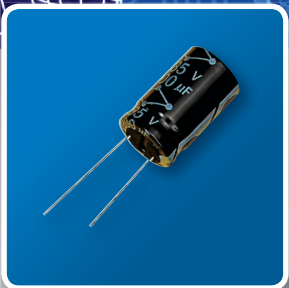




Design with confidence...



...choose SPC Multicomp for Capacitors

- Excellent value for money
- High quality and reliability
- Industry standard product range
- Order from Farnell for next day delivery with fast, reliable service and support

For the full range and technical information visit www.farnell.com/multicomp



multicomp

Ceramic - Multilayer Chip - Multicomp

General Purpose Commodity MLCC



0201	Dielectric Characteristic	Capacitance Tolerance	Order Code	Price Each		
				100+	500+	1K+
6.3 V dc						
10 nF	X5R	± 10%	SMD 175-8840	0.007	0.005	0.004
15 nF	X5R	± 10%	SMD 175-8841	0.007	0.005	0.004
22 nF	X5R	± 10%	SMD 175-8842	0.007	0.005	0.004
33 nF	X5R	± 10%	SMD 175-8843	0.007	0.005	0.004
47 nF	X5R	± 10%	SMD 175-8844	0.007	0.005	0.004
68 nF	X5R	± 10%	SMD 175-8845	0.007	0.005	0.004
10 V dc						
1 nF	X7R	± 10%	SMD 175-8847	0.007	0.005	0.004
1.5 nF	X7R	± 10%	SMD 175-8848	0.007	0.005	0.004
2.2 nF	X7R	± 10%	SMD 175-8849	0.007	0.005	0.004
3.3 nF	X5R	± 10%	SMD 175-8850	0.007	0.005	0.004
4.7 nF	X5R	± 10%	SMD 175-8851	0.007	0.005	0.004
6.8 nF	X5R	± 10%	SMD 175-8852	0.007	0.005	0.004
10 nF	X5R	± 10%	SMD 175-8853	0.007	0.005	0.004
16 V dc						
56 pF	COG / NPO	± 5%	SMD 175-8854	0.007	0.005	0.004
68 pF	COG / NPO	± 5%	SMD 175-8855	0.007	0.005	0.004
82 pF	COG / NPO	± 5%	SMD 175-8856	0.007	0.005	0.004
100 pF	COG / NPO	± 5%	SMD 175-8857	0.007	0.005	0.004
1.5 nF	X7R	± 10%	SMD 175-8859	0.007	0.005	0.004
2.2 nF	X7R	± 10%	SMD 175-8861	0.007	0.005	0.004
25 V dc						
0.5 pF	COG / NPO	± 0.25pF	SMD 175-8862	0.007	0.005	0.004
1 pF	COG / NPO	± 0.25pF	SMD 175-8863	0.007	0.005	0.004
1.5 pF	COG / NPO	± 0.25pF	SMD 175-8864	0.007	0.005	0.004
10 pF	COG / NPO	± 1%	SMD 175-8865	0.009	0.008	0.007
12 pF	COG / NPO	± 5%	SMD 175-8866	0.007	0.005	0.004
15 pF	COG / NPO	± 5%	SMD 175-8867	0.007	0.005	0.004
18 pF	COG / NPO	± 5%	SMD 175-8868	0.007	0.005	0.004
22 pF	COG / NPO	± 5%	SMD 175-8869	0.007	0.005	0.004
27 pF	COG / NPO	± 5%	SMD 175-8870	0.007	0.005	0.004
33 pF	COG / NPO	± 5%	SMD 175-8872	0.007	0.005	0.004
150 pF	X7R	± 10%	SMD 175-8873	0.007	0.005	0.004
220 pF	X7R	± 10%	SMD 175-8874	0.007	0.005	0.004
330 pF	X7R	± 10%	SMD 175-8875	0.007	0.005	0.004
470 pF	X7R	± 10%	SMD 175-8876	0.007	0.005	0.004
680 pF	X7R	± 10%	SMD 175-8877	0.007	0.005	0.004
1 nF	X7R	± 10%	SMD 175-8878	0.007	0.005	0.004
0402						
6.3 V dc	Dielectric Characteristic	Capacitance Tolerance	Order Code	Price Each		
				100+	500+	1K+
1 μF	Y5V	-20%, +80%	SMD 175-8879	0.008	0.006	0.005
10 V dc						
220 nF	Y5V	-20%, +80%	SMD 175-8880	0.007	0.005	0.004
16 V dc						
5.6 nF	X7R	± 10%	SMD 175-8881	0.006	0.004	0.003
6.8 nF	X7R	± 10%	SMD 175-8882	0.006	0.004	0.003
8.2 nF	X7R	± 10%	SMD 175-8884	0.006	0.004	0.003
10 nF	X7R	± 10%	SMD 175-8885	0.006	0.004	0.003
12 nF	X7R	± 10%	SMD 175-8886	0.006	0.004	0.003
15 nF	X7R	± 10%	SMD 175-8887	0.006	0.004	0.003
15 nF	Y5V	-20%, +80%	SMD 175-8888	0.006	0.004	0.003
18 nF	X7R	± 10%	SMD 175-8889	0.006	0.004	0.003
22 nF	X7R	± 10%	SMD 175-8890	0.006	0.004	0.003
22 nF	Y5V	-20%, +80%	SMD 175-8891	0.006	0.004	0.003
33 nF	Y5V	-20%, +80%	SMD 175-8892	0.006	0.004	0.003
47 nF	Y5V	-20%, +80%	SMD 175-8893	0.006	0.004	0.003
68 nF	Y5V	-20%, +80%	SMD 175-8894	0.006	0.004	0.003
100 nF	X7R	± 10%	SMD 175-8896	0.007	0.005	0.004
100 nF	Y5V	-20%, +80%	SMD 175-8897	0.006	0.004	0.003
25 V dc						
100 pF	X7R	± 10%	SMD 175-8898	0.006	0.004	0.003
120 pF	X7R	± 10%	SMD 175-8899	0.006	0.004	0.003
150 pF	X7R	± 10%	SMD 175-8900	0.006	0.004	0.003
180 pF	X7R	± 10%	SMD 175-8902	0.006	0.004	0.003
220 pF	X7R	± 10%	SMD 175-8903	0.006	0.004	0.003
270 pF	X7R	± 10%	SMD 175-8904	0.006	0.004	0.003
330 pF	X7R	± 10%	SMD 175-8905	0.006	0.004	0.003

0402	Dielectric Characteristic	Capacitance Tolerance	Order Code	Price Each		
				100+	500+	1K+
25 V dc						
390 pF	X7R	± 10%	SMD 175-8906	0.006	0.004	0.003
470 pF	X7R	± 10%	SMD 175-8907	0.006	0.004	0.003
560 pF	X7R	± 10%	SMD 175-8908	0.006	0.004	0.003
680 pF	X7R	± 10%	SMD 175-8909	0.006	0.004	0.003
820 pF	X7R	± 10%	SMD 175-8910	0.006	0.004	0.003
1 nF	X7R	± 10%	SMD 175-8911	0.006	0.004	0.003
1.2 nF	X7R	± 10%	SMD 175-8912	0.006	0.004	0.003
1.5 nF	X7R	± 10%	SMD 175-8914	0.006	0.004	0.003
1.8 nF	X7R	± 10%	SMD 175-8915	0.006	0.004	0.003
2.2 nF	X7R	± 10%	SMD 175-8916	0.006	0.004	0.003
2.7 nF	X7R	± 10%	SMD 175-8917	0.006	0.004	0.003
3.3 nF	X7R	± 10%	SMD 175-8918	0.006	0.004	0.003
3.9 nF	X7R	± 10%	SMD 175-8919	0.006	0.004	0.003
4.7 nF	X7R	± 10%	SMD 175-8920	0.006	0.004	0.003
5.6 nF	X7R	± 10%	SMD 175-8921	0.006	0.004	0.003
6.8 nF	X7R	± 10%	SMD 175-8922	0.006	0.004	0.003
8.2 nF	X7R	± 10%	SMD 175-8923	0.006	0.004	0.003
10 nF	X7R	± 10%	SMD 175-8924	0.006	0.004	0.003
10 nF	Y5V	-20%, +80%	SMD 175-8926	0.006	0.004	0.003
15 nF	Y5V	-20%, +80%	SMD 175-8927	0.006	0.004	0.003
22 nF	Y5V	-20%, +80%	SMD 175-8928	0.006	0.004	0.003
50 V dc						
0.5 pF	COG / NPO	± 0.25pF	SMD 175-8929	0.006	0.004	0.003
1 pF	COG / NPO	± 0.25pF	SMD 175-8930	0.006	0.004	0.003
1.5 pF	COG / NPO	± 0.25pF	SMD 175-8931	0.006	0.004	0.003
2 pF	COG / NPO	± 0.25pF	SMD 175-8932	0.006	0.004	0.003
3 pF	COG / NPO	± 0.25pF	SMD 175-8933	0.006	0.004	0.003
4 pF	COG / NPO	± 0.25pF	SMD 175-8934	0.006	0.004	0.003
5 pF	COG / NPO	± 0.25pF	SMD 175-8935	0.006	0.004	0.003
6 pF	COG / NPO	± 0.05pF	SMD 175-8936	0.006	0.004	0.003
7 pF	COG / NPO	± 0.05pF	SMD 175-8938	0.006	0.004	0.003
8 pF	COG / NPO	± 0.05pF	SMD 175-8939	0.006	0.004	0.003
9 pF	COG / NPO	± 0.05pF	SMD 175-8940	0.006	0.004	0.003
10 pF	COG / NPO	± 0.05pF	SMD 175-8941	0.006	0.004	0.003
11 pF	COG / NPO	± 5%	SMD 175-8942	0.006	0.004	0.003
12 pF	COG / NPO	± 5%	SMD 175-8943	0.006	0.004	0.003
13 pF	COG / NPO	± 5%	SMD 175-8944	0.006	0.004	0.003
15 pF	COG / NPO	± 5%	SMD 175-8945	0.006	0.004	0.003
16 pF	COG / NPO	± 5%	SMD 175-8946	0.006	0.004	0.003
18 pF	COG / NPO	± 5%	SMD 175-8947	0.006	0.004	0.003
20 pF	COG / NPO	± 5%	SMD 175-8948	0.006	0.004	0.003
22 pF	COG / NPO	± 5%	SMD 175-8951	0.006	0.004	0.003
24 pF	COG / NPO	± 5%	SMD 175-8952	0.006	0.004	0.003
27 pF	COG / NPO	± 5%	SMD 175-8953	0.006	0.004	0.003
30 pF	COG / NPO	± 5%	SMD 175-8954	0.006	0.004	0.003
33 pF	COG / NPO	± 5%	SMD 175-8955	0.006	0.004	0.003
36 pF	COG / NPO	± 5%	SMD 175-8956	0.006	0.004	0.003
39 pF	COG / NPO	± 5%	SMD 175-8957	0.006	0.004	0.003
43 pF	COG / NPO	± 5%	SMD 175-8958	0.006	0.004	0.003
47 pF	COG / NPO	± 5%	SMD 175-8959	0.006	0.004	0.003
51 pF	COG / NPO	± 5%	SMD 175-8960	0.006	0.004	0.003
56 pF	COG / NPO	± 5%	SMD 175-8961	0.006	0.004	0.003
62 pF	COG / NPO	± 5%	SMD 175-8963	0.006	0.004	0.003
68 pF	COG / NPO	± 5%	SMD 175-8964	0.006	0.004	0.003
75 pF	COG / NPO	± 5%	SMD 175-8965	0.006	0.004	0.003
82 pF	COG / NPO	± 5%	SMD 175-8966	0.006	0.004	0.003
91 pF	COG / NPO	± 5%	SMD 175-8967	0.006	0.004	0.003
100 pF	X7R	± 10%	SMD 175-8968	0.006	0.004	0.003
100 pF	COG / NPO	± 5%	SMD 175-8969	0.006	0.004	0.003
110 pF	COG / NPO	± 5%	SMD 175-8970	0.007	0.005	0.004
120 pF	X7R	± 10%	SMD 175-8971	0.006	0.004	0.003
120 pF	COG / NPO	± 5%	SMD 175-8972	0.006	0.004	0.003
130 pF	COG / NPO	± 5%	SMD 175-8973	0.007	0.005	0.004
150 pF	X7R	± 10%	SMD 175-8975	0.006	0.004	0.003
150 pF	COG / NPO	± 5%	SMD 175-8976	0.006	0.004	0.003
160 pF	COG / NPO	± 5%	SMD 175-8977	0.007	0.005	0.004
180 pF	X7R	± 1				



Ceramic - Multilayer Chip - Multicomp - continued

General Purpose Commodity MLCC - continued

0402	Dielectric	Capacitance	Order	Price Each		
6.3 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
50 V dc						
1.8 nF	X7R	± 10%	SMD 175-8994	0.006	0.004	0.003
2.2 nF	X7R	± 10%	SMD 175-8995	0.006	0.004	0.003
2.7 nF	X7R	± 10%	SMD 175-8996	0.006	0.004	0.003
3.3 nF	X7R	± 10%	SMD 175-8997	0.006	0.004	0.003
3.9 nF	X7R	± 10%	SMD 175-8999	0.006	0.004	0.003
10 nF	Y5V	-20%, +80%	SMD 175-9001	0.006	0.004	0.003
0603						
6.3 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
680 nF	Y5V	-20%, +80%	SMD 175-9002	0.007	0.006	0.004
16 V dc						
10 nF	X7R	± 10%	SMD 175-9003	0.005	0.003	0.002
12 nF	X7R	± 10%	SMD 175-9004	0.006	0.004	0.003
15 nF	X7R	± 10%	SMD 175-9005	0.006	0.004	0.003
18 nF	X7R	± 10%	SMD 175-9006	0.006	0.004	0.003
22 nF	X7R	± 10%	SMD 175-9007	0.006	0.004	0.003
27 nF	X7R	± 10%	SMD 175-9008	0.006	0.004	0.003
33 nF	X7R	± 10%	SMD 175-9009	0.006	0.004	0.003
39 nF	X7R	± 10%	SMD 175-9010	0.006	0.004	0.003
47 nF	X7R	± 10%	SMD 175-9011	0.006	0.004	0.003
56 nF	X7R	± 10%	SMD 175-9013	0.006	0.004	0.003
68 nF	X7R	± 10%	SMD 175-9014	0.006	0.004	0.003
82 nF	X7R	± 10%	SMD 175-9015	0.006	0.004	0.003
100 nF	X7R	± 10%	SMD 175-9016	0.006	0.004	0.003
100 nF	Y5V	-20%, +80%	SMD 175-9017	0.005	0.003	0.002
150 nF	Y5V	-20%, +80%	SMD 175-9018	0.005	0.004	0.003
220 nF	Y5V	-20%, +80%	SMD 175-9019	0.006	0.005	0.004
330 nF	Y5V	-20%, +80%	SMD 175-9020	0.007	0.006	0.004
470 nF	Y5V	-20%, +80%	SMD 175-9021	0.007	0.006	0.004
25 V dc						
10 nF	X7R	± 10%	SMD 175-9022	0.005	0.003	0.002
12 nF	X7R	± 10%	SMD 175-9023	0.005	0.004	0.003
15 nF	X7R	± 10%	SMD 175-9025	0.005	0.004	0.003
18 nF	X7R	± 10%	SMD 175-9026	0.005	0.004	0.003
22 nF	X7R	± 10%	SMD 175-9027	0.005	0.004	0.003
27 nF	X7R	± 10%	SMD 175-9028	0.005	0.004	0.003
33 nF	X7R	± 10%	SMD 175-9029	0.005	0.004	0.003
39 nF	X7R	± 10%	SMD 175-9030	0.005	0.004	0.003
47 nF	X7R	± 10%	SMD 175-9031	0.005	0.004	0.003
56 nF	X7R	± 10%	SMD 175-9032	0.005	0.004	0.003
68 nF	X7R	± 10%	SMD 175-9033	0.005	0.004	0.003
68 nF	Y5V	-20%, +80%	SMD 175-9034	0.005	0.003	0.002
82 nF	X7R	± 10%	SMD 175-9035	0.005	0.004	0.003
100 nF	X7R	± 10%	SMD 175-9037	0.006	0.004	0.003
100 nF	Y5V	-20%, +80%	SMD 175-9038	0.005	0.003	0.002
1 μF	Y5V	-20%, +80%	SMD 175-9039	0.009	0.007	0.006
50 V dc						
0.5 pF	COG / NPO	± 0.25pF	SMD 175-9040	0.006	0.004	0.003
1 pF	COG / NPO	± 0.25pF	SMD 175-9041	0.006	0.004	0.003
1.5 pF	COG / NPO	± 0.25pF	SMD 175-9042	0.006	0.004	0.003
2 pF	COG / NPO	± 0.25pF	SMD 175-9043	0.006	0.004	0.003
3 pF	COG / NPO	± 0.25pF	SMD 175-9044	0.006	0.004	0.003
4 pF	COG / NPO	± 0.25pF	SMD 175-9045	0.006	0.004	0.003
5 pF	COG / NPO	± 0.25pF	SMD 175-9046	0.006	0.004	0.003
6 pF	COG / NPO	± 0.5pF	SMD 175-9047	0.006	0.004	0.003
7 pF	COG / NPO	± 0.5pF	SMD 175-9049	0.006	0.004	0.003
8 pF	COG / NPO	± 0.5pF	SMD 175-9051	0.006	0.004	0.003
9 pF	COG / NPO	± 0.5pF	SMD 175-9052	0.006	0.004	0.003
10 pF	COG / NPO	± 0.5pF	SMD 175-9053	0.006	0.004	0.003
12 pF	COG / NPO	± 5%	SMD 175-9054	0.006	0.004	0.003
15 pF	COG / NPO	± 5%	SMD 175-9055	0.006	0.004	0.003
18 pF	COG / NPO	± 5%	SMD 175-9056	0.006	0.004	0.003
22 pF	COG / NPO	± 5%	SMD 175-9057	0.005	0.003	0.002
27 pF	COG / NPO	± 5%	SMD 175-9058	0.005	0.003	0.002
33 pF	COG / NPO	± 5%	SMD 175-9059	0.005	0.003	0.002
39 pF	COG / NPO	± 5%	SMD 175-9060	0.005	0.003	0.002
47 pF	COG / NPO	± 5%	SMD 175-9062	0.005	0.003	0.002
56 pF	COG / NPO	± 5%	SMD 175-9063	0.005	0.003	0.002
68 pF	COG / NPO	± 5%	SMD 175-9064	0.005	0.003	0.002
82 pF	COG / NPO	± 5%	SMD 175-9065	0.005	0.003	0.002
100 pF	COG / NPO	± 5%	SMD 175-9066	0.005	0.003	0.002
120 pF	COG / NPO	± 5%	SMD 175-9067	0.005	0.004	0.003
150 pF	COG / NPO	± 5%	SMD 175-9068	0.005	0.004	0.003
180 pF	COG / NPO	± 5%	SMD 175-9069	0.005	0.004	0.003
220 pF	X7R	± 10%	SMD 175-9070	0.005	0.003	0.002

0603	Dielectric	Capacitance	Order	Price Each		
6.3 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
50 V dc						
220 pF	COG / NPO	± 5%	SMD 175-9071	0.005	0.004	0.003
270 pF	X7R	± 10%	SMD 175-9072	0.005	0.003	0.002
270 pF	COG / NPO	± 5%	SMD 175-9074	0.007	0.006	0.004
330 pF	X7R	± 10%	SMD 175-9075	0.005	0.003	0.002
330 pF	COG / NPO	± 5%	SMD 175-9076	0.007	0.006	0.004
390 pF	X7R	± 10%	SMD 175-9077	0.005	0.003	0.002
390 pF	COG / NPO	± 5%	SMD 175-9078	0.008	0.006	0.005
470 pF	X7R	± 10%	SMD 175-9079	0.005	0.003	0.002
470 pF	COG / NPO	± 5%	SMD 175-9080	0.008	0.006	0.005
560 pF	X7R	± 10%	SMD 175-9081	0.005	0.003	0.002
560 pF	COG / NPO	± 5%	SMD 175-9082	0.009	0.007	0.006
680 pF	X7R	± 10%	SMD 175-9083	0.005	0.003	0.002
680 pF	COG / NPO	± 5%	SMD 175-9084	0.010	0.008	0.006
820 pF	X7R	± 10%	SMD 175-9086	0.005	0.003	0.002
820 pF	COG / NPO	± 5%	SMD 175-9087	0.010	0.008	0.006
1 nF	X7R	± 10%	SMD 175-9088	0.005	0.003	0.002
1 nF	COG / NPO	± 5%	SMD 175-9089	0.012	0.010	0.008
1.2 nF	X7R	± 10%	SMD 175-9090	0.005	0.003	0.002
1.5 nF	X7R	± 10%	SMD 175-9091	0.005	0.003	0.002
1.8 nF	X7R	± 10%	SMD 175-9092	0.005	0.003	0.002
2.2 nF	X7R	± 10%	SMD 175-9093	0.005	0.003	0.002
2.7 nF	X7R	± 10%	SMD 175-9094	0.005	0.003	0.002
3.3 nF	X7R	± 10%	SMD 175-9095	0.005	0.003	0.002
3.9 nF	X7R	± 10%	SMD 175-9096	0.005	0.003	0.002
4.7 nF	X7R	± 10%	SMD 175-9098	0.005	0.003	0.002
5.6 nF	X7R	± 10%	SMD 175-9099	0.005	0.003	0.002
6.8 nF	X7R	± 10%	SMD 175-9100	0.005	0.003	0.002
8.2 nF	X7R	± 10%	SMD 175-9101	0.005	0.003	0.002
10 nF	X7R	± 10%	SMD 175-9102	0.005	0.003	0.002
10 nF	Y5V	-20%, +80%	SMD 175-9104	0.005	0.003	0.002
12 nF	X7R	± 10%	SMD 175-9105	0.005	0.004	0.003
15 nF	X7R	± 10%	SMD 175-9106	0.005	0.004	0.003
15 nF	Y5V	-20%, +80%	SMD 175-9107	0.005	0.003	0.002
18 nF	X7R	± 10%	SMD 175-9108	0.005	0.004	0.003
22 nF	X7R	± 10%	SMD 175-9109	0.005	0.004	0.003
22 nF	Y5V	-20%, +80%	SMD 175-9110	0.005	0.003	0.002
27 nF	X7R	± 10%	SMD 175-9111	0.005	0.004	0.003
33 nF	X7R	± 10%	SMD 175-9112	0.006	0.005	0.004
33 nF	Y5V	-20%, +80%	SMD 175-9113	0.005	0.003	0.002
39 nF	X7R	± 10%	SMD 175-9114	0.006	0.005	0.004
47 nF	X7R	± 10%	SMD 175-9116	0.006	0.005	0.004
47 nF	Y5V	-20%, +80%	SMD 175-9117	0.005	0.003	0.002
56 nF	X7R	± 10%	SMD 175-9118	0.007	0.006	0.005
68 nF	X7R	± 10%	SMD 175-9119	0.007	0.006	0.005
68 nF	Y5V	-20%, +80%	SMD 175-9120	0.005	0.003	0.002
82 nF	X7R	± 10%	SMD 175-9121	0.007	0.006	0.005
100 nF	X7R	± 10%	SMD 175-9122	0.005	0.004	0.003
100 nF	Y5V	-20%, +80%	SMD 175-9123	0.005	0.003	0.002
100 V dc						
15 pF	COG / NPO	± 5%	SMD 175-9124	0.007	0.006	0.004
22 pF	COG / NPO	± 5%	SMD 175-9125	0.007	0.005	0.004
33 pF	COG / NPO	± 5%	SMD 175-9126	0.007	0.005	0.004
47 pF	COG / NPO	± 5%	SMD 175-9128	0.007	0.005	0.004
68 pF	COG / NPO	± 5%	SMD 175-9129	0.007	0.005	0.004
100 pF	COG / NPO	± 5%	SMD 175-9130	0.007	0.005	0.004
220 pF	X7R	± 10%	SMD 175-9131	0.007	0.006	0.004
330 pF	X7R	± 10%	SMD 175-9132	0.007	0.006	0.004
47						

0805	Dielectric	Capacitance	Order	Price Each		
6.3 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
16 V dc						
470 nF	X7R	± 10%	SMD175-9156	0.018	0.014	0.009
470 nF	Y5V	-20%, +80%	SMD175-9157	0.011	0.008	0.006
680 nF	Y5V	-20%, +80%	SMD175-9158	0.011	0.008	0.006
25 V dc						
39 nF	X7R	± 10%	SMD175-9159	0.007	0.005	0.004
47 nF	X7R	± 10%	SMD175-9160	0.007	0.005	0.004
56 nF	X7R	± 10%	SMD175-9161	0.007	0.005	0.004
68 nF	X7R	± 10%	SMD175-9162	0.007	0.005	0.004
68 nF	Y5V	-20%, +80%	SMD175-9163	0.007	0.005	0.004
82 nF	X7R	± 10%	SMD175-9165	0.007	0.005	0.004
100 nF	X7R	± 10%	SMD175-9166	0.007	0.005	0.004
100 nF	Y5V	-20%, +80%	SMD175-9167	0.007	0.005	0.004
120 nF	X7R	± 10%	SMD175-9168	0.021	0.016	0.011
150 nF	X7R	± 10%	SMD175-9169	0.021	0.016	0.011
150 nF	Y5V	-20%, +80%	SMD175-9170	0.011	0.008	0.006
180 nF	X7R	± 10%	SMD175-9171	0.021	0.016	0.011
220 nF	X7R	± 10%	SMD175-9172	0.022	0.017	0.012
220 nF	Y5V	-20%, +80%	SMD175-9173	0.011	0.008	0.006
330 nF	Y5V	-20%, +80%	SMD175-9174	0.011	0.008	0.006
470 nF	Y5V	-20%, +80%	SMD175-9175	0.011	0.008	0.006
2.2 µF	Y5V	-20%, +80%	SMD175-9177	0.025	0.019	0.015
50 V dc						
0.5 pF	COG / NPO	± 0.25pF	SMD175-9178	0.008	0.006	0.004
1 pF	COG / NPO	± 0.25pF	SMD175-9179	0.008	0.006	0.004
1.5 pF	COG / NPO	± 0.25pF	SMD175-9180	0.008	0.006	0.004
2 pF	COG / NPO	± 0.25pF	SMD175-9181	0.010	0.007	0.005
3 pF	COG / NPO	± 0.25pF	SMD175-9182	0.010	0.007	0.005
4 pF	COG / NPO	± 0.25pF	SMD175-9183	0.010	0.007	0.005
5 pF	COG / NPO	± 0.25pF	SMD175-9184	0.010	0.007	0.005
6 pF	COG / NPO	± 0.5pF	SMD175-9185	0.010	0.007	0.005
7 pF	COG / NPO	± 0.5pF	SMD175-9186	0.010	0.007	0.005
8 pF	COG / NPO	± 0.5pF	SMD175-9187	0.010	0.007	0.005
9 pF	COG / NPO	± 0.5pF	SMD175-9189	0.010	0.007	0.005
10 pF	COG / NPO	± 0.5pF	SMD175-9191	0.008	0.006	0.005
12 pF	COG / NPO	± 5%	SMD175-9192	0.008	0.006	0.004
15 pF	COG / NPO	± 5%	SMD175-9193	0.008	0.006	0.004
18 pF	COG / NPO	± 5%	SMD175-9194	0.008	0.006	0.004
22 pF	COG / NPO	± 5%	SMD175-9195	0.008	0.006	0.004
27 pF	COG / NPO	± 5%	SMD175-9196	0.008	0.006	0.004
33 pF	COG / NPO	± 5%	SMD175-9197	0.008	0.006	0.004
39 pF	COG / NPO	± 5%	SMD175-9198	0.008	0.006	0.004
47 pF	COG / NPO	± 5%	SMD175-9199	0.008	0.006	0.004
56 pF	COG / NPO	± 5%	SMD175-9200	0.008	0.006	0.004
68 pF	COG / NPO	± 5%	SMD175-9201	0.008	0.006	0.004
82 pF	COG / NPO	± 5%	SMD175-9202	0.008	0.006	0.004
100 pF	COG / NPO	± 5%	SMD175-9203	0.008	0.006	0.004
120 pF	COG / NPO	± 5%	SMD175-9204	0.009	0.007	0.005
150 pF	COG / NPO	± 5%	SMD175-9205	0.011	0.009	0.006
180 pF	COG / NPO	± 5%	SMD175-9207	0.011	0.009	0.006
220 pF	X7R	± 10%	SMD175-9208	0.007	0.005	0.004
220 pF	COG / NPO	± 5%	SMD175-9209	0.011	0.009	0.006
270 pF	X7R	± 10%	SMD175-9210	0.007	0.005	0.004
270 pF	COG / NPO	± 5%	SMD175-9211	0.016	0.011	0.008
330 pF	X7R	± 10%	SMD175-9212	0.007	0.005	0.004
330 pF	COG / NPO	± 5%	SMD175-9213	0.016	0.011	0.008
390 pF	X7R	± 10%	SMD175-9214	0.007	0.005	0.004
390 pF	COG / NPO	± 5%	SMD175-9215	0.016	0.011	0.008
470 pF	X7R	± 10%	SMD175-9216	0.007	0.005	0.004
470 pF	COG / NPO	± 5%	SMD175-9217	0.016	0.011	0.008
560 pF	X7R	± 10%	SMD175-9219	0.007	0.005	0.004
560 pF	COG / NPO	± 5%	SMD175-9221	0.018	0.012	0.009
680 pF	X7R	± 10%	SMD175-9222	0.007	0.005	0.004
680 pF	COG / NPO	± 5%	SMD175-9223	0.018	0.012	0.009
820 pF	X7R	± 10%	SMD175-9224	0.007	0.005	0.004
820 pF	COG / NPO	± 5%	SMD175-9225	0.018	0.012	0.009
1 nF	X7R	± 10%	SMD175-9226	0.007	0.005	0.004
1 nF	COG / NPO	± 5%	SMD175-9227	0.018	0.012	0.009
1.2 nF	X7R	± 10%	SMD175-9228	0.007	0.005	0.004
1.2 nF	COG / NPO	± 5%	SMD175-9229	0.026	0.020	0.016
1.5 nF	COG / NPO	± 5%	SMD175-9230	0.026	0.020	0.016
1.5 nF	X7R	± 10%	SMD175-9232	0.007	0.005	0.004
1.8 nF	X7R	± 10%	SMD175-9233	0.007	0.005	0.004
1.8 nF	COG / NPO	± 5%	SMD175-9234	0.029	0.022	0.017
2.2 nF	X7R	± 10%	SMD175-9235	0.007	0.005	0.004
2.2 nF	COG / NPO	± 5%	SMD175-9236	0.029	0.022	0.017
2.7 nF	X7R	± 10%	SMD175-9237	0.007	0.005	0.004
2.7 nF	COG / NPO	± 5%	SMD175-9238	0.042	0.031	0.023
3.3 nF	X7R	± 10%	SMD175-9239	0.007	0.005	0.004
3.9 nF	X7R	± 10%	SMD175-9240	0.007	0.005	0.004
4.7 nF	X7R	± 10%	SMD175-9241	0.007	0.005	0.004
5.6 nF	X7R	± 10%	SMD175-9242	0.007	0.005	0.004

0805	Dielectric	Capacitance	Order	Price Each		
6.3 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
16 V dc						
6.8 nF	X7R	± 10%	SMD175-9244	0.007	0.005	0.004
8.2 nF	X7R	± 10%	SMD175-9245	0.007	0.005	0.004
10 nF	X7R	± 10%	SMD175-9246	0.007	0.005	0.004
10 nF	Y5V	-20%, +80%	SMD175-9247	0.007	0.005	0.004
12 nF	X7R	± 10%	SMD175-9248	0.007	0.005	0.004
15 nF	X7R	± 10%	SMD175-9249	0.007	0.005	0.004
15 nF	Y5V	-20%, +80%	SMD175-9250	0.007	0.005	0.004
18 nF	X7R	± 10%	SMD175-9251	0.007	0.005	0.004
22 nF	X7R	± 10%	SMD175-9252	0.007	0.005	0.004
22 nF	Y5V	-20%, +80%	SMD175-9253	0.007	0.005	0.004
27 nF	X7R	± 10%	SMD175-9254	0.007	0.005	0.004
33 nF	Y5V	-20%, +80%	SMD175-9256	0.007	0.005	0.004
33 nF	X7R	± 10%	SMD175-9257	0.007	0.005	0.004
39 nF	X7R	± 10%	SMD175-9258	0.007	0.005	0.004
47 nF	Y5V	-20%, +80%	SMD175-9259	0.007	0.005	0.004
47 nF	X7R	± 10%	SMD175-9260	0.007	0.005	0.004
56 nF	X7R	± 10%	SMD175-9261	0.007	0.005	0.004
68 nF	X7R	± 10%	SMD175-9262	0.007	0.005	0.004
68 nF	Y5V	-20%, +80%	SMD175-9263	0.007	0.005	0.004
82 nF	X7R	± 10%	SMD175-9264	0.007	0.005	0.004
100 nF	X7R	± 10%	SMD175-9265	0.007	0.005	0.004
100 nF	Y5V	-20%, +80%	SMD175-9266	0.007	0.005	0.004
150 nF	Y5V	-20%, +80%	SMD175-9268	0.011	0.008	0.006
220 nF	Y5V	-20%, +80%	SMD175-9269	0.011	0.008	0.006
100 V dc						
15 pF	COG / NPO	± 5%	SMD175-9270	0.012	0.009	0.007
22 pF	COG / NPO	± 5%	SMD175-9271	0.012	0.009	0.007
33 pF	COG / NPO	± 5%	SMD175-9272	0.012	0.009	0.007
47 pF	COG / NPO	± 5%	SMD175-9273	0.012	0.009	0.007
68 pF	COG / NPO	± 5%	SMD175-9274	0.012	0.009	0.007
100 pF	COG / NPO	± 5%	SMD175-9275	0.012	0.009	0.007
150 pF	COG / NPO	± 5%	SMD175-9276	0.014	0.010	0.008
220 pF	X7R	± 10%	SMD175-9277	0.010	0.007	0.005
220 pF	COG / NPO	± 5%	SMD175-9278	0.018	0.012	0.009
330 pF	X7R	± 10%	SMD175-9281	0.010	0.007	0.005
330 pF	COG / NPO	± 5%	SMD175-9282	0.021	0.016	0.011
470 pF	X7R	± 10%	SMD175-9283	0.010	0.007	0.005
470 pF	COG / NPO	± 5%	SMD175-9284	0.021	0.016	0.011
680 pF	X7R	± 10%	SMD175-9285	0.010	0.007	0.005
680 pF	COG / NPO	± 5%	SMD175-9286	0.023	0.018	0.014
1 nF	X7R	± 10%	SMD175-9287	0.010	0.007	0.005
1 nF	COG / NPO	± 5%	SMD175-9288	0.023	0.018	0.014
1.5 nF	X7R	± 10%	SMD175-9289	0.012	0.009	0.007
2.2 nF	X7R	± 10%	SMD175-9290	0.012	0.009	0.007
3.3 nF	X7R	± 10%	SMD175-9291	0.015	0.011	0.008
4.7 nF	X7R	± 10%	SMD175-9293	0.015	0.011	0.008
6.8 nF	X7R	± 10%	SMD175-9294	0.015	0.011	0.008
10 nF	X7R	± 10%	SMD175-9295	0.015	0.011	0.008
15 nF	X7R	± 10%	SMD175-9296	0.019	0.014	0.010
1206						
16 V dc	Characteristic	Tolerance	Order	Price Each		
100 nF	X7R	± 10%	Code	10+	250+	1K+
100 nF	X7R	± 10%	SMD175-9297	0.020	0.015	0.011
120 nF	X7R	±				



Ceramic - Multilayer Chip - Multicomp - continued

General Purpose Commodity MLCC - continued

1206	Dielectric	Capacitance	Order	Price Each		
16 V dc	Characteristic	Tolerance	Code	10+	250+	1K+
50 V dc						
100 pF	Y5V	± 5%	SMD 175-9327	0.020	0.015	0.010
220 pF	X7R	± 10%	SMD 175-9328	0.018	0.014	0.010
270 pF	X7R	± 10%	SMD 175-9329	0.018	0.014	0.010
330 pF	X7R	± 10%	SMD 175-9330	0.018	0.014	0.010
390 pF	X7R	± 10%	SMD 175-9331	0.018	0.014	0.010
470 pF	X7R	± 10%	SMD 175-9332	0.018	0.014	0.010
560 pF	X7R	± 10%	SMD 175-9333	0.018	0.014	0.010
680 pF	X7R	± 10%	SMD 175-9335	0.018	0.014	0.010
820 pF	X7R	± 10%	SMD 175-9336	0.018	0.014	0.010
1 nF	X7R	± 10%	SMD 175-9337	0.018	0.014	0.010
1.2 nF	X7R	± 10%	SMD 175-9338	0.019	0.015	0.010
1.5 nF	X7R	± 10%	SMD 175-9339	0.019	0.015	0.010
1.8 nF	X7R	± 10%	SMD 175-9340	0.019	0.015	0.010
2.2 nF	X7R	± 10%	SMD 175-9341	0.019	0.015	0.010
2.7 nF	X7R	± 10%	SMD 175-9342	0.019	0.015	0.010
3.3 nF	X7R	± 10%	SMD 175-9343	0.019	0.015	0.010
3.9 nF	X7R	± 10%	SMD 175-9344	0.019	0.015	0.010
4.7 nF	X7R	± 10%	SMD 175-9345	0.019	0.015	0.010
5.6 nF	X7R	± 10%	SMD 175-9347	0.019	0.015	0.010
6.8 nF	X7R	± 10%	SMD 175-9348	0.019	0.015	0.010
8.2 nF	X7R	± 10%	SMD 175-9349	0.019	0.015	0.010
10 nF	X7R	± 10%	SMD 175-9350	0.019	0.015	0.010
12 nF	X7R	± 10%	SMD 175-9351	0.022	0.016	0.012
15 nF	X7R	± 10%	SMD 175-9352	0.022	0.016	0.012
18 nF	X7R	± 10%	SMD 175-9353	0.022	0.016	0.012
22 nF	X7R	± 10%	SMD 175-9354	0.022	0.016	0.012
27 nF	X7R	± 10%	SMD 175-9355	0.022	0.016	0.012
33 nF	X7R	± 10%	SMD 175-9356	0.022	0.016	0.012
39 nF	X7R	± 10%	SMD 175-9357	0.022	0.016	0.012
47 nF	X7R	± 10%	SMD 175-9359	0.022	0.016	0.012
100 nF	X7R	± 10%	SMD 175-9361	0.020	0.015	0.011
220 nF	X7R	± 10%	SMD 175-9362	0.041	0.030	0.023
100 V dc						
22 nF	X7R	± 10%	SMD 175-9363	0.022	0.016	0.012
33 nF	X7R	± 10%	SMD 175-9364	0.030	0.022	0.017
47 nF	X7R	± 10%	SMD 175-9365	0.030	0.022	0.017
100 nF	X7R	± 10%	SMD 175-9366	0.027	0.021	0.016

546880

Capacitance Conversion Table		
0.000001µF	=	0.001nF
0.00001µF	=	0.01nF
0.0001µF	=	0.1nF
0.001µF	=	1nF
0.01µF	=	10nF
0.1µF	=	100nF
1µF	=	1000nF
10µF	=	10000nF
100µF	=	100000nF
	=	1pF
	=	10pF
	=	100pF
	=	1000pF
	=	10000pF
	=	100000pF
	=	1000000pF
	=	10000000pF

Ceramic - Multilayer Chip - AVX

Surface Mount – Nickel Barrier



- Multilayer ceramic chip capacitors
- Nickel barrier terminations
- High performance and reliability
- 0402, 0603, 0805, 1206, 1210 and 1812 case size



Case Size	L	W	H	Qty per reel
0201	0.6 ± 0.03	0.3 ± 0.03	0.33 max	15000
0402	1 ± 0.05	0.5 ± 0.05	1 to 0.55	10000
0603	1.6 ± 0.15	0.8 ± 0.15	0.8 to 0.98	4000
0805	2 ± 0.2	1.25 ± 0.2	0.95 to 1.4	3000
1206	3.2 ± 0.2	1.6 ± 0.2	1.05 to 1.6	3000
1210	3.2 ± 0.3	2.5 ± 0.2	1.6 max	2500
1812	4.5 ± 0.3	3.2 ± 0.25	1.4 to 2.0	1000

Note AVX reserve the right to change maximum voltage ratings as technology improves.

0201 Case Size

COG (NPO) Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
10 Volt d.c. COG								
100	0.1	SMD 174-0560	0.030	0.024	0.018	0.012	0.009	0.006
25 Volt d.c. COG								
6.8	0.0068	SMD 165-7912 RL	0.046	0.035	0.025	0.020	0.018	0.016
10	0.01	SMD 174-0561	0.020	0.016	0.011	0.008	0.005	0.004
12	0.012	SMD 174-0562	0.031	0.025	0.019	0.012	0.009	0.006
18	0.018	SMD 174-0563	0.031	0.025	0.019	0.012	0.009	0.006
47	0.047	SMD 165-7909 RL	0.046	0.035	0.025	0.020	0.018	0.016
56	0.056	SMD 165-7910 RL	0.046	0.035	0.025	0.020	0.018	0.016
68	0.068	SMD 165-7911 RL	0.046	0.035	0.025	0.020	0.018	0.016

X7R Dielectric

Order Multiple=10

	Order Code	Price Each					
		10+	100+	500+	1K+	3K+	5K+
10 Volt d.c. X7R							
1.5 nF	SMD 165-7920 RL	0.092	0.057	0.034	0.025	0.023	0.019
2.2 nF	SMD 165-7921 RL	0.092	0.057	0.034	0.025	0.023	0.019
3.3 nF	SMD 165-7922 RL	0.092	0.057	0.034	0.025	0.023	0.019
4.7 nF	SMD 165-7923 RL	0.092	0.057	0.034	0.025	0.023	0.019
6.8 nF	SMD 165-7924 RL	0.046	0.035	0.025	0.020	0.018	0.016
10 nF	SMD 165-7919 RL	0.092	0.055	0.032	0.024	0.022	0.018
16 Volt d.c. X7R							
120 pF	NEW SMD 174-0564	0.040	0.032	0.024	0.016	0.011	0.008
150 pF	SMD 165-7918 RL	0.058	0.046	0.032	0.026	0.024	0.018
180 pF	NEW SMD 174-0565	0.040	0.032	0.024	0.016	0.011	0.008
470 pF	SMD 165-8858 RL	0.240	0.210	0.183	0.161	0.141	0.125
1000 pF	NEW SMD 174-0566	0.040	0.032	0.024	0.016	0.011	0.008

X5R Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
6.3 Volt d.c. X5R								
22	0.022	SMD 165-7915 RL	0.112	0.069	0.042	0.030	0.027	0.021
33	0.033	SMD 165-7916 RL	0.112	0.069	0.042	0.030	0.027	0.021
47	0.047	SMD 165-7917 RL	0.112	0.069	0.042	0.030	0.027	0.021
100	0.1	SMD 165-7913 RL	0.112	0.070	0.042	0.031	0.027	0.021
10 Volt d.c. X5R								
5600	5.6	NEW SMD 174-0567	0.043	0.034	0.026	0.017	0.012	0.009
8200	8.2	NEW SMD 174-0569	0.043	0.034	0.026	0.017	0.012	0.009

0402 Case Size

COG (NPO) Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
16 Volt d.c. COG								
330	0.33	SMD 121-6532	0.025	0.022	0.021	0.017	0.015	0.013
25 Volt d.c. COG								
100	0.1	SMD 132-7622	0.043	0.023	0.014	0.010	0.009	0.007
50 Volt d.c. COG								
10	0.01	SMD 174-0571	0.014	0.011	0.008	0.005	0.004	0.003
10	0.01	SMD 132-7626	0.043	0.023	0.014	0.010	0.009	0.007
18	0.018	SMD 174-0572	0.014	0.011	0.008	0.005	0.004	0.003
20	0.02	SMD 174-0573	0.014	0.011	0.008	0.005	0.004	0.003
22	0.022	SMD 132-7634	0.076	0.058	0.032	0.022	0.016	0.010
22	0.022	SMD 121-6541	0.036	0.027	0.019	0.015	0.014	0.012
27	0.027	SMD 174-0574	0.014	0.011	0.008	0.005	0.004	0.003
56	0.056	SMD 165-8861 RL	0.159	0.139	0.121	0.108	0.099	0.083
68	0.068	SMD 165-8862 RL	0.330	0.290	0.250	0.230	0.197	0.173
82	0.082	SMD 174-0575	0.055	0.044	0.033	0.022	0.016	0.011
100	0.1	SMD 174-0576	0.014	0.011	0.008	0.005	0.004	0.003
100	0.1	SMD 121-6543	0.061	0.034	0.028	0.023	0.022	0.020
120	0.12	SMD 174-0577	0.037	0.030	0.023	0.015	0.010	0.007
150	0.15	SMD 174-0578	0.037	0.030	0.023	0.015	0.010	0.007
180	0.18	SMD 174-0579	0.038	0.031	0.023	0.016	0.011	0.007
220	0.22	SMD 165-8860 RL	0.159	0.139	0.121	0.104	0.093	0.078
330	0.33	SMD 165-7925 RL	0.135	0.083	0.050	0.036	0.032	0.021
470	0.47	SMD 165-7927 RL	0.135	0.104	0.062	0.046	0.041	0.021

X7R Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
16 Volt d.c. X7R								
10000	10	SMD121-6548	0.184	0.102	0.061	0.045	0.041	0.033
12000	12	NEW SMD174-0580	0.033	0.027	0.020	0.014	0.009	0.006
18000	18	NEW SMD174-0582	0.022	0.017	0.013	0.009	0.006	0.004
22000	22	SMD121-6534	0.035	0.033	0.031	0.024	0.021	0.019
25 Volt d.c. X7R								
6800	6.8	NEW SMD174-0583	0.058	0.047	0.035	0.023	0.017	0.011
10000	10	SMD132-7624	0.121	0.101	0.087	0.067	0.062	0.061
50 Volt d.c. X7R								
1000	1	SMD121-6544	0.060	0.033	0.027	0.022	0.021	0.019
1500	1.5	NEW SMD174-0584	0.019	0.015	0.011	0.007	0.005	0.004
2200	2.2	NEW SMD174-0585	0.019	0.015	0.011	0.007	0.005	0.004
2200	2.2	SMD121-6546	0.035	0.025	0.017	0.013	0.012	0.010

Y5V Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
16 Volt d.c. Y5V								
100000	100	SMD121-6535	0.031	0.025	0.018	0.014	0.013	0.011

0603 Case Size

X5R Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	10K+
6.3 Volt d.c. X5R								
150000	150	NEW SMD174-0586	0.132	0.105	0.079	0.053	0.038	0.026
470000	470	NEW SMD174-0587	0.112	0.089	0.068	0.045	0.032	0.023
10 Volt d.c. X5R								
1000000	1000	NEW SMD174-0588	0.125	0.100	0.075	0.050	0.035	0.025
16 Volt d.c. X5R								
100000	100	SMD132-7666	0.099	0.076	0.064	0.045	0.041	0.040
25 Volt d.c. X5R								
10000	10	NEW SMD174-0589	0.020	0.016	0.011	0.008	0.005	0.004

COG (NPO) Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
10 Volt d.c. COG								
10	0.01	SMD165-8863 RL	0.103	0.092	0.076	0.069	0.060	0.051
50 Volt d.c. COG								
10	0.01	SMD499-110 RL	0.075	0.055	0.032	0.024	0.022	0.018
15	0.015	SMD146-2442	0.056	0.049	0.032	0.022	0.020	--
22	0.022	SMD498-543 RL	0.073	0.036	0.020	0.014	0.010	0.006
33	0.033	SMD498-555 RL	0.092	0.050	0.028	0.019	0.018	0.017
47	0.047	SMD498-567 RL	0.092	0.056	0.031	0.021	0.014	0.008
100	0.1	SMD499-122 RL	0.079	0.044	0.026	0.020	0.018	0.015
180	0.18	NEW SMD174-0590	0.041	0.029	0.021	0.015	0.008	--
220	0.22	SMD498-579 RL	0.100	0.050	0.028	0.019	0.018	0.017
330	0.33	SMD316-660 RL	0.142	0.112	0.062	0.043	0.042	0.040
470	0.47	SMD316-672 RL	0.089	0.045	0.025	0.017	0.012	0.007
560	0.56	NEW SMD174-0591	0.087	0.061	0.044	0.030	0.018	--
1000	1	SMD317-202 RL	0.270	0.200	0.120	0.088	0.079	0.067
100 Volt d.c. COG								
12	0.012	NEW SMD174-0592	0.040	0.028	0.020	0.014	0.008	--
15	0.015	NEW SMD174-0594	0.040	0.028	0.020	0.014	0.008	--
18	0.018	NEW SMD174-0595	0.040	0.028	0.020	0.014	0.008	--
22	0.022	NEW SMD174-0596	0.040	0.028	0.020	0.014	0.008	--
27	0.027	NEW SMD174-0597	0.040	0.028	0.020	0.014	0.008	--
33	0.033	NEW SMD174-0598	0.040	0.028	0.020	0.014	0.008	--
39	0.039	NEW SMD174-0599	0.040	0.028	0.020	0.014	0.008	--
47	0.047	NEW SMD174-0601	0.040	0.028	0.020	0.014	0.008	--
51	0.051	NEW SMD174-0602	0.041	0.029	0.021	0.015	0.008	--
68	0.068	NEW SMD174-0603	0.040	0.028	0.020	0.014	0.008	--
82	0.082	NEW SMD174-0604	0.040	0.028	0.020	0.014	0.008	--
100	0.1	NEW SMD174-0605	0.040	0.028	0.020	0.014	0.008	--
150	0.15	NEW SMD174-0606	0.040	0.028	0.020	0.014	0.008	--
220	0.22	NEW SMD174-0607	0.041	0.029	0.021	0.015	0.008	--
270	0.27	NEW SMD174-0608	0.041	0.029	0.021	0.015	0.008	--

X8R Dielectric

Order Multiple=5

µF	nF	Order Code	Price Each					
			5+	100+	500+	1K+	3K+	5K+
50 Volt d.c. X8R								
33	33	SMD130-1801	0.230	0.125	0.075	0.055	0.049	0.042

X7R Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
6.3 Volt d.c. X7R								
2200	2.2	SMD165-7930 RL	0.400	0.310	0.187	0.137	0.123	0.104
10 Volt d.c. X7R								
120000	120	NEW SMD174-0609	0.032	0.023	0.017	0.011	0.006	--
150000	150	NEW SMD174-0610	0.032	0.023	0.017	0.011	0.006	--
16 Volt d.c. X7R								
100000	100	SMD121-6538	0.122	0.068	0.041	0.029	0.027	0.022
100000	100	SMD132-7679	0.066	0.034	0.019	0.013	0.009	0.007
100000	100	NEW SMD174-0612	0.020	0.014	0.010	0.007	0.004	--
25 Volt d.c. X7R								
22000	22	SMD578-174 RL	0.092	0.054	0.032	0.024	0.022	0.018
47000	47	SMD121-6549	0.164	0.090	0.054	0.040	0.035	0.030
47000	47	NEW SMD174-0613	0.030	0.021	0.015	0.010	0.006	--
100000	100	NEW SMD174-0614	0.023	0.016	0.011	0.008	0.004	--
1000000	1000	SMD165-8870 RL	0.250	0.230	0.193	0.164	0.147	0.124
50 Volt d.c. X7R								
470	0.47	SMD498-580 RL	0.066	0.034	0.019	0.015	0.014	0.013
1000	1	SMD499-134 RL	0.055	0.028	0.015	0.012	0.008	0.005
2200	2.2	SMD498-592 RL	0.082	0.056	0.031	0.021	0.016	0.013
3300	3.3	SMD317-251 RL	0.084	0.074	0.062	0.043	0.042	0.037
4700	4.7	SMD317-263 RL	0.084	0.074	0.059	0.041	0.040	0.035
10000	10	NEW SMD174-0615	0.084	0.059	0.042	0.029	0.017	--
10000	10	SMD132-7675	0.055	0.028	0.015	0.011	0.008	0.006
15000	15	NEW SMD174-0616	0.030	0.021	0.015	0.010	0.006	--
22000	22	SMD165-8869 RL	0.085	0.075	0.066	0.056	0.051	0.042
27000	27	NEW SMD174-0617	0.020	0.014	0.010	0.007	0.004	--
33000	33	NEW SMD174-0618	0.030	0.021	0.015	0.010	0.006	--
39000	39	NEW SMD174-0619	0.046	0.032	0.023	0.016	0.009	--
47000	47	SMD165-7929 RL	0.112	0.073	0.044	0.032	0.028	0.021
100000	100	SMD130-1804	0.081	0.046	0.025	0.021	--	--
100000	100	NEW SMD174-0621	0.059	0.042	0.030	0.021	0.011	--
100 Volt d.c. X7R								
180	0.18	NEW SMD174-0622	0.025	0.018	0.012	0.008	0.005	--
330	0.33	NEW SMD174-0624	0.025	0.018	0.012	0.008	0.005	--
390	0.39	NEW SMD174-0625	0.025	0.018	0.012	0.008	0.005	--
470	0.47	NEW SMD174-0626	0.037	0.026	0.019	0.014	0.007	--
1000	1	NEW SMD174-0627	0.026	0.019	0.014	0.009	0.005	--
1200	1.2	SMD165-8865 RL	0.103	0.092	0.076	0.069	0.060	0.051
1500	1.5	NEW SMD174-0628	0.037	0.026	0.019	0.014	0.007	--
1800	1.8	NEW SMD174-0629	0.037	0.026	0.019	0.014	0.007	--
2200	2.2	SMD165-8866 RL	0.060	0.051	0.045	0.040	0.036	0.031
2700	2.7	NEW SMD174-0630	0.025	0.018	0.012	0.008	0.005	--
3300	3.3	SMD165-8867 RL	0.060	0.051	0.045	0.040	0.036	0.031
3900	3.9	NEW SMD174-0631	0.025	0.018	0.012	0.008	0.005	--
4700	4.7	NEW SMD174-0632	0.037	0.026	0.019	0.014	0.007	--
5600	5.6	NEW SMD174-0633	0.037	0.026	0.019	0.014	0.007	--
8200	8.2	NEW SMD174-0634	0.025	0.018	0.012	0.008	0.005	--
10000	10	SMD132-7671	0.107	0.092	0.076	0.071	0.069	0.064
12000	12	NEW SMD174-0636	0.035	0.024	0.018	0.012	0.007	--
200 Volt d.c. X7R								
1000	1	NEW SMD174-0637	0.061	0.043	0.030	0.022	0.012	--

X5R Dielectric

Order Multiple=10

µF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
4 Volt d.c. X5R								
10	10000	SMD165-7928 RL	1.560	1.090	0.680	0.500	0.450	0.370
6.3 Volt d.c. X5R								
4.7	4700	SMD174-0638	0.112	0.078	0.056	0.040	0.023	--
16 Volt d.c. X5R								
0.22	220	SMD174-0639	0.058	0.041	0.029	0.021	0.011	--
0.33	330	SMD132-7681	0.189	0.095	0.052	0.036	0.035	0.031
0.47	470	S						



Ceramic - Multilayer Chip - AVX - continued

2220 Case Size - continued

Y5V Dielectric - continued

Order Multiple=10		Price Each						
pF	nF	Order Code	10+	100+	500+	1K+	3K+	5K+
16 Volt d.c. Y5V								
1000	1	SMD165-8872 ● RL	0.550	0.480	0.400	0.340	0.300	0.260
25 Volt d.c. Y5V								
100000	100	SMD317-287 ● RL	0.062	0.031	0.030	0.028	0.026	0.025
50 Volt d.c. Y5V								
10000	10	SMD317-433 ● RL	0.075	0.058	0.028	0.015	0.012	0.011
47000	47	SMD317-445 ● RL	0.111	0.056	0.031	0.021	0.015	0.009

0805 Case Size

COG (NPO) Dielectric

Order Multiple=10		Price Each						
pF	nF	Order Code	10+	100+	500+	1K+	3K+	5K+
50 Volt d.c. COG								
390	0.39	NEW SMD174-0645 ●	0.066	0.046	0.033	0.023	0.014	--
470	0.47	NEW SMD174-0646 ●	0.260	0.185	0.132	0.093	0.053	--
510	0.51	NEW SMD174-0648 ●	0.081	0.056	0.041	0.028	0.017	--
820	0.82	NEW SMD174-0649 ●	0.087	0.061	0.044	0.030	0.018	--
1000	1	SMD317-457 ● RL	0.134	0.067	0.037	0.026	0.025	0.023
1000	1	NEW SMD174-0641 ●	0.340	0.240	0.175	0.122	0.070	--
1500	1.5	NEW SMD174-0642 ●	0.440	0.300	0.220	0.153	0.087	--
1800	1.8	NEW SMD174-0643 ●	0.440	0.300	0.220	0.153	0.087	--
2200	2.2	SMD121-6556 ●	0.360	0.250	0.168	0.124	0.111	0.094
2200	2.2	NEW SMD174-0644 ●	0.440	0.300	0.220	0.153	0.087	--
100 Volt d.c. COG								
10	0.01	SMD499-158 ● RL	0.156	0.101	0.064	0.045	0.044	0.042
12	0.012	NEW SMD174-0650 ●	0.056	0.040	0.028	0.020	0.011	--
15	0.015	SMD165-8873 ● RL	0.066	0.059	0.051	0.045	0.040	0.033
18	0.018	NEW SMD174-0651 ●	0.056	0.040	0.028	0.020	0.011	--
22	0.022	SMD317-500 ● RL	0.150	0.099	0.062	0.043	0.042	0.040
27	0.027	NEW SMD174-0652 ●	0.056	0.040	0.028	0.020	0.011	--
30	0.03	NEW SMD174-0653 ●	0.056	0.040	0.028	0.020	0.011	--
33	0.033	SMD317-603 ● RL	0.151	0.099	0.065	0.045	0.043	0.042
47	0.047	SMD499-160 ● RL	0.150	0.097	0.062	0.043	0.042	0.040
51	0.051	NEW SMD174-0654 ●	0.056	0.040	0.028	0.020	0.011	--
82	0.082	NEW SMD174-0656 ●	0.056	0.040	0.028	0.020	0.011	--
100	0.1	SMD499-171 ● RL	0.180	0.093	0.064	0.045	0.044	0.042
120	0.12	NEW SMD174-0657 ●	0.056	0.040	0.028	0.020	0.011	--
150	0.15	NEW SMD174-0658 ●	0.056	0.040	0.028	0.020	0.011	--
180	0.18	NEW SMD174-0661 ●	0.260	0.185	0.132	0.093	0.053	--
220	0.22	SMD498-609 ● RL	0.210	0.109	0.086	0.060	0.058	0.054
330	0.33	SMD499-183 ● RL	0.180	0.099	0.064	0.045	0.044	0.042
470	0.47	SMD499-195 ● RL	0.220	0.112	0.062	0.043	0.042	0.040
1000	1	NEW SMD174-0662 ●	0.087	0.061	0.044	0.030	0.018	--
200 Volt d.c. COG								
10	0.01	NEW SMD174-0663 ●	0.083	0.058	0.042	0.029	0.017	--
47	0.047	NEW SMD174-0664 ●	0.083	0.058	0.042	0.029	0.017	--

X8R Dielectric

Order Multiple=5		Price Each						
μF	nF	Order Code	5+	100+	500+	1K+	3K+	5K+
50 Volt d.c. X8R								
1	1	SMD130-1788 ●	0.124	0.090	0.064	0.050	0.046	0.040
1.5	1.5	SMD130-1773 ●	0.123	0.091	0.064	0.051	0.046	0.040
2.2	2.2	SMD130-1778 ●	0.079	0.061	0.056	0.042	0.036	0.030
4.7	4.7	SMD130-1781 ●	0.048	0.036	0.033	0.025	0.022	0.019
6.8	6.8	SMD130-1782 ●	0.079	0.061	0.056	0.042	0.036	0.030
10	10	SMD130-1791 ●	0.260	0.141	0.084	0.062	0.055	0.047
15	15	SMD130-1783 ●	0.270	0.151	0.090	0.067	0.059	0.050
47	47	SMD130-1785 ●	0.280	0.155	0.093	0.068	0.061	0.051
100	100	SMD130-1790 ●	0.320	0.180	0.107	0.079	0.071	0.059

X7R Dielectric

Order Multiple=10		Price Each						
nF	μF	Order Code	10+	100+	500+	1K+	3K+	5K+
6.3 Volt d.c. X7R								
10000	10	SMD165-7936 ● RL	0.720	0.430	0.250	0.185	0.166	0.139
16 Volt d.c. X7R								
220	0.22	SMD121-6539 ● RL	0.300	0.164	0.098	0.072	0.064	0.054
330	0.33	SMD121-6551 ●	0.420	0.230	0.139	0.102	0.092	0.077
470	0.47	SMD121-6552 ●	0.420	0.230	0.149	0.127	0.105	0.084
4700	4.7	SMD165-7937 ● RL	0.610	0.340	0.200	0.150	0.134	0.113

Order Multiple=10

		Price Each						
nF	μF	Order Code	10+	100+	500+	1K+	3K+	5K+
20 Volt d.c. X7R								
220	0.22	SMD165-8878 ● RL	0.230	0.196	0.173	0.141	0.127	0.106
25 Volt d.c. X7R								
100	0.1	SMD174-0665 ●	0.025	0.018	0.012	0.008	0.005	--
150	0.15	SMD174-0666 ●	0.069	0.048	0.034	0.024	0.014	--
220	0.22	SMD174-0667 ●	0.102	0.072	0.051	0.035	0.021	--
220	0.22	SMD146-2434 ●	0.157	0.116	0.064	0.045	0.044	--
1000	1	SMD165-8877 ● RL	1.630	1.400	1.240	1.040	0.940	0.790
2200	2.2	SMD165-7931 ● RL	0.520	0.320	0.189	0.139	0.125	0.105
50 Volt d.c. X7R								
pF	nF	Order Code	10+	100+	500+	1K+	3K+	5K+
1000	1	SMD499-201 ● RL	0.081	0.045	0.027	0.020	0.018	0.015
2200	2.2	SMD498-610 ● RL	0.111	0.056	0.031	0.021	0.014	0.006
4700	4.7	SMD499-213 ● RL	0.111	0.056	0.031	0.021	0.014	0.006
4700	4.7	SMD174-0668 ●	0.046	0.032	0.023	0.016	0.009	--
10000	10	SMD174-0669 ●	0.037	0.026	0.019	0.014	0.007	--
10000	10	SMD499-225 ● RL	0.066	0.044	0.035	0.027	0.018	0.008
22000	22	SMD578-198 ● RL	0.111	0.056	0.031	0.021	0.014	0.008
33000	33	SMD174-0670 ●	0.046	0.032	0.023	0.016	0.009	--
47000	47	SMD174-0671 ●	0.046	0.032	0.023	0.016	0.009	--
47000	47	SMD121-6550 ●	0.173	0.096	0.057	0.042	0.038	0.032
56000	56	SMD165-8879 ● RL	0.125	0.112	0.099	0.085	0.076	0.066
100000	100	SMD174-0673 ●	0.037	0.026	0.019	0.014	0.007	--
100000	100	SMD499-687 ● RL	0.089	0.045	0.027	0.021	0.014	0.011
330000	330	SMD165-7934 ● RL	0.590	0.350	0.220	0.157	0.140	0.119
470000	470	SMD165-7935 ● RL	0.650	0.450	0.270	0.194	0.175	0.147
100 Volt d.c. X7R								
1200	1.2	SMD174-0674 ●	0.040	0.028	0.020	0.014	0.008	--
1500	1.5	SMD174-0675 ●	0.040	0.028	0.020	0.014	0.008	--
2200	2.2	SMD174-0676 ●	0.059	0.042	0.030	0.021	0.011	--
2700	2.7	SMD174-0677 ●	0.040	0.028	0.020	0.014	0.008	--
3300	3.3	SMD165-8875 ● RL	0.064	0.056	0.049	0.042	0.037	0.032
10000	10	SMD165-8874 ● RL	0.064	0.056	0.049	0.042	0.037	0.031
12000	12	SMD174-0678 ●	0.038	0.027	0.020	0.014	0.007	--
18000	18	SMD174-0679 ●	0.038	0.027	0.020	0.014	0.007	--
22000	22	SMD174-0680 ●	0.038	0.027	0.020	0.014	0.007	--
100000	100	SMD174-0681 ●	0.097	0.068	0.049	0.034	0.020	--
200 Volt d.c. X7R								
270	0.27	SMD174-0682 ●	0.055	0.038	0.027	0.019	0.011	--
470	0.47	SMD174-0683 ●	0.055	0.038	0.027	0.019	0.011	--
560	0.56	SMD174-0685 ●	0.055	0.038	0.027	0.019	0.011	--
680	0.68	SMD174-0686 ●	0.055	0.038	0.027	0.019	0.011	--
1000	1	SMD174-0687 ●	0.055	0.038	0.027	0.019	0.011	--
2200	2.2	SMD174-0688 ●	0.058	0.041	0.029	0.021	0.011	--
10000	10	SMD174-0689 ●	0.058	0.041	0.029	0.021	0.011	--

X5R Dielectric

		Price Each				
μF	nF	Order Code	5+	50+	250+	500+
6.3 Volt d.c. X5R						
10	10000	SMD130-1818 ●	0.420	0.300	0.162	0.114
10 Volt d.c. X5R						
3.3	3300	SMD130-1817 ●	0.530			

1206 Case Size

COG (NPO) Dielectric

Order Multiple=10

pF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
25 Volt d.c. COG								
4700	4.7	SMD 121-6559 ● RL	0.520	0.380	0.270	0.210	0.194	0.170
10000	10	SMD 121-6560 ● RL	2.030	1.120	0.680	0.500	0.450	0.370
10000	10	SMD 165-8883 ● RL	0.360	0.320	0.280	0.240	0.220	0.182

50 Volt d.c. COG

1000	1	NEW SMD 174-0690 ●	0.125	0.087	0.062	0.044	0.025	--
2700	2.7	NEW SMD 174-0691 ●	0.310	0.220	0.156	0.109	0.062	--

100 Volt d.c. COG

10	0.01	SMD 499-237 ● RL	0.310	0.172	0.157	0.135	0.127	0.124
15	0.015	NEW SMD 174-0692 ●	0.112	0.078	0.056	0.040	0.023	--
22	0.022	SMD 499-249 ● RL	0.310	0.172	0.157	0.135	0.127	0.124
27	0.027	NEW SMD 174-0693 ●	0.112	0.078	0.056	0.040	0.023	--
33	0.033	SMD 499-250 ● RL	0.310	0.172	0.157	0.135	0.127	0.124
47	0.047	SMD 499-262 ● RL	0.270	0.148	0.098	0.072	0.064	0.054
82	0.082	NEW SMD 174-0694 ●	0.112	0.078	0.056	0.040	0.023	--
100	0.1	SMD 499-274 ● RL	0.330	0.184	0.172	0.145	0.139	0.129
220	0.22	SMD 499-286 ● RL	0.310	0.172	0.157	0.135	0.127	0.124
330	0.33	SMD 499-298 ● RL	0.310	0.172	0.157	0.135	0.127	0.124
470	0.47	SMD 499-304 ● RL	0.400	0.220	0.210	0.178	0.171	0.158
680	0.68	NEW SMD 174-0695 ●	0.156	0.109	0.078	0.054	0.031	--
1000	1	SMD 499-316 ● RL	0.380	0.210	0.200	0.171	0.164	0.152
3300	3.3	NEW SMD 174-0697 ●	0.310	0.220	0.156	0.109	0.062	--

200 Volt d.c. COG

47	0.047	NEW SMD 174-0698 ●	0.156	0.109	0.078	0.054	0.031	--
150	0.15	NEW SMD 174-0699 ●	0.156	0.109	0.078	0.054	0.031	--
330	0.33	NEW SMD 174-0700 ●	0.194	0.136	0.097	0.068	0.038	--

200 Volt d.c. COG

470	0.47	NEW 178-0928 ●	0.340	0.290	0.260	0.230	0.210	0.173
-----	------	--------------------------------	-------	-------	-------	-------	-------	-------

X7R Dielectric

Order Multiple=10

μF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
6.3 Volt d.c. X7R								
22000	22000	SMD 165-7942 ● RL	2.280	1.560	0.930	0.690	0.610	0.520

10 Volt d.c. X7R

2200	2200	SMD 121-6537 ●	0.720	0.620	0.370	0.280	0.250	0.210
------	------	--------------------------------	-------	-------	-------	-------	-------	-------

16 Volt d.c. X7R

470	470	SMD 121-6540 ●	0.710	0.400	0.240	0.173	0.154	0.130
1000	1000	SMD 499-717 ● RL	0.680	0.370	0.230	0.165	0.149	0.127
10000	10000	SMD 165-7943 ● RL	0.880	0.530	0.320	0.240	0.210	0.177

25 Volt d.c. X7R

330	330	SMD 121-6554 ●	0.620	0.340	0.210	0.152	0.136	0.114
2200	2200	SMD 165-8884 ● RL	0.600	0.550	0.480	0.440	0.390	0.320
4700	4700	SMD 165-7941 ● RL	0.770	0.480	0.280	0.210	0.187	0.157

50 Volt d.c. X7R

1	1	SMD 499-328 ● RL	0.178	0.089	0.049	0.034	0.033	0.031
2.2	2.2	SMD 499-330 ● RL	0.230	0.133	0.088	0.061	0.058	0.056
3.3	3.3	SMD 498-622 ● RL	0.260	0.148	0.088	0.061	0.059	0.056
4.7	4.7	SMD 499-341 ● RL	0.260	0.148	0.109	0.076	0.073	0.070
10	10	SMD 499-353 ● RL	0.178	0.089	0.049	0.034	0.033	0.031
22	22	SMD 499-365 ● RL	0.300	0.162	0.089	0.062	0.059	0.057
33	33	SMD 498-634 ● RL	0.300	0.162	0.089	0.062	0.059	0.057
47	47	SMD 499-377 ● RL	0.300	0.162	0.089	0.062	0.059	0.057
100	100	SMD 499-389 ● RL	0.197	0.109	0.064	0.048	0.043	0.036
120	120	NEW SMD 174-0701 ●	0.087	0.061	0.044	0.030	0.018	--
220	220	NEW SMD 174-0703 ●	0.131	0.092	0.066	0.046	0.026	--
220	220	SMD 121-6553 ●	0.430	0.290	0.191	0.140	0.126	0.106
270	270	NEW SMD 174-0704 ●	0.137	0.096	0.069	0.048	0.027	--
330	330	SMD 165-8885 ● RL	0.320	0.290	0.240	0.210	0.192	0.162
470	470	NEW SMD 174-0705 ●	0.210	0.144	0.103	0.072	0.041	--
1000	1000	NEW SMD 174-0706 ●	0.280	0.196	0.140	0.098	0.056	--
1000	1000	SMD 130-1811 ●	0.540	0.300	0.196	0.149	--	--

100 Volt d.c. X7R

1	1	NEW SMD 174-0707 ●	0.087	0.061	0.044	0.030	0.018	--
2.2	2.2	NEW SMD 174-0708 ●	0.100	0.070	0.050	0.035	0.020	--
3.3	3.3	NEW SMD 174-0709 ●	0.100	0.070	0.050	0.035	0.020	--
4.7	4.7	NEW SMD 174-0710 ●	0.100	0.070	0.050	0.035	0.020	--
6.8	6.8	NEW SMD 174-0711 ●	0.100	0.070	0.050	0.035	0.020	--
8.2	8.2	NEW SMD 174-0712 ●	0.100	0.070	0.050	0.035	0.020	--
10	10	NEW SMD 174-0713 ●	0.131	0.092	0.066	0.046	0.026	--
15	15	NEW SMD 174-0715 ●	0.137	0.096	0.069	0.048	0.027	--
22	22	NEW SMD 174-0716 ●	0.210	0.144	0.103	0.072	0.041	--
39	39	NEW SMD 174-0717 ●	0.137	0.096	0.069	0.048	0.027	--

Order Multiple=10

μF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
100 Volt d.c. X7R								
47	47	NEW SMD 174-0718 ●	0.137	0.096	0.069	0.048	0.027	--
100	100	SMD 132-7703 ●	0.220	0.112	0.062	0.043	0.040	0.038
1000	1000	SMD 165-7939 ● RL	1.280	0.770	0.460	0.340	0.300	0.260

200 Volt d.c. X7R

2.2	2.2	NEW SMD 174-0719 ●	0.112	0.078	0.056	0.040	0.023	--
4.7	4.7	NEW SMD 174-0720 ●	0.112	0.078	0.056	0.040	0.023	--
33	33	SMD 165-8882 ● RL	0.240	0.200	0.177	0.156	0.138	0.118

X5R Dielectric

Order Multiple=10

μF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
6.3 Volt d.c. X5R								
47	47000	SMD 165-8886 ● RL	1.970	1.770	1.530	1.290	1.150	0.980

50 Volt d.c. X5R

22	22000	SMD 130-1816 ●	0.890	0.500	0.280	0.220	--	--
10	10000	SMD 130-1815 ●	0.470	0.260	0.143	0.100	--	--

Y5V Dielectric

Order Multiple=5

μF	nF	Order Code	Price Each					
			5+	100+	500+	1K+	3K+	5K+
16 Volt d.c. Y5V								
2.2	2200	SMD 578-265 ● RL	0.660	0.360	0.220	0.159	0.142	0.120
4.7	4700	SMD 578-277 ● RL	0.890	0.450	0.250	0.171	0.162	0.153

50 Volt d.c. Y5V

0.1	100	SMD 499-390 ● RL	0.240	0.119	0.066	0.046	0.044	0.042
0.22	220	SMD 499-407 ● RL	0.460	0.310	0.170	0.118	0.112	0.107

1210 Case Size

X7R Dielectric

Order Multiple=5

μF	nF	Order Code	Price Each					
			5+	100+	500+	1K+	3K+	5K+
16 Volt d.c. X7R								
22	22000	SMD 165-7948 ● RL	7.630	4.590	2.750	2.020	1.810	1.520

25 Volt d.c. X7R

10	10000	SMD 165-7945 ● RL	2.410	1.660	1.000	0.730	0.660	0.550
----	-------	---	-------	-------	-------	-------	-------	-------

50 Volt d.c. X7R

4.7	4700	SMD 165-8891 ● RL	2.120	1.850	1.630	1.400	1.280	1.090
3.3	3300	SMD 165-7947 ● RL	2.900	2.090	1.260	0.930	0.830	0.700
2.2	2200	SMD 165-8889 ● RL	1.690	1.520	1.310	1.150	1.040	0.880

100 Volt d.c. X7R

0.68	680	SMD 165-8887 ● RL	0.960	0.830	0.750	0.720	0.710	0.690
1	1000	SMD 130-1814 ●	1.060	0.530	0.290	0.270	--	--
2.2	2200	SMD 165-7944 ● RL	2.610	1.550	0.930			



Ceramic - Multilayer Chip - AVX - continued

2220 Case Size - continued

Y5V Dielectric - continued

1812 Case Size

Order Multiple=10

µF	nF	Order Code	Price Each					
			10+	100+	500+	1K+	3K+	5K+
50 Volt d.c. X7R								
0.22	220	SMD499-419 ● RL	1.31	0.93	0.55	0.41	0.36	0.31
0.33	330	SMD540-481 ● RL	1.53	1.09	0.65	0.48	0.43	0.36
0.47	470	SMD540-493 ● RL	1.77	1.23	0.73	0.54	0.48	0.41
100 Volt d.c. X7R								
0.68	680	SMD130-1821 ●	0.91	0.72	0.63	0.50	--	--

2220 Case Size

Order Multiple=5

µF	nF	Order Code	Price Each					
			5+	100+	500+	1K+	3K+	5K+
100 Volt d.c. X7R								
10	10000	SMD165-7949 ● RL	11.22	8.02	4.85	3.57	3.19	2.68

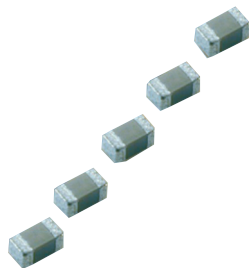
208437

Capacitance Conversion Table

0.000001µF	=	0.001nF	=	1pF
0.00001µF	=	0.01nF	=	10pF
0.0001µF	=	0.1nF	=	100pF
0.001µF	=	1nF	=	1000pF
0.01µF	=	10nF	=	10000pF
0.1µF	=	100nF	=	100000pF
1µF	=	1000nF	=	1000000pF
10µF	=	10000nF	=	10000000pF
100µF	=	100000nF	=	100000000pF

MLCC with Flexible Termination

X8R & X7R dielectric



The soft termination is designed to enhance the mechanical flexure and temperature cycling performance of a standard ceramic capacitor with an X7R dielectric. The industry standard for flexure is 2mm minimum, with Soft Termination AVX guarantee a minimum flexure of 5mm, without any internal cracks. Beyond 5mm, Open Circuit Failure Mode. The industry standard for temperature cycling is 1000 cycles, AVX guarantee 3000 cycles. As well as for automotive applications the Soft Termination will provide Design Engineers with a satisfactory solution when designing PCBs which may be subject to high levels of board flexure.

- Flexible termination system
- High mechanical performance able to withstand, 5mm bend test guaranteed
- Open circuit failure mode is apparent when products are overstressed by 5mm
- Increased temperature cycling performance, 3000 cycle and beyond
- Reduction in circuit board flex failures
- Base metal electrode system

0603 Case Size

nF	Mfrs. List No.	Order Code	Price Each				
			5+	100+	500+	1K+	3K+
50 Volt d.c. X8R							
6.8	06035F682KAZ2A	SMD130-1800 ●	0.080	0.057	0.041	0.032	0.030
47	06035F473KAZ2A	SMD130-1802 ●	0.270	0.149	0.089	0.065	0.059
16 Volt d.c. X7R							
68	0603YC683KAZ2A	SMD130-1893 ●	0.040	0.031	0.021	0.018	0.017
100	0603YC104KAZ2A	SMD756-9556 ● RL	0.112	0.076	0.046	0.037	0.035
50 Volt d.c. X7R							
1	06035C102KAZ2A	SMD756-9513 ● RL	0.064	0.046	0.028	0.023	0.021
2.2	06035C222KAZ2A	SMD756-9521 ● RL	0.059	0.040	0.024	0.020	0.019
4.7	06035C472KAZ2A	SMD756-9530 ● RL	0.059	0.039	0.024	0.020	0.018
10	06035C103KAZ2A	SMD756-9548 ● RL	0.066	0.051	0.033	0.027	0.025
15	06035C153KAZ2A	NEW SMD174-0537 ●	0.021	0.020	0.018	0.016	0.010
22	06035C223KAZ2A	SMD130-1890 ●	0.046	0.035	0.024	0.020	0.019
33	06035C333KAZ2A	SMD130-1891 ●	0.075	0.049	0.033	0.027	0.025
47	06035C473KAZ2A	SMD130-1892 ●	0.061	0.043	0.026	0.021	0.020
100	06035C104KAZ2A	SMD130-1894 ●	0.077	0.052	0.031	0.026	0.024
100 Volt d.c. X7R							
0.47	06031C471KAZ2A	SMD130-1888 ●	0.061	0.041	0.025	0.021	0.019
2.2	06031C222KAZ2A	NEW SMD174-0536 ●	0.031	0.022	0.020	0.018	0.011
4.7	06031C472KAZ2A	SMD130-1889 ●	0.074	0.050	0.030	0.025	0.023

0805 Case Size

nF	Mfrs. List No.	Order Code	Price Each				
			5+	100+	500+	1K+	3K+
Order Multiple=5							
50 Volt d.c. X8R							
1	08055F102KAZ2A	SMD130-1794 ●	0.065	0.052	0.048	0.040	0.032
1.8	08055F182KAZ2A	SMD130-1795 ●	0.074	0.059	0.055	0.047	0.038
15	08055F153KAZ2A	SMD130-1784 ●	0.059	0.048	0.041	0.033	0.026
47	08055F473KAZ2A	SMD130-1899 ●	0.071	0.060	0.052	0.042	0.037
10 Volt d.c. X7R							
680	0805ZC684KAZ2A	SMD130-1900 ●	0.230	0.152	0.093	0.075	0.071
1000	0805ZC105KAZ2A	SMD130-1902 ●	0.126	0.084	0.052	0.042	0.040
16 Volt d.c. X7R							
470	0805YC474KAZ1A	SMD756-9580 ● RL	0.140	0.095	0.057	0.047	0.044
25 Volt d.c. X7R							
220	08053C224KAZ1A	SMD756-9572 ● RL	0.152	0.102	0.062	0.051	0.048
1000	08053C105KAZ2A	SMD130-1807 ●	0.370	0.210	0.118	0.095	--
50 Volt d.c. X7R							
4.7	08051C472KAZ2A	SMD130-1896 ●	0.085	0.057	0.034	0.028	0.026
10	08051C103KAZ2A	SMD130-1898 ●	0.088	0.060	0.036	0.030	0.028
22	08055C223KAZ2A	NEW SMD174-0538 ●	0.042	0.029	0.026	0.023	0.016
30	08055C334KAZ2A	NEW SMD174-0539 ●	0.094	0.070	0.062	0.056	0.037
100	08051C104KAZ2A	SMD130-1805 ●	0.330	0.186	0.104	0.084	--
100	08055C104KAZ2A	SMD756-9564 ● RL	0.120	0.083	0.051	0.042	0.038
470	08055C474KAZ2A	SMD130-1806 ●	0.350	0.194	0.127	0.097	--

1206 Case Size

nF	Mfrs. List No.	Order Code	Price Each				
			5+	50+	100+	500+	1K+
Order Multiple=5							
16 Volt d.c. X7R							
1000	1206YC105KAZ2A	SMD756-9599 ● RL	0.166	0.112	0.069	0.055	0.052
25 Volt d.c. X7R							
2200	12063C225KAZ2A	SMD130-1808 ●	0.440	0.240	0.156	0.127	--
50 Volt d.c. X7R							
47	12065C473KAZ2A	NEW SMD174-0542 ●	0.073	0.054	0.049	0.044	0.029
100	12065C104KAZ2A	SMD130-1906 ●	0.109	0.074	0.045	0.036	0.034
220	12065C224KAZ2A	SMD130-1907 ●	0.172	0.114	0.073	0.057	0.053
100 Volt d.c. X7R							
1	12061C102KAZ2A	SMD130-1903 ●	0.155	0.104	0.067	0.052	0.049
5.6	12061C562KAZ2A	SMD130-1904 ●	0.191	0.128	0.078	0.063	0.059
15	12061C153KAZ2A	NEW SMD174-0541 ●	0.083	0.061	0.056	0.050	0.033
47	12061C473KAZ1A	SMD130-1905 ●	0.189	0.127	0.078	0.062	0.059
100	12061C104KAZ2A	NEW SMD174-0540 ●	0.073	0.055	0.050	0.045	0.030
330	12061C334KAZ2A	SMD130-1812 ●	0.910	0.510	0.340	0.270	--

1210 Case Size

nF	Mfrs. List No.	Order Code	Price Each				
			5+	50+	100+	500+	1K+
Order Multiple=5							
16 Volt d.c. X7R							
4.7	1210YC475KAZ2A	SMD138-0918 ●	0.460	0.350	0.320	0.250	0.198
50 Volt d.c. X7R							
100	12105C104KAZ2A	SMD130-1908 ●	0.320	0.220	0.136	0.107	0.101
470	12105C474KAZ1A	SMD130-1909 ●	0.480	0.320	0.196	0.159	0.150
100 Volt d.c. X7R							
470	12101C474KAZ2A	SMD130-1813 ●	1.340	0.750	0.420	0.330	--
1000	12101C105KAZ2A	SMD130-1910 ●	1.280	0.860	0.530	0.430	0.410

1812 Case Size

nF	Mfrs. List No.	Order Code	Price Each				
			5+	50+	100+	500+	1K+
Order Multiple=5							
50 Volt d.c. X7R							
680	18125C684KAZ2A	SMD130-1912 ●	1.22	0.82	0.51	0.41	0.39
1000	18125C105KAZ2A	SMD756-9602 ● RL	1.39	0.94	0.57	0.47	0.44
4700	18125C475KAZ2A	SMD130-1819 ●	4.48	2.50	1.48	1.15	--
100 Volt d.c. X7R							
330	18121C334KAZ1A	SMD130-1911 ●	1.30	0.87	0.53	0.43	0.41
1000	18121C105KAZ2A	SMD130-1820 ●	2.88	1.61	0.89	0.72	--
2200	18121C225KAZ2A	SMD130-1914 ●	4.26	2.90	1.77	1.44	1.35

2225 Case Size

nF	Mfrs. List No.	Order Code	Price Each				
			5+	100+	500+	1K+	3K+
Order Multiple=5							
200 Volt d.c. X7R							
330	22252C334KAT1A	NEW 178-0929 ●	1.37	1.19	0.97	0.83	0.70
630 Volt d.c. X7R							
100	2225CC104KAT2A	NEW 178-0930 ●	1.78	1.54	1.26	1.08	0.91

339481

Over half a million products available online



Tip & Ring MLCC
250V, X7R



Case Size	L	W	H(mm)
0805	1.25	2.01	1.3
1206	1.6	3.2	1.5
1210	2.5	3.2	1.78
1812	3.2	4.5	2
1825	6.34	4.5	2
2225	6.35	5.6	2



AVX "Tip & Ring" Multilayer Ceramic Chip Capacitors are designed as a standard telecom filter to block -48 Volts DC telephone line voltage and pass subscriber's AC signal pulse (16 to 25Hz, 70 to 90Vrms).

- Multilayer ceramic chip capacitors
- High performance and reliability
- Operating Temperature Range: -55°C to +125°C
- Capacitance Tolerance: ±10% (*±20%)
- 0805, 1206, 1210, 1812, 1825 and 2225 case sizes.

0805 Case Size

Capacitance	Order Code	Price Each				
		10+	50+	100+	250+	500+
680 pF	178-0932	0.135	0.114	0.094	0.083	0.073
1 nF	178-0933	0.135	0.114	0.094	0.083	0.073
1.2 nF	178-0934	0.135	0.114	0.094	0.083	0.073
1.8 nF	178-0935	0.135	0.114	0.094	0.083	0.073
1.9 nF	178-0936	0.135	0.114	0.094	0.083	0.073
2.2 nF	178-0937	0.135	0.114	0.094	0.083	0.073
3.9 nF	178-0938	0.135	0.114	0.094	0.083	0.073
4.7 nF	178-0939	0.135	0.114	0.094	0.083	0.073
8.2 nF	178-0940	0.135	0.114	0.094	0.083	0.073
12 nF	178-0941	0.135	0.114	0.094	0.083	0.073
18 nF	178-0942	0.135	0.114	0.094	0.083	0.073

1206 Case Size

Capacitance (nF)	Order Code	Price Each				
		10+	50+	100+	250+	500+
1	178-0944	0.166	0.146	0.114	0.104	0.083
3.3	178-0945	0.187	0.156	0.125	0.114	0.094
4.7	178-0946	0.187	0.156	0.125	0.114	0.094
8.2	178-0947	0.187	0.156	0.125	0.114	0.094
10	178-0948	0.166	0.146	0.114	0.104	0.083
18	178-0949	0.187	0.156	0.125	0.114	0.094
22	178-0950	0.187	0.156	0.125	0.114	0.094
33	178-0951	0.187	0.156	0.125	0.114	0.094
47	178-0952	0.340	0.290	0.240	0.210	0.177
56	178-0953	0.198	0.177	0.146	0.125	0.104

1210 Case Size

Capacitance (nF)	Order Code	Price Each				
		10+	50+	100+	250+	500+
1	178-0954	0.210	0.177	0.146	0.125	0.104
4.7	178-0956	0.210	0.177	0.146	0.125	0.104
10	178-0957	0.210	0.177	0.146	0.125	0.104
33	178-0958	0.210	0.177	0.146	0.125	0.104
47	178-0959	0.230	0.198	0.166	0.135	0.114
68	178-0960	0.230	0.198	0.166	0.135	0.114

1812 Case Size

Capacitance (nF)	Order Code	Price Each				
		10+	50+	100+	250+	500+
1	178-0961	0.230	0.198	0.166	0.135	0.114
2.2	178-0962	0.230	0.198	0.166	0.135	0.114
27	178-0963	0.230	0.198	0.166	0.135	0.114
33	178-0964	0.260	0.220	0.177	0.156	0.125
120	178-0965	0.270	0.240	0.198	0.166	0.135
150	178-0966	0.270	0.240	0.198	0.166	0.135
180	178-0968	0.270	0.240	0.198	0.166	0.135
270	178-0969	0.260	0.220	0.177	0.156	0.125

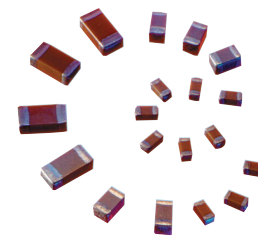
1825 Case Size

Capacitance (nF)	Order Code	Price Each				
		10+	50+	100+	250+	500+
330	178-0970	0.320	0.280	0.230	0.198	0.166
390	178-0971	0.360	0.310	0.260	0.220	0.187
680	178-0972	0.360	0.310	0.260	0.220	0.187
820	178-0973	0.390	0.330	0.270	0.230	0.198

2225 Case Size

Capacitance	Order Code	Price Each				
		10+	50+	100+	250+	500+
470 nF	178-0974	1.78	1.54	1.26	1.08	0.91
560 nF	178-0975	1.78	1.54	1.26	1.08	0.91
1 μF *	178-0976	0.92	0.79	0.65	0.55	0.46
1.2 μF *	178-0977	1.70	1.47	1.20	1.03	0.85

Automotive MLCC
AECQ200 Qualified



- Multilayer ceramic capacitors developed and tested for the automotive market
- AECQ200 qualified
- Flexitem terminations available
- Specific automotive part number
- Base metal electrode system



0603 Case Size

nF	Mftrs. List No.	Order Code	Price Each				
			5+	50+	250+	1K+	2K+
50 Volt d.c. NP0							
0.47	06035A471J4T2A	SMD130-1710	0.076	0.051	0.031	0.025	0.024
16 Volt d.c. X7R							
100	0603YC104K4Z2A	SMD130-1716	0.063	0.047	0.028	0.023	0.022
50 Volt d.c. X7R							
100	06035C104K4T2A	SMD130-1713	0.070	0.047	0.028	0.023	0.022
100 Volt d.c. X7R							
1	06031C102K4Z2A	SMD130-1714	0.070	0.047	0.029	0.023	0.022
10	06031C103K4Z2A	SMD130-1715	0.066	0.044	0.027	0.022	0.021
50 Volt d.c. X8R							
1	06035F102K4T2A	NEW SMD174-0498	0.031	0.023	0.022	0.019	0.015
10	06035F103K4T2A	NEW SMD174-0499	0.031	0.023	0.022	0.019	0.015

0805 Case Size

nF	Mftrs. List No.	Order Code	Price Each				
			5+	50+	250+	1K+	2K+
50 Volt d.c. X8R							
1	08055F102K4Z2A	SMD130-1727	0.167	0.112	0.069	0.056	0.052
1.8	08055F182K4Z2A	SMD130-1728	0.105	0.080	0.056	0.046	0.044
2.2	08055F222K4T2A	NEW SMD174-0501	0.042	0.033	0.031	0.026	0.020
10	08055F103K4T2A	SMD130-1725	0.132	0.088	0.055	0.044	0.042
100	08055F104K4T2A	NEW SMD174-0500	0.052	0.041	0.037	0.032	0.025
50 Volt d.c. X7R							
100	08055C104K4Z2A	SMD130-1717	0.114	0.077	0.047	0.038	0.035
100 Volt d.c. NP0							
1	08051A102J4T2A	SMD130-1711	0.134	0.090	0.055	0.045	0.042

1206 Case Size

nF	Mftrs. List No.	Order Code	Price Each				
			5+	50+	250+	1K+	2K+
100 Volt d.c. NP0							
1	12061A102J4T2A	SMD130-1712	0.192	0.129	0.079	0.064	0.060
50 Volt d.c. X8R							
6.8	12065F682K4T2A	SMD130-1724	0.310	0.230	0.142	0.115	0.109
50 Volt d.c. X7R							
100	12065C104K4Z2A	SMD130-1719	0.160	0.107	0.067	0.053	0.050
120	12065C224K4T2A	SMD130-1721	0.165	0.111	0.067	0.055	0.051
100 Volt d.c. X7R							
2.2μF	12063C225K4Z2A	NEW SMD174-0502	0.125	0.101	0.094	0.079	0.061

1210 Case Size

nF	Mftrs. List No.	Order Code	Price Each				
			5+	50+	250+	1K+	2K+
100 Volt d.c. X7R							
1000	12101C105K4Z2A	SMD130-1722	1.43	0.96	0.58	0.48	0.45

RL FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

Over 100 latest technologies added online everyday

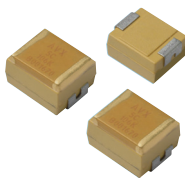
See our pick of the hottest products and latest technologies in 'What's New?' at www.farnell.co.uk



Ceramic - Multilayer Chip - AVX - continued

MH Series

Stacked Parallel Ceramic Capacitors



In order to provide a RoHS compliant, stacked ceramic capacitor offering for the power supply industry AVX have developed the MH range of products.

- Excellent ESR and voltage immunity
- Can be a same pad size replacement for tantalum parts
- Mechanically extremely robust
- Molded case

Operating temperature Tolerance: -55°C to +125°C ± 20%
Dielectric Case Size: X7R V



		Price Each					
µF	Mfrs. List No.	Order Code	1+	10+	100+	250+	500+
25 Volt d.c.							
22	MHV13C226MAT2A	SMD 167-2272 ● RL	12.58	10.79	9.42	7.86	7.38
50 Volt d.c.							
10	MHV15C106MAT2A	SMD 167-2271 ● RL	12.50	10.68	9.38	7.86	7.39
100 Volt d.c.							
1	MHV11C105MAT2A	SMD 167-2275 ● RL	10.75	9.21	7.22	5.87	5.51
1.5	MHV11C155MAT2A	SMD 167-2276 ● RL	11.20	9.59	7.52	6.12	5.74
2.2	MHV11C225MAT2A	SMD 167-2270 ● RL	11.88	10.18	8.93	7.43	6.98

RH Series

Stacked Ceramic Capacitors in a Surface Mountable Lead Frame



The Stacked capacitor configuration gives a very high capacitance value whilst the surface mount leadframe provides the component with excellent resistance to mechanical damage.

- Uses high CV manufacture and stack configuration to offer very high cap values on small PCB footprint
- Low ESR / ESL
- None of the build costs associated with thru hole technology

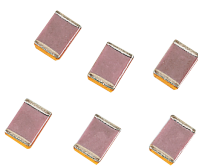
Operating temperature Tolerance: -55°C to +125°C ± 20%
Dielectric Case Size: X7R



		Price Each					
µF	Mfrs. List No.	Order Code	1+	10+	100+	250+	500+
50 Volt d.c.							
4.7	RH215C475MAARA3	SMD 167-2281 ● RL	11.83	10.13	8.19	6.65	6.25
10	RH215C106MAARA3	SMD 167-2279 ● RL	8.93	7.63	6.18	5.02	4.72
22	RH225C226MAARA3	SMD 167-2278 ● RL	15.11	12.96	11.27	9.16	8.61
100 Volt d.c.							
4.7	RH221C475MAARA3	SMD 167-2280 ● RL	13.80	11.83	10.35	8.74	8.22

Ceramic - Multilayer Chip - Kemet

Ceramic Chip Capacitors



- Multilayer ceramic chip capacitors
- 0402, 0603, 0805, 1206, 1210 & 1812 case sizes
- Standard end metalization: Tin-plate over nickel barrier

Operating Temperature: -55°C to +125°C
Temperature coefficient Tolerance: ±30% / ±5%

X7R: -55°C to +125°C ±15% / ±10%

X8L: -55°C to +150°C ±15% / ±5% / ±10%

X8R: -55°C to +150°C ±15% / ±5% / ±10%



		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	2K+
0402 Case Size							
Order Multiple=10							
16 Volt d.c. X7R							
15000	15	SMD 157-2612 ●	0.041	0.026	0.016	0.011	0.009
33000	33	SMD 141-4591 ●	0.038	0.032	0.030	0.028	0.026
68000	68	SMD 157-2613 ●	0.050	0.029	0.019	0.014	0.010
Order Multiple=10							
25 Volt d.c. X7R							
47000	47	SMD 141-4595 ●	0.026	0.016	0.010	0.008	0.007
Order Multiple=10							
25 Volt d.c. NPO							
470	0.47	SMD 145-7724 ●	0.103	0.066	0.045	0.033	0.027
1000	1	SMD 145-7725 ●	0.108	0.066	0.045	0.033	0.027
1800	1.8	180-0793 ● NEW	0.021	0.015	0.010	0.007	0.005

Order Multiple=10

		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	2K+
50 Volt d.c. NPO							
1	0.001	180-0794 ● NEW	0.022	0.017	0.011	0.008	0.006
2.2	0.0022	180-0795 ● NEW	0.022	0.017	0.011	0.008	0.006
3.3	0.0033	180-0797 ● NEW	0.022	0.017	0.011	0.008	0.006
4.7	0.0047	180-0798 ● NEW	0.022	0.017	0.011	0.008	0.006
6.8	0.0068	180-0799 ● NEW	0.018	0.013	0.009	0.006	0.004
10	0.01	SMD 141-4571 ●	0.017	0.008	0.005	0.004	0.003
12	0.012	SMD 141-4576 ●	0.021	0.014	0.008	0.007	0.005
15	0.015	SMD 141-4577 ●	0.017	0.008	0.005	0.004	0.003
18	0.018	SMD 157-2614 ●	0.024	0.012	0.008	0.005	0.004
22	0.022	SMD 141-4580 ●	0.014	0.008	0.005	0.004	0.003
27	0.027	SMD 141-4584 ●	0.014	0.008	0.005	0.004	0.003
33	0.033	SMD 141-4588 ●	0.012	0.008	0.005	0.004	0.003
39	0.039	SMD 157-2615 ●	0.020	0.012	0.008	0.005	0.004
47	0.047	SMD 141-4592 ●	0.015	0.008	0.005	0.004	0.003
56	0.056	SMD 157-2616 ●	0.024	0.012	0.008	0.005	0.004
68	0.068	SMD 141-4596 ●	0.024	0.014	0.008	0.007	0.005
82	0.082	SMD 157-2617 ●	0.031	0.020	0.012	0.009	0.008
100	0.1	SMD 141-4572 ●	0.017	0.008	0.005	0.004	0.003
120	0.12	SMD 157-2618 ●	0.018	0.009	0.007	0.005	0.004
150	0.15	SMD 141-4578 ●	0.017	0.009	0.007	0.005	0.004
180	0.18	SMD 157-2619 ●	0.020	0.011	0.008	0.007	0.005
220	0.22	SMD 141-4581 ●	0.020	0.010	0.008	0.005	0.004
270	0.27	SMD 141-4585 ●	0.019	0.011	0.008	0.007	0.005
330	0.33	SMD 141-4589 ●	0.020	0.011	0.008	0.007	0.005
390	0.39	180-0800 ● NEW	0.016	0.012	0.008	0.006	0.004
560	0.56	SMD 157-2620 ●	0.034	0.019	0.014	0.009	0.008
820	0.82	180-0801 ● NEW	0.018	0.013	0.009	0.006	0.004
1200	1.2	180-0803 ● NEW	0.018	0.014	0.009	0.007	0.005

Order Multiple=10

		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	2K+
50 Volt d.c. X7R							
470	0.47	SMD 141-4593 ●	0.012	0.008	0.005	0.004	0.003
1000	1	SMD 141-4573 ●	0.012	0.007	0.005	0.004	0.003
1500	1.5	SMD 141-4579 ●	0.020	0.010	0.008	0.005	0.004
2200	2.2	SMD 141-4582 ●	0.014	0.008	0.005	0.004	0.003
2700	2.7	SMD 141-4587 ●	0.021	0.014	0.008	0.007	0.005
3300	3.3	SMD 141-4590 ●	0.020	0.010	0.008	0.005	0.004
4700	4.7	SMD 141-4594 ●	0.016	0.008	0.005	0.004	0.003
6800	6.8	SMD 141-4597 ●	0.041	0.024	0.015	0.010	0.009
10000	10	SMD 141-4575 ●	0.015	0.009	0.005	0.004	0.003
22000	22	SMD 141-4583 ●	0.028	0.015	0.010	0.008	0.007

Order Multiple=10

		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	2K+
100 Volt d.c. NPO							
100	0.1	180-0804 ● NEW	0.015	0.011	0.007	0.005	0.004
220	0.22	180-0805 ● NEW	0.016	0.012	0.008	0.006	0.004

0603 Case Size

		Price Each					
nF	µF	Order Code	10+	100+	500+	1K+	+
Order Multiple=10							
10 Volt d.c. X8L							
220	0.22	NEW 178-9712 ●	0.104	0.088	0.078	0.052	--

		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	4K+
Order Multiple=10							
16 Volt d.c. X7R							
100000	100	SMD 141-4610 ●	0.017	0.009	0.007	0.005	0.004
330000	330	SMD 141-4637 ●	0.187	0.104	0.071	0.052	0.042
470000	470	SMD 141-4644 ●	0.192	0.113	0.079	0.077	0.075

		Price Each					
nF	µF	Order Code	10+	100+	500+	1K+	+
Order Multiple=10							
25 Volt d.c. X8L							
150	0.15	NEW 178-9713 ●	0.092	0.078	0.069	0.046	--

		Price Each					
nF	µF	Order Code	10+	100+	500+	1K+	+
Order Multiple=10							
25 Volt d.c. X8R							
10	0.01	NEW 178-9714 ●	0.090	0.077	0.068	0.045	--

		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	4K+
Order Multiple=10							
25 Volt d.c. X7R							
220000	220	SMD 141-4626 ●	0.058	0.033	0.022	0.016	0.014

		Price Each					
pF	nF	Order Code	10+	100+	500+	1K+	2K+
Order Multiple=10							
25 Volt d.c. NPO							
2200	2.2	SMD 145-7726 ●	0.170	0.109	0.073	0.054	0.045
4700	4.7	SMD 145-7727 ●	0.189	0.111	0.076	0.056	0.046
10000	10	SMD 145-7729 ●	0.123	0.079	0.055	0.043	0.032

Order Multiple=10

50 Volt d.c. X8R

nF	µF	Order Code	10+	100+	500+	1K+	+
0.47	0.00047	NEW 178-9716	0.072	0.061	0.054	0.036	--
0.68	0.00068	NEW 178-9717	0.072	0.061	0.054	0.036	--
1	0.001	NEW 178-9718	0.076	0.066	0.057	0.038	--
1.5	0.0015	NEW 178-9719	0.104	0.088	0.078	0.052	--
2.2	0.0022	NEW 178-9720	0.076	0.066	0.057	0.038	--
3.3	0.0033	NEW 178-9721	0.079	0.068	0.059	0.040	--
4.7	0.0047	NEW 178-9722	0.079	0.068	0.059	0.040	--
6.8	0.0068	NEW 178-9723	0.099	0.085	0.075	0.050	--

Order Multiple=10

50 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1	0.001	*SMD 141-4611	0.038	0.022	0.015	0.010	0.008
2.2	0.0022	*181-3415	0.026	0.021	0.012	0.009	0.006
3.3	0.0033	*181-3416	0.026	0.021	0.012	0.009	0.006
4.7	0.0047	*SMD 141-4645	0.038	0.022	0.015	0.010	0.008
6.8	0.0068	*SMD 141-4651	0.062	0.035	0.024	0.018	0.014
10	0.01	*SMD 141-4599	0.029	0.019	0.011	0.009	0.008
10	0.01	SMD 141-4601	0.017	0.010	0.007	0.005	0.004
12	0.012	SMD 141-4612	0.023	0.014	0.008	0.007	0.005
15	0.015	SMD 141-4614	0.023	0.017	0.015	0.012	0.010
18	0.018	SMD 141-4620	0.023	0.014	0.008	0.007	0.005
22	0.022	SMD 141-4622	0.023	0.014	0.008	0.007	0.005
27	0.027	SMD 141-4627	0.023	0.014	0.008	0.007	0.005
33	0.033	SMD 141-4633	0.020	0.011	0.008	0.007	0.005
39	0.039	SMD 157-2626	0.033	0.019	0.012	0.009	0.007
47	0.047	SMD 141-4639	0.022	0.011	0.008	0.007	0.005
56	0.056	SMD 157-2627	0.031	0.019	0.012	0.009	0.007
68	0.068	SMD 141-4647	0.023	0.014	0.008	0.007	0.005
120	0.12	SMD 141-4613	0.024	0.014	0.009	0.007	0.005
150	0.15	SMD 141-4615	0.028	0.015	0.010	0.008	0.007
180	0.18	SMD 141-4621	0.033	0.020	0.014	0.009	0.008
100	0.1	SMD 141-4603	0.016	0.009	0.007	0.005	0.004
220	0.22	SMD 141-4623	0.030	0.019	0.012	0.008	0.007
270	0.27	SMD 141-4629	0.029	0.016	0.010	0.008	0.007
330	0.33	SMD 141-4634	0.030	0.019	0.011	0.009	0.008
390	0.39	SMD 141-4638	0.037	0.022	0.015	0.010	0.008
470	0.47	SMD 141-4640	0.034	0.019	0.014	0.009	0.008
560	0.56	SMD 141-4646	0.043	0.026	0.016	0.011	0.009
680	0.68	SMD 141-4648	0.037	0.022	0.014	0.010	0.008
1000	1	SMD 141-4605	0.036	0.020	0.014	0.010	0.008

* Tolerance = ±0.25pF

Order Multiple=10

50 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1000	1	SMD 141-4608	0.016	0.009	0.007	0.005	0.004
1500	1.5	SMD 141-4617	0.024	0.014	0.008	0.007	0.005
2200	2.2	SMD 141-4624	0.019	0.010	0.007	0.005	0.004
2700	2.7	SMD 141-4631	0.023	0.014	0.008	0.007	0.005
3300	3.3	SMD 141-4635	0.023	0.014	0.008	0.007	0.005
4700	4.7	SMD 141-4642	0.019	0.010	0.007	0.005	0.004
6800	6.8	SMD 141-4649	0.021	0.011	0.008	0.007	0.005
10000	10	SMD 141-4609	0.017	0.009	0.007	0.005	0.004
15000	15	SMD 141-4618	0.029	0.016	0.010	0.008	0.007
22000	22	SMD 141-4625	0.029	0.018	0.011	0.009	0.007
27000	27	SMD 141-4632	0.059	0.033	0.022	0.016	0.014
33000	33	SMD 141-4636	0.036	0.020	0.014	0.010	0.008
47000	47	SMD 141-4643	0.040	0.024	0.015	0.010	0.009
68000	68	SMD 141-4650	0.040	0.024	0.015	0.010	0.009
150000	150	SMD 141-4619	0.056	0.031	0.022	0.016	0.011

Order Multiple=10

100 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10	0.01	SMD 141-4600	0.027	0.016	0.010	0.008	0.007
12	0.012	181-3426	0.036	0.029	0.016	0.012	0.008
15	0.015	181-3427	0.036	0.029	0.016	0.012	0.008
18	0.018	181-3428	0.036	0.029	0.016	0.012	0.008
22	0.022	181-3429	0.036	0.029	0.016	0.012	0.008
27	0.027	181-3430	0.036	0.029	0.016	0.012	0.008
33	0.033	181-3431	0.036	0.029	0.016	0.012	0.008
47	0.047	181-3433	0.036	0.029	0.016	0.012	0.008
68	0.068	181-3434	0.036	0.029	0.016	0.012	0.008
100	0.1	SMD 141-4602	0.024	0.014	0.008	0.007	0.005
150	0.15	181-3435	0.035	0.028	0.015	0.012	0.008
180	0.18	181-3436	0.035	0.028	0.015	0.012	0.008
220	0.22	181-3437	0.029	0.024	0.013	0.010	0.007
270	0.27	181-3438	0.029	0.024	0.013	0.010	0.007
330	0.33	181-3439	0.048	0.038	0.021	0.016	0.011
470	0.47	181-3440	0.048	0.038	0.021	0.016	0.011

Order Multiple=10

100 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
560	0.56	181-3441	0.055	0.044	0.024	0.018	0.012
680	0.68	181-3442	0.037	0.030	0.016	0.012	0.008
1000	1	181-3443	0.038	0.031	0.017	0.013	0.009
3300	3.3	181-3445	0.150	0.120	0.066	0.050	0.033
4700	4.7	181-3446	0.150	0.120	0.066	0.050	0.033

Order Multiple=10

100 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1000	1	SMD 141-4606	0.034	0.019	0.014	0.009	0.008

Order Multiple=10

200 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1000	1	SMD 141-4607	0.040	0.024	0.015	0.010	0.009

Order Multiple=10

200 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10	0.01	181-3447	0.036	0.029	0.016	0.012	0.008
15	0.015	181-3448	0.044	0.036	0.020	0.015	0.010
22	0.022	181-3449	0.044	0.036	0.020	0.015	0.010
33	0.033	181-3450	0.044	0.036	0.020	0.015	0.010
47	0.047	181-3451	0.044	0.036	0.020	0.015	0.010

0805 Case Size

Order Multiple=10

10 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
1000	1	NEW 178-9724	0.250	0.210	0.184	0.123	--

Order Multiple=10

25 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
330	0.33	NEW 178-9725	0.220	0.188	0.165	0.110	--
470	0.47	NEW 178-9726	0.260	0.220	0.192	0.128	--
680	0.68	NEW 178-9728	0.210	0.175	0.154	0.102	--

Order Multiple=10

25 Volt d.c. X7R

pF	nF	Order Code	10+	+	+	+	+
330000	330	SMD 141-4691	0.18	--	--	--	--

Order Multiple=10

25 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	2K+
4700	4.7	SMD 145-7733	0.400	0.260	0.168	0.127	0.102
10000	10	SMD 145-7736	0.470	0.270	0.178	0.133	0.107
22000	22	SMD 145-7738	0.450	0.300	0.196	0.148	0.119

Order Multiple=10

50 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
150	0.15	NEW 178-9729	0.153	0.131	0.114	0.076	--
220	0.22	NEW 178-9730	0.200	0.173	0.151	0.101	--

Order Multiple=10

50 Volt d.c. X8R

nF	µF	Order Code	10+	100+	500+	1K+	+
2.2	0.0022	NEW 178-9731	0.145	0.124	0.109	0.073	--
3.3	0.0033	NEW 178-9732	0.164	0.141	0.124	0.082	--
4.7	0.0047	NEW 178-9733	0.179	0.153	0.134	0.089	--
6.8	0.0068	NEW 178-9734	0.240	0.200	0.179	0.120	--
10	0.01	NEW 178-9735	0.210	0.175	0.154	0.102	--
15	0.015	NEW 178-9736	0.230	0.193	0.170	0.113	--
22	0.022	NEW 178-9737	0.240	0.200	0.179	0.120	--

Order Multiple=10

50 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1	0.001	180-0806	0.034	0.025	0.016	0.012	0.008
2.2	0.0022	180-0807	0.034	0.025	0.016	0.012	0.008
3.3	0.0033	180-0808	0.034	0.025	0.016	0.012	0.008
4.7	0.0047	180-0809	0.034	0.025	0.016	0.012	0.008
6.8	0.0068	180-0810	0.045	0.033	0.021	0.016	0.011
10	0.01	SMD 141-4654	0.029	0.016	0.010	0.008	0.007
12	0.012	SMD 141-4666	0.024	0.014	0.009	0.007	0.005
15	0.015	SMD 141-4668	0.030	0.016	0.010	0.008	0.007
18	0.018	SMD 141-4673	0.026	0.016	0.010	0.008	0.007
22	0.022	SMD 141-4678	0.026	0.016	0.010	0.008	0.007
27	0.027	SMD 141-4683	0.028	0.016	0.010	0.008	0.007
33	0.033	SMD 141-4685	0.028	0.016	0.010	0.008	0.007
47	0.047	SMD 141-4692	0.029	0.016	0.010	0.008	0.007
68	0.068	SMD 141-4698	0.027	0.016	0.010	0.008	0.007
100	0.1	SMD 141-4656	0.028	0.017	0.011	0.008	0.007



Ceramic - Multilayer Chip - Kemet - continued

Ceramic Chip Capacitors - continued

1812 Case Size - continued

Order Multiple=10
50 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
120	0.12	SMD 141-4667	0.031	0.018	0.011	0.009	0.007
150	0.15	SMD 141-4669	0.031	0.018	0.011	0.009	0.007
180	0.18	SMD 141-4674	0.036	0.020	0.014	0.010	0.008
220	0.22	SMD 141-4679	0.033	0.018	0.011	0.009	0.007
270	0.27	SMD 141-4684	0.046	0.027	0.018	0.011	0.010
330	0.33	SMD 141-4686	0.030	0.019	0.014	0.009	0.008
470	0.47	SMD 141-4694	0.036	0.024	0.015	0.011	0.009
680	0.68	SMD 141-4699	0.072	0.041	0.028	0.020	0.016
1000	1	SMD 141-4658	0.050	0.029	0.019	0.014	0.010
1500	1.5	180-0811 NEW	0.050	0.037	0.024	0.018	0.012
1800	1.8	SMD 141-4675	0.153	0.090	0.060	0.046	0.035
2200	2.2	180-0812 NEW	0.047	0.035	0.022	0.017	0.012
3300	3.3	180-0813 NEW	0.078	0.058	0.037	0.028	0.020

Order Multiple=10
50 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
220	0.22	SMD 141-4680	0.031	0.018	0.011	0.009	0.007
1000	1	SMD 141-4660	0.023	0.012	0.008	0.007	0.005
1500	1.5	SMD 141-4670	0.040	0.020	0.015	0.009	0.008
2200	2.2	SMD 141-4681	0.021	0.014	0.009	0.007	0.005
3300	3.3	SMD 141-4687	0.025	0.015	0.009	0.008	0.005
4700	4.7	SMD 141-4696	0.025	0.015	0.009	0.008	0.005
6800	6.8	SMD 141-4700	0.029	0.019	0.011	0.009	0.008
10000	10	SMD 141-4662	0.022	0.011	0.008	0.007	0.005
15000	15	SMD 141-4671	0.026	0.016	0.010	0.008	0.007
22000	22	SMD 141-4682	0.035	0.020	0.014	0.009	0.008
33000	33	SMD 141-4688	0.040	0.022	0.014	0.010	0.008
47000	47	SMD 141-4697	0.037	0.022	0.014	0.010	0.008
68000	68	SMD 141-4701	0.090	0.052	0.034	0.027	0.020
100000	100	*SMD 141-4663	0.073	0.042	0.029	0.021	0.017
100000	100	SMD 141-4664	0.029	0.016	0.010	0.008	0.007
150000	150	SMD 141-4672	0.116	0.066	0.045	0.033	0.027
680000	680	SMD 141-4702	0.140	--	--	--	--

* Tolerance = ±5%

Order Multiple=10
100 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10	0.01	SMD 141-4652	0.038	0.022	0.015	0.010	0.008
15	0.015	180-0815 NEW	0.025	0.019	0.012	0.009	0.006
22	0.022	SMD 141-4676	0.034	0.022	0.015	0.010	0.008
33	0.033	180-0816 NEW	0.027	0.020	0.013	0.010	0.007
47	0.047	180-0817 NEW	0.034	0.025	0.016	0.012	0.009
68	0.068	180-0818 NEW	0.027	0.020	0.013	0.010	0.007
100	0.1	SMD 141-4655	0.034	0.022	0.015	0.010	0.008
220	0.22	180-0819 NEW	0.039	0.029	0.019	0.014	0.010
470	0.47	SMD 141-4693	0.066	0.038	0.026	0.019	0.015
1000	1	SMD 141-4657	0.109	0.061	0.042	0.030	0.026

Order Multiple=10
100 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10000	10	SMD 141-4661	0.029	0.017	0.011	0.008	0.007

Order Multiple=10
200 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1000	1	SMD 141-4659	0.046	0.027	0.018	0.011	0.010
4700	4.7	SMD 141-4695	0.051	0.029	0.019	0.015	0.011
10000	10	NEW 179-3837	0.023	0.019	0.017	0.015	0.012
22000	22	NEW 179-3838	0.033	0.028	0.025	0.021	0.018

Order Multiple=10
200 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	2K+
10	0.01	180-0820 NEW	0.034	0.025	0.016	0.012	0.008
22	0.022	180-0821 NEW	0.031	0.023	0.015	0.011	0.008
47	0.047	180-0822 NEW	0.039	0.029	0.019	0.014	0.010
100	0.1	180-0823 NEW	0.033	0.025	0.016	0.012	0.008
220	0.22	180-0824 NEW	0.062	0.046	0.029	0.022	0.015
470	0.47	180-0825 NEW	0.054	0.040	0.026	0.019	0.013

1206 Case Size

Order Multiple=10
10 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
3300	3.3	NEW 178-9738	0.42	0.36	0.31	0.21	--
4700	4.7	NEW 178-9741	0.42	0.36	0.31	0.21	--

Order Multiple=10
25 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
1000	1	NEW 178-9742	0.320	0.280	0.240	0.162	--
1500	1.5	NEW 178-9743	0.340	0.290	0.260	0.174	--
2200	2.2	NEW 178-9744	0.340	0.290	0.260	0.172	--

Order Multiple=5
25 Volt d.c. X8R

nF	µF	Order Code	5+	100+	500+	1K+	+
100	0.1	NEW 178-9745	0.78	0.67	0.58	0.40	--

Order Multiple=10
25 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	2K5+
10000	10	SMD 141-4711	0.600	0.390	0.260	0.193	0.155
100000	100	SMD 145-7748	1.730	1.130	0.770	0.560	0.470

Order Multiple=5
50 Volt d.c. X8L

nF	µF	Order Code	5+	100+	500+	1K+	+
470	0.47	NEW 178-9746	0.240	0.210	0.183	0.123	--

Order Multiple=5
50 Volt d.c. X8R

nF	µF	Order Code	5+	100+	500+	1K+	+
6.8	0.0068	NEW 178-9747	0.32	0.27	0.24	0.16	--
10	0.01	NEW 178-9748	0.46	0.40	0.34	0.23	--
15	0.015	NEW 178-9749	0.59	0.51	0.45	0.30	--
22	0.022	NEW 178-9750	0.56	0.48	0.42	0.28	--
33	0.033	NEW 178-9751	0.56	0.48	0.42	0.28	--
47	0.047	NEW 178-9753	0.62	0.53	0.47	0.31	--
68	0.068	NEW 178-9754	0.72	0.61	0.54	0.36	--

Order Multiple=10
50 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10	0.01	SMD 141-4703	0.059	0.035	0.024	0.018	0.014
15	0.015	180-0827 NEW	0.038	0.028	0.018	0.014	0.010
22	0.022	SMD 141-4717	0.058	0.035	0.024	0.018	0.014
33	0.033	SMD 141-4727	0.053	0.035	0.024	0.018	0.014
47	0.047	SMD 141-4734	0.055	0.035	0.024	0.018	0.014
68	0.068	180-0828 NEW	0.039	0.029	0.019	0.014	0.010
100	0.1	SMD 141-4705	0.061	0.035	0.024	0.018	0.014
150	0.15	180-0829 NEW	0.039	0.029	0.018	0.014	0.010
220	0.22	SMD 141-4718	0.059	0.035	0.024	0.018	0.014
330	0.33	SMD 141-4728	0.061	0.035	0.024	0.018	0.014
470	0.47	SMD 141-4736	0.093	0.056	0.038	0.029	0.024
680	0.68	180-0830 NEW	0.054	0.040	0.026	0.019	0.013
1000	1	SMD 141-4709	0.088	0.058	0.040	0.030	0.024
1500	1.5	SMD 141-4716	0.157	0.090	0.060	0.046	0.035
2200	2.2	SMD 141-4721	0.135	0.088	0.058	0.045	0.035
2700	2.7	SMD 141-4726	0.230	0.151	0.102	0.076	0.060
3300	3.3	SMD 141-4729	0.173	0.108	0.073	0.054	0.045
4700	4.7	SMD 141-4737	0.260	0.171	0.113	0.085	0.069
10000	10	180-0831 NEW	0.550	0.410	0.260	0.195	0.136

Order Multiple=10
50 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
1000	1	SMD 141-4710	0.060	0.035	0.024	0.018	0.014
3300	3.3	SMD 141-4730	0.060	0.037	0.026	0.018	0.015
4700	4.7	SMD 141-4738	0.060	0.035	0.024	0.018	0.014
10000	10	SMD 141-4713	0.060	0.035	0.024	0.018	0.014
22000	22	SMD 141-4723	0.059	0.035	0.024	0.018	0.014
33000	33	SMD 141-4731	0.076	0.043	0.029	0.022	0.018
47000	47	SMD 141-4740	0.058	0.037	0.026	0.019	0.015
68000	68	SMD 141-4742	0.102	0.064	0.043	0.031	0.027
100000	100	SMD 141-4715	0.049	0.029	0.019	0.014	0.010
220000	220	SMD 141-4725	0.096	0.058	0.040	0.030	0.024
330000	330	SMD 141-4733	0.300	0.176	0.118	0.088	0.071
470000	470	SMD 141-4741	0.182	0.104	0.071	0.052	0.042

Order Multiple=10
100 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10	0.01	180-0832 NEW	0.052	0.039	0.025	0.019	0.013
22	0.022	180-0833 NEW	0.062	0.046	0.029	0.022	0.015
100	0.1	SMD 141-4704	0.078	0.046	0.030	0.022	0.018
1000	1	SMD 141-4706	0.220	0.126	0.084	0.062	0.050
10000	10	180-0834 NEW	0.580	0.430	0.270	0.208	0.146

Order Multiple=10
100 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
22000	22	SMD 141-4722	0.118	0.061	0.042	0.032	0.025
47000	47	SMD 141-4739	0.089	0.056	0.038	0.029	0.024
100000	100	SMD 141-4714	0.071	0.049	0.033	0.026	0.020
220000	220	SMD 141-4724	0.145	0.083	0.054	0.042	0.033

Order Multiple=10
200 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10	0.01	180-0835 NEW	0.062	0.046	0.029	0.022	0.015
100	0.1	180-0836 NEW	0.078	0.058	0.037	0.028	0.020
470	0.47	SMD 141-4735	0.114	0.064	0.043	0.031	0.027
1000	1	SMD 141-4708	0.230	0.130	0.087	0.064	0.052

Order Multiple=10
200 Volt d.c. X7R

pF	nF	Order Code	10+	100+	500+	1K+	4K+
10000	10	SMD 141-4712	0.081	0.052	0.034	0.027	0.020
100000	100	NEW 179-3839	0.093	0.078	0.068	0.058	0.049

1210 Case Size

Order Multiple=5
10 Volt d.c. X8L

µF	nF	Order Code	5+	100+	500+	1K+	+
6800	6800	NEW 178-9755	0.54	0.47	0.41	0.27	--
10000	10000	NEW 178-9756	0.54	0.47	0.41	0.27	--

Order Multiple=10
25 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
1500	1.5	NEW 178-9757	0.450	0.370	0.330	0.220	--
2200	2.2	NEW 178-9758	0.360	0.310	0.270	0.183	--
3300	3.3	NEW 178-9759	0.490	0.420	0.370	0.240	--
4700	4.7	NEW 178-9760	0.400	0.340	0.290	0.198	--

Order Multiple=10
25 Volt d.c. NPO

pF	nF	Order Code	10+	100+	500+	1K+	2K+
220000	220	SMD 145-7760	5.36	3.40	2.29	1.72	1.34

Order Multiple=10
50 Volt d.c. X8L

nF	µF	Order Code	10+	100+	500+	1K+	+
470	0.47	NEW 178-9761	0.41	0.34	0.30	0.20	--
680	0.68	NEW 178-9762	0.41	0.34	0.30	0.20	--
1000	1	NEW 178-9763	0.45	0.37	0.32	0.22	--

Order Multiple=5
50 Volt d.c. X8R

nF	µF	Order Code	5+	100+	500+	1K+	+
15	0.015	NEW 178-9765	0.75	0.65	0.56	0.37	--
22	0.022	NEW 178-9766	0.72	0.61	0.54	0.36	--
33	0.033	NEW 178-9767	0.72	0.61	0.54	0.36	--
47	0.047	NEW 178-9768	0.78	0.67	0.58	0.40	--
68	0.068	NEW 178-9769	0.84	0.73	0.63	0.42	--
100	0.1	NEW 178-9770	0.77	0.66	0.57	0.39	--
150	0.15	NEW 178-9771	0.91	0.77	0.68	0.45	--

1812 Case Size

Order Multiple=1
50 Volt d.c. X8R

nF	µF	Order Code	1+	100+	500+	1K+	+
100	0.1	NEW 178-9772	0.95	0.81	0.71	0.48	--
150	0.15	NEW 178-9773	1.25	1.07	0.94	0.62	--
220	0.22	NEW 178-9774	1.14	0.98	0.86	0.57	--

Capacitance Conversion Table

0.000001µF	=	0.001nF	=	1pF
0.00001µF	=	0.01nF	=	10pF
0.0001µF	=	0.1nF	=	100pF
0.001µF	=	1nF	=	1000pF
0.01µF	=	10nF	=	10000pF
0.1µF	=	100nF	=	100000pF
1µF	=	1000nF	=	1000000pF
10µF	=	10000nF	=	10000000pF
100µF	=	100000nF	=	100000000pF

Open Mode Ceramic Capacitors



Open Mode ceramic surface mount capacitors are designed to significantly minimise the probability of a low IR or short circuit condition when forced to failure in a board flex situation. This reduces the potential for causing catastrophic failures.

Applications:

- Input side filtering
- High current applications
- Circuits that cannot be fused to open when short circuits occur due to flex cracks

Performance characteristics X7R -55°C to +125°C Performance characteristics X7R ±10%
Operating Temperature Tolerance

N.B. For ease of selection, capacitance value is listed in both nF and µF.

Order Multiple=10

nF	µF	Order Code	10+	50+	100+	1K+	4K+
16 Volt d.c. 0805 Case Size							
0.68	0.68	SMD 135-8502	0.270	0.164	0.118	0.104	0.088
25 Volt d.c. 0805 Case Size							
0.47	0.47	SMD 128-8274 RL	0.181	0.153	0.133	0.104	0.093
50 Volt d.c. 0805 Case Size							
0.01	0.01	SMD 128-8268 RL	0.099	0.084	0.069	0.056	0.047
0.047	0.047	SMD 128-8270 RL	0.065	0.054	0.048	0.037	0.033
0.1	0.1	SMD 128-8272 RL	0.183	0.155	0.132	0.104	0.097
0.22	0.22	SMD 128-8273 RL	0.191	0.160	0.139	0.108	0.097
100 Volt d.c. 0805 Case Size							
0.022	0.022	SMD 128-8269 RL	0.114	0.099	0.084	0.062	0.050
0.068	0.068	SMD 135-8501	0.220	0.132	0.097	0.084	0.079
16 Volt d.c. 1206 Case Size							
4.7	4.7	SMD 135-8506	0.560	0.350	0.250	0.220	0.187
25 Volt d.c. 1206 Case Size							
2.2	2.2	SMD 135-8505	0.360	0.230	0.165	0.145	0.132
50 Volt d.c. 1206 Case Size							
0.47	0.47	SMD 135-8504	0.310	0.194	0.142	0.127	0.110
0.22	0.22	SMD 128-8276 RL	0.300	0.270	0.230	0.173	0.135
1	1	SMD 128-8277 RL	0.310	0.250	0.220	0.170	0.159
100 Volt d.c. 1206 Case Size							
0.1	0.1	SMD 128-8275 RL	0.230	0.196	0.167	0.129	0.111
0.33	0.33	SMD 135-8503	0.450	0.270	0.198	0.175	0.148
25 Volt d.c. 1210 Case Size							
4.7	4.7	SMD 135-8508	0.650	0.410	0.300	0.260	0.240
50 Volt d.c. 1210 Case Size							
1	1	SMD 128-8278 RL	0.530	0.450	0.410	0.310	0.270
2.2	2.2	SMD 135-8507	0.580	--	--	--	--
100 Volt d.c. 1210 Case Size							
0.47	0.47	SMD 157-2641	0.950	0.650	0.450	0.340	0.270
100 Volt d.c. 1812 Case Size							
1	1	SMD 157-2642	2.310	1.240	0.980	0.900	0.810
0.68	0.68	SMD 157-2643	2.010	1.360	0.950	0.730	0.560

Passive Components

7

Capacitors

Capacitor Engineering Kits



A range of three ceramic capacitor engineering kits from Kemet ideal for use during test and development. Each kit contains 20 pieces of each value as well as complete data books.

Kit	Number of Values	Order Code
Hi CV Ceramic Capacitors Engineering Kit	20	128-8251
Open Mode Ceramic Chip Engineering Kit	10	128-8267

Order Code	Price Each
All Kits	50.49

FT-CAP Flexible Terminations



- Multi-layer ceramic capacitor, with unique, flexible termination system
- Conductive epoxy utilized between the conductive metallization and nickel barrier establishes pliability while maintaining terminal strength, solderability and electrical performance



Ceramic - Multilayer Chip - Kemet - continued

FT-CAP Flexible Terminations - continued

1812 Case Size - continued

- Board flex stress is directed away from the ceramic body into the termination area
- This termination system mitigates the risk of low-IR or short-circuit failures associated with board flex

Operating and storage temperature Tolerance -55°C to +125°C Dielectric characteristic X7R ±10%

0603 Case Size

Order Multiple=10

nF	Mfrs. List No.	Order Code	10+	100+	500+	1K+	4K+	Price Each
16 Volt								
	100C0603X104K4RAC	SMD 141-4027	0.051	0.029	0.019	0.015	0.011	
	220C0603X224K4RAC	SMD 141-4032	0.095	0.054	0.035	0.028	0.022	
	470C0603X474K4RACTU	SMD 141-4037	0.114	0.064	0.043	0.031	0.027	
50 Volt								
	1 C0603X102K5RAC	SMD 141-4025	0.041	0.027	0.018	0.014	0.010	
	10 C0603X103K5RAC	SMD 141-4026	0.047	0.027	0.018	0.014	0.010	
	33 C0603X333K5RACTU	SMD 141-4034	0.055	0.031	0.020	0.015	0.011	
	47 C0603X473K5RAC	SMD 141-4036	0.057	0.031	0.022	0.016	0.011	
	100C0603X104K5RAC	SMD 141-4028	0.059	0.034	0.024	0.016	0.014	

100 Volt

1	C0603X102K1RACTU	SMD 141-4023	0.049	0.031	0.020	0.015	0.011	
---	------------------	--------------	-------	-------	-------	-------	-------	--

200 Volt

1	C0603X102K2RACTU	SMD 141-4024	0.047	0.023	0.016	0.011	0.010	
---	------------------	--------------	-------	-------	-------	-------	-------	--

0805 Case Size

Order Multiple=10

nF	Mfrs. List No.	Order Code	10+	100+	500+	1K+	4K+	Price Each
16 Volt								
	1000C0805X105K4RAC	SMD 141-4042	0.129	--	--	--	--	
	2200C0805X225K4RAC	SMD 141-4047	0.161	--	--	--	--	
25 Volt								
	220 C0805X224K3RAC	SMD 141-4046	0.109	0.061	0.042	0.032	0.025	
	470 C0805X474K3RAC	SMD 141-4049	0.137	0.083	0.055	0.041	0.033	
50 Volt								
	1 C0805X102K5RACTU	SMD 141-4038	0.046	0.030	0.020	0.015	0.011	
	10 C0805X103K5RACTU	SMD 141-4040	0.052	0.030	0.020	0.015	0.011	
	22 C0805X223K5RACTU	SMD 141-4044	0.060	0.041	0.027	0.020	0.016	
	100 C0805X104K5RAC	SMD 141-4041	0.083	0.048	0.032	0.025	0.019	
100 Volt								
	10 C0805X103K1RAC	SMD 141-4039	0.057	0.025	0.017	0.015	0.011	
	22 C0805X223K1RAC	SMD 141-4043	0.080	0.048	0.032	0.025	0.019	

1206 Case Size

Order Multiple=10

nF	Mfrs. List No.	Order Code	10+	100+	500+	1K+	2K+	Price Each
25 Volt								
	1000C1206X105K3RAC	SMD 141-4054	0.220	0.135	0.090	0.068	0.054	
	4700C1206X475K3RACTU	SMD 141-4061	0.450	--	--	--	--	
50 Volt								
	10 C1206X103K5RACTU	SMD 141-4051	0.136	0.092	0.061	0.047	0.037	
	100 C1206X104K5RAC	SMD 141-4053	0.133	0.085	0.056	0.043	0.034	
	220 C1206X224K5RAC	SMD 141-4056	0.194	0.108	0.073	0.054	0.045	
	470 C1206X474K5RAC	SMD 141-4060	0.220	0.134	0.090	0.068	0.053	
	1000C1206X105K5RACTU	SMD 141-4055	0.430	0.250	0.163	0.122	0.099	
	2200C1206X225K5RACTU	SMD 141-4058	0.520	0.330	0.230	0.167	0.133	
100 Volt								
	10 C1206X103K1RAC	SMD 141-4050	0.178	0.115	0.077	0.057	0.047	
	100 C1206X104K1RAC	SMD 141-4052	0.167	0.099	0.066	0.050	0.040	

1210 Case Size

Order Multiple=10

µF	Mfrs. List No.	Order Code	10+	100+	500+	1K+	4K+	Price Each
25 Volt d.c.								
	10 C1210X106K3RAC	SMD 141-4064	0.780	0.390	0.260	0.194	--	
50 Volt d.c.								
	0.22 C1210X224K5RAC	SMD 141-4065	0.360	0.250	0.174	0.133	0.104	
	1 C1210X105K5RAC	SMD 141-4063	0.410	0.240	0.157	0.119	0.095	
	2.2 C1210X225K5RAC	SMD 141-4066	0.530	0.300	0.198	0.151	0.122	
	4.7 C1210X475K5RAC	SMD 141-4067	0.680	0.330	0.230	0.165	--	
100 Volt d.c.								
	100 C1210X104K1RAC	SMD 141-4062	0.280	0.156	0.104	0.079	0.062	

1812 Case Size

Order Multiple=10

Mfrs. List No.	Order Code	10+	50+	100+	500+	1K+	Price Each
25 Volt							
10µF C1812X106K3RAC-TU	NEW SMD 169-9296	2.32	2.08	1.81	1.39	1.09	
50 Volt							
10nF C1812X103K5RAC-TU	NEW SMD 169-9297	0.50	0.46	0.42	0.31	0.25	
100nF C1812X104K5RAC-TU	NEW SMD 169-9298	0.66	0.60	0.51	0.40	0.30	
1µF C1812X105K5RAC-TU	NEW SMD 169-9299	1.84	1.67	1.50	1.14	0.89	
4.7µF C1812X475K5RAC-TU	NEW SMD 169-9300	2.34	2.11	1.83	1.40	1.09	
100 Volt							
22nF C1812X223K1RAC-TU	NEW SMD 169-9302	0.56	0.50	0.46	0.34	0.28	
47nF C1812X473K1RAC-TU	NEW SMD 169-9303	0.75	0.68	0.61	0.47	0.36	
220nF C1812X224K1RAC-TU	NEW SMD 169-9304	0.79	0.72	0.65	0.50	0.39	
470nF C1812X474K1RAC-TU	NEW SMD 169-9305	1.22	1.08	0.98	0.75	0.58	

1825 Case Size

Order Multiple=10

Mfrs. List No.	Order Code	10+	50+	100+	500+	1K+	Price Each
50 Volt							
2.2µF C1825X225K5RAC-TU	NEW SMD 169-9306	2.85	2.59	2.32	1.78	1.39	

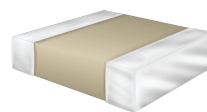
2220 Case Size

Order Multiple=10

Mfrs. List No.	Order Code	10+	50+	100+	500+	+	Price Each
25 Volt							
22µF C2220X226K3RAC-TU	NEW SMD 169-9307	3.52	3.17	2.96	2.08	--	
50 Volt							
470nF C2220X474K5RAC-TU	NEW SMD 169-9308	2.23	2.01	1.86	1.30	--	
2.2µF C2220X225K5RAC-TU	NEW SMD 169-9309	3.47	3.13	2.92	2.06	--	
10µF C2220X106K5RAC-TU	NEW SMD 169-9310	3.13	2.82	2.62	1.86	--	
200 Volt							
100nF C2220X104K2RAC-TU	NEW SMD 169-9311	1.55	1.38	1.30	0.92	--	
220nF C2220X224K2RAC-TU	NEW SMD 169-9312	1.69	1.51	1.38	1.00	--	
1µF C2220X105K2RAC-TU	NEW SMD 169-9314	2.85	2.57	2.39	1.69	--	

Floating Electrode MLCC

FE Series



Performance characteristics
Operating Temperature Tolerance -55°C to +125°C ±10%



- A SMD MLCC which utilises a floating internal electrode design - the electrodes are configured to form multiple capacitors in series within a single MLCC package
- This not only yields improved voltage and ESD performance over standard designs, but also mitigates the risk of low-IR or short-circuit failures that can occur due to board flex

N.B. For ease of selection, capacitance value is listed in both pF and nF.

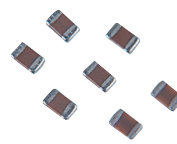
pF	nF	Order Code	10+	100+	500+	1K+	10K+	Price Each
50 Volt d.c. 0402 Case Size X7R								
220	0.22	SMD 152-0249	0.020	--	--	--	--	
1000	1	SMD 152-0248	0.011	0.009	0.007	0.006	0.005	
50 Volt d.c. 0603 Case Size X7R								
1000	1	SMD 152-0252	0.031	0.022	0.014	0.010	0.008	
10000	10	SMD 152-0253	0.030	0.021	0.014	0.010	0.008	
1500	1.5	SMD 152-0254	0.028	--	--	--	--	
220	0.22	SMD 152-0255	0.035	0.024	0.015	0.010	0.009	
2200	2.2	SMD 152-0256	0.015	--	--	--	--	
22000	2.2	SMD 152-0257	0.038	0.026	0.018	0.014	0.010	
2700	2.7	SMD 152-0259	0.028	--	--	--	--	
330	0.33	SMD 152-0261	0.029	--	--	--	--	
3300	3.3	SMD 152-0262	0.025	--	--	--	--	

pF	nF	Order Code	Price Each				
			10+	100+	500+	1K+	10K+
50 Volt d.c. 0603 Case Size X7R							
470	0.47	SMD 152-0263	0.050	0.034	0.024	0.016	0.014
4700	4.7	SMD 152-0264	0.026	--	--	--	--
680	0.68	SMD 152-0265	0.026	--	--	--	--
6800	6.8	SMD 152-0266	0.021	--	--	--	--
50 Volt d.c. 0805 Case Size X7R							
470	0.47	SMD 152-0274	0.052	0.035	0.025	0.017	0.015
2200	2.2	SMD 152-0269	0.018	--	--	--	--
3300	3.3	SMD 152-0272	0.035	0.024	0.016	0.011	0.009
4700	4.7	SMD 152-0275	0.015	--	--	--	--
22000	22	SMD 152-0270	0.022	--	--	--	--
33000	33	SMD 152-0273	0.027	--	--	--	--
50 Volt d.c. 1206 Case Size X7R							
4700	4.7	SMD 152-0282	0.040	--	--	--	--
1000	1	SMD 152-0277	0.041	--	--	--	--
10000	10	SMD 152-0279	0.063	0.043	0.029	0.022	0.016
22000	22	SMD 152-0281	0.051	--	--	--	--
47000	47	SMD 152-0284	0.035	--	--	--	--
200 Volt d.c. 1206 Case Size X7R							
10000	10	SMD 152-0278	0.062	--	--	--	--

Ceramic - Multilayer Chip - Murata

Surface Mount - Chip ceramic

GRM03/15/18/21/31 Series



- Multilayer ceramic chip capacitors
- High performance and reliability
- 0201, 0402, 0603, 0805, and 1206 case sizes
- Nickel barrier terminations
- Conform to IEC 384-10



0201 case size	L=0.6±0.03, W=0.3±0.03, H=0.03 ±0.3
0402 case size	L=1.0±0.05, W=0.5±0.05, H=0.45 to 0.55, P=0.15 to 0.3
0603 case size	L=1.6±0.1, W=0.8±0.1, H=0.7 to 0.9, P=0.25 to 0.65
0805 case size	L=2.0±0.15, W=1.25±0.15, H=0.51 to 1.27, P=0.25 to 0.75
1206 case size	L=3.2±0.15, W=1.60±0.15, H=0.51 to 1.60, P=0.25 to 0.75

Performance Characteristics

	COG	X7R	Y5V
Operating Temperature	-55°C to 125°C	-55°C to 125°C	-55°C to 125°C
Insulation resistance	100,000MΩ	Dielectric strength 2.5VR for 1 minute	

0201 Case Size

Order Multiple=10	Tolerance	Reel Qty	Order Code	Price Each			
				10+	100+	500+	1K+

6.3 Volt d.c. X5R, 0201 Case Size

nF	µF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
22	0.022 ± 10%	1000		NEW 177-5992	0.024	0.018	0.015	0.009
33	0.033 ± 10%	1000		NEW 177-5993	0.026	0.020	0.017	0.009
100	0.1 ± 10%	1000		NEW 177-5994	0.030	0.023	0.019	0.011

10 Volt d.c. X5R, 0201 Case Size

2.2	0.0022 ± 10%	1000		NEW 177-5995	0.020	0.015	0.012	0.007
-----	--------------	------	--	--------------	-------	-------	-------	-------

10 Volt d.c. X7R, 0201 Case Size

3.3	0.0033 ± 10%	1000		NEW 177-5997	0.020	0.015	0.012	0.007
4.7	0.0047 ± 10%	1000		NEW 177-5998	0.020	0.015	0.012	0.007
6.8	0.0068 ± 10%	1000		NEW 177-5999	0.020	0.015	0.012	0.007
10	0.01 ± 10%	1000		NEW 177-6000	0.020	0.015	0.012	0.007

25 Volt d.c. X7R, 0201 Case Size

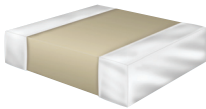
pF	nF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
150	0.15 ± 10%	1000		NEW 177-6001	0.019	0.014	0.011	0.007
220	0.22 ± 10%	1000		NEW 177-6002	0.019	0.014	0.011	0.007
330	0.33 ± 10%	1000		NEW 177-6003	0.019	0.014	0.011	0.007
470	0.47 ± 10%	1000		NEW 177-6004	0.019	0.014	0.011	0.007
680	0.68 ± 10%	1000		NEW 177-6005	0.019	0.014	0.011	0.007
1nF	0.001µF ± 10%	1000		NEW 177-6006	0.019	0.014	0.011	0.007

25 Volt d.c. COG, 0201 Case Size

pF	µF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
0.5	0.0005 ± 0.1pF	1000		NEW 177-6007	0.033	0.025	0.021	0.012
1	0.001 ± 0.25pF	1000		NEW 177-6008	0.019	0.014	0.011	0.007
1.2	0.0012 ± 0.25pF	1000		NEW 177-6011	0.019	0.014	0.011	0.007
1.8	0.0018 ± 0.25pF	1000		NEW 177-6012	0.019	0.014	0.011	0.007
2	0.002 ± 0.25pF	1000		NEW 177-6013	0.019	0.014	0.011	0.007
2.2	0.0022 ± 0.25pF	1000		NEW 177-6014	0.019	0.014	0.011	0.007
3	0.003 ± 0.25pF	1000		NEW 177-6015	0.019	0.014	0.011	0.007
3.9	0.0039 ± 0.25pF	1000		NEW 177-6016	0.019	0.014	0.011	0.007
4	0.004 ± 0.25pF	1000		NEW 177-6017	0.019	0.014	0.011	0.007
4.7	0.0047 ± 0.25pF	1000		NEW 177-6018	0.019	0.014	0.011	0.007
5	0.005 ± 0.25pF	1000		NEW 177-6019	0.019	0.014	0.011	0.007
5.6	0.0056 ± 0.5pF	1000		NEW 177-6020	0.019	0.014	0.011	0.007
6	0.006 ± 0.5pF	1000		NEW 177-6021	0.019	0.014	0.011	0.007
6.8	0.0068 ± 0.5pF	1000		NEW 177-6023	0.019	0.014	0.011	0.007
7	0.007 ± 0.5pF	1000		NEW 177-6024	0.019	0.014	0.011	0.007
8	0.008 ± 0.5pF	1000		NEW 177-6025	0.019	0.014	0.011	0.007
8.2	0.0082 ± 0.5pF	1000		NEW 177-6026	0.019	0.014	0.011	0.007
9	0.009 ± 0.5pF	1000		NEW 177-6027	0.019	0.014	0.011	0.007
10	0.01 ± 0.5pF	1000		NEW 177-6028	0.019	0.014	0.011	0.007
100	0.1 ± 5%	1000		NEW 177-6029	0.019	0.014	0.011	0.007
12	0.012 ± 5%	1000		NEW 177-6030	0.019	0.014	0.011	0.007
15	0.015 ± 5%	1000		NEW 177-6031	0.019	0.014	0.011	0.007
18	0.018 ± 5%	1000		NEW 177-6032	0.019	0.014	0.011	0.007
22	0.022 ± 5%	1000		NEW 177-6033	0.019	0.014	0.011	0.007
27	0.027 ± 5%	1000		NEW 177-6035	0.019	0.014	0.011	0.007
33	0.033 ± 5%	1000		NEW 177-6036	0.019	0.014	0.011	0.007
39	0.039 ± 5%	1000		NEW 177-6037	0.019	0.014	0.011	0.007
47	0.047 ± 5%	1000		NEW 177-6038	0.019	0.014	0.011	0.007
56	0.056 ± 5%	1000		NEW 177-6039	0.019	0.014	0.011	0.007
68	0.068 ± 5%	1000		NEW 177-6040	0.019	0.014	0.011	0.007
82	0.082 ± 5%	1000		NEW 177-6041	0.019	0.014	0.011	0.007

	Order Code	1+	5+	10+
GRM03 Design Kit	NEW 177-6042	68.650	61.790	54.920

Floating Electrode MLCC with Flexible Termination FF Series



Performance characteristics X7R
Operating Temperature -55°C to +125°C
Tolerance ± 10%



- The floating electrode component of these capacitors yields improved voltage and ESD performance over standard designs, and also mitigates the risk of low IR or short circuit failures associated with mechanical flex cracks
- The flexible termination component incorporates a measure of flexibility to the capacitor, shifting stress away from the ceramic body and into the termination area

N.B. For ease of selection, capacitance value is listed in both pF and nF.

495405

pF	nF	Order Code	Price Each				
			10+	100+	500+	1K+	4K+
50 Volt d.c. 0603 Case Size X7R							
220	0.22	SMD 152-0286	0.017	--	--	--	--
470	0.47	SMD 152-0287	0.021	--	--	--	--
2200	2.2	SMD 152-0289	0.013	--	--	--	--
4700	4.7	SMD 152-0290	0.015	--	--	--	--
50 Volt d.c. 0805 Case Size X7R							
220	0.22	SMD 152-0293	0.025	--	--	--	--
470	0.47	SMD 152-0294	0.032	--	--	--	--
1000	1	SMD 152-0296	0.018	--	--	--	--
2200	2.2	SMD 152-0297	0.041	0.021	0.013	0.010	0.008
4700	4.7	SMD 152-0298	0.017	--	--	--	--
22000	22	SMD 152-0302	0.023	--	--	--	--
47000	47	SMD 152-0303	0.028	--	--	--	--
50 Volt d.c. 1206 Case Size X7R							
2200	2.2	SMD 152-0305	0.036	--	--	--	--
4.7	0.0047	SMD 152-0306	0.038	--	--	--	--
10000	10	SMD 152-0307	0.040	--	--	--	--
100000	100	SMD 152-0311	0.078	0.039	0.026	0.020	0.015
100 Volt d.c. 1206 Case Size X7R							
22000	22	SMD 152-0309	0.049	--	--	--	--
200 Volt d.c. 1206 Case Size X7R							
10000	10	SMD 152-0308	0.049	--	--	--	--
100 Volt d.c. 1210 Case Size X7R							
2200	2.2	SMD 152-0312	0.148	--	--	--	--
4700	4.7	SMD 152-0314	0.142	--	--	--	--
47000	47	SMD 152-0316	0.148	--	--	--	--
200 Volt d.c. 1210 Case Size X7R							
10000	10	SMD 152-0315	0.136	--	--	--	--

Help us to help the environment



This catalogue has been printed on paper certified from a sustainable source.

Please recycle after use.



Ceramic - Multilayer Chip - Murata - continued

0201 Case Size - continued

GRM03/15/18/21/31 Series - continued

0402 Case Size

Order Multiple=10				Price Each				
pF	nF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
6.3 Volt d.c. X5R, 0402 Case Size								
470000470000	± 10%	10000		SMD 881-9726	0.089	0.064	0.055	0.046
10 Volt d.c. X5R, 0402 Case Size								
220000220000	± 10%	10000		SMD 881-9718	0.078	0.048	0.042	0.036
16 Volt d.c. X7R, 0402 Case Size								
100000100000	± 10%	10000		SMD 881-9742	0.026	0.016	0.014	0.012
25 Volt d.c. X7R, 0402 Case Size								
10000 10000	± 10%	10000		SMD 881-9734	0.022	0.011	0.009	0.007
50 Volt d.c. COG, 0402 Case Size								
1 1	± 25%	10000		SMD 881-9530	0.024	0.014	0.009	0.007
2.2 2.2	± 11%	10000		SMD 881-9510	0.022	0.011	0.006	0.004
3.3 3.3	± 7%	10000		SMD 881-9637	0.022	0.011	0.006	0.004
4.7 4.7	± 5%	10000		SMD 881-9661	0.022	0.011	0.007	0.005
6.8 6.8	± 0.5pF	10000		SMD 881-9696	0.022	0.011	0.007	0.005
10 10	± 5%	10000		SMD 881-9564	0.025	0.013	0.010	0.008
15 15	± 5%	10000		SMD 881-9599	0.022	0.011	0.006	0.004
22 22	± 5%	10000		SMD 881-9629	0.022	0.011	0.006	0.004
33 33	± 5%	10000		SMD 881-9645	0.022	0.012	0.010	0.008
47 47	± 5%	10000		SMD 881-9670	0.016	0.013	0.011	0.010
68 68	± 5%	10000		SMD 881-9548	0.030	0.015	0.008	0.006
100 100	± 5%	10000		SMD 881-9572	0.024	0.014	0.010	0.008
150 150	± 5%	10000		SMD 881-9602	0.030	0.015	0.008	0.006
220 220	± 5%	10000		SMD 881-9580	0.039	0.020	0.016	0.014
330 330	± 5%	10000		SMD 881-9653	0.049	0.025	0.014	0.009
470 470	± 5%	10000		SMD 881-9688	0.041	0.025	0.021	0.019
680 680	± 5%	10000		SMD 881-9700	0.051	0.026	0.020	0.018
1000 1000	± 5%	10000		SMD 881-9556	0.074	0.037	0.029	0.025
				Order Code	1+	5+	10+	
GRM15 Design Kit				NEW 176-0700	79.210	71.290	63.370	

0603 Case Size

Order Multiple=10				Price Each				
pF	nF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
50 Volt d.c. COG, 0603 Case Size								
1 1	± 25%	4000		SMD 881-9750	0.043	0.022	0.012	0.008
1.5 1.5	± 16%	4000		SMD 881-9769	0.046	0.023	0.013	0.009
2.2 2.2	± 11%	4000		SMD 881-9777	0.046	0.023	0.013	0.009
3.3 3.3	± 7%	4000		SMD 881-9785	0.046	0.023	0.013	0.009
4.7 4.7	± 5%	4000		SMD 881-9793	0.046	0.023	0.013	0.009
6.8 6.8	± 3%	4000		SMD 881-9807	0.070	0.035	0.019	0.013
10 10	± 5%	4000		SMD 881-9815	0.043	0.022	0.018	0.014
15 15	± 5%	4000		SMD 881-9823	0.043	0.022	0.018	0.014
22 22	± 5%	4000		SMD 881-9831	0.043	0.022	0.018	0.014
47 47	± 5%	4000		SMD 881-9840	0.043	0.022	0.018	0.014
68 68	± 5%	4000		SMD 881-9858	0.043	0.022	0.012	0.008
100 100	± 5%	4000		SMD 881-9866	0.046	0.023	0.017	0.014
150 150	± 5%	4000		SMD 881-9874	0.049	0.025	0.014	0.009
220 220	± 5%	4000		SMD 881-9882	0.054	0.027	0.021	0.018
330 330	± 5%	4000		SMD 881-9890	0.058	0.029	0.023	0.020
470 470	± 5%	4000		SMD 881-9904	0.062	0.031	0.017	0.012
680 680	± 5%	4000		SMD 881-9912	0.074	0.037	0.030	0.025
1000 1000	± 5%	4000		SMD 881-9920	0.077	0.040	0.034	0.028
1500 1500	± 5%	4000		SMD 881-9939	0.111	0.055	0.044	0.036
2200 2200	± 5%	4000		SMD 881-9947	0.115	0.058	0.046	0.039
25 Volt d.c. X7R, 0603 Case Size								
47000 47000	± 10%	4000		SMD 882-0007	0.058	0.029	0.016	0.011
50 Volt d.c. X7R, 0603 Case Size								
1000 1000	± 10%	4000		SMD 881-9955	0.035	0.018	0.014	0.010
2200 2200	± 10%	4000		SMD 881-9963	0.036	0.019	0.010	0.007
4700 4700	± 10%	4000		SMD 881-9971	0.036	0.019	0.010	0.007
10000 10000	± 10%	4000		SMD 881-9980	0.035	0.018	0.014	0.010
22000 22000	± 10%	4000		SMD 881-9998	0.050	0.025	0.018	0.015
47000 47000	± 10%	4000		SMD 882-0015	0.070	0.036	0.030	0.025
100000 100000	± 10%	4000		SMD 882-0023	0.062	0.032	0.029	0.023
				Order Code	1+	5+	10+	
GRM18 Design Kit				NEW 176-0702	84.690	76.220	67.760	

0805 Case Size

Order Multiple=10				Price Each				
pF	nF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
50 Volt d.c. COG, 0805 Case Size								
2200 2200	± 5%	4000		SMD 882-0031	0.150	0.076	0.055	0.046
3300 3300	± 5%	4000		SMD 882-0040	0.194	0.098	0.070	0.059
4700 4700	± 5%	4000		SMD 882-0058	0.160	0.114	0.097	0.082
6800 6800	± 5%	4000		SMD 882-0066	0.300	0.152	0.110	0.092
10000 10000	± 5%	4000		SMD 882-0074	0.460	0.230	0.169	0.136
50 Volt d.c. X7R, 0805 Case Size								
4700 4700	± 5%	4000		SMD 882-0082	0.086	0.055	0.035	0.026
10000 10000	± 5%	4000		SMD 882-0090	0.045	0.033	0.029	0.024
22000 22000	± 10%	4000		SMD 882-0104	0.072	0.036	0.020	0.014
47000 47000	± 10%	3000		SMD 882-0112	0.093	0.047	0.035	0.028
100000 100000	± 10%	3000		SMD 882-0120	0.108	0.054	0.044	0.037
220000 220000	± 10%	3000		SMD 882-0139	0.260	0.131	0.093	0.078

1206 Case Size

Order Multiple=10				Price Each				
pF	nF	Tolerance	Reel Qty	Order Code	10+	100+	500+	1K+
50 Volt d.c. COG, 1206 Case Size								
6800 6.8	± 5%	4000		SMD 882-0147	0.540	0.270	0.150	0.104
10000 10	± 5%	4000		SMD 882-0155	0.610	0.310	0.210	0.176
15000 15	± 5%	4000		SMD 882-0163	0.660	0.330	0.182	0.126
18000 18	± 5%	4000		SMD 882-0171	0.660	0.330	0.184	0.127
22000 22	± 5%	4000		SMD 882-0180	0.670	0.340	0.186	0.129
33000 33	± 5%	4000		SMD 882-0198	0.690	0.350	0.230	0.195
47000 47	± 5%	4000		SMD 882-0201	1.080	0.590	0.420	0.310
25 Volt d.c. COG, 1206 Case Size								
100000 100	± 5%	2000		SMD 882-0210	0.900	0.450	0.300	0.250

FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

Ceramic - Multilayer Chip - Yageo

Surface Mount - Nickel Barrier

CG, 2R Series



- Multilayer ceramic chip capacitors
- High performance and reliability
- 0201, 0402, 0603, 0805, 1206 and 1210 case sizes
- Nickel barrier terminations
- Conform to IEC 384-10



0201 case size	L=0.6±0.03, W=0.30±0.03, H=0.23±0.03
0402 case size	L=1.0±0.05, W=0.5±0.05, H=0.45 to 0.55, P=0.15 to 0.3
0603 case size	L=1.6±0.1, W=0.8±0.1, H=0.7 to 0.9, P=0.25 to 0.65
0805 case size	L=2.0±0.15, W=1.25±0.15, H=0.51 to 1.27, P=0.25 to 0.75
1206 case size	L=3.2±0.15, W=1.60±0.15, H=0.51 to 1.60, P=0.25 to 0.75
1210 case size	L=3.2±0.2, W=2.5±0.2, H=0.50 to 1.80

Performance Characteristics

	NPO	X7R	X5R	Y5V
Operating Temperature	-55°C to +125°C	-55°C to +125°C	-25°C to +85°C	-25°C to +85°C
Tolerance	±5%	±10%	±10%	-20% +80%
Insulation resistance	100,000MΩ			Dielectric strength 2.5VR for 1 minute

N.B. For ease of selection, capacitance value is listed in both pF and nF

0201 Case Size

Order Multiple=50				Price Each			
pF	nF	Order Code	50+	100+	1K+	10K+	
33	0.033	SMD 145-8847	0.011	0.009	0.007	0.004	
47	0.047	SMD 145-8848	0.011	0.009	0.007	0.004	
100	0.1	SMD 145-8850	0.016	0.007	0.005	0.004	

Order Multiple=50

50 Volt d.c. NPO, 0201 Case Size				Price Each			
pF	nF	Order Code	50+	100+	1K+	10K+	
2.2	0.0022	SMD 145-8839	0.011	0.009	0.007	0.004	
3.3	0.0033	SMD 145-8841	0.011	0.009	0.007	0.004	
10	0.01	SMD 145-8844	0.014	0.010	0.0		

Order Multiple=50

25 Volt d.c. X7R, 0201 Case Size		Price Each				
pF	nF	Order Code	50+	100+	1K+	10K+
680	0.68	SMD145-8856	0.010	0.008	0.006	0.004
1000	1	SMD145-8857	0.021	0.016	0.010	0.007

Order Multiple=50

16 Volt d.c. X7R, 0201 Case Size		Price Each				
pF	nF	Order Code	50+	100+	1K+	10K+
1500	1.5	SMD145-8858	0.011	0.008	0.006	0.004
2200	2.2	SMD145-8859	0.021	0.016	0.010	0.007
3300	3.3	SMD145-8860	0.010	0.008	0.006	0.004

0402 Case Size

Tolerance <4.7pF ±0.25pF, 5.8pF to 8.2pF ±0.5pF, >10pF ±5%

Order Multiple=10

50 Volt d.c. NPO, 0402 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
0.47	0.00047	SMD301-9081	0.030	0.024	0.016	0.014
0.56	0.00056	SMD301-9093	0.023	0.018	0.012	0.010
1	0.001	SMD301-9100	0.031	0.015	0.007	0.006
1.5	0.0015	SMD301-9111	0.030	0.024	0.016	0.014
2.2	0.0022	SMD301-9123	0.030	0.024	0.016	0.014
3.3	0.0033	SMD301-9135	0.029	0.023	0.016	0.014
4.7	0.0047	SMD301-9147	0.030	0.024	0.017	0.014
6.8	0.0068	SMD301-9159	0.028	0.022	0.016	0.014
10	0.01	SMD301-9160	0.025	0.019	0.011	0.010
15	0.015	SMD301-9172	0.025	0.019	0.011	0.010
22	0.022	SMD301-9184	0.025	0.019	0.011	0.010
33	0.033	SMD301-9196	0.025	0.019	0.011	0.010
47	0.047	SMD301-9202	0.025	0.019	0.011	0.010
68	0.068	SMD301-9214	0.025	0.019	0.011	0.010
100	0.1	SMD301-9226	0.025	0.019	0.011	0.010
150	0.15	SMD301-9238	0.023	0.018	0.012	0.010
220	0.22	SMD301-9240	0.029	0.023	0.016	0.014

Order Multiple=10

10 Volt d.c. X5R, 0402 Case Size		Price Each				
nF	µF	Order Code	10+	100+	1K+	10K+
1	1	SMD145-8896	0.079	0.062	0.049	0.040

Order Multiple=10

50 Volt d.c. X7R, 0402 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
100	0.1	SMD301-9329	0.022	0.017	0.012	0.011
220	0.22	SMD301-9342	0.020	0.017	0.013	0.011
330	0.33	SMD301-9354	0.018	0.015	0.009	0.008
470	0.47	SMD301-9366	0.009	0.007	0.006	0.005
680	0.68	SMD301-9378	0.029	0.023	0.016	0.014
1000	1	SMD301-9380	0.030	0.024	0.017	0.014
1500	1.5	SMD301-9391	0.029	0.023	0.016	0.014
2200	2.2	SMD301-9408	0.030	0.024	0.016	0.014
3300	3.3	SMD301-9410	0.030	0.024	0.016	0.014

Order Multiple=10

25 Volt d.c. X7R, 0402 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
3300	3.3	SMD301-9305	0.029	0.024	0.019	0.017
4700	4.7	SMD301-9317	0.018	0.014	0.010	0.009

Order Multiple=10

16 Volt d.c. X7R, 0402 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
4700	4.7	SMD301-9251	0.034	0.027	0.020	0.016
6800	6.8	SMD301-9263	0.036	0.028	0.020	0.016
10000	10	SMD301-9275	0.036	0.028	0.021	0.016
15000	15	SMD301-9287	0.021	0.016	0.011	0.009
22000	22	SMD301-9299	0.036	0.028	0.020	0.016

Order Multiple=10

16 Volt d.c. Y5V, 0402 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
10000	10	SMD301-9421	0.034	0.027	0.020	0.016
22000	22	SMD301-9445	0.014	0.011	0.008	0.007
33000	33	SMD301-9457	0.034	0.027	0.020	0.016
47000	47	SMD301-9469	0.034	0.027	0.021	0.016
68000	68	SMD301-9470	0.016	0.014	0.010	0.008
100000	100	SMD301-9482	0.034	0.027	0.020	0.016

0603 Case Size

Tolerance <4.7pF ±0.25pF, 5.8pF to 8.2pF ±0.5pF, >10pF ±5%

Order Multiple=10

50 Volt d.c. NPO, 0603 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
0.47	0.00047	SMD721-803	0.034	0.027	0.021	0.016
0.56	0.00056	SMD721-815	0.034	0.027	0.021	0.016
0.68	0.00068	SMD721-827	0.034	0.027	0.021	0.016
0.82	0.00082	SMD721-839	0.025	0.019	0.012	0.010
1	0.001	SMD721-840	0.034	0.027	0.021	0.016
1.2	0.0012	SMD721-852	0.034	0.027	0.021	0.016
1.5	0.0015	SMD721-864	0.034	0.027	0.021	0.016
1.8	0.0018	SMD721-876	0.025	0.019	0.012	0.010
2.2	0.0022	SMD721-888	0.034	0.027	0.021	0.016
2.7	0.0027	SMD721-890	0.034	0.027	0.021	0.016
3.3	0.0033	SMD721-906	0.034	0.027	0.021	0.016
3.9	0.0039	SMD721-918	0.034	0.027	0.021	0.016
4.7	0.0047	SMD721-920	0.034	0.027	0.021	0.016
5.6	0.0056	SMD721-931	0.034	0.027	0.021	0.016
6.8	0.0068	SMD721-943	0.034	0.027	0.021	0.016
8.2	0.0082	SMD721-955	0.037	0.029	0.022	0.017
10	0.01	SMD721-967	0.034	0.027	0.021	0.016
12	0.012	SMD721-979	0.034	0.027	0.021	0.016
15	0.015	SMD721-980	0.034	0.027	0.021	0.016
18	0.018	SMD721-992	0.034	0.027	0.021	0.016
22	0.022	SMD722-005	0.034	0.027	0.021	0.016
27	0.027	SMD722-017	0.036	0.028	0.021	0.016
33	0.033	SMD722-029	0.036	0.028	0.021	0.016
39	0.039	SMD722-030	0.036	0.028	0.021	0.016
47	0.047	SMD722-042	0.036	0.028	0.021	0.016
56	0.056	SMD722-054	0.036	0.028	0.021	0.016
68	0.068	SMD722-066	0.040	0.029	0.023	0.017
82	0.082	SMD722-078	0.037	0.029	0.022	0.017
100	0.1	SMD722-080	0.038	0.029	0.022	0.017
120	0.12	SMD722-091	0.040	0.030	0.024	0.017
150	0.15	SMD722-108	0.043	0.032	0.025	0.021
180	0.18	SMD301-9494	0.040	0.029	0.023	0.017
220	0.22	SMD430-948	0.034	0.026	0.021	0.016
270	0.27	SMD301-9500	0.037	0.028	0.020	0.016
330	0.33	SMD430-973	0.036	0.028	0.021	0.016
390	0.39	SMD301-9512	0.032	0.026	0.017	0.015
470	0.47	SMD430-985	0.036	0.028	0.021	0.016
560	0.56	SMD301-9524	0.038	0.029	0.022	0.017
680	0.68	SMD430-997	0.040	0.030	0.024	0.017

Order Multiple=10

16 Volt d.c. X5R, 0603 Case Size		Price Each				
nF	µF	Order Code	10+	100+	1K+	10K+
2.2	2.2	SMD145-8897	0.164	0.123	0.092	0.068

Order Multiple=10

10 Volt d.c. X5R, 0603 Case Size		Price Each				
nF	µF	Order Code	10+	100+	1K+	10K+
4.7	4.7	SMD145-8898	0.270	0.210	0.152	0.109

Order Multiple=10

6.3 Volt d.c. X5R, 0603 Case Size		Price Each				
nF	µF	Order Code	10+	100+	1K+	10K+
10	10	SMD145-8902	0.69	0.51	0.39	0.28

Order Multiple=10

10 Volt d.c. X7R, 0603 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
150000	150	SMD335-2006	0.022	0.017	0.013	0.011
180000	180	SMD335-2018	0.079	0.062	0.044	0.041
220000	220	SMD335-2020	0.121	0.095	0.069	0.061

Order Multiple=10

16 Volt d.c. X7R, 0603 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
33000	33	SMD432-015	0.027	0.022	0.018	0.015
39000	39	SMD301-9536	0.037	0.029	0.021	0.017
47000	47	SMD432-027	0.036	0.028	0.021	0.016
56000	56	SMD301-9548	0.037	0.029	0.021	0.017
68000	68	SMD432-192	0.037	0.029	0.021	0.017
82000	82	SMD301-9550	0.042	0.032	0.024	0.021
100000	100	SMD432-210	0.040	0.030	0.024	0.017
1000000	1000	SMD145-8900	0.075	0.057	0.043	0.033

Order Multiple=10

25 Volt d.c. X7R, 0603 Case Size		Price Each				
pF	nF	Order Code	10+	100+	1K+	10K+
10000	10	SMD301-9561	0.025	0.019	0.012	0.010
12000	12	SMD301-9573	0.025	0.019	0.012	0.010
15000	15	SMD722-248	0.041	0.031	0.024	0.021
18000	18	SMD301-9585	0.028	0.021	0.015	0.012
22000	22	SMD722-250	0.047	0.034	0.027	0.024
27000	27	SMD301-9597	0.032	0.025	0.017	0.014



Ceramic - Multilayer Chip - Yageo - continued

0201 Case Size - continued

CG, 2R Series - continued

Order Multiple=10

50 Volt d.c. X7R, 0603 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
100	0.1	SMD722-110 RL	0.034	0.027	0.021	0.016
120	0.12	SMD301-9603 RL	0.030	0.024	0.016	0.014
150	0.15	SMD722-121 RL	0.034	0.027	0.021	0.016
180	0.18	SMD301-9615 RL	0.030	0.024	0.016	0.014
220	0.22	SMD722-133 RL	0.034	0.027	0.021	0.016
270	0.27	SMD301-9627 RL	0.030	0.024	0.016	0.014
330	0.33	SMD722-145 RL	0.033	0.026	0.020	0.016
390	0.39	SMD301-9639 RL	0.030	0.024	0.016	0.014
470	0.47	SMD722-157 RL	0.024	0.017	0.011	0.009
560	0.56	SMD301-9640 RL	0.030	0.024	0.016	0.014
680	0.68	SMD722-169 RL	0.034	0.027	0.020	0.016
820	0.82	SMD301-9652 RL	0.030	0.024	0.017	0.014
1000	1	SMD722-170 RL	0.034	0.027	0.021	0.016
1200	1.2	SMD301-9668 RL	0.030	0.024	0.016	0.014
1500	1.5	SMD722-182 RL	0.036	0.028	0.021	0.016
1800	1.8	SMD301-9676 RL	0.030	0.024	0.016	0.014
2200	2.2	SMD722-194 RL	0.018	0.014	0.010	0.008
2700	2.7	SMD301-9688 RL	0.030	0.024	0.017	0.014
3300	3.3	SMD722-200 RL	0.038	0.029	0.022	0.017
3900	3.9	SMD301-9690 RL	0.030	0.024	0.016	0.014
4700	4.7	SMD722-212 RL	0.038	0.030	0.022	0.017
5600	5.6	SMD301-9706 RL	0.030	0.024	0.017	0.014
6800	6.8	SMD722-224 RL	0.038	0.030	0.022	0.017
8200	8.2	SMD301-9718 RL	0.030	0.024	0.016	0.014
10000	10	SMD722-236 RL	0.024	0.017	0.012	0.009
12000	12	SMD301-9720 RL	0.029	0.023	0.016	0.014
15000	15	SMD301-9731 RL	0.030	0.024	0.016	0.014
18000	18	SMD301-9743 RL	0.030	0.024	0.017	0.014
22000	22	SMD301-9755 RL	0.030	0.024	0.017	0.014
100000	100	SMD136-2556 RL	0.027	0.025	0.024	0.023

Order Multiple=10

10 Volt d.c. Y5V, 0603 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
1000	1	SMD318-8840 RL	0.061	0.048	0.033	0.030

Order Multiple=10

16 Volt d.c. Y5V, 0603 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
150000	150	SMD431-151 RL	0.041	0.031	0.024	0.021
220000	220	SMD431-199 RL	0.044	0.033	0.026	0.024
470000	470	SMD318-8851 RL	0.061	0.048	0.036	0.031
2200000	2200	SMD145-8901 RL	0.055	0.046	0.034	0.029

Order Multiple=10

50 Volt d.c. Y5V, 0603 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
10000	10	SMD431-590 RL	0.040	0.030	0.023	0.017
22000	22	SMD431-941 RL	0.018	0.015	0.012	0.009
47000	47	SMD431-965 RL	0.040	0.030	0.023	0.017
68000	68	SMD431-977 RL	0.026	0.022	0.018	0.014
100000	100	SMD431-989 RL	0.037	0.029	0.022	0.017

0805 Case Size

Order Multiple=10

50 Volt d.c. NPO, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
22	0.022	SMD136-2555 RL	0.022	0.021	0.020	0.019
33	0.033	SMD136-2559 RL	0.022	0.021	0.020	0.019
47	0.047	SMD136-2560 RL	0.022	0.021	0.020	0.019
100	0.1	SMD360-6028 RL	0.056	0.044	0.030	0.027
180	0.18	SMD718-476 RL	0.056	0.044	0.030	0.027
220	0.22	SMD718-488 RL	0.056	0.044	0.032	0.028
270	0.27	SMD718-490 RL	0.056	0.044	0.030	0.027
330	0.33	SMD718-506 RL	0.061	0.048	0.036	0.031
390	0.39	SMD718-518 RL	0.060	0.046	0.034	0.031
470	0.47	SMD718-520 RL	0.061	0.048	0.036	0.031
560	0.56	SMD718-531 RL	0.060	0.046	0.034	0.031
680	0.68	SMD718-543 RL	0.064	0.049	0.037	0.033
820	0.82	SMD718-555 RL	0.064	0.049	0.037	0.033
1000	1	SMD718-567 RL	0.076	0.058	0.043	0.038

Order Multiple=10

10 Volt d.c. X7R, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
330000	330	SMD335-2031 RL	0.062	0.054	0.044	0.042
470000	470	SMD335-2043 RL	0.055	0.045	0.037	0.032
680000	680	SMD335-2055 RL	0.182	0.140	0.103	0.089
1000000	1000	SMD335-2067 RL	0.240	0.181	0.133	0.119

Order Multiple=10

16 Volt d.c. X7R, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
47000	47	SMD644-146 RL	0.042	0.035	0.028	0.025
68000	68	SMD644-158 RL	0.063	0.049	0.036	0.033
100000	100	SMD644-160 RL	0.076	0.058	0.043	0.038
150000	150	SMD644-171 RL	0.112	0.087	0.063	0.057
220000	220	SMD644-183 RL	0.171	0.131	0.096	0.084
330000	330	SMD318-8875 RL	0.126	0.098	0.072	0.064
470000	470	SMD318-8887 RL	0.177	0.136	0.100	0.087

Order Multiple=10

25 Volt d.c. X7R, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
10000	10	SMD301-9767 RL	0.056	0.044	0.032	0.028
12000	12	SMD301-9779 RL	0.055	0.043	0.030	0.027
15000	15	SMD301-9780 RL	0.025	0.019	0.014	0.013
18000	18	SMD301-9792 RL	0.055	0.043	0.030	0.027
22000	22	SMD301-9809 RL	0.055	0.043	0.030	0.027
33000	33	SMD301-9822 RL	0.022	0.018	0.013	0.012
39000	39	SMD644-195 RL	0.059	0.047	0.032	0.030
47000	47	SMD644-201 RL	0.029	0.023	0.016	0.015
56000	56	SMD644-213 RL	0.066	0.051	0.037	0.033
68000	68	SMD644-225 RL	0.033	0.026	0.019	0.017
82000	82	SMD644-237 RL	0.083	0.063	0.048	0.042
100000	100	SMD644-249 RL	0.085	0.064	0.049	0.043
1000000	1000	SMD145-8903 RL	0.068	0.051	0.038	0.028
2200000	2200	SMD145-8904 RL	0.220	0.163	0.122	0.088

Order Multiple=10

50 Volt d.c. X7R, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
220	0.22	SMD301-9834 RL	0.042	0.032	0.024	0.021
330	0.33	SMD301-9846 RL	0.041	0.031	0.024	0.021
470	0.47	SMD301-9858 RL	0.042	0.032	0.024	0.021
680	0.68	SMD301-9860 RL	0.042	0.032	0.024	0.021
1000	1	SMD301-9871 RL	0.042	0.032	0.024	0.021
1500	1.5	SMD301-9883 RL	0.042	0.032	0.024	0.021
2200	2.2	SMD301-9895 RL	0.042	0.032	0.024	0.021
3300	3.3	SMD301-9901 RL	0.042	0.032	0.024	0.021
4700	4.7	SMD301-9913 RL	0.042	0.032	0.024	0.021
6800	6.8	SMD301-9925 RL	0.056	0.044	0.030	0.027
10000	10	SMD301-9937 RL	0.056	0.044	0.032	0.028
15000	15	SMD718-658 RL	0.044	0.033	0.026	0.024
22000	22	SMD718-660 RL	0.048	0.036	0.028	0.024
33000	33	SMD718-671 RL	0.060	0.046	0.032	0.030
47000	47	SMD718-683 RL	0.059	0.046	0.033	0.029
100000	100	SMD301-9949 RL	0.115	0.088	0.064	0.058

Order Multiple=10

100 Volt d.c. X7R, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
1000	1	SMD136-2553 RL	0.028	0.026	0.025	0.024
10000	10	SMD136-2561 RL	0.028	0.026	0.025	0.024

Order Multiple=10

10 Volt d.c. Y5V, 0805 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
3300	3.3	SMD318-8863 RL	0.094	0.073	0.053	0.048

Order Multiple=10

16 Volt d.c. Y5V, 0805 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
1500	1.5	SMD318-8905 RL	0.175	0.135	0.099	0.088
2200	2.2	SMD318-8917 RL	0.175	0.135	0.099	0.088
10000	10	SMD145-8906 RL	0.250	0.189	0.141	0.103

Order Multiple=10

50 Volt d.c. Y5V, 0805 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
100000	100	SMD136-2552 RL	0.023	0.022	0.021	0.020
1000000	1000	SMD145-8907 RL	0.147	0.110	0.081	0.060

1206 Case Size

Order Multiple=10

50 Volt d.c. NPO, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
10	0.01	SMD360-6030 RL	0.070	0.053	0.040	0.036
22	0.022	SMD360-6041 RL	0.073	0.057	0.042	0.038
33	0.033	SMD360-6053 RL	0.073	0.057	0.042	0.038
47	0.047	SMD360-6065 RL	0.073	0.057	0.042	0.038
100	0.1	SMD360-6077 RL	0.073	0.057	0.042	0.038
220	0.22	SMD360-6089 RL	0.097	0.074	0.056	0.048
330	0.33	SMD360-6090 RL	0.097	0.074	0.056	0.048
470	0.47	SMD360-6107 RL	0.097	0.074	0.056	0.048
1000	1	SMD360-6119 RL	0.097	0.074	0.056	0.048
1200	1.2	SMD718-579 RL	0.104	0.081	0.059	0.052
1500	1.5	SMD718-580 RL	0.114	0.088	0.064	0.058
1800	1.8	SMD718-592 RL	0.126	0.098	0.071	0.064
2200	2.2	SMD718-609 RL	0.139	0.108	0.079	0.071
2700	2.7	SMD718-610 RL	0.153	0.118	0.086	0.077
3300	3.3	SMD718-622 RL	0.177	0.136	0.100	0.087

Order Multiple=10

200 Volt d.c. NPO, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
10	0.01	SMD491-160 RL	0.142	0.110	0.080	0.072
100	0.1	SMD491-172 RL	0.104	0.081	0.060	0.053
470	0.47	SMD491-184 RL	0.156	0.121	0.087	0.078

Order Multiple=10

500 Volt d.c. NPO, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
10	0.01	SMD491-226 RL	0.040	0.030	0.023	0.020
100	0.1	SMD491-238 RL	0.173	0.132	0.098	0.084

Order Multiple=10

6.3 Volt d.c. X5R, 1206 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
22000	22	SMD145-8914	0.56	0.42	0.30	0.23

Order Multiple=10

10 Volt d.c. X7R, 1206 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
1500	1.5	SMD335-2080 RL	0.132	0.098	0.073	0.064
2200	2.2	SMD335-2092 RL	0.270	0.200	0.148	0.131

Order Multiple=10

16 Volt d.c. X7R, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
220000	220	SMD644-250 RL	0.155	0.120	0.087	0.078
330000	330	SMD644-262 RL	0.240	0.178	0.131	0.115
470000	470	SMD644-274 RL	0.340	0.260	0.191	0.168
680000	680	SMD644-286 RL	0.430	0.330	0.250	0.220
1000000	1000	SMD318-8966 RL	0.193	0.149	0.110	0.097
10000000	10000	SMD145-8910	0.500	0.370	0.280	0.210

Order Multiple=10

25 Volt d.c. X7R, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
100000	100	SMD644-316 RL	0.061	0.048	0.036	0.031
120000	120	SMD644-328 RL	0.111	0.085	0.063	0.056
150000	150	SMD644-330 RL	0.061	0.047	0.035	0.031
180000	180	SMD644-341 RL	0.065	0.050	0.037	0.033
220000	220	SMD644-353 RL	0.181	0.140	0.102	0.089
2200000	2200	SMD145-8911	0.270	0.210	0.152	0.109
4700000	4700	SMD145-8912	0.320	0.240	0.179	0.131

Order Multiple=10

50 Volt d.c. X7R, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
1000	1	SMD136-2558	0.042	0.040	0.036	0.034
2200	2.2	SMD360-6120 RL	0.077	0.057	0.043	0.038
3300	3.3	SMD360-6132 RL	0.075	0.056	0.042	0.037
4700	4.7	SMD360-6144 RL	0.077	0.057	0.043	0.038
10000	10	SMD360-6156 RL	0.078	0.059	0.044	0.038
22000	22	SMD360-6168 RL	0.032	0.023	0.017	0.015
33000	33	SMD360-6170 RL	0.073	0.057	0.041	0.037
47000	47	SMD360-6181 RL	0.071	0.055	0.038	0.035
68000	68	SMD718-634 RL	0.084	0.064	0.047	0.042
100000	100	SMD718-646 RL	0.144	0.111	0.080	0.072
220000	220	SMD136-2557	0.078	0.074	0.069	0.066
1000000	1000	SMD145-8913	0.186	0.140	0.104	0.076

Order Multiple=10

100 Volt d.c. X7R, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
100000	100	SMD136-2554	0.084	0.080	0.075	0.072

Order Multiple=10

200 Volt d.c. X7R, 1206 Case Size

pF	nF	Order Code	10+	100+	1K+	10K+
1000	1	SMD491-196 RL	0.100	0.077	0.057	0.049
10000	10	SMD491-202 RL	0.111	0.084	0.062	0.056
22000	22	SMD491-214 RL	0.140	0.109	0.079	0.071

Order Multiple=10

10 Volt d.c. Y5V, 1206 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
10000	10	SMD318-8954 RL	0.340	0.270	0.192	0.170

Order Multiple=10

16 Volt d.c. Y5V, 1206 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
1000	1	SMD318-8978 RL	0.134	0.103	0.076	0.068
2200	2.2	SMD318-9016 RL	0.110	0.095	0.078	0.072
3300	3.3	SMD318-9030 RL	0.240	0.174	0.129	0.113
4700	4.7	SMD318-9053 RL	0.250	0.186	0.138	0.121
22000	22	SMD145-8916	0.430	0.320	0.240	0.174

Order Multiple=10

25 Volt d.c. Y5V, 1206 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
10000	10	SMD145-8919	0.360	0.270	0.210	0.148

Order Multiple=10

50 Volt d.c. Y5V, 1206 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
1000	1	SMD145-8915	0.147	0.110	0.081	0.060

Order Multiple=10

16 Volt d.c. X5R, 1210 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
22	22	SMD145-8921	1.31	0.98	0.73	0.54

Order Multiple=10

16 Volt d.c. Y5V, 1210 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
22	22	SMD145-8923	0.480	0.360	0.270	0.196

Order Multiple=10

25 Volt d.c. Y5V, 1210 Case Size

nF	µF	Order Code	10+	100+	1K+	10K+
10	10	SMD145-8922	0.350	0.260	0.196	0.141

Capacitance Conversion Table

0.000001µF	=	0.001nF	=	1pF
0.00001µF	=	0.01nF	=	10pF
0.0001µF	=	0.1nF	=	100pF
0.001µF	=	1nF	=	1000pF
0.01µF	=	10nF	=	10000pF
0.1µF	=	100nF	=	100000pF
1µF	=	1000nF	=	1000000pF
10µF	=	10000nF	=	10000000pF
100µF	=	100000nF	=	100000000pF

0402 – Nickel Barrier Kit

Phycomp YAGEO SMD

- 0402 case size multilayer ceramic capacitor kit
- 3 dielectrics
- Sturdy A4 binder

Kit contains 95 each of the following:

NPO 50V 0.47pF, 0.68pF, 1.0pF, 1.5pF, 2.2pF, 3.3pF, 4.7pF, 6.8pF, 10pF, 15pF, 22pF, 33pF, 47pF, 68pF, 100pF, 150pF, 220pF

X7R 16V 6.8nF, 10nF, 15nF, 22nF

X7R 25V 4.7nF

X7R 50V 100pF, 150pF, 220pF, 330pF, 470pF, 680pF, 1.0nF, 1.5nF, 2.2nF, 3.3nF

Y5V 16V 10nF, 15nF, 22nF, 33nF, 47nF, 68nF, 100nF

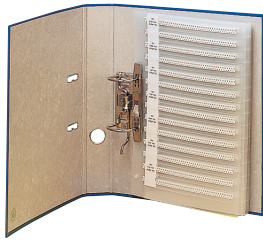
Order Code	1+	5+	10+	
0402 Kit	SMD302-0150	375.44	364.18	326.39

Over half a million products available online QGO



Ceramic - Multilayer Chip - Yageo - continued

0603 - Nickel Barrier Kit



- 0603 case size multilayer ceramic
- capacitor kit
- 3 dielectrics
- Sturdy A4 binder

Kit contains 48 each of the following:
 NPO 50V 0.47pF, 0.68pF, 1.0pF, 1.5pF, 2.2pF, 3.3pF, 4.7pF, 6.8pF, 10pF, 15pF, 22pF, 33pF, 47pF, 68pF, 100pF, 150pF, 220pF, 330pF, 470pF, 680pF
 X7R 50V 100pF, 150pF, 220pF, 330pF, 470pF, 680pF, 1nF, 1.5nF, 2.2nF, 3.3nF, 4.7nF, 6.8nF, 10nF, 33nF, 47nF, 68nF, 100nF
 X7R 25V 15nF, 22nF
 Y5V 16V 150nF, 220nF
 Y5V 50V 10nF, 15nF, 22nF, 33nF, 47nF, 68nF, 100nF

208510

Order Code	Price Each			
	1+	5+	10+	
0603 Kit	SMD 157-922	375.44	364.18	326.39

Ceramic - Multilayer High CV - Multicomp

Low Profile Hi-Cap MLCC



0805	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
6.3 V dc	Characteristic	Tolerance	Code			
2.2µF	X5R	± 10%	SMD 175-9473	0.032	0.024	0.019
4.7µF	X5R	± 10%	SMD 175-9475	0.027	0.021	0.016
10µF	X5R	± 20%	SMD 175-9476	0.036	0.027	0.021
10 V dc						
2.2µF	X5R	± 10%	SMD 175-9477	0.032	0.024	0.019
4.7µF	Y5V	-20%, +80%	SMD 175-9478	0.020	0.015	0.010
16 V dc						
1µF	X5R	± 10%	SMD 175-9479	0.027	0.021	0.016
2.2µF	Y5V	-20%, +80%	SMD 175-9480	0.020	0.015	0.010
2.2µF	X5R	± 10%	SMD 175-9481	0.035	0.027	0.020
4.7µF	Y5V	-20%, +80%	SMD 175-9482	0.020	0.015	0.010

547007

1206	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
6.3 V dc	Characteristic	Tolerance	Code			
10µF	X5R	± 20%	SMD 175-9483	0.069	0.052	0.040
10 V dc						
2.2µF	X5R	± 10%	SMD 175-9484	0.064	0.048	0.036
10µF	Y5V	-20%, +80%	SMD 175-9485	0.037	0.028	0.021
22µF	Y5V	-20%, +80%	SMD 175-9487	0.112	0.086	0.064

Hi-Cap MLCC



0402	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
6.3 V dc	Characteristic	Tolerance	Code			
0.22µF	X5R	± 10%	SMD 175-9373	0.009	0.007	0.006
0.47µF	X5R	± 10%	SMD 175-9374	0.009	0.007	0.006
1µF	X5R	± 10%	SMD 175-9375	0.007	0.006	0.005
2.2µF	X5R	± 20%	SMD 175-9376	0.038	0.032	0.028

10 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
0.056µF	X5R	± 10%	SMD 175-9377	0.006	0.004	0.003
0.068µF	X5R	± 10%	SMD 175-9378	0.006	0.004	0.003
0.082µF	X5R	± 10%	SMD 175-9379	0.006	0.004	0.003
0.1µF	X5R	± 10%	SMD 175-9380	0.006	0.004	0.003
1µF	X5R	± 20%	SMD 175-9381	0.008	0.006	0.005

16 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
0.027µF	X5R	± 10%	SMD 175-9382	0.006	0.004	0.003
0.033µF	X5R	± 10%	SMD 175-9384	0.006	0.004	0.003
0.039µF	X5R	± 10%	SMD 175-9385	0.006	0.004	0.003
0.047µF	X5R	± 10%	SMD 175-9386	0.006	0.004	0.003
0.068µF	X5R	± 10%	SMD 175-9387	0.007	0.005	0.004
0.1µF	X5R	± 10%	SMD 175-9388	0.006	0.004	0.003
0.22µF	X5R	± 10%	SMD 175-9389	0.009	0.008	0.007

0603	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
6.3 V dc	Characteristic	Tolerance	Code			
0.82µF	X5R	± 10%	SMD 175-9390	0.012	0.009	0.007
1µF	X5R	± 10%	SMD 175-9391	0.008	0.006	0.004
2.2µF	X5R	± 10%	SMD 175-9392	0.018	0.014	0.009
10µF	X5R	± 20%	SMD 175-9393	0.068	0.051	0.038

10 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
0.33µF	X5R	± 10%	SMD 175-9394	0.010	0.008	0.006
0.47µF	X5R	± 10%	SMD 175-9396	0.011	0.008	0.006
0.68µF	X5R	± 10%	SMD 175-9397	0.012	0.009	0.007
1µF	Y5V	-20%, +80%	SMD 175-9398	0.006	0.004	0.003
1µF	X5R	± 10%	SMD 175-9399	0.008	0.006	0.004
2.2µF	Y5V	-20%, +80%	SMD 175-9400	0.015	0.011	0.008
2.2µF	X5R	± 20%	SMD 175-9402	0.020	0.014	0.010

16 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
0.22µF	X5R	± 10%	SMD 175-9403	0.011	0.008	0.006
0.33µF	X5R	± 10%	SMD 175-9404	0.011	0.008	0.006
0.47µF	X5R	± 10%	SMD 175-9405	0.011	0.008	0.006
0.68µF	X5R	± 10%	SMD 175-9406	0.012	0.009	0.007
1µF	X5R	± 10%	SMD 175-9407	0.009	0.007	0.005
1µF	Y5V	-20%, +80%	SMD 175-9408	0.006	0.004	0.003

25 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
1µF	X5R	± 10%	SMD 175-9409	0.012	0.009	0.007

0805	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
6.3 V dc	Characteristic	Tolerance	Code			
1.5µF	X5R	± 10%	SMD 175-9410	0.027	0.021	0.016
2.2µF	X5R	± 10%	SMD 175-9411	0.025	0.019	0.015
3.3µF	X5R	± 10%	SMD 175-9412	0.027	0.021	0.016
4.7µF	X5R	± 10%	SMD 175-9414	0.025	0.019	0.015
22µF	X5R	± 20%	SMD 175-9415	0.082	0.062	0.047

10 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
2.2µF	X5R	± 10%	SMD 175-9416	0.029	0.022	0.017
3.3µF	Y5V	-20%, +80%	SMD 175-9417	0.029	0.021	0.016
3.3µF	X5R	± 10%	SMD 175-9418	0.032	0.025	0.019
4.7µF	Y5V	-20%, +80%	SMD 175-9419	0.018	0.012	0.009
4.7µF	X5R	± 10%	SMD 175-9420	0.029	0.022	0.017
10µF	Y5V	-20%, +80%	SMD 175-9421	0.026	0.020	0.015

16 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
1µF	Y5V	-20%, +80%	SMD 175-9422	0.011	0.008	0.006
1.5µF	Y5V	-20%, +80%	SMD 175-9423	0.021	0.016	0.011
2.2µF	Y5V	-20%, +80%	SMD 175-9424	0.016	0.012	0.009
2.2µF	X5R	± 10%	SMD 175-9426	0.043	0.032	0.024
4.7µF	Y5V	-20%, +80%	SMD 175-9427	0.018	0.012	0.009
4.7µF	X5R	± 10%	SMD 175-9428	0.043	0.032	0.024

25 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
1µF	Y5V	-20%, +80%	SMD 175-9429	0.011	0.008	0.006
2.2µF	X5R	± 10%	SMD 175-9430	0.061	0.047	0.035
4.7µF	X5R	± 10%	SMD 175-9431	0.061	0.047	0.035

50 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
1µF	Y5V	-20%, +80%	SMD 175-9432	0.015	0.011	0.008

1206	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
10 V dc	Characteristic	Tolerance	Code			
1.5µF	X7R	± 10%	SMD 175-9433	0.073	0.055	0.042
10µF	Y5V	-20%, +80%	SMD 175-9434	0.035	0.027	0.020
22µF	Y5V	-20%, +80%	SMD 175-9435	0.067	0.050	0.037

16 V dc	Dielectric	Capacitance	Order	Price Each		
				100+	500+	1K+
1µF	X7R	± 10%	SMD 175-9436	0.036	0.028	0.021
1µF	Y5V	-20%, +80%	SMD 175-9438	0.032	0.025	0.019
1.5µF	X7R	± 10%	SMD 175-9439	0.077	0.058	0.044
1.5µF	Y5V	-20%, +80%	SMD 175-9440	0.036	0.028	0.021

1206	Dielectric	Capacitance	Order	Price Each		
10 V dc	Characteristic	Tolerance	Code	10+	250+	1K+
16 V dc						
2.2µF	X7R	± 10%	SMD175-9441	0.070	0.052	0.040
2.2µF	Y5V	-20%, +80%	SMD175-9442	0.033	0.025	0.019
3.3µF	Y5V	-20%, +80%	SMD175-9443	0.034	0.026	0.020
4.7µF	Y5V	-20%, +80%	SMD175-9444	0.026	0.020	0.015
10µF	Y5V	-20%, +80%	SMD175-9445	0.044	0.032	0.025
1µF	X7R	± 10%	SMD175-9446	0.041	0.030	0.023

25 V dc	Dielectric	Capacitance	Order	Price Each		
10 V dc	Characteristic	Tolerance	Code	10+	250+	500+
1µF	Y5V	-20%, +80%	SMD175-9447	0.032	0.025	0.019
1.5µF	Y5V	-20%, +80%	SMD175-9448	0.036	0.028	0.021
2.2µF	Y5V	-20%, +80%	SMD175-9451	0.033	0.025	0.019
4.7µF	Y5V	-20%, +80%	SMD175-9452	0.033	0.025	0.019
10µF	Y5V	-20%, +80%	SMD175-9453	0.068	0.051	0.038

1210	Dielectric	Capacitance	Order	Price Each		
6.3 V dc	Characteristic	Tolerance	Code	10+	250+	500+
22µF	X5R	± 20%	SMD175-9456	0.200	0.153	0.114
100µF	X5R	± 20%	SMD175-9457	0.730	0.550	0.420

10 V dc	Dielectric	Capacitance	Order	Price Each		
16 V dc	Characteristic	Tolerance	Code	10+	250+	500+
10µF	X5R	± 10%	SMD175-9458	0.124	0.094	0.070
22µF	Y5V	-20%, +80%	SMD175-9459	0.128	0.097	0.073
22µF	X5R	± 20%	SMD175-9460	0.200	0.153	0.114
47µF	X5R	± 20%	SMD175-9461	0.620	0.470	0.350
4.7µF	X5R	± 10%	SMD175-9463	0.124	0.094	0.070
10µF	Y5V	-20%, +80%	SMD175-9464	0.095	0.072	0.054
10µF	X5R	± 10%	SMD175-9465	0.124	0.094	0.070
22µF	Y5V	-20%, +80%	SMD175-9466	0.138	0.105	0.079
22µF	X5R	± 20%	SMD175-9467	0.230	0.172	0.129

25 V dc	Dielectric	Capacitance	Order	Price Each		
50 V dc	Characteristic	Tolerance	Code	10+	250+	500+
4.7µF	X5R	± 10%	SMD175-9468	0.140	0.106	0.080
10µF	Y5V	-20%, +80%	SMD175-9469	0.103	0.078	0.058
10µF	X5R	± 20%	SMD175-9470	0.220	0.163	0.123
4.7µF	Y5V	-20%, +80%	SMD175-9471	0.139	0.106	0.079

1812	Dielectric	Capacitance	Order	Price Each		
100 V dc	Characteristic	Tolerance	Code	10+	250+	500+
1µF	X7R	± 20%	SMD175-9472	0.210	0.157	0.118

546972

Ceramic - Multilayer High CV - Kemet

RL FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

Multilayer ceramic-Hi-Cap 0402 - 2220 Sizes



KEMET multilayer ceramic chip capacitors are produced in plants designed specifically for chip capacitor manufacture. The process features a high degree of mechanization, as well as precise conditions. Extensive technology, engineering and quality assurance programs supplement the manufacturing. Standard end terminations use a nickel barrier layer and a tin over-plate to provide excellent soldering ability for the customer.

Operating Temperature	COG / NP0	X5R	X7R	Y5V
-55°C to +125°C	-55°C to +85°C	-55°C to +125°C	-30°C to +85°C	

0402 Case Size

	Voltage (V)	Tolerance	Order Code	10+	100+	1K+	4K+
COG							
2.2nF	25	± 5%	SMD153-5555	0.220	0.146	0.098	0.075
0.47nF	50	± 5%	SMD153-5556	0.198	0.135	0.095	0.071
0.68nF	50	± 5%	SMD153-5557	0.198	0.135	0.095	0.071
1nF	50	± 5%	SMD153-5558	0.125	0.062	0.042	0.031
1.5nF	50	± 5%	SMD153-5561	0.230	0.148	0.098	0.075
0.47nF	100	± 5%	SMD153-5562	0.250	0.170	0.118	0.088
1nF	100	± 5%	SMD153-5563	0.260	0.153	0.103	0.077
X5R							
3.3µF	4	± 20%	SMD157-2621	0.240	0.100	0.064	0.061
4.7µF	4	± 20%	SMD157-2622	0.490	0.280	0.187	0.140
0.22µF	6.3	± 10%	SMD157-2610	0.041	0.024	0.015	0.011
2.2µF	6.3	± 20%	SMD128-8200	0.680	0.420	0.300	0.250

	Voltage (V)	Tolerance	Order Code	10+	100+	1K+	4K+
X5R							
1µF	6.3	± 10%	SMD128-8253	0.057	0.049	0.042	0.034
0.1µF	10	± 10%	SMD128-8282	0.017	0.008	0.005	0.004
1µF	10	± 10%	NEW 179-3827	0.068	0.057	0.049	0.042
X7R							
0.1µF	16	± 10%	SMD128-8252	0.023	0.020	0.016	0.014
0.01µF	25	± 5%	SMD169-2285	0.010	0.008	0.007	--

0603 Case Size

	Voltage (V)	Tolerance	Order Code	1+	25+	50+	100+
COG							
15nF	25	± 5%	SMD153-5564	0.250	0.137	0.092	0.069
2.2nF	50	± 5%	SMD153-5565	0.168	0.103	0.069	0.052
3.3nF	50	± 5%	SMD153-5566	0.187	0.107	0.072	0.053
4.7nF	50	± 5%	SMD153-5567	0.187	0.107	0.072	0.053
6.8nF	50	± 5%	SMD153-5568	0.220	0.132	0.088	0.066
1.5nF	100	± 5%	SMD153-5569	0.320	0.173	0.113	0.085
X5R							
2.2µF	6.3	± 10%	SMD128-8257	0.126	0.106	0.088	0.072
3.3µF	6.3	± 20%	SMD110-8324	0.179	0.161	0.142	0.125
4.7µF	6.3	± 10%	SMD922-7784	0.190	0.168	0.151	0.131
10µF	6.3	± 20%	SMD128-8201	1.010	0.610	0.450	0.350
1µF	10	± 10%	SMD922-7776	0.063	0.056	0.050	0.044
2.2µF	10	± 10%	SMD110-8322	0.190	0.168	0.152	0.133
4.7µF	10	± 10%	SMD157-2625	0.270	0.163	0.108	0.082
0.68µF	16	± 10%	SMD157-2624	0.076	0.041	0.027	0.020
1µF	16	± 10%	SMD128-8256	0.066	0.057	0.050	0.042
1µF	16	± 10%	SMD146-3388	0.013	0.006	--	--
2.2µF	16	± 10%	SMD128-8203	0.270	0.168	0.112	0.099
1µF	25	± 10%	SMD128-8202	0.082	0.048	0.036	0.028
X7R							
0.1µF	16	± 5%	SMD165-0834	0.025	0.022	0.019	0.017
1µF	16	± 10%	SMD165-0837	0.132	0.115	0.103	0.100
0.1µF	50	± 10%	SMD128-8255	0.020	0.018	0.015	0.014
0.1µF	50	± 10%	SMD169-2286	0.021	0.017	0.014	--
0.12µF	50	± 10%	NEW 179-3828	0.028	0.024	0.021	0.018
0.01µF	200	± 10%	SMD128-8254	0.111	0.095	0.079	0.066

0805 Case Size

	Voltage (V)	Tolerance	Order Code	1+	25+	50+	100+
COG							
4.7nF	25	± 5%	SMD153-5570	0.680	0.390	0.250	0.189
6.8nF	50	± 5%	SMD153-5571	0.480	0.310	0.220	0.159
10nF	50	± 5%	SMD153-5573	0.480	0.270	0.182	0.136
15nF	50	± 5%	SMD153-5574	0.600	0.320	0.210	0.159
22nF	50	± 5%	SMD153-5575	0.560	0.310	0.220	0.159
3.3nF	100	± 5%	SMD153-5576	0.440	0.260	0.172	0.128
4.7nF	100	± 5%	SMD153-5577	0.450	0.280	0.184	0.139
X5R							
47µF	4	± 20%	SMD128-8205	4.310	2.690	1.980	1.550
4.7µF	6.3	± 10%	SMD922-7857	0.189	0.174	0.159	0.144
10µF	6.3	± 10%	SMD922-7814	0.250	0.210	0.194	0.161
22µF	6.3	± 20%	SMD110-8326	1.060	0.960	0.880	0.750
47µF	6.3	± 20%	SMD157-2633	2.280	1.320	0.880	0.650
2.2µF	10	± 10%	SMD922-7822	0.220	0.210	0.188	0.176
6.8µF	10	± 10%	SMD157-2632	0.720	0.420	0.280	0.210
10µF	10	± 10%	SMD146-3362	0.270	0.137	0.096	--
3.3µF	16	± 10%	SMD157-2630	0.390	0.220	0.147	0.109
4.7µF	16	± 10%	SMD922-7849	0.250	0.230	0.192	0.174
10µF	16	± 10%	SMD128-8204	0.700	0.440	0.310	0.240
1µF	25	± 10%	SMD146-3389	0.300	0.270	0.220	--
4.7µF	25	± 10%	SMD157-2631	0.350	0.200	0.135	0.100
Y5V							
1µF	16	+80%, -20%	SMD922-7806	0.040	0.030	0.024	0.015
2.2µF	16	+80%, -20%	SMD922-7830	0.084	0.072	0.057	0.042
X7R							
0.47µF	16	± 10%	SMD128-8279	0.041	--	--	--
1µF	16	± 10%	SMD922-7792	0.069	--	--	--
2.2µF	16	± 10%	SMD128-8262	0.140	0.115	0.098	0.083
0.47µF	25	± 10%	SMD128-8281	0.111	0.076	0.047	0.029
1µF	25	± 10%	SMD163-7035	0.099	0.049	0.033	0.025
0.01µF	50	± 10%	SMD169-2287	0.010	0.008	0.007	--
0.22µF	50	± 10%	SMD128-8261	0.260	--	--	--
0.1µF	100	± 10%	SMD165-0862	0.088	0.072	0.062	0.060
0.12µF	100	± 10%	SMD128-8259	0.100	0.084	0.069	0.056
0.22µF	100	± 10%	NEW 179-3829	0.134	0.113	0.099	0.084

Passive Components

7 Capacitors



Ceramic - Multilayer High CV - Kemet - continued

0603 Case Size - continued

1206 Case Size

Voltage Tolerance (V)	Order Code	Price Each			
		10+	100+	1K+	4K+
COG					
15nF 50 ± 5%	SMD153-5578	1.200	0.790	0.520	0.410
22nF 50 ± 5%	SMD153-5579	1.170	0.760	0.500	0.370
33nF 50 ± 5%	SMD153-5580	1.270	0.760	0.500	0.370
47nF 50 ± 5%	SMD153-5581	1.460	0.830	0.540	0.420
68nF 50 ± 5%	SMD153-5582	1.400	0.700	0.470	0.340
6.8nF 100 ± 5%	SMD153-5583	0.760	0.470	0.310	0.240
X5R					
10µF 6.3 ± 10%	SMD128-8286	0.300	0.192	0.107	0.062
22µF 6.3 ± 10%	SMD128-8265	0.760	0.630	0.540	0.460
100µF 6.3 ± 20%	SMD135-8552	2.650	1.800	1.180	0.880
10µF 10 ± 10%	SMD922-7890	0.250	0.230	0.178	0.170
22µF 10 ± 20%	SMD157-2634	0.600	0.360	0.240	0.180
47µF 10 ± 20%	SMD157-2639	1.810	1.070	0.730	0.530
3.3µF 16 ± 10%	SMD157-2636	0.390	0.230	0.153	0.113
4.7µF 16 ± 10%	SMD922-7946	0.360	0.330	0.300	0.270
6.8µF 16 ± 10%	SMD157-2638	0.550	0.320	0.220	0.163
10µF 16 ± 10%	SMD922-7821	0.290	0.260	0.240	0.192
10µF 16 ± 10%	SMD146-3365	0.133	0.124	0.112	--
4.7µF 25 ± 10%	SMD922-7938	0.680	0.600	0.540	0.440
10µF 25 ± 10%	SMD128-8206	0.910	0.540	0.410	0.310
4.7µF 50 ± 10%	SMD157-2637	0.580	0.350	0.230	0.173
Y5V					
10µF 10 +80%, -20%	SMD922-7903	0.115	0.102	0.093	0.090
2.2µF 16 +80%, -20%	SMD922-7920	0.121	0.108	0.094	0.077
4.7µF 16 +80%, -20%	SMD922-7954	0.126	0.108	0.092	0.077
1µF 25 +80%, -20%	SMD922-7873	0.055	0.047	0.035	0.028
X7R					
10µF 10 ± 10%	SMD128-8264	0.187	0.159	0.132	0.110
1µF 16 ± 10%	SMD165-8888	0.050	0.047	0.045	0.030
2.2µF 16 ± 10%	SMD922-7911	0.175	--	--	--
10µF 16 ± 10%	SMD146-3368	0.560	0.310	0.250	--
0.47µF 25 ± 10%	SMD128-8280	0.071	0.030	0.026	0.019
1µF 25 ± 10%	SMD922-7865	0.087	0.073	0.061	0.050
4.7µF 25 ± 10%	SMD128-8211	0.730	0.460	0.350	0.280
0.1µF 50 ± 10%	SMD165-8887	0.026	0.023	0.020	0.015
0.68µF 50 ± 10%	SMD128-8263	0.450	0.390	0.310	0.270
1µF 50 ± 10%	SMD128-8207	0.700	0.440	0.320	0.260
2.2µF 50 ± 10%	SMD128-8208	0.770	0.480	0.340	0.260

1210 Case Size

Voltage Tolerance (V)	Order Code	Price Each			
		1+	25+	50+	100+
COG					
100nF 50 ± 5%	SMD153-5585	2.870	1.710	1.130	0.850
150nF 50 ± 5%	SMD153-5586	2.050	1.030	0.690	0.500
100nF 100 ± 5%	SMD153-5587	3.230	2.080	1.380	1.030
X5R					
22µF 6.3 ± 10%	SMD922-7997	0.770	0.710	0.640	0.580
47µF 6.3 ± 20%	SMD110-8327	1.190	1.090	1.030	0.920
100µF 6.3 ± 20%	SMD110-8328	2.250	2.060	1.910	1.720
10µF 10 ± 10%	SMD922-7970	0.520	0.480	0.420	0.370
22µF 16 ± 10%	SMD128-8266	0.790	0.660	0.540	0.460
22µF 16 ± 10%	SMD146-3394	0.720	0.690	0.480	--
Y5V					
10µF 16 +80%, -20%	SMD922-7989	0.610	0.550	0.500	0.450
X7R					
10µF 6.3 ± 10%	SMD128-8212	0.890	0.540	0.410	0.330
4.7µF 10 ± 10%	SMD128-8216	0.760	0.470	0.320	0.270
22µF 10 ± 10%	NEW 179-3830	0.880	0.750	0.650	0.550
10µF 16 ± 10%	SMD128-8213	1.080	0.680	0.500	0.370
4.7µF 25 ± 10%	SMD128-8217	0.660	--	--	--
10µF 25 ± 10%	SMD135-8512	0.970	--	--	--
1µF 50 ± 10%	SMD922-7962	0.260	0.210	0.192	0.168
2.2µF 50 ± 10%	SMD128-8214	0.810	0.500	0.350	0.290
3.3µF 50 ± 10%	SMD128-8215	0.960	--	--	--
4.7µF 50 ± 10%	SMD135-8511	0.950	--	--	--
1µF 100 ± 10%	NEW 179-3831	0.320	0.280	0.240	0.210
2.2µF 100 ± 10%	NEW 179-3832	0.310	0.260	0.230	0.198

1812 Case Size

Voltage (V)	Tolerance	Order Code	Price Each			
			10+	100+	1K+	2K+
COG						
33nF 50	± 5%	SMD167-9453	1.050	0.520	0.350	0.210
47nF 50	± 5%	SMD167-9455	0.980	0.490	0.330	0.198
220nF 50	± 5%	SMD167-9456	1.230	0.610	0.410	0.250
100nF 100	± 5%	SMD167-9457	1.300	0.660	0.440	0.260
150nF 100	± 5%	SMD167-9458	1.360	0.690	0.460	0.270
X7R						
10µF 25	± 10%	SMD135-8500	2.840	1.790	1.320	1.030
0.47µF 50	± 10%	SMD128-8285	0.750	0.550	0.300	0.220
1µF 50	± 10%	SMD922-9094	0.690	0.590	0.500	0.450
4.7µF 50	± 10%	SMD135-8499	2.400	1.530	1.110	0.880
2.2µF 100	± 20%	NEW 179-3833	1.760	1.490	1.290	1.100

2220 Case Size

Voltage (V)	Tolerance	Order Code	Price Each			
			10+	100+	1K+	2K+
COG						
220nF 50	± 5%	SMD167-9459	2.39	1.20	0.79	0.48
470nF 50	± 5%	SMD167-9460	2.62	1.30	0.87	0.57
100nF 100	± 5%	SMD167-9461	2.36	1.18	0.79	0.48
150nF 100	± 5%	SMD167-9462	1.16	0.84	0.65	0.49
330nF 100	± 5%	SMD167-9463	3.32	1.66	1.10	0.67
X7R						
22µF 25	± 10%	NEW 179-3835	2.18	1.85	1.60	1.36
1µF 50	± 10%	SMD128-8284	1.11	0.70	0.34	0.27
10µF 50	± 10%	NEW 179-3836	1.76	1.49	1.29	1.10

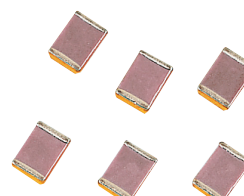
Ceramic - Multilayer High CV - Murata

Hi-Cap Multilayer Ceramic Capacitors



The Hi-Cap range has been designed to replace products such as electrolytic and tantalum capacitors, where high capacitance values are required in a small space. Ceramic offers many advantages including longer life, greater reliability, and superior high frequency performance. In noise bypassing and decoupling applications, tantalum devices can be replaced with a lower value Hi-Cap (due to better Z and ESR), enabling designers to use a smaller and lower cost part. Combine this with being non-polarised and, by definition fail-safe, Hi-Cap is the preferred choice for capacitors in the range of 1µF to 100µF.

Hi-Cap MLCC - Surface Mount



- High performance multilayer ceramic chip capacitors
- Capacitance range 1 to 100µF
- Voltage range 6.3 to 50V d.c.
- Designed for use as alternative to electrolytic and tantalum capacitors

Operating temperature	X5R		X7R		Y5V	
	Capacitance (µF)	Voltage (V d.c.)	Case Size	Reel Quantity	Mfrs. List No.	Order Code
-55°C to +85°C	1	6.3	0603	4000	GRM188R60J105KA01D	952-7699
-55°C to +125°C	1	10	0402	10000	GRM155R61A105KE15D	173-5523
-55°C to +85°C	2.2	16	0603	4000	GRM188R61C225KE15D	173-5526
	4.7	4	0402	10000	GRM155R60G475ME	173-5525
	4.7	6.3	0805	3000	GRM219R60J475KE19D	952-2999
	4.7	6.3	0603	4000	GRM188R60J475KE19D	173-5527
	4.7	25	0805	3000	GRM21BR61E475KA12L	173-5529
	10	4	0603	4000	GRM188R60G106ME47	780-6558
	10	6.3	0603	4000	GRM188R60J106ME47D	173-5528
	10	10	1210	1000	GRM32ER61A106KA01L	952-7796
	10	16	0805	3000	GRM21BR61C106KE15L	176-2635
	10	25	0805	3000	GRM21BR61E106KA73L	173-5530
	10	35	1206	2000	GRM31CR6YA106KA12L	179-7011
	22	6.3	0805	3000	GRM21BR60J226ME39L	173-5531
	22	16	1206	2000	GRM31CR61C226ME15L	173-5533
	22	16	1210	3000	GRM32ER61C226KE20L	952-7800
	22	25	1210	1000	GRM32ER61E226ME15L	173-5539
	22	25	1206	2000	GRM31CR61E226KE15L	179-7010
	47	6.3	1206	2000	GRM31CR60J476ME19L	173-5534
	47	6.3	1210	1000	GRM32ER60J476ME20L	952-7788
	47	10	1206	2000	GRM31CR61A476ME15L	179-7008
	47	16	1210	1000	GRM32ER61C476ME15L	173-5538
	100	6.3	1206	2000	GRM31CR60J107ME39L	173-5535
	100	6.3	1812	5000	GRM43SR60J107ME20L	952-7834
	100	6.3	2220	300	GRM55FR60J107KA01L	952-7842
X7R						
	1	16	0805	3000	GRM21BR71C105KA01L	952-7710
	1	25	0603	4000	GRM188R71E105KA12D	173-5540
	1	25	1206	3000	GRM31MR71E105KA01L	952-7761

Capacitance (µF)	Voltage (V d.c.)	Case Size	Reel Quantity	Mfrs. List No.	Order Code
X7R					
1	50	0805	3000	GRM21BR71H105KA12L	173-5541
1	50	1210	1000	GRM32RR71H105KA01L	952-7826
1	100	1206	2000	GRM31CR72A105KA01L	173-5543
2.2	10	0603	4000	GRM188R71A225KE15D	179-7012
2.2	50	1206	2000	GRM31CR71H225KA88L	179-7017
2.2	16	1206	3000	GRM31MR71C225KA35L	952-7753
2.2	25	0805	3000	GRM21BR71E225KA73L	173-5542
2.2	25	1206	3000	GRM31MR71E225KA93L	173-5544
2.2	100	1210	1000	GRM32ER72A225KA35L	173-5547
4.7	10	1206	2000	GRM31CR71A475KA01L	952-7737
4.7	16	0805	3000	GRM21BR71C475KA73L	179-7015
4.7	50	1206	2000	GRM31CR71H475KA12L	173-5545
10	6.3	1206	1000	GRM31CR70J106KA01L	952-7729
10	25	1206	2000	GRM31CR71E106KA12L	173-5546
10	35	1210	1000	GRM32ER7YA106KA12L	173-5537
22	10	1206	2000	GRM31CR71A226KE15L	179-7016
22	25	1210	1000	GRM32ER71E226KE15L	179-7019
47	10	1210	1000	GRM32ER71A476KE15L	179-7018
Y5V					
2.2	25	0805	3000	GRM21BF51E225ZA01L	952-7702
10	10	1206	3000	GRM31MF51A106ZA01L	952-7745
22	10	1210	1000	GRM32CF51A226ZA01L	952-7770
10	25	1210	2000	GRM32NF51E106ZA01L	952-7818

333794

Order Multiple=10		Price Each					
µF	Volts d.c.	Order Code	10+	50+	100+	500+	1K+

X5R							
1	6.3	SMD 952-7699	0.058	0.031	0.017	0.012	0.011
1	10	NEW SMD 173-5523	0.042	0.035	0.025	0.019	0.015
2.2	16	NEW SMD 173-5526	0.107	0.089	0.062	0.047	0.037
4.7	4	NEW SMD 173-5525	0.250	0.210	0.145	0.109	0.086
4.7	6.3	SMD 952-2999	0.370	0.260	0.167	0.125	0.111
4.7	6.3	NEW SMD 173-5527	0.137	0.114	0.080	0.060	0.048
4.7	25	NEW SMD 173-5529	0.210	0.175	0.122	0.092	0.073
10	4	SMD 780-6558	0.550	0.480	0.410	0.350	0.310
10	6.3	NEW SMD 173-5528	0.360	0.300	0.210	0.157	0.124
10	10	SMD 952-7796	0.550	0.370	0.250	0.182	0.162
10	16	NEW SMD 176-2635	0.125	0.113	0.102	0.094	0.076
10	25	NEW SMD 173-5530	0.320	0.270	0.187	0.141	0.112
10	35	NEW SMD 179-7011	0.195	0.164	0.134	0.111	0.094
22	6.3	NEW SMD 173-5531	0.530	0.450	0.310	0.240	0.187
22	16	NEW SMD 173-5533	0.840	0.700	0.490	0.360	0.290
22	16	SMD 952-7800	1.610	1.400	0.810	0.680	0.620
22	25	NEW SMD 173-5539	1.660	1.140	0.740	0.550	0.490
22	25	NEW SMD 179-7010	0.250	0.214	0.176	0.145	0.122
47	6.3	NEW SMD 173-5534	1.480	1.230	0.850	0.650	0.510
47	6.3	SMD 952-7788	0.790	0.670	0.530	0.460	0.400
47	10	NEW SMD 179-7008	0.420	0.350	0.290	0.237	0.200
47	16	NEW SMD 173-5538	1.540	--	--	--	--
100	6.3	NEW SMD 173-5535	1.830	--	--	--	--
100	6.3	SMD 952-7834	6.180	4.480	3.860	3.190	2.900
100	6.3	SMD 952-7842	6.700	--	--	--	--
X7R							
1	16	SMD 952-7710	0.088	0.056	0.031	0.022	0.020
1	25	NEW SMD 173-5540	0.198	0.165	0.114	0.087	0.069
1	25	SMD 952-7761	0.118	0.098	0.063	0.047	0.042
1	50	NEW SMD 173-5541	0.280	0.240	0.163	0.124	0.098
1	50	SMD 952-7826	0.360	0.320	0.186	0.151	0.140
1	100	NEW SMD 173-5543	0.830	0.690	0.480	0.360	0.290
2.2	10	NEW SMD 179-7012	0.085	0.072	0.059	0.049	0.041
2.2	16	SMD 952-7753	0.135	0.115	0.075	0.056	0.050
2.2	25	NEW SMD 173-5542	0.430	0.350	0.250	0.185	0.147
2.2	25	NEW SMD 173-5544	0.200	0.171	0.119	0.089	0.071
2.2	50	NEW SMD 179-7017	0.107	0.090	0.074	0.061	0.051
2.2	100	NEW SMD 173-5547	1.570	1.080	0.700	0.520	0.470
4.7	10	SMD 952-7737	0.290	0.193	0.106	0.074	0.069
4.7	16	NEW SMD 179-7015	0.182	0.153	0.126	0.104	0.087
4.7	50	NEW SMD 173-5545	0.840	--	--	--	--
10	6.3	SMD 952-7729	0.330	0.250	0.140	0.097	0.089
10	25	NEW SMD 173-5546	0.760	0.620	0.440	0.330	0.260
10	35	NEW SMD 173-5537	2.130	1.480	0.960	0.710	0.630
22	10	NEW SMD 179-7016	0.510	0.430	0.360	0.290	0.250
22	25	NEW SMD 179-7019	1.140	0.960	0.790	0.650	0.550
47	10	NEW SMD 179-7018	1.160	0.970	0.800	0.660	0.560
Y5V							
2.2	25	SMD 952-7702	0.107	0.073	0.041	0.028	0.026
10	10	SMD 952-7745	0.220	0.110	0.060	0.042	0.039
22	10	SMD 952-7770	0.650	0.370	0.210	0.141	0.131
10	25	SMD 952-7818	0.530	0.350	0.196	0.135	0.124

Over half a million products available online

0402-1210 Class 2 Hi Cap series Kit

muRata



- Capacitor kit
- 0402-1210
- 6.3 to 50 VDC
- Blue Binder with Sleeves
- For Kit Contents, Please See Datasheet



546808

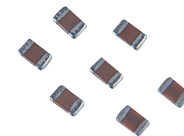
Order Code	1+	5+	10+
176-0699	112.45	101.20	89.95

Capacitance Conversion Table				
0.000001µF	=	0.001nF	=	1pF
0.00001µF	=	0.01nF	=	10pF
0.0001µF	=	0.1nF	=	100pF
0.001µF	=	1nF	=	1000pF
0.01µF	=	10nF	=	10000pF
0.1µF	=	100nF	=	100000pF
1µF	=	1000nF	=	1000000pF
10µF	=	10000nF	=	10000000pF
100µF	=	100000nF	=	100000000pF

Ceramic - Multilayer High CV - Yageo

Hi-Cap

Phycomp YAGEO



- Multilayer ceramic chip capacitors
- High performance and reliability
- 0402, 0603, 0805, 1206, 1210 and 1812 case sizes
- Nickel barrier terminations
- Conform to IEC 60-68

Performance Characteristics

	X5R	X7R	Y5V
Operating Temperature	-55°C to +85°C	-55°C to +125°C	-25°C to +85°C
Tolerance	±10%	±10%	20% to 80%

0402 Case Size

Order Multiple=10		Price Each				
µF	Dielectric	Order Code	10+	100+	1K+	10K+
6.3 Volt d.c.						
1	X5R	SMD 940-2063	0.116	0.094	0.080	0.070
1	Y5V	SMD 940-2071	0.115	0.093	0.080	0.070
10 Volt d.c.						
0.22	X5R	SMD 940-2055	0.115	0.094	0.080	0.070
16 Volt d.c.						
0.1	X7R	SMD 940-2047	0.118	0.094	0.081	0.071

0603 Case Size

Order Multiple=10		Price Each				
µF	Dielectric	Order Code	10+	100+	1K+	10K+
6.3 Volt d.c.						
2.2	X5R	SMD 940-2101	0.082	0.071	0.069	0.070
4.7	X5R	SMD 940-2110	0.164	0.141	0.116	0.070
4.7	Y5V	SMD 940-2128	0.107	0.095	0.076	0.070
10 Volt d.c.						
1	X5R	SMD 940-2080	0.060	0.055	0.046	0.070
2.2	Y5V	SMD 940-2098	0.059	0.055	0.046	0.071

0805 Case Size

Order Multiple=10		Price Each				
µF	Dielectric	Order Code	10+	100+	1K+	10K+
10 Volt d.c.						
2.2	X7R	SMD 940-2152	0.141	0.118	0.100	0.081
4.7	X5R	SMD 940-2160	0.164	0.140	0.124	0.070
10	X5R	SMD 940-2136	0.240	0.199	0.177	0.076
10	Y5V	SMD 940-2144	0.163	0.140	0.116	0.070

1206 Case Size

Order Multiple=10		Price Each				
µF	Dielectric	Order Code	10+	100+	1K+	10K+
10 Volt d.c.						
4.7	X7R	SMD 940-2195	0.196	0.179	0.149	0.081
10	X5R	SMD 940-2179	0.320	0.270	0.240	0.070
22	Y5V	SMD 940-2187	0.270	0.250	0.210	0.076

Passive Components

7

Capacitors



Ceramic - Multilayer High CV - Yageo - continued

Hi-Cap - continued

1210 Case Size

Order Multiple=10		Price Each				
µF	Dielectric	Order Code	10+	100+	1K+	10K+
10 Volt d.c.						
22	X5R	SMD 940-2233	0.910	0.800	0.690	0.580
22	Y5V	SMD 940-2241	0.270	0.230	0.200	0.580
25 Volt d.c.						
10	X5R	SMD 940-2217	0.650	0.570	0.460	0.580
4.7	X5R	SMD 940-2250	0.430	0.370	0.330	0.580
1	X7R	SMD 940-2225	0.210	0.187	0.151	0.580

1812 Case Size

N.B. Order codes 9402268 and 9402209 are of ±20% tolerance.

411910

Order Multiple=10		Price Each				
µF	Dielectric	Order Code	10+	100+	1K+	10K+
50 Volt d.c.						
1	X7R	SMD 940-2284	0.57	0.49	0.43	0.58

Ceramic - Multilayer Arrays - Yageo

CA0508 Series



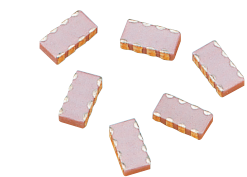
Operating Temperature -55°C to +125°C
 Temperature coefficient ±15% @ 20°C
 Tolerance ± 10%
 Voltage Rating 16V & 50V
 HxWxD(mm) 0.5x2x1.25

- Nickel-barrier end termination
 - High volumetric efficiency
 - F
- our 0402 capacitors in one 1220 package

555359

Order Multiple=10		Price Each				
	Order Code	10+	50+	100+	1K+	4K+
16 Volt						
10nF	177-9474	0.129	0.111	0.093	0.074	0.061
100nF	177-9475	0.144	0.123	0.103	0.082	0.068
50 Volt						
10pF	177-9476	0.056	0.048	0.041	0.032	0.027
100pF	177-9477	0.056	0.048	0.041	0.032	0.027

0612 Series - Arrays



- Four 0603 capacitors of the same value on one array
- Saves placement time and cost, reduced amount of board space needed
- Each individual capacitor element has Nickel barrier terminations for improved solderability
- 4000 per reel

H = 0.8 min 1.2 max, W = 1.6±0.15, D = 3.2±0.15

Operating Temperature -55°C to +125°C
 Temperature coefficient (0±30) x 10⁶/K
 Tolerance ±5%
 Climatic category (IEC) 55/125/56

X7R -55°C to +125°C ±15% @ 20°C
 Y5V -25°C to +85°C -20% +80% ±10%

Mfrs. List No. 06122CGXXYJ9B200 where XX=capacitance value and Y=multiplier in pF

Order Multiple=10		Price Each				
pF	Order Code	10+	50+	100+	1K+	4K+
50 Volt d.c. NPO						
22	SMD156-693	0.192	0.157	0.144	0.122	0.095
47	SMD156-711	0.188	0.154	0.141	0.119	0.093
100	SMD156-723	0.260	0.210	0.180	0.146	0.131
220	SMD156-735	0.250	0.200	0.175	0.141	0.128
330	SMD156-747	0.370	0.290	0.260	0.210	0.179
470	SMD156-759	0.350	0.290	0.260	0.220	0.166

Mfrs. List No. 06122RXXYKSB200 where XX=capacitance value and Y=multiplier in pF

Order Multiple=10		Price Each				
pF	Order Code	10+	50+	100+	1K+	4K+
16 Volt d.c. X7R						
10000	SMD335-1865	0.320	0.280	0.260	0.170	0.108
47000	SMD335-1907	0.150	0.131	0.125	0.080	0.063
100000	SMD335-1920	0.500	0.460	0.420	0.330	0.166

Mfrs. List No. 06122RXXYKSB200 where XX=capacitance value and Y=multiplier in pF

Order Multiple=10		Price Each				
pF	Order Code	10+	50+	100+	1K+	4K+
50 Volt d.c. X7R						
1000	SMD156-772	0.360	0.280	0.260	0.210	0.165
2200	SMD156-784	0.280	0.230	0.200	0.163	0.131
4700	SMD156-802	0.280	0.230	0.200	0.163	0.131

Order Multiple=10		Price Each				
pF	Order Code	10+	50+	100+	1K+	4K+
25 Volt d.c. X7R						
10000	SMD156-814	0.168	0.137	0.120	0.098	0.079
47000	SMD156-840	0.360	0.280	0.260	0.210	0.165

Mfrs. List No. 06122FXXY8B20D where XX=capacitance value and Y=multiplier in pF

208541

Order Multiple=10		Price Each				
pF	Order Code	10+	50+	100+	1K+	4K+
25 Volt d.c. Y5V						
100000	SMD335-1993	0.340	0.290	0.280	0.181	0.142

Capacitance Conversion Table

0.000001µF	=	0.001nF	=	1pF
0.00001µF	=	0.01nF	=	10pF
0.0001µF	=	0.1nF	=	100pF
0.001µF	=	1nF	=	1000pF
0.01µF	=	10nF	=	10000pF
0.1µF	=	100nF	=	100000pF
1µF	=	1000nF	=	1000000pF
10µF	=	10000nF	=	10000000pF
100µF	=	100000nF	=	100000000pF

Ceramic - High Voltage - Multicomp

High Voltage MLCC



0805	Dielectric	Capacitance	Order	Price Each		
200 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
15pF	COG / NPO	± 5%	SMD175-9488	0.016	0.011	0.009
22pF	COG / NPO	± 5%	SMD175-9489	0.016	0.011	0.009
33pF	COG / NPO	± 5%	SMD175-9490	0.016	0.011	0.009
47pF	COG / NPO	± 5%	SMD175-9491	0.016	0.011	0.009
68pF	COG / NPO	± 5%	SMD175-9492	0.016	0.011	0.009
100pF	COG / NPO	± 5%	SMD175-9493	0.016	0.011	0.009
150pF	COG / NPO	± 5%	SMD175-9494	0.023	0.018	0.014
220pF	X7R	± 10%	SMD175-9495	0.014	0.010	0.007
220pF	COG / NPO	± 5%	SMD175-9496	0.029	0.022	0.017
330pF	X7R	± 10%	SMD175-9497	0.014	0.010	0.007
330pF	COG / NPO	± 5%	SMD175-9499	0.029	0.022	0.017
470pF	X7R	± 10%	SMD175-9500	0.014	0.010	0.007
680pF	X7R	± 10%	SMD175-9501	0.014	0.010	0.007
1nF	X7R	± 10%	SMD175-9502	0.014	0.010	0.007
1.5nF	X7R	± 10%	SMD175-9503	0.016	0.012	0.009
2.2nF	X7R	± 10%	SMD175-9505	0.018	0.014	0.010
3.3nF	X7R	± 10%	SMD175-9506	0.018	0.014	0.010
4.7nF	X7R	± 10%	SMD175-9507	0.023	0.018	0.012
6.8nF	X7R	± 10%	SMD175-9508	0.023	0.018	0.012
10nF	X7R	± 10%	SMD175-9509	0.023	0.018	0.012

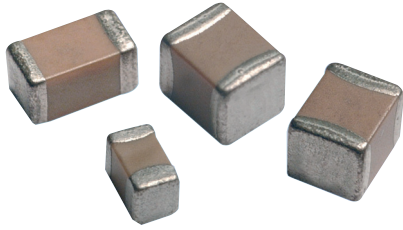
547008

1206	Dielectric	Capacitance	Order	Price Each		
200 V dc	Characteristic	Tolerance	Code	100+	500+	1K+
1nF	COG / NPO	± 5%	SMD175-9510	0.043	0.031	0.024
15nF	X7R	± 10%	SMD175-9511	0.023	0.017	0.012
22nF	X7R	± 10%	SMD175-9512	0.023	0.017	0.012
630 V dc						
100pF	COG / NPO	± 5%	SMD175-9513	0.045	0.033	0.025
1nF	X7R	± 10%	SMD175-9514	0.029	0.022	0.016
2.2nF	X7R	± 10%	SMD175-9515	0.035	0.027	0.020
4.7nF	X7R	± 10%	SMD175-9517	0.041	0.030	0.023
10nF	X7R	± 10%	SMD175-9518	0.035	0.027	0.020

Ceramic - High Voltage - AVX

High Voltage MLCC

For 500V to 3000V applications



AVX special high voltage MLCC capacitors have high value, low leakage and small size and are designed for applications such as snubbers in high frequency power converters, resonators in SMPS, and high voltage coupling/DC blocking. These high voltage chip designs exhibit low ESRs at high frequencies.

These larger size capacitors require that special precautions be taken in applying them in surface mount assemblies. Apply heat at less than 4°C per second during the preheat (temperature must be within 50°C of the peak temperature reached by the ceramic bodies through the soldering process). Capacitors of case size 1808 and larger should always be used in a reflow solder process.

Operating and storage temperature	-55°C to +125°C
Temperature coefficient	0 ±30ppm/°C dielectric code J
Capacitance measurement	1MHz, 1Vrms
Insulation resistance	≥10 ¹⁰
Proof voltage	2.5 U _n for 5 secs
Aging characteristic	Zero
Dielectric absorption	0.01%
Dimensions (LxWxH)	0805: 2.01 x 1.25 x 1.52mm 1206: 3.2 x 1.6 x 1.52mm, 1210: 3.2 x 2.5 x 1.70mm 1808: 4.57 x 2.03 x 2.03mm, 1812: 4.50 x 3.20 x 2.54mm 1825: 4.5 x 6.4 x 2.54mm, 2220: 5.7 x 5.0 x 3.3mm 2225: 5.72 x 6.35 x 2.54mm

Flexitem = Z / Plated Ni & Sn = T - example part no. 1812HC272KAZ1A

339441

Capacitance	Mfrs.	Price Each				
pF	Tol. List No.	Order Code	5+	50+	250+	
0805						
COG, 600V						
100	± 10%	0805CA101KAT1A	NEW 178-0911 ●	0.280	0.240	0.198
1206						
COG, 500V						
47	± 5%	12067A470JAT2A	SMD 121-6452 ● RL	0.240	0.163	0.099
100	± 5%	12067A101JAT2A	SMD 121-6449 ● RL	0.230	0.180	0.109
220	± 5%	12067A221JAT2A	SMD 121-6450 ● RL	0.250	0.196	0.120
330	± 5%	12067A331JAT2A	SMD 121-6451 ● RL	0.290	0.220	0.135
470	± 5%	12067A471JAT1A	SMD 121-6453 ● RL	0.280	0.190	0.115
COG, 1000V						
100	± 5%	1206AA101JAT2A	SMD 121-6460 ● RL	0.250	0.210	0.128
220	± 5%	1206AA221JAT2A	SMD 121-6461 ● RL	0.280	0.190	0.115
220	± 5%	1206AA221JAT1A	NEW SMD 169-7170 ●	0.870	0.800	0.570
470	± 5%	1206AA471JAT1A	SMD 121-6462 ● RL	0.480	0.450	0.350
COG, 2000V						
10	± 5%	1206GA100JAT2A	SMD 130-1841 ●	0.520	0.290	0.161
15	± 5%	1206GA150JAT2A	SMD 130-1842 ●	0.420	0.230	0.149
22	± 5%	1206GA220JAT2A	SMD 130-1843 ●	0.570	0.320	0.178
33	± 5%	1206GA330JAT1A	SMD 130-1844 ●	0.630	0.350	0.196
56	± 5%	1206GA560JAT1A	SMD 130-1845 ●	0.610	0.340	0.189
68	± 10%	1206GA680KAT1A	SMD 130-1847 ●	0.530	0.300	0.183
X7R, 500V						
1000	± 10%	12067C102KAT2A	SMD 121-6455 ● RL	0.200	0.176	0.107
1500	± 10%	12067C152KAT2A	SMD 121-6457 ● RL	0.190	0.128	0.078
2200	± 10%	12067C222KAT2A	SMD 121-6458 ● RL	0.230	0.177	0.107
4700	± 10%	12067C472KAT2A	SMD 121-6459 ● RL	0.189	0.127	0.077
10000	± 10%	12067C103KAT1A	SMD 121-6456 ● RL	0.270	0.220	0.135
X7R, 600V						
10000	± 10%	1206CC103KAT1A	SMD 121-6465 ● RL	0.390	0.350	0.192
15000	± 10%	1206CC153KAT1A	SMD 130-1826 ●	0.460	0.260	0.162
X7R, 1000V						
1000	± 10%	1206AC102KAT2A	SMD 121-6463 ● RL	0.250	0.200	0.123
1000	± 10%	1206AC102KAT1A	NEW SMD 169-7172 ●	0.720	0.660	0.480
4700	± 10%	1206AC472KAT1A	SMD 121-6464 ● RL	0.380	0.370	0.310
X7R, 2000V						
100	± 10%	1206GC101KAT2A	SMD 130-1848 ●	0.330	0.186	0.119
150	± 10%	1206GC151KAT2A	SMD 130-1849 ●	0.390	0.220	0.135
270	± 10%	1206GC271KAT1A	SMD 130-1850 ●	0.530	0.290	0.164
330	± 10%	1206GC331KAT1A	SMD 130-1851 ●	0.480	0.270	0.156
470	± 10%	1206GC471KAT1A	SMD 130-1852 ●	0.670	0.340	0.185
1000	± 10%	1206GC102KAT2A	SMD 121-6467 ● RL	0.270	0.210	0.137
1210						
COG, 2000V						
100	± 10%	1210GA101KAT1A	SMD 130-1854 ●	0.780	0.440	0.260

Capacitance	Mfrs.	Price Each				
pF	Tol. List No.	Order Code	5+	50+	250+	
X7R, 500V						
1000	± 10%	12107C102KAT2A	SMD 121-6469 ● RL	0.300	0.199	0.121
10000	± 10%	12107C103KAT1A	SMD 121-6470 ● RL	0.390	0.260	0.155
X7R, 600V						
27000	± 10%	1210CC273KAT1A	SMD 130-1827 ●	0.800	0.450	0.290
X7R, 1000V						
1000	± 10%	1210AC102KAT1A	NEW SMD 169-7173 ●	0.970	0.870	0.630
10000	± 10%	1210AC103KAT1A	SMD 121-6471 ● RL	0.650	0.590	0.480
4700	± 10%	1210AC472KAT1A	SMD 121-6472 ● RL	0.400	0.320	0.193
3300	± 20%	1210AC332MAT1A	SMD 130-1832 ●	0.730	0.410	0.230
X7R, 2000V						
220	± 10%	1210GC221KAT1A	SMD 130-1855 ●	0.540	0.300	0.200
560	± 10%	1210GC561KAT1A	SMD 130-1856 ●	0.720	0.400	0.260
820	± 10%	1210GC821KAT1A	NEW 178-0912 ●	0.460	0.390	0.320
1000	± 10%	1210GC102KAT1A..	SMD 121-6473 ● RL	0.450	0.400	0.360
3300	± 10%	1210GC332KAT1A	NEW 178-9451 ●	0.480	0.430	0.360
1808						
COG, 2000V						
100	± 5%	1808GA101JAT1A	SMD 130-1857 ●	1.430	0.790	0.440
220	± 5%	1808GA221JAT1A	SMD 130-1859 ●	1.150	0.650	0.390
COG, 3000V						
10	± 5%	1808HA100JAT1A	SMD 130-1867 ●	0.830	0.470	0.290
15	± 5%	1808HA150JAT1A	SMD 130-1869 ●	0.870	0.490	0.270
18	± 10%	1808HA180JAT1A	SMD 130-1870 ●	0.950	0.530	0.340
22	± 5%	1808HA220JAT1A	SMD 130-1872 ●	0.900	0.500	0.330
33	± 5%	1808HA330JAT1A	SMD 130-1873 ●	0.990	0.550	0.350
47	± 5%	1808HA470JAT1A	SMD 130-1875 ●	0.990	0.550	0.360
82	± 10%	1808HA820KAT1A	SMD 130-1877 ●	0.600	0.520	0.380
X7R, 6000V						
68000	± 10%	1808CC683KAT1A	NEW 178-9452 ●	0.730	0.650	0.550
X7R, 10000V						
10000	± 20%	1808AC103MAT1A	SMD 130-1833 ●	1.370	0.770	0.430
15000	± 20%	1808AC153MAT1A	SMD 130-1835 ●	0.810	0.550	0.360
X7R, 2000V						
1000	± 10%	1808GC102KAT1A	SMD 121-6474 ● RL	0.920	0.800	0.710
1000	± 20%	1808GC102MAT1A	NEW SMD 169-7174 ●	1.360	1.250	0.910
1500	± 10%	1808GC152KAT1A	SMD 130-1862 ●	1.160	0.930	0.630
X7R, 3000V						
330	± 10%	1808HC331KAT1A	SMD 130-1879 ●	1.230	0.690	0.390
470	± 10%	1808HC471KAT1A	SMD 130-1880 ●	0.950	0.530	0.340
680	± 10%	1808HC681KAT1A	SMD 130-1881 ●	0.990	0.550	0.350
1000	± 10%	1808HC102KAT1A	SMD 130-1878 ●	2.970	1.750	0.970
1812						
COG, 1000V						
100	± 5%	1812AA101JAT1A	NEW 178-0914 ●	0.590	0.500	0.420
220	± 10%	1812AA221KAT1A	NEW 178-0915 ●	0.480	0.410	0.330
1000	± 5%	1812AA102JAT1A	NEW 178-0916 ●	0.870	0.750	0.610
1000	± 10%	1812AA102KAT1A	SMD 121-6475 ●	1.980	1.470	0.980
2200	± 0.5%	1812AA222JAT1A	NEW SMD 169-7175 ●	1.840	1.690	1.080
COG, 2000V						
150	± 5%	1812GA151JAT1A	NEW 178-0919 ●	0.610	0.520	0.430
COG, 3000V						
10	± 5%	1812HA100JAT1A	SMD 130-1882 ●	1.070	0.900	0.740
220	± 5%	1812HA221JAT1A	NEW 178-0923 ●	0.630	0.540	0.450
220	± 10%	1812HA221KAT1A	NEW 178-0924 ●	0.590	0.500	0.420
330	± 10%	1812HA331KAT1A	NEW 178-0925 ●	0.730	0.620	0.510
X7R, 600V						
33000	± 10%	1812CC333KAT1A	NEW SMD 169-7177 ●	1.530	1.400	0.970
68000	± 10%	1812CC683KAT1A	NEW 178-0913 ●	0.420	0.350	0.290
100000	± 10%	1812CC104KAT1A	SMD 130-1828 ●	3.990	2.230	1.290
X7R, 1000V						
1000	± 10%	1812AC102KAT1A	NEW SMD 169-7176 ●	1.530	1.400	1.010
4700	± 10%	1812AC472KAT1A	SMD 121-6477 ●	2.090	1.370	0.870
10000	± 10%	1812AC103KAT1A	SMD 130-1836 ●	3.560	1.790	0.990
15000	± 10%	1812AC153KAT1A	SMD 130-1837 ●	2.990	1.980	1.760
22000	± 10%	1812AC223KAT1A	SMD 121-6476 ● RL	2.440	1.230	0.680
27000	± 10%	1812AC273KAT1A	NEW 178-0917 ●	0.420	0.350	0.290
X7R, 2000V						
1000	± 20%	1812GC102MAT1A	NEW SMD 169-7178 ●	1.460	1.330	0.850
1500	± 10%	1812GC152KAT1A	SMD 121-6479 ● RL	1.050	0.960	0.810
2200	± 10%	1812GC222KAT1A	SMD 121-6481 ●	1.430	1.290	1.010
4700	± 10%	1812GC472KAT1A	SMD 121-6482 ● RL	3.560	1.790	0.990
6800	± 10%	1812GC682KAT1A	NEW 178-9453 ●	0.770	0.690	0.580
8200	± 10%	1812GC822KAT1A	NEW 178-9455 ●	0.770	0.690	0.580
X7R, 2500V						
1200	± 20%	1812WC122MAT1A	NEW 178-0921 ●	0.460	0.390	0.320
3300	± 10%	1812WC332KAT1A	NEW 178-0922 ●	0.500	0.430	0.350



Ceramic - High Voltage - AVX - continued

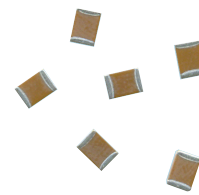
High Voltage MLCC - continued

For 500V to 3000V applications - continued

Capacitance		Mftrs.		Order Code	Price Each		
pF	Tol.	List No.			5+	50+	250+
X7R, 3000V							
1000	± 10%	1812HC102KAT1A		SMD121-6483 RL	3.560	1.790	0.990
1000	± 20%	1812HC102MAZ1A		NEW 178-0926	0.700	0.590	0.490
2700	± 10%	1812HC272KAZ1A		NEW 178-9456	0.770	0.690	0.580
3300	± 10%	1812HC332KAT1A		NEW 178-9457	0.770	0.690	0.580
1825							
X7R, 600V							
270000	± 10%	1825CC274KAT1A		NEW 178-9458	1.010	0.910	0.770
270000	± 10%	1825CC274KAZ1A		NEW 178-9459	1.010	0.910	0.770
X7R, 2000V							
15000	± 10%	1825GC153KAT1A		NEW 178-9460	1.010	0.910	0.770
22000	± 10%	1825GC223KAT1A		NEW 178-9461	1.010	0.910	0.770
22000	± 10%	1825GC223KAZ1A		NEW 178-9462	1.010	0.910	0.770
X7R, 2500V							
5600	± 10%	1825WC562KAT1A		NEW SMD169-7180	2.010	1.840	1.220
15000	± 10%	1825WC153KAT1A		NEW 178-9463	1.010	0.910	0.770
X7R, 3000V							
10000	± 10%	1825HC103KAT1A		NEW 178-9464	1.010	0.910	0.770
X7R, 4000V							
1000	± 10%	1825JC102KAT1A		NEW SMD169-7179	2.010	1.840	1.330
2220							
nF							
X7R, 100V							
1000	± 10%	22201C105KAT1A		SMD756-9459 RL	7.030	6.180	3.810
X7R, 600V							
100	± 20%	2220CC104MAT1A		SMD130-1829	6.450	3.600	2.010
270	± 10%	2220CC274KAT1A		NEW 178-9465	1.880	1.690	1.430
270	± 10%	2220CC274KAZ1A		NEW 178-9467	1.880	1.690	1.430
X7R, 1000V							
100	± 10%	2220AC104KAT1A		NEW 178-9468	1.880	1.690	1.430
100	± 10%	2220AC104KAZ1A		NEW 178-9469	1.880	1.690	1.430
120	± 10%	2220AC124KAT1A		NEW 178-9470	1.880	1.690	1.430
120	± 10%	2220AC124KAZ1A		NEW 178-9471	1.880	1.690	1.430
X7R, 1500V							
10	± 20%	2220SC103MAT1A		SMD130-1840	5.780	3.220	1.860
47	± 10%	2220SC473KAT1A		NEW 178-9472	1.880	1.690	1.430
47	± 10%	2220SC473KAZ1A		NEW 178-9473	1.880	1.690	1.430
X7R, 2000V							
10	± 20%	2220GC103MAT1A		NEW 178-0927	1.690	1.440	1.180
27	± 10%	2220GC273KAT1A		NEW 178-9474	1.880	1.690	1.430
27	± 10%	2220GC273KAZ1A		NEW 178-9475	1.880	1.690	1.430
X7R, 3000V							
10	± 10%	2220HC103KAT1A		NEW 178-9476	1.880	1.690	1.430
10	± 10%	2220HC103KAZ1A		NEW 178-9477	1.880	1.690	1.430
5.6	± 10%	2220HC562KAT1A		NEW 178-9479	1.880	1.690	1.430
6.8	± 10%	2220HC682KAT1A		NEW 178-9481	1.880	1.690	1.430
6.8	± 10%	2220HC682KAZ1A		NEW 178-9482	1.880	1.690	1.430
2225							
nF							
COG, 1000V							
2200	± 10%	2225AA822KAT1A		NEW SMD169-7181	3.730	3.420	2.470
COG, 3000V							
680	± 10%	2225HA681KAT1A		NEW SMD169-7182	3.730	3.420	2.380
X7R, 1500V							
68	± 10%	2225SC683KAT1A		NEW 178-9483	1.880	1.690	1.430
68	± 10%	2225SC683KAZ1A		NEW 178-9484	1.880	1.690	1.430
X7R, 2000V							
33	± 10%	2225GC333KAT1A		NEW 178-9485	1.880	1.690	1.430
33	± 10%	2225GC333KAZ1A		NEW 178-9486	1.880	1.690	1.430
X7R, 2500V							
22	± 10%	2225WC223KAT1A		NEW 178-9487	1.880	1.690	1.430
X7R, 3000V							
10	± 10%	2225HC103KAT1A		NEW 178-9488	1.880	1.690	1.430
15	± 10%	2225HC153KAT1A		NEW 178-9489	1.880	1.690	1.430
15	± 10%	2225HC153KAZ1A		NEW 178-9490	1.880	1.690	1.430

Ceramic - High Voltage - Kemet

High Voltage SMD Capacitors



- High voltage multilayer ceramic chip capacitors
- Standard end metalization: Tin plate over nickel barrier
- 0805, 1206, 1210, 1808, 1812, 2220 and 2225 case sizes

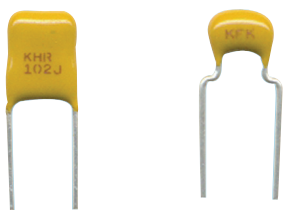
Operating Temperature: -55°C to +125°C
 Temperature Coefficient: NPO - ±30ppm/°C
 X7R - ±15%

451530

Capacitance		Mftrs.		Order Code	Price Each		
		List No.			5+	50+	250+
0805							
COG, 500V							
0.1nF		C0805C101JCGACTU		SMD128-8239 RL	0.156	0.096	0.079
150pF		C0805C151JCGACTU		NEW SMD170-2124	0.115	0.100	0.087
X7R, 500V							
2.2nF		C0805C222KCRACTU		NEW SMD170-2126	0.077	0.066	0.058
3.3nF		C0805C332KCRACTU		NEW SMD170-2127	0.076	0.066	0.057
1206							
COG, 500V							
0.33nF		C1206C331KCGACTU		SMD128-8243 RL	0.470	0.300	0.250
X7R, 500V							
1nF		C1206C102KCRAC		SMD157-2650	0.940	0.530	0.360
4.7nF		C1206C472KCRACTU		SMD128-8240 RL	0.490	0.300	0.260
10nF		C1206C103KCRAC		SMD128-8241 RL	0.300	0.210	0.129
6.8nF		C1206C682KCRACTU		NEW SMD170-2128	0.210	0.182	0.157
15nF		C1206C153KCRACTU		NEW SMD170-2131	0.220	0.186	0.161
COG, 1000V							
0.22nF		C1206C221KDGACTU		SMD157-2652	0.820	0.530	0.360
10pF		C1206C100JDGACTU		SMD170-2125	0.270	0.230	0.198
100pF		C1206C101JDGACTU		SMD170-2132	0.220	0.187	0.163
150pF		C1206C151JDGACTU		SMD170-2133	0.240	0.210	0.181
X7R, 1000V							
2.2nF		C1206C222KDRACTU		SMD170-2134	0.230	0.200	0.174
3.3nF		C1206C332KDRACTU		SMD170-2135	0.220	0.189	0.165
X7R, 1500V							
0.47nF		C1206C471JFRACTU		SMD128-8242 RL	0.540	0.330	0.280
1.5nF		C1206C152KFRACTU		SMD170-2136	0.240	0.210	0.176
X7R, 2000V							
1nF		C1206C102KGRAC		SMD157-2651	0.950	0.770	0.510
470pF		C1206C471KGRACTU		SMD170-2137	0.260	0.230	0.197
1210							
COG, 500V							
1.5nF		C1210C152JCGACTU		SMD170-2138	0.470	0.410	0.340
2.2nF		C1210C222JCGACTU		SMD170-2139	0.460	0.390	0.340
3.3nF		C1210C332JCGACTU		SMD170-2140	0.490	0.430	0.360
X7R, 500V							
10nF		C1210C103KCRAC		SMD157-2653	1.290	0.840	0.540
22nF		C1210C223KCRACTU		SMD170-2141	0.410	0.350	0.310
33nF		C1210C333KCRACTU		SMD170-2143	0.390	0.330	0.300
47nF		C1210C473KCRACTU		SMD170-2144	0.430	0.360	0.310
COG, 1000V							
470pF		C1210C471JDGACTU		NEW SMD170-2145	0.430	0.370	0.310
680pF		C1210C681JDGACTU		NEW SMD170-2146	0.460	0.390	0.340
1nF		C1210C102JDGACTU		NEW SMD170-2147	0.480	0.410	0.360
X7R, 1000V							
10nF		C1210C103JDRACTU		SMD128-8244 RL	0.890	0.540	0.470
2.2nF		C1210C222KDRACTU		NEW SMD170-2148	0.420	0.360	0.300
4.7nF		C1210C472KDRACTU		NEW SMD170-2149	0.430	0.370	0.310
COG, 2000V							
150pF		C1210C151JGGACTU		NEW SMD170-2150	0.500	0.450	0.370
220pF		C1210C221JGGACTU		NEW SMD170-2151	0.520	0.460	0.410
330pF		C1210C331JGGACTU		NEW SMD170-2152	0.540	0.490	0.420
1808							
X7R, 1000V							
10nF		C1808C103KDRAC		SMD157-2654	1.250	0.910	0.660
X7R, 2000V							
1nF		C1808C102KGRACTU		SMD128-8245 RL	0.920	0.560	0.490
1812							
X7R, 500V							
10nF		C1812C103KCRACTU		SMD128-8247 RL	1.080	0.660	0.560
47nF		C1812C473KCRACTU		SMD128-8248 RL	1.080	0.680	0.560
68nF		C1812C683KCRACTU		NEW SMD170-2153	0.850	0.670	0.470

Capacitance	Mfrs.		Price Each		
	List No.	Order Code	5+	50+	250+
COG, 1000V					
220pF	C1812C221JDGACTU	NEW SMD 170-2155	0.910	0.700	0.490
330pF	C1812C331JDGACTU	NEW SMD 170-2156	0.920	0.710	0.500
1.5nF	C1812C152JDGACTU	NEW SMD 170-2157	0.950	0.720	0.500
X7R, 1000V					
2.2nF	C1812C222KDRACU	NEW SMD 170-2158	0.890	0.700	0.490
4.7nF	C1812C472KDRACU	NEW SMD 170-2159	0.890	0.700	0.490
6.8nF	C1812C682KDRACU	NEW SMD 170-2160	0.890	0.700	0.490
15nF	C1812C153KDRACU	NEW SMD 170-2161	0.890	0.700	0.490
22nF	C1812C223KDRACU	NEW SMD 170-2162	0.960	0.740	0.510
COG, 1500V					
0.1nF	C1812C101FFGACTU	SMD 157-2655	1.830	1.050	0.730
680pF	C1812C681JFGACTU	NEW SMD 170-2163	0.980	0.750	0.520
COG, 2000V					
470pF	C1812C471JGGACTU	NEW SMD 170-2164	1.060	0.810	0.560
X7R, 2000V					
1.5nF	C1812C152KGRACU	NEW SMD 170-2165	0.980	0.720	0.500
3.3nF	C1812C332KGRACU	NEW SMD 170-2167	0.980	0.720	0.500
1nF	C1812C102KGRAC	SMD 128-8249	1.140	0.700	0.580
COG, 3000V					
100pF	C1812C101JHGACTU	NEW SMD 170-2168	1.150	0.870	0.610
150pF	C1812C151JHGACTU	NEW SMD 170-2169	1.090	0.830	0.580
2.2nF	C1812C222JDGACTU	NEW SMD 170-2170	0.920	0.720	0.500
X7R, 3000V					
1nF	C1812C102KHRAC	NEW SMD 170-2171	1.070	0.810	0.560
2220					
COG, 500V					
6.8nF	C2220C682JGACTU	NEW SMD 170-2172	2.760	2.060	1.440
X7R, 500V					
100nF	C2220C104KCRACU	NEW SMD 170-2181	2.250	1.730	1.210
COG, 1000V					
3.3nF	C2220C332JDGACTU	NEW SMD 170-2173	2.830	2.110	1.480
4.7nF	C2220C472JDGACTU	NEW SMD 170-2174	2.970	2.230	1.540
X7R, 1000V					
10nF	C2220C103KDRACU	NEW SMD 170-2182	2.490	1.910	1.330
33nF	C2220C333KDRACU	NEW SMD 170-2183	2.490	1.870	1.300
47nF	C2220C473KDRACU	NEW SMD 170-2184	2.490	1.910	1.330
COG, 1500V					
330pF	C2220C331JFGACTU	NEW SMD 170-2175	2.830	2.160	1.510
X7R, 1500V					
15nF	C2220C153KFRACU	NEW SMD 170-2185	2.550	1.950	1.350
COG, 2000V					
1nF	C2220C102JGGACTU	NEW SMD 170-2176	3.370	2.570	1.790
X7R, 2000V					
2.2nF	C2220C222KGRACU	NEW SMD 170-2187	2.620	2.000	1.390
4.7nF	C2220C472KGRACU	NEW SMD 170-2188	2.760	2.110	1.480
6.8nF	C2220C682KGRACU	NEW SMD 170-2189	2.760	2.060	1.440
COG, 3000V					
220pF	C2220C221JHGACTU	NEW SMD 170-2177	3.340	2.490	1.740
2225					
X7R, 500V					
100nF	C2225C104KCRACU	SMD 128-8250	3.870	2.390	2.010
220nF	C2225C224KCRAC	NEW SMD 170-2190	2.760	2.110	1.480
COG, 500V					
10nF	C2225C103JGACTU	NEW SMD 170-2179	3.610	2.750	1.910
COG, 2000V					
1.5nF	C2225C152JGGACTU	NEW SMD 170-2186	3.990	3.060	2.120
COG, 3000V					
470pF	C2225C471JHGACTU	NEW SMD 170-2192	4.270	3.190	2.230

High Voltage Leaded MLCC Capacitors



- Leaded MLCC radial capacitors
- High voltage
- Conformally coated

Performance Characteristics

	NPO	X7R
Operating Temperature	-55°C to +125°C	-55°C to +25°C
Temperature coefficient	0±30ppm/°C	±15%

N.B. For ease of selection, capacitance value is listed in both pF and nF

NPO	Tolerance (%)	Lead Pitch	Mfrs. List No.	Order Code
3000 Volt d.c. 100 pF	0.1	5	5.08	C330C101JHG5CA 128-8232
1000 Volt d.c. 1000 nF	1	5	5.08	C330C102JDG5CA 128-8231
500 Volt d.c. 100 nF	0.1	5	5.08	C322C101JCG5CA 128-8237
Price Each				
3000 Volt d.c. 0.1 nF	128-8232	3.30	2.03	1.48 1.14 1.03
4000 Volt d.c. 1 nF	128-8231	3.02	1.86	1.34 1.04 0.86
500 Volt d.c. 0.1 nF	128-8237	1.95	1.23	0.89 0.70 0.61
NPO				
3000 Volt d.c. 0.001 nF	1 5	5.08	C330C102JHR5CA 128-8230	
2000 Volt d.c. 0.001 nF	1 10	5.08	C330C102KGR5CA 128-8229	
1500 Volt d.c. 0.001 nF	1 10	5.08	C322C102KFR5CA 128-8236	
1000 Volt d.c. 0.01 nF	10 5	5.08	C322C103JDR5CA 128-8235	
500 Volt d.c. 0.047 nF	47 10	5.08	C322C473KCR5CA 128-8233	
Price Each				
3000 Volt d.c. 1 nF	128-8230	3.05	1.90	1.38 1.08 0.98
2000 Volt d.c. 1 nF	128-8229	2.18	1.34	0.98 0.76 0.69
1500 Volt d.c. 1 nF	128-8236	1.53	0.95	0.69 0.53 0.49
1000 Volt d.c. 10 nF	128-8235	1.33	0.83	0.61 0.49 0.43
500 Volt d.c. 47 nF	128-8233	1.37	0.85	0.61 0.50 0.43

Ceramic - High Voltage - Murata

High Voltage



- High voltage disc ceramic capacitors
- Resin coated with tinned copper leads

Min lead length=25, Lead dia=0.65 (219-472=0.5)

Operating temperature -25°C to +85°C Insulation resistance @ 1kV 10000MΩ

N.B. For ease of selection capacitance value is listed in both nF and pF.

1000 Volt d.c.	Tolerance	Temperature Coefficient	Body Dia.	Pitch	Mfrs. List No.	Order Code
47 pF	±5%	+350 -1000ppm/°C	4.5	5	DEA1X3A470JC1B	952-7079
100 pF	±10%	±10%	4.5	5	DEBB33A101KC1B	952-7109
220 pF	±10%	±10%	4.5	5	DEBB33A221KC1B	952-7117
470 pF	±10%	±10%	5	5	DEBB33A471KC1B	952-7125
1000 pF	+80%20%	+22%-50%	5	5	DEB33A102ZC1B	952-7184
2200 pF	+80%20%	+30%-80%	6	5	DEBF33A222ZA2B	952-7230
4700 pF	+80%20%	+30%-80%	7	5	DEBF33A472ZC1B	952-7249
10000 pF	+80%20%	+30%-80%	10	5	DEBF33A103ZA2B	952-7222

Order Multiple=10	Price Each	10+	50+	100+	500+	1K+	10K+
1000 Volt d.c. 47 pF	952-7079	0.162	0.101	0.069	0.056	0.042	0.038
100 pF	952-7109	0.146	0.110	0.076	0.046	0.044	0.043
220 pF	952-7117	0.135	0.108	0.084	0.082	0.080	0.078
470 pF	952-7125	0.146	0.110	0.075	0.052	0.043	0.042
1000 pF	952-7184	0.176	0.108	0.074	0.053	0.040	0.039
2200 pF	952-7230	0.176	0.108	0.073	0.056	0.054	0.053
4700 pF	952-7249	0.250	0.158	0.108	0.079	0.063	0.061
10000 pF	952-7222	0.260	0.158	0.107	0.077	0.075	0.073

2000 Volt d.c.	Tolerance	Temperature Coefficient	Body Dia.	Pitch	Mfrs. List No.	Order Code
100 pF	±10%	±10%	4.5	5	DEBB33D101KC1B	952-7133
220 pF	±10%	±10%	4.5	5	DEBB33D221KC1B	952-7150
470 pF	±10%	±10%	6	5	DEBB33D471KA2B	952-7168
1000 pF	±10%	±10%	8	5	DEBB33D102KA2B	952-7141
2200 pF	+80%20%	+30%-80%	9	5	DEBF33D222ZA2B	952-7265
4700 pF	+80%20%	+30%-80%	9	5	DEBF33D472ZC1B	952-7273
10000 pF	+80%20%	+30%-80%	12	7.5	DEBF33D103ZA3B	952-7257



Ceramic - High Voltage - Murata - continued

High Voltage - continued

Order Multiple=10

2000 Volt d.c.		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
100	952-7133	0.189	0.121	0.083	0.060	0.046	0.044
220	952-7150	0.176	0.117	0.080	0.058	0.045	0.044
470	952-7168	0.189	0.121	0.083	0.060	0.049	0.047
1000	952-7141	0.220	0.141	0.096	0.069	0.055	0.054
2200	952-7265	0.240	0.150	0.102	0.073	0.060	0.059
4700	952-7273	0.300	0.192	0.131	0.096	0.078	0.075
10000	952-7257	0.430	0.280	0.188	0.162	0.116	0.109

3150 Volt d.c.	pF	nF	Tolerance	Temperature Coefficient	Body Dia.	Pitch	Mftrs. List No.	Order Code
100	0.1		±10%	+350-1000ppm/°C	5	7.5	DEA1X3F101JA3B	952-7087
220	0.22		±10%	+350-1000ppm/°C	5	7.5	DEA1X3F221JA3B	952-7095
470	0.47		±10%	±10%	7	7.5	DEBB33F471KC3B	952-7176
1000	1		+80%20%	+22%-50%	7	7.5	DEBE33F102ZC3B	952-7192
2200	2.2		+80%20%	+22%-50%	10	7.5	DEBE33F22ZC3B	952-7206
4700	4.7		+80%20%	+22%-50%	13	7.5	DEBE33F47ZC3B	952-7214

Order Multiple=10

3150 Volt d.c.		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
100	952-7087	0.144	0.102	0.087	0.084	0.082	0.080
220	952-7095	0.340	0.210	0.146	0.105	0.078	0.077
470	952-7176	0.220	0.136	0.093	0.067	0.050	0.049
1000	952-7192	0.220	0.131	0.090	0.074	0.072	0.070
2200	952-7206	0.360	0.230	0.159	0.116	0.094	0.090
4700	952-7214	0.500	0.320	0.220	0.160	0.130	0.125

6300 Volt d.c.	pF	nF	Tolerance	Temperature Coefficient	Body Dia.	Pitch	Mftrs. List No.	Order Code
22	0.022		±5%	+350-1000ppm/°C	9	10	DEC1X3J220JC4B	952-7281
47	0.047		±5%	+350-1000ppm/°C	9	10	DEC1X3J470JC4B	952-7290
100	0.1		±10%	±10%	9	10	DECB33J101KC4B	952-7303
220	0.22		±10%	±10%	9	10	DECB33J221KC4B	952-7311
470	0.47		±10%	±10%	10	10	DECB33J471KC4B	952-7320
1000	1		+80%20%	+22%-50%	11	10	DECE33J102ZC4B	952-7338
2200	2.2		+80%20%	+22%-50%	15	10	DECE33J22ZC4B	952-7346

208482

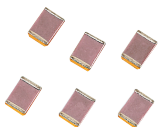
Order Multiple=10

6300 Volt d.c.		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
22	952-7281	0.290	0.190	0.130	0.114	0.102	0.087
47	952-7290	0.340	0.220	0.151	0.110	0.089	0.085
100	952-7303	0.390	0.250	0.169	0.122	0.090	0.085
220	952-7311	0.410	0.250	0.173	0.124	0.092	0.085
470	952-7320	0.380	0.240	0.165	0.118	0.100	0.097
1000	952-7338	0.410	0.250	0.173	0.124	0.099	0.096
2200	952-7346	0.700	0.440	0.300	0.220	0.186	0.182

Ceramic - High Voltage - Yageo

Surface Mount - Nickel Barrier

High Voltage - CG Series



- High voltage multilayer ceramic chip capacitors
- High capacitance per unit volume
- 0603, 0805, 1206, 1210, 1808 and 1812 case sizes
- Nickel barrier terminations
- Conform to IEC 384-10

0603 Case Size L=1.6 ± 0.2, W=0.8 ± 0.2, H=0.45
 0805 Case Size L=2 ± 0.2, W=1.25 ± 0.1, H=0.5
 1206 Case Size L=3.2 ± 0.2, W=1.6 ± 0.2, H=1.3 max
 1210 Case Size L=3.2 ± 0.2, W=2.5 ± 0.2, H=1.6 max
 1808 Case Size L=4.5 ± 0.3, W=2.0 ± 0.3, H=1.3 max
 1812 Case Size L=4.5 ± 0.3, W=3.2 ± 0.3, H=1.3 max

Performance characteristics
 Operating temperature
 Tolerance
 Insulation resistance
 Dielectric strength for 1 minute

NPO
 -55°C to +125°C
 ±5%
 100000MΩ
 2VR (1000V), 1.2VR (3000V)

N.B. For ease of selection, capacitance value is listed in both pF and nF

0603 Case Size

200 Volt d.c. NPO, 0603 Case Size		Price Each					
pF	nF	Order Code	1+	100+	1K+	4K+	
10	0.01	SMD128-4110 RL	0.023	0.022	0.020	0.017	
22	0.022	SMD128-4112 RL	0.023	0.022	0.020	0.017	
47	0.047	SMD128-4116 RL	0.023	0.022	0.020	0.017	
100	0.1	SMD128-4111 RL	0.023	0.022	0.020	0.017	
220	0.22	SMD128-4114 RL	0.027	0.025	0.023	0.021	
470	0.47	SMD128-4117 RL	0.031	0.028	0.026	0.024	

200 Volt d.c. NPO, 0603 Case Size		Price Each				
pF	nF	Order Code	1+	100+	1K+	4K+
100 Volt d.c. X7R, 0603 Case Size						
1000	1	SMD128-4118 RL	0.027	0.025	0.023	0.021
2200	2.2	SMD128-4120 RL	0.027	0.025	0.023	0.021
4700	4.7	SMD128-4121 RL	0.027	0.025	0.023	0.021
10000	10	SMD128-4119 RL	0.027	0.025	0.023	0.021

0805 Case Size

500 Volt d.c. NPO, 0805 Case Size		Price Each				
pF	nF	Order Code	1+	100+	1K+	4K+
10	0.01	SMD128-4123 RL	0.083	0.077	0.069	0.062
22	0.022	SMD128-4126 RL	0.083	0.077	0.069	0.062
47	0.047	SMD128-4128 RL	0.083	0.077	0.069	0.062
100	0.1	SMD128-4124 RL	0.083	0.077	0.069	0.062
220	0.22	SMD128-4127 RL	0.099	0.088	0.081	0.074
470	0.47	SMD128-4129 RL	0.108	0.099	0.088	0.079
1000	1	SMD128-4122 RL	0.121	0.110	0.099	0.088

500 Volt d.c. X7R, 0805 Case Size

2200	2.2	SMD128-4131 RL	0.089	0.081	0.074	0.068
10000	10	SMD128-4130 RL	0.142	0.132	0.119	0.107

1206 Case Size

200 Volt d.c. NPO, 1206 Case Size		Price Each				
pF	nF	Order Code	1+	100+	1K+	10K+
22	0.022	SMD128-4138 RL	0.192	0.177	0.158	0.142
47	0.047	SMD128-4140 RL	0.187	0.172	0.154	0.139
220	0.22	SMD128-4139 RL	0.187	0.172	0.154	0.139

1000 Volt d.c. NPO, 1206 Case Size

120	0.12	SMD335-1828 RL	0.350	0.270	0.230	0.188
180	0.18	SMD335-1830 RL	0.440	0.350	0.290	0.260
220	0.22	SMD335-1841 RL	0.124	0.098	0.079	0.071
330	0.33	SMD335-1853 RL	0.590	0.470	0.370	0.330

500 Volt d.c. NPO, 1206 Case Size

22	0.022	SMD128-4141 RL	0.186	0.171	0.154	0.139
220	0.22	SMD128-4142 RL	0.210	0.193	0.175	0.157

2000 Volt d.c. NPO, 1206 Case Size

47	0.047	SMD128-4136 RL	0.520	0.480	0.440	0.400
100	0.1	SMD128-4133 RL	0.580	0.540	0.480	0.440
220	0.22	SMD128-4135 RL	0.400	0.360	0.330	0.290

200 Volt d.c. X7R, 1206 Case Size

2200	2.2	SMD128-4151 RL	0.121	0.110	0.098	0.086
47000	47	SMD128-4144 RL	0.199	0.183	0.165	0.148

1000 Volt d.c. X7R, 1206 Case Size

1000	1	SMD128-4145 RL	0.320	0.290	0.270	0.240
2200	2.2	SMD128-4147 RL	0.330	0.300	0.270	0.250
4700	4.7	SMD128-4148 RL	0.330	0.300	0.270	0.250
10000	10	SMD128-4146 RL	0.320	0.290	0.270	0.240

1210 Case Size

1000 Volt d.c. NPO, 1210 Case Size		Price Each				
pF	nF	Order Code	1+	100+	1K+	3K+
1000	1	SMD128-4153 RL	0.61	0.58	0.55	0.52

2000 Volt d.c. NPO, 1210 Case Size

100000	100	SMD128-4158 RL	0.45	0.41	0.37	0.34
--------	-----	----------------	------	------	------	------

1000 Volt d.c. X7R, 1210 Case Size

1000	1	SMD128-4159 RL	0.28	0.26	0.25	0.22
22000	22	SMD128-4160 RL	0.49	0.46	0.42	0.37

1808 Case Size

3000 Volt d.c. NPO, 1808 Case Size		Price Each				
pF	nF	Order Code	1+	100+	1K+	10K+
10	0.01	SMD301-9950	0.72	0.64	0.57	0.50
15	0.015	SMD301-9962	2.68	2.36	2.13	1.87
22	0.022	SMD301-9974	1.23	1.08	0.98	0.86
47	0.047	SMD301-9998	0.83	0.74	0.68	0.61
220	0.22	SMD128-4164 RL	0.93	0.85	0.77	0.70

1000 Volt d.c. X7R, 1808 Case Size

10000	10	SMD128-4165 RL	1.00	0.92	0.82	0.74
-------	----	----------------	------	------	------	------

3000 Volt d.c. X7R, 1808 Case Size

1000	1	SMD128-4166 RL	0.86	0.80	0.72	0.65
------	---	----------------	------	------	------	------

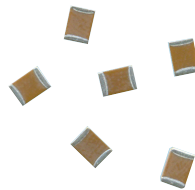
1812 Case Size

208563

1000 Volt d.c. NPO, 1812 Case Size			Price Each			
pF	nF	Order Code	1+	100+	1K+	10K+
100	0.1	SMD302-0009	1.71	1.49	1.37	1.18
220	0.22	SMD302-0022	1.91	1.67	1.51	1.32
330	0.33	SMD302-0034	1.98	1.72	1.54	1.36
470	0.47	SMD302-0046	2.01	1.75	1.56	1.38
680	0.68	SMD302-0058	1.98	1.72	1.54	1.36
1000	1	SMD302-0060	0.47	0.40	0.34	0.28
1500	1.5	SMD302-0071	3.12	2.77	2.49	2.15
2000 Volt d.c. NPO, 1812 Case Size						
1000	1	SMD128-4167	1.59	1.45	1.32	1.18
3000 Volt d.c. NPO, 1812 Case Size						
10	0.01	SMD302-0083	3.31	2.94	2.61	2.34
15	0.015	SMD302-0095	2.68	2.38	2.12	1.90
22	0.022	SMD302-0101	3.36	2.99	2.65	2.37
33	0.033	SMD302-0113	4.35	3.83	3.44	3.01
220	0.22	SMD128-4168	2.38	2.18	1.97	1.78
4000 Volt d.c. NPO, 1812 Case Size						
10	0.01	SMD128-4170	0.56	0.53	0.51	0.47
500 Volt d.c. X7R, 1812 Case Size						
100000	100	SMD128-4175	0.69	0.62	0.56	0.50
2000 Volt d.c. X7R, 1812 Case Size						
1000	1	SMD128-4176	0.86	0.79	0.71	0.65
2200	2.2	SMD128-4178	1.30	1.20	1.08	0.96
4700	4.7	SMD128-4179	1.30	1.20	1.08	0.96
10000	10	SMD128-4177	1.30	1.20	1.08	0.96

RL FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

High Voltage MLCC



- Nickel-barrier end termination
- 0805, 1206, 1210, 1808 and 1812 case sizes

Operating Temperature -55°C to +125°C

555361

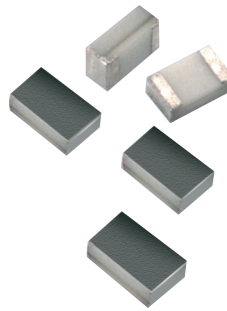
Order Multiple=50		Price Each					
Capacitance	Dielectric	Tolerance	List No.	Order Code	50+	100+	250+
250V							
47pF	COG / NPO	± 5%	CC0805JRNPOYBN470	177-9486	0.028	0.024	0.020
220pF	X7R	± 10%	CC0805KRX7RYBB221	177-9487	0.020	0.017	0.014
470pF	X7R	± 10%	CC0805KRX7RYBB471	177-9488	0.020	0.017	0.014
1nF	X7R	± 10%	CC0805KRX7RYBB102	177-9489	0.020	0.017	0.014
2.2nF	X7R	± 10%	CC0805KRX7RYBB222	177-9490	0.020	0.017	0.014
4.7nF	X7R	± 10%	CC0805KRX7RYBB472	177-9491	0.020	0.017	0.014
10nF	X7R	± 10%	CC0805KRX7RYBB103	177-9492	0.025	0.022	0.018
1nF	X7R	± 10%	CC1206KRX7RYBB102	177-9493	0.042	0.035	0.029
2.2nF	X7R	± 10%	CC1206KRX7RYBB222	177-9494	0.050	0.043	0.035
4.7nF	X7R	± 10%	CC1206KRX7RYBB472	177-9495	0.050	0.043	0.035
10nF	X7R	± 10%	CC1206KRX7RYBB103	177-9496	0.061	0.053	0.044
22nF	X7R	± 10%	CC1206KRX7RYBB223	177-9498	0.061	0.053	0.044
22nF	X7R	± 10%	CC1210KRX7RYBB223	177-9499	0.126	0.108	0.090
100nF	X7R	± 10%	CC1210KRX7RYBB104	177-9500	0.196	0.167	0.139
2.2nF	COG / NPO	± 5%	CC1812JKNPOYBN222	177-9501	0.480	0.20	0.340
4.7nF	COG / NPO	± 5%	CC1812JKNPOYBN472	177-9502	0.530	0.460	0.370
100nF	X7R	± 10%	CC1812KXK7RYBB104	177-9504	0.420	0.350	0.290
1000V							
47pF	COG / NPO	± 5%	CC1206JRNPOCBN470	177-9505	0.080	0.069	0.057
100pF	COG / NPO	± 5%	CC1206JRNPOCBN101	177-9506	0.080	0.069	0.057
4.7nF	X7R	± 10%	CC1210KXK7RCBB472	177-9507	0.182	0.156	0.130
10nF	X7R	± 10%	CC1210KXK7RCBB103	177-9508	0.182	0.156	0.130
4.7nF	X7R	± 10%	CC1808KXK7RCBB472	177-9509	0.230	0.197	0.163
1nF	X7R	± 10%	CC1812KXK7RCBB102	177-9510	0.230	0.197	0.163
10nF	X7R	± 10%	CC1812KXK7RCBB103	177-9511	0.290	0.250	0.210
2000V							
470pF	X7R	± 10%	CC1206KXK7RDBB471	177-9512	0.095	0.081	0.068
1nF	X7R	± 10%	CC1206KXK7RDBB102	177-9513	0.095	0.081	0.068
220pF	COG / NPO	± 5%	CC1210JKNPODBN221	177-9514	0.192	0.165	0.137
1nF	X7R	± 10%	CC1210KXK7RDBB102	177-9516	0.150	0.128	0.107
220pF	COG / NPO	± 5%	CC1808JKNPODBN221	177-9517	0.240	0.210	0.173
470pF	COG / NPO	± 5%	CC1808JKNPODBN471	177-9518	0.320	0.280	0.230
470pF	X7R	± 10%	CC1808KXK7RDBB471	177-9519	0.196	0.167	0.139
1nF	X7R	± 10%	CC1808KXK7RDBB102	177-9520	0.196	0.167	0.139
2.2nF	X7R	± 10%	CC1808KXK7RDBB222	177-9521	0.220	0.187	0.156
3000V							
1nF	X7R	± 10%	CC1812KXK7REBB102	177-9522	0.320	0.280	0.230

Ceramic - RF & Microwave - AVX

RF/Microwave Capacitors



ACCU-P®



0201 H=0.225 W=0.6 D=0.325mm
0402 H=0.4 W=1 D=0.55mm
0603 H=0.63 W=1.6 D=0.81mm

- Low ESR, high Q, availability of very low capacitance values and very tight capacitance tolerances
- The RF power handling capability allows for its usage in both small signal and RF power applications
- Inspection, test and quality control procedures in accordance with ISO 9001, CECC, IECQ and USA MIL Standards guarantee product of the highest quality
- Minimal batch to batch variability of parameters at high frequency
- Hand soldering: Due to their construction utilizing relatively high thermal conductivity materials, Accu-Ps have become the preferred device in R & D labs and production environments where hand soldering is used

The use of very low-loss dielectric materials (silicon dioxide and silicon oxynitride) in conjunction with highly conductive electrode metals results in low ESR and high Q. At high frequency these characteristics change at a slower rate with increasing frequency than conventional ceramic microwave capacitors. Using thin-film technology, the above-mentioned frequency characteristics are obtained without significant compromise of properties required for surface mounting. The use of high thermal conductivity materials results in excellent RF power handling capabilities.

Operating and storage temperature -55°C to +125°C
Temperature coefficient 0 ±30ppm/°C dielectric code J
Capacitance measurement 1MHz, 1Vrms
Insulation resistance ≥10¹⁰

Proof voltage 2.5 U₀ for 5 secs
Aging characteristic Zero
Dielectric absorption 0.01%

Capacitance		Price Each				
(pF)	Mfrs. List No.	Order Code	1+	25+	100+	1K+
0201 - 10 Volt d.c.						
4.7	0201ZJ4R7ABSTR	NEW SMD174-0487	0.530	0.440	0.400	0.350
0201 - 16 Volt d.c.						
3.3	0201YJ3R3ABSTR	NEW SMD174-0485	0.530	0.440	0.400	0.350
3.9	0201YJ3R9ABSTR	NEW SMD174-0486	0.530	0.440	0.400	0.350
0201 - 25 Volt d.c.						
0.1	02013J0R1ABSTR	NEW SMD174-0475	0.360	0.300	0.270	0.240
0.3	02013J0R3ABSTR	NEW SMD174-0476	0.360	0.300	0.270	0.240
0.5	02013J0R5PBSTR	NEW SMD169-7168	1.830	1.610	0.910	0.630
0.7	02013J0R7ABSTR	NEW SMD174-0478	0.360	0.300	0.270	0.240
0.9	02013J0R9ABSTR	NEW SMD174-0479	0.360	0.300	0.270	0.240
1	02013J1R0ABSTR	NEW SMD169-7169	0.870	0.770	0.430	0.300
1.1	02013J1R1ABSTR	NEW SMD174-0480	0.360	0.300	0.270	0.240
1.3	02013J1R3ABSTR	NEW SMD174-0481	0.360	0.300	0.270	0.240
1.8	02013J1R8ABSTR	NEW SMD174-0482	0.370	0.310	0.280	0.250
2.2	02013J2R2ABSTR	NEW SMD174-0483	0.370	0.310	0.280	0.250
2.7	02013J2R7ABSTR	NEW SMD174-0484	0.370	0.310	0.280	0.250
0402 - 10 Volt d.c.						
15	0402ZK150GBSTR	NEW SMD174-0488	0.410	0.340	0.300	0.270
18	0402ZK180GBSTR	SMD110-0633	1.460	1.010	0.560	0.390
22	0402ZK220GBSTR	NEW SMD174-0491	0.400	0.330	0.290	0.260
0402 - 25 Volt d.c.						
0.2	04023J0R2ABSTR	SMD110-0608	1.250	0.690	0.380	0.270
0.3	04023J0R3ABSTR	SMD110-0611	1.030	0.920	0.550	0.390
0.5	04023J0R5ABSTR	SMD110-0613	1.290	0.710	0.400	0.280
0.7	04023J0R7ABSTR	SMD110-0615	1.070	0.950	0.530	0.370
0.8	04023J0R8ABSTR	SMD110-0616	0.970	0.680	0.380	0.270
0.9	04023J0R9ABSTR	SMD110-0617	0.420	0.380	0.330	0.290
1.2	04023J1R2BBSTR	SMD110-0618	0.870	0.480	0.270	0.187
2.7	04023J2R7BBSTR	SMD110-0623	0.320	0.290	0.168	0.116
3	04023J3R0BBWTR	NEW SMD174-0492	0.360	0.300	0.270	0.240
3.9	04023J3R9BBSTR	SMD110-0625	1.200	0.700	0.390	0.270
4.7	04023J4R7BBSTR	SMD110-0626	1.200	0.700	0.390	0.270
0603 - 50 Volt d.c.						
0.5	06035J0R5PBSTR	NEW SMD174-0493	0.650	0.540	0.480	0.440
2.4	06035J2R4BBTTR	NEW SMD174-0494	0.610	0.510	0.450	0.410
6.8	06035J6R8BBSTR	NEW SMD174-0495	0.610	0.510	0.450	0.410
8.2	06035J8R2BBSTR	NEW SMD174-0496	0.570	0.480	0.430	0.370
10	06035J100GBSTR	NEW SMD174-0497	0.590	0.490	0.440	0.400

Technical information at your fingertips

Over 420,000 technical datasheets available online.

Visit www.farnell.co.uk and look for the Tech Info heading in your search results.

Ceramic - RF & Microwave - AVX - continued

RF/Microwave Ceramic Capacitors

U Series



U Series capacitors are COG (NPO) chip capacitors specially designed for Ultra low ESR for applications in the communications market. Max ESR and effective capacitance are met on each value producing lot to lot uniformity.

- Tolerance**
B = ±0.1pF
C = ±0.25pF
G = ±2%
J = ±5%
- Temperature coefficient**
Insulation resistance
Dielectric working voltage
Dimensions (LxWxH)
- Indicated by the 10th digit of Mftrs. List No.
0±30ppm/°C
10¹²Ωmin. @ 25°C and WVDC
250% of rated WVDC
0402: 1 x 0.50 x 0.6mm
0603: 1.52 x 0.76 x 0.91mm
0805: 2.01 x 1.25 x 1.02mm

0402 Case Size

Order Multiple=5

50 Volt d.c. COG 0402 Case Size

pF	Mftrs. List No.	Order Code	5+	50+	250+	1K+	5K+
0.5	04025U0R5BAT2A	SMD 756-7995 R L	0.220	0.123	0.069	0.048	0.046
1	04025U1R0BAT2A	SMD 756-8002 R L	0.184	0.092	0.051	0.035	0.034
1.5	04025U1R5BAT2A	SMD 756-8010 R L	0.220	0.120	0.067	0.047	0.044
1.8	04025U1R8BAT2A	SMD 756-8029 R L	0.220	0.120	0.067	0.047	0.044
2.2	04025U2R2BAT2A	SMD 756-8037 R L	0.220	0.123	0.069	0.048	0.046
3	04025U3R0BAT2A	SMD 756-8053 R L	0.230	0.124	0.069	0.048	0.046
3.6	04025U3R6BAT2A	SMD 756-8061 R L	0.086	0.076	0.065	0.056	0.043
4.7	04025U4R7CAT2A	SMD 756-8070 R L	0.096	0.084	0.060	0.042	0.040
5.6	04025U5R6CAT2A	SMD 756-8088 R L	0.200	0.110	0.061	0.043	0.041
6.8	04025U6R8CAT2A	SMD 756-8100 R L	0.052	0.047	0.041	0.034	0.027
8.2	04025U8R2CAT2A	SMD 756-8118 R L	0.196	0.107	0.060	0.042	0.040
10	04025U10GAT2A	SMD 756-8126 R L	0.230	0.151	0.084	0.059	0.056
12	04025U12GAT2A	SMD 756-8134 R L	0.250	0.147	0.082	0.057	0.054
15	04025U15GAT2A	SMD 756-8142 R L	0.180	0.123	0.069	0.048	0.046

0603 Case Size

Order Multiple=5

200 Volt d.c. COG 0603 Case Size

pF	Mftrs. List No.	Order Code	5+	50+	250+	1K+	5K+
1	06032U1R0BAT2A	SMD 756-8150 R L	0.550	0.340	0.189	0.132	0.125
1.2	06032U1R2BAT2A	SMD 756-8169 R L	0.470	0.260	0.142	0.100	0.095
1.5	06032U1R5BAT2A	SMD 756-8177 R L	0.550	0.340	0.189	0.132	0.125
1.8	06032U1R8BAT2A	SMD 756-8185 R L	0.187	0.167	0.142	0.121	0.097
2	06032U2R0BAT2A	SMD 756-8193 R L	0.390	0.196	0.108	0.075	0.074
2.4	06032U2R4BAT2A	SMD 756-8207 R L	0.480	0.260	0.147	0.102	0.097
2.7	06032U2R7BAT2A	SMD 756-8215 R L	0.390	0.196	0.108	0.075	0.066
3	06032U3R0BAT2A	SMD 756-8223 R L	0.450	0.250	0.138	0.097	0.092
3.3	06032U3R3BAT2A	SMD 756-8231 R L	0.520	0.280	0.159	0.111	0.105
3.9	06032U3R9BAT2A	SMD 756-8240 R L	0.470	0.260	0.146	0.102	0.096
4.7	06032U4R7CAT2A	SMD 756-8258 R L	0.330	0.183	0.103	0.072	0.068
5.6	06032U5R6CAT2A	SMD 756-8266 R L	0.320	0.180	0.101	0.070	0.067
6.8	06032U6R8CAT2A	SMD 756-8274 R L	0.330	0.182	0.102	0.071	0.068
7.5	06032U7R5CAT2A	SMD 756-8282 R L	0.210	0.130	0.079	0.057	0.055
8.2	06032U8R2CAT2A	SMD 756-8290 R L	0.460	0.410	0.340	0.300	0.280
10	06032U10GAT2A	SMD 756-8304 R L	0.360	0.200	0.112	0.078	0.074
12	06032U12GAT2A	SMD 756-8312 R L	0.330	0.185	0.104	0.073	0.069
15	06032U15GAT2A	SMD 756-8320 R L	0.330	0.183	0.103	0.072	0.068
18	06032U18GAT2A	SMD 756-8339 R L	0.330	0.186	0.104	0.073	0.069

0805 Case Size

Order Multiple=5

200 Volt d.c. COG 0805 Case Size

pF	Mftrs. List No.	Order Code	5+	50+	250+	1K+	5K+
1	08052U1R0BAT2A	SMD 756-8398 R L	0.570	0.310	0.176	0.123	0.116
1.5	08052U1R5BAT2A	SMD 756-8401 R L	0.370	0.240	0.152	0.111	0.106
2.2	08052U2R2BAT2A	SMD 756-8410 R L	0.570	0.320	0.178	0.124	0.118
2.4	08052U2R4BAT2A	SMD 756-8428 R L	0.126	0.113	0.101	0.083	0.081
2.7	08052U2R7BAT2A	SMD 756-8436 R L	0.630	0.390	0.220	0.149	0.141
3	08052U3R0BAT2A	SMD 756-8444 R L	0.570	0.310	0.177	0.124	0.118
3.3	08052U3R3BAT2A	SMD 756-8452 R L	0.620	0.340	0.192	0.134	0.127
3.9	08052U3R9BAT2A	SMD 756-8460 R L	0.570	0.390	0.220	0.149	0.141
4.7	08052U4R7CAT2A	SMD 756-8478 R L	0.500	0.270	0.148	0.103	0.099
5.6	08052U5R6CAT2A	SMD 756-8487 R L	0.280	0.220	0.139	0.101	0.097

Order Multiple=5

200 Volt d.c. COG 0805 Case Size

pF	Mftrs. List No.	Order Code	5+	50+	250+	1K+	5K+
7.5	08052U7R5CAT2A	SMD 756-8495 R L	0.390	0.280	0.155	0.108	0.103
8.2	08052U8R2CAT2A	SMD 756-8509 R L	0.390	0.220	0.120	0.083	0.079
9.1	08052U9R1CAT2A	SMD 756-8517 R L	0.380	0.210	0.116	0.081	0.077
10	08052U10GAT2A	SMD 756-8525 R L	0.390	0.240	0.134	0.094	0.088
12	08052U12GAT2A	SMD 756-8533 R L	0.390	0.240	0.134	0.094	0.088
15	08052U15GAT2A	SMD 756-8541 R L	0.440	0.280	0.157	0.110	0.104
18	08052U18GAT2A	SMD 756-8550 R L	0.400	0.220	0.121	0.084	0.080
22	08052U22GAT2A	SMD 756-8568 R L	0.390	0.290	0.160	0.111	0.106
24	08052U24GAT2A	SMD 756-8576 R L	0.440	0.300	0.166	0.116	0.110
27	08052U27GAT2A	SMD 756-8584 R L	0.390	0.290	0.165	0.115	0.109
33	08052U33GAT2A	SMD 756-8592 R L	0.390	0.210	0.119	0.083	0.078
39	08052U39GAT2A	SMD 756-8614 R L	0.390	0.220	0.120	0.083	0.079
47	08052U47GAT2A	SMD 756-8622 R L	0.360	0.220	0.124	0.086	0.082
68	08052U68GAT2A	SMD 756-8649 R L	0.350	0.194	0.109	0.076	0.072
82	08052U82GAT2A	SMD 756-8657 R L	0.340	0.186	0.104	0.073	0.069
100	08052U101JAT2A	SMD 756-8665 R L	0.360	0.200	0.112	0.079	0.075
130	08052U131JAT2A	SMD 756-8673 R L	0.360	0.250	0.137	0.096	0.090

Capacitance Conversion Table

0.000001μF	=	0.001nF	=	1pF
0.00001μF	=	0.01nF	=	10pF
0.0001μF	=	0.1nF	=	100pF
0.001μF	=	1nF	=	1000pF
0.01μF	=	10nF	=	10000pF
0.1μF	=	100nF	=	100000pF
1μF	=	1000nF	=	1000000pF
10μF	=	10000nF	=	10000000pF
100μF	=	100000nF	=	100000000pF

SQCA/CB/CF/CS RF Capacitors Ceramic Low ESR, High Q Capacitors



SQCA/CB/CF/CS are ultra low ESR microwave capacitors suitable for RF Power Amplifiers. They come in non-mag termination for MRI applications. They offer very high Q and resonant frequency and power handling capability.

- Operating temperature -55 to 175°C
- Resonant frequency >10000 @ 1 MHz
- Case size SQCS = 0603, SQCA = 0605, SQCF = 0805, SQCB = 1210

0603 Case Size

Price Each

pF	Mftrs. List No.	Order Code	1+	50+	250+	500+
0.1	SQCSVA0R1BAT1A/500	NEW SMD 174-0736 R L	0.280	0.240	0.198	0.146
0.3	SQCSVA0R3BAT1A/500	NEW SMD 174-0737 R L	0.280	0.240	0.198	0.146
0.4	SQCSVA0R4BAT1A	NEW SMD 169-7202 R L	0.630	0.570	0.530	0.450
0.5	SQCSVA0R5BAT1A/500	NEW SMD 174-0739 R L	0.280	0.240	0.198	0.146
0.8	SQCSVA0R8BAT1A	NEW SMD 169-7203 R L	0.720	0.660	0.600	0.520
1.5	SQCSVA1R5BAT1A	NEW SMD 169-7204 R L	0.760	0.710	0.650	0.550
1.8	SQCSVA1R8BAT1A	NEW SMD 169-7205 R L	0.920	0.830	0.760	0.660
2.2	SQCSVA2R2BAT1A	NEW SMD 169-7206 R L	0.920	0.830	0.760	0.660
2.7	SQCSVA2R7BAT1A	NEW SMD 169-7207 R L	0.920	0.830	0.760	0.660
3.3	SQCSVA3R3BAT1A	NEW SMD 169-7208 R L	1.070	0.970	0.880	0.760
4.7	SQCSVA4R7CAT1A	NEW SMD 169-7209 R L	0.660	0.600	0.570	0.490
8.2	SQCSVA8R2CAT1A	NEW SMD 169-7210 R L	1.290	1.200	1.080	0.930
10	SQCSVA100FAT1A/500	NEW SMD 174-0741 R L	0.790	0.680	0.550	0.410
12	SQCSVA120JAT1A	NEW SMD 169-7211 R L	0.760	0.710	0.650	0.550
15	SQCSVA150JAT1A	NEW SMD 169-7212 R L	0.760	0.710	0.650	0.550
18	SQCSVA180JAT1A	NEW SMD 169-7214 R L	0.760	0.710	0.650	0.550
22	SQCSVA220JAT1A	NEW SMD 169-7215 R L	0.760	0.710	0.650	0.550
24	SQCSVA240JAT1A	NEW SMD 169-7216 R L	0.760	0.710	0.650	0.550
27	SQCSVA270JAT1A	NEW SMD 169-7217 R L	0.760	0.710	0.650	0.550
30	SQCSVA300JAT1A	NEW SMD 169-7218 R L	0.760	0.710	0.650	0.550
56	SQCSVA560JAT1A	NEW SMD 169-7219 R L	0.920	0.830	0.760	0.660
68	SQCSVA680JAT1A	NEW SMD 169-7220 R L	0.920	0.830	0.760	0.660
82	SQCSVA820JAT1A	NEW SMD 169-7221 R L	0.920	0.830	0.760	0.660

0605 Case Size

Price Each

pF	Mftrs. List No.	Order Code	1+	50+	250+	500+
1.1	SQCAEM1R1BATME/500	SMD 130-1995 R L	0.37	0.30	0.27	0.22
1.2	SQCAEM1R2BATME/500	SMD 130-1996 R L	1.26	1.01	0.89	0.69
1.5	SQCAEM1R5BATME/500	SMD 130-1997 R L	0.69	0.55	0.49	0.38
1.6	SQCAEM1R6BATME/500	SMD 130-1999 R L	0.37	0.30	0.27	0.22
1.8	SQCAEM1R8BATME/500	SMD 130-2001 R L	0.43	0.34	0.30	0.24
2	SQCAEM2R0BATME/500	SMD 130-2003 R L	0.56	0.47	0.42	0.34

pF	Mftrs. List No.	Order Code	Price Each			
			1+	50+	250+	500+
150 Volt						
2.2	SQCAEM2R2BATME/500	SMD 130-2004	0.37	0.30	0.27	0.22
2.4	SQCAEM2R4BATME/500	SMD 130-2005	0.37	0.30	0.27	0.22
3	SQCAEM3R0BATME/500	SMD 130-2007	0.37	0.30	0.27	0.22
3.9	SQCAEM3R9BATME/500	SMD 130-2009	0.41	0.33	0.29	0.23
5.6	SQCAEM5R6BATME/500	SMD 130-2011	0.37	0.30	0.27	0.22
8.2	SQCAEM8R2BATME/500	SMD 130-2014	0.83	0.67	0.59	0.46
10	SQCAEM100FATME/500	SMD 130-2015	1.69	1.35	1.18	0.93
18	SQCAEM180FATME/500	SMD 130-2018	0.69	0.57	0.51	0.41
22	SQCAEM220FATME/500	SMD 130-2019	1.30	1.04	0.91	0.71
27	SQCAEM270FATME/500	SMD 130-2020	1.58	1.35	1.23	1.03
39	SQCAEM390FATME/500	SMD 130-2022	0.69	0.57	0.51	0.41
47	SQCAEM470FATME/500	SMD 130-2023	0.78	0.62	0.55	0.43
100	SQCAEM101JATME/500	NEW SMD 169-7184	2.39	2.21	2.01	1.73

0805 Case Size

pF	Mftrs. List No.	Order Code	Price Each			
			1+	50+	250+	500+
250 Volt						
0.1	SQCFVA0R1BAT1A/500	NEW SMD 174-0742	0.340	0.290	0.240	0.177
0.3	SQCFVA0R3BAT1A/500	NEW SMD 174-0743	0.340	0.290	0.240	0.177
0.5	SQCFVA0R5BAT1A/500	NEW SMD 174-0744	0.340	0.290	0.240	0.177
0.7	SQCFVA0R7BAT1A/500	NEW SMD 174-0745	0.340	0.290	0.240	0.177
0.9	SQCFVA0R9BAT1A/500	NEW SMD 174-0746	0.360	0.310	0.250	0.187
1	SQCFVA1R0BATME	NEW SMD 169-7222	0.870	0.800	0.720	0.630
1.2	SQCFVA1R2BAT1A/500	NEW SMD 174-0747	0.360	0.310	0.250	0.187
1.4	SQCFVA1R4BAT1A/500	NEW SMD 174-0748	0.360	0.310	0.250	0.187
1.6	SQCFVA1R6BAT1A/500	NEW SMD 174-0749	0.430	0.360	0.300	0.220
1.8	SQCFVA1R8BAT1A/500	NEW SMD 174-0750	0.430	0.360	0.300	0.220
2	SQCFVA2R0BAT1A/500	NEW SMD 174-0752	0.430	0.360	0.300	0.220
2.2	SQCFVA2R2BAT1A/500	NEW SMD 174-0753	0.430	0.360	0.300	0.220
2.7	SQCFVA2R7BAT1A/500	NEW SMD 174-0754	0.430	0.360	0.300	0.220
3	SQCFVA3R0BAT1A/500	NEW SMD 174-0755	0.430	0.360	0.300	0.220
3.3	SQCFVA3R3BAT1A/500	NEW SMD 174-0756	0.510	0.430	0.350	0.260
3.6	SQCFVA3R6BAT1A/500	NEW SMD 174-0757	0.510	0.430	0.350	0.260
3.9	SQCFVA3R9BAT1A/500	NEW SMD 174-0758	0.510	0.430	0.350	0.260
4.3	SQCFVA4R3BAT1A/500	NEW SMD 174-0759	0.510	0.430	0.350	0.260
4.7	SQCFVA4R7BAT1A/500	NEW SMD 174-0760	0.510	0.430	0.350	0.260
5.1	SQCFVA5R1BAT1A/500	NEW SMD 174-0761	0.610	0.520	0.430	0.310
5.6	SQCFVA5R6BAT1A/500	NEW SMD 174-0762	0.610	0.520	0.430	0.310
6.2	SQCFVA6R2BAT1A/500	NEW SMD 174-0764	0.610	0.520	0.430	0.310
6.8	SQCFVA6R8BAT1A/500	NEW SMD 174-0765	0.770	0.660	0.540	0.400
7.5	SQCFVA7R5BAT1A/500	NEW SMD 174-0766	0.770	0.660	0.540	0.400
8.2	SQCFVA8R2BAT1A/500	NEW SMD 174-0767	0.770	0.660	0.540	0.400

1210 Case Size

pF	Mftrs. List No.	Order Code	Price Each			
			1+	50+	250+	500+
200 Volt						
220	SQCB2M221JATME/500	SMD 130-1989	2.92	2.32	2.02	1.57
270	SQCB2M271JATME/500	SMD 130-1990	1.48	1.17	1.03	0.80
330	SQCB2M331JATME/500	NEW SMD 169-7185	3.08	2.81	2.58	2.22
300 Volt						
150	SQCB9M151JATME/500	SMD 130-1987	2.82	2.24	1.98	1.53
180	SQCB9M181JATME/500	SMD 130-1988	1.06	0.90	0.81	0.66
500 Volt						
1	SQCB7M1R0BATME/500	SMD 130-1958	1.61	1.29	1.12	0.88
1.5	SQCB7M1R5BATME/500	SMD 130-1960	0.54	0.43	0.39	0.29
2	SQCB7M2R0BATME/500	NEW SMD 169-7186	5.09	4.65	4.26	3.66
2.2	SQCB7M2R2BATME/500	SMD 130-1963	1.62	1.30	1.13	0.89
3.3	SQCB7M3R3BATME/500	SMD 130-1965	1.05	0.83	0.73	0.58
3.9	SQCB7M3R9BATME/500	SMD 130-1966	0.69	0.57	0.52	0.42
3.9	SQCB7M3R9CATME/500	NEW SMD 169-7187	2.34	2.15	1.97	1.69
4.7	SQCB7M4R7BATME/500	SMD 130-1967	2.62	2.11	1.84	1.45
4.7	SQCB7M4R7CATME/500	NEW SMD 169-7188	2.34	2.15	1.97	1.69
5.6	SQCB7M5R6BATME/500	SMD 130-1968	1.60	1.27	1.13	0.89
5.6	SQCB7M5R6CATME/500	NEW SMD 169-7189	2.34	2.15	1.97	1.69
6.8	SQCB7M6R8CATME/500	NEW SMD 169-7190	2.73	2.50	2.29	1.97
8.2	SQCB7M8R2BATME/500	SMD 130-1970	1.32	1.05	0.93	0.73
8.2	SQCB7M8R2CATME/500	NEW SMD 169-7191	2.73	2.50	2.29	1.97
10	SQCB7M100FATME/500	SMD 130-1971	2.66	2.36	2.07	1.60
10	SQCB7M100JATME/500	NEW SMD 169-7192	2.11	1.93	1.79	1.52
12	SQCB7M120JATME/500	NEW SMD 169-7193	2.11	1.93	1.79	1.52
15	SQCB7M150FATME/500	SMD 130-1973	2.67	2.37	2.08	1.61
15	SQCB7M150JATME/500	NEW SMD 169-7194	2.11	1.93	1.79	1.52
18	SQCB7M180FATME/500	SMD 130-1975	2.71	2.42	2.13	1.65
20	SQCB7M200JATME/500	NEW SMD 169-7196	2.11	1.93	1.79	1.52
22	SQCB7M220FATME/500	SMD 130-1976	1.45	1.28	1.11	0.86
22	SQCB7M220JATME/500	NEW SMD 169-7197	2.11	1.93	1.79	1.52
27	SQCB7M270FATME/500	SMD 130-1977	1.12	1.02	0.91	0.74
27	SQCB7M270JATME/500	NEW SMD 169-7198	2.21	2.01	1.85	1.59

pF	Mftrs. List No.	Order Code	Price Each			
			1+	50+	250+	500+
500 Volt						
39	SQCB7M390JATME/500	NEW SMD 169-7199	2.21	2.01	1.85	1.59
47	SQCB7M470FATME/500	SMD 130-1980	2.01	1.78	1.56	1.22
47	SQCB7M470JATME/500	NEW SMD 169-7200	2.39	2.21	2.01	1.73
56	SQCB7M560JATME/500	SMD 130-1981	0.60	0.48	0.42	0.32
68	SQCB7M680JATME/500	SMD 130-1982	1.06	0.84	0.74	0.58
82	SQCB7M820JATME/500	SMD 130-1983	1.48	1.17	1.03	0.80
100	SQCB7M101JATME/500	SMD 130-1984	2.92	2.32	2.02	1.57

AVX Hi-Q Designer Kits

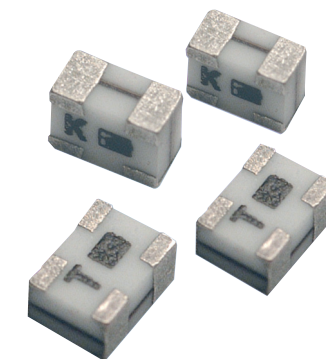


A range of Hi-Q designer kits giving the user maximum range choice with enough samples to be useful during test and development. Once used, each product in the kits can be replenished through Farnell InOne. Also included with the kit is a full range card and a data CD Rom. 5 of each capacitance value (within the stated range) is supplied in each kit.

No. of Values	Capacitance Values	Mftrs List No.	Order Code	Price Each
30 Values	1 pF to 270 pF	RFSQ001	130-1957	87.93
30 Values	0.6 pF to 56 pF	RFSQ002	130-1991	87.93

Thin-Film 3dB Directional Couplers

DB0805 Series



Reel Quantity = 3000

The ITF SMD 3dB 90° Coupler is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF 3dB 90° Coupler is offered in a variety of frequency bands compatible with various types of high frequency wireless systems such as GSM, PCS, W-CDMA etc.

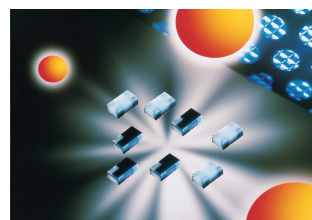
- Miniature size
- Low Insertion Loss
- High Isolation
- Power Handling: 10W RF CW
- Operating Temperature: -40°C to +85°C
- Applications: Balanced amplifiers and signal distribution in mobile communications

Fo (MHz)	I. Loss @ Fo (dB)	Phase Balance Max (deg)	Device Marking	Mftrs. List No.	Order Code
880	0.35	3	Y	DB0805A0880ASTR	110-0636
915	0.35	3	V	DB0805A0915ASTR	110-0637
967	0.35	3	V	DB0805A0967ASTR	110-0638
1650	0.35	3	F	DB0805A1650ASTR	110-0640
1950	0.25	3	K	DB0805A1950ASTR	110-0644
2140	0.25	3	L	DB0805A2140ASTR	110-0645
2325	0.25	3	T	DB0805A2325ASTR	110-0647

Order Code	Price Each				
	1+	25+	100+	1K+	3K+
All Values	1.95	1.55	1.28	1.10	0.97

Thin -Film Directional Couplers

CP0603 High Directivity LGA Termination



The ITF LGA Coupler is based on thin-film multilayer technology. The technology provides a miniature part with excellent high frequency performance and rugged construction for reliable automatic assembly.

The ITF Coupler is offered in a variety of frequency bands compatible with various types of high frequency wireless systems.

- Features:**
- Inherent Low Profile
 - Self Alignment during Reflow
 - Excellent Solderability
 - Low Parasitics
 - Better Heat Dissipation
 - Operating/Storage Temp -40°C to +85°C
 - Power Rating 3W RF Cont

For full technical specifications, please see the datasheet on our website



Ceramic - RF & Microwave - AVX - continued

Thin -Film Directional Couplers - continued

CP0603 High Directivity LGA Termination - continued

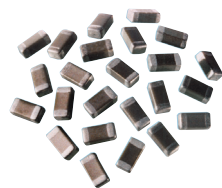
464338

Mftrs. List No.	Order Code	Price Each				
		1+	100+	500+	1K+	3K+
CP0603AXXXCNTR	SMD134-3813	0.390	0.330	0.280	0.250	0.220
CP0603AXXXHNTR	SMD134-3814	0.230	0.194	0.159	0.144	0.128
CP0603AXXXANTR	SMD134-3815	0.230	0.194	0.159	0.144	0.128
CP0603AXXXDNTR	SMD134-3817	0.310	0.260	0.210	0.194	0.174
CP0603AXXXBNTR	SMD134-3818	0.510	0.410	0.330	0.290	0.250
CP0603AXXXMNTR	SMD134-3819	0.490	0.390	0.320	0.280	0.240
CP0603AXXXENTR	SMD134-3820	0.310	0.260	0.210	0.194	0.175
CP0603AXXXFNTR	SMD134-3821	0.390	0.330	0.280	0.250	0.220
CP0603AXXXGNTR	SMD134-3823	0.310	0.260	0.210	0.194	0.174
CP0603AXXXLNTR	SMD134-3824	0.310	0.260	0.210	0.194	0.174

Ceramic - RF & Microwave - Murata

High Frequency/High Power Chip Monolithic Ceramic Capacitor

MA Series



- Miniature sizes
- Very high Q at high frequency
- High RF power capabilities
- Impervious to environmental conditions
- Low noise

Performance Characteristics		Performance Characteristics	
Dielectric	COG / NPO	Operating Temperature	-55°C to 125°C
Temperature Coefficient	±20ppm/°C		

0505 Case Size

pF	Order Code	Price Each			
		1+	50+	500+	1K+
150 Volt d.c. P090, 0505 Case Size					
1	SMD129-4566	1.56	1.27	1.14	1.10
1.8	SMD129-4571	1.56	1.27	1.14	1.10
2.2	SMD129-4574	3.15	2.62	2.02	1.57
3.3	SMD129-4577	1.72	1.42	1.19	1.10
3.9	SMD129-4578	1.39	1.22	1.07	1.01
4.7	SMD129-4580	2.09	1.72	1.47	1.27
5.6	SMD129-4583	0.70	0.61	0.54	0.53
6.8	SMD129-4585	0.70	0.61	0.54	0.53
8.2	SMD129-4560	1.12	1.05	1.04	1.01
8.2	SMD129-4587	0.70	0.61	0.54	0.53
10	SMD129-4561	0.87	0.71	0.61	0.56
12	SMD129-4563	0.90	0.74	0.63	0.58
15	SMD129-4564	0.73	0.63	0.56	0.53
18	SMD129-4565	0.92	0.76	0.65	0.58
22	SMD129-4572	0.90	0.74	0.63	0.58
27	SMD129-4573	0.69	0.59	0.54	0.53
33	SMD129-4575	0.90	0.74	0.63	0.58
39	SMD129-4576	0.90	0.74	0.63	0.58
47	SMD129-4579	0.90	0.74	0.63	0.58
56	SMD129-4582	0.90	0.74	0.63	0.58
68	SMD129-4584	0.90	0.74	0.63	0.58
82	SMD129-4586	0.73	0.63	0.56	0.53

1111 Case Size

452088

pF	Order Code	Price Each			
		1+	50+	500+	750+
50 Volt d.c. P090, 1111 Case Size					
680	SMD129-4619	1.23	1.01	0.86	0.79
1	SMD129-4591	3.55	2.50	1.67	1.25
200 Volt d.c. P090, 1111 Case Size					
220	SMD129-4603	1.23	1.01	0.86	0.79
330	SMD129-4608	3.55	2.50	1.67	1.25
470	SMD129-4614	3.55	2.50	1.67	1.25
500 Volt d.c. P090, 1111 Case Size					
0.5	SMD129-4588	1.75	1.45	1.23	1.12
1	SMD129-4597	1.75	1.45	1.23	1.12
1.2	SMD129-4598	1.91	1.74	1.69	1.63
1.5	SMD129-4599	1.01	0.83	0.71	0.62
1.8	SMD129-4601	2.00	1.66	1.40	1.23
2.2	SMD129-4605	1.75	1.45	1.23	1.12
2.7	SMD129-4606	1.42	1.24	1.10	1.03
3.3	SMD129-4610	1.75	1.45	1.23	1.12

pF	Order Code	Price Each			
		1+	50+	500+	750+
500 Volt d.c. P090, 1111 Case Size					
3.9	SMD129-4612	3.23	2.69	2.08	1.61
5.6	SMD129-4617	0.89	0.73	0.62	0.57
6.8	SMD129-4620	0.89	0.73	0.62	0.57
8.2	SMD129-4622	0.89	0.73	0.62	0.57
10	SMD129-4589	1.21	0.96	0.80	0.69
12	SMD129-4592	1.01	0.79	0.67	0.62
15	SMD129-4594	0.93	0.75	0.64	0.60
18	SMD129-4596	1.05	0.86	0.73	0.64
22	SMD129-4602	0.93	0.75	0.64	0.60
27	SMD129-4604	0.93	0.75	0.64	0.60
33	SMD129-4607	1.11	0.91	0.78	0.69
39	SMD129-4609	1.24	0.99	0.83	0.72
47	SMD129-4613	1.11	0.91	0.78	0.69
56	SMD129-4616	0.94	0.76	0.65	0.61
68	SMD129-4618	0.93	0.75	0.64	0.60
82	SMD129-4621	0.93	0.75	0.64	0.60
100	SMD129-4590	1.41	1.11	0.95	0.87
150	SMD129-4595	1.08	0.88	0.75	0.70

Chip Monolithic Ceramic Capacitors

High Frequency Type ERB Series



- Negligible inductance is achieved by its monolithic structure so the series can be used at frequencies above 1GHz
- Nickel barrier terminations of ERB series improve solderability and decrease solder leaching
- ERB18/21 series are designed for both flow and re-flow soldering and ERB32 series are designed for re-flow soldering

Performance Characteristics		Performance Characteristics		Performance Characteristics	
Dielectric	COG / NPO	Dielectric	COG / NPO	Dielectric	COG / NPO
Temperature Coefficient	±30ppm/°C	Temperature Coefficient	±30ppm/°C	Insulation Resistance	100,000MΩ
Operating Temperature	-55°C to 125°C	Operating Temperature	-55°C to 125°C		

0603 Case Size

Order Multiple=5	Order Code	Price Each				
		5+	50+	250+	1K+	4K+
200 Volt d.c. COG, 0603 Case Size						
1	SMD129-4484	0.230	0.161	0.135	0.119	0.097
1.1	SMD129-4485	0.111	0.086	0.079	0.071	0.058
1.2	SMD129-4486	0.197	0.142	0.130	0.112	0.088
1.3	SMD129-4487	0.127	0.094	0.086	0.076	0.061
1.5	SMD129-4488	0.147	0.115	0.108	0.095	0.077
1.6	SMD129-4491	0.132	0.098	0.089	0.079	0.063
1.8	SMD129-4492	0.340	0.240	0.162	0.121	0.103
2	SMD129-4495	0.114	0.085	0.079	0.072	0.057
2.4	SMD129-4496	0.240	0.184	0.131	0.102	0.087
2.7	SMD129-4497	0.197	0.142	0.130	0.112	0.088
3	SMD129-4500	0.240	0.184	0.131	0.101	0.087
3.6	SMD129-4502	0.197	0.142	0.130	0.112	0.088
3.9	SMD129-4503	0.187	0.144	0.125	0.110	0.089
4.3	SMD129-4505	0.200	0.147	0.134	0.115	0.090
4.7	SMD129-4506	0.230	0.168	0.150	0.132	0.103
5.1	SMD129-4508	0.116	0.082	0.069	0.062	0.051
5.6	SMD129-4509	0.114	0.085	0.079	0.072	0.057
6.2	SMD129-4511	0.116	0.082	0.069	0.062	0.051
6.8	SMD129-4512	0.154	0.108	0.073	0.062	0.051
7.5	SMD129-4513	0.140	0.099	0.066	0.053	0.043
8.2	SMD129-4514	0.116	0.082	0.069	0.062	0.051
9.1	SMD129-4515	0.061	0.046	0.042	0.038	0.030
10	SMD129-4479	0.154	0.108	0.073	0.062	0.051
12	SMD129-4481	0.134	0.093	0.092	0.082	0.061
15	SMD129-4482	0.210	0.146	0.099	0.080	0.062
18	SMD129-4483	0.072	0.057	0.052	0.049	0.037
22	SMD129-4493	0.137	0.097	0.082	0.075	0.057
27	SMD129-4494	0.137	0.097	0.082	0.075	0.057
33	SMD129-4498	0.137	0.097	0.066	0.048	0.042
39	SMD129-4499	0.166	0.115	0.078	0.064	0.050
47	SMD129-4504	0.220	0.158	0.109	0.081	0.069
68	SMD129-4510	0.146	0.106	0.100	0.093	0.069
100	SMD129-4480	0.137	0.097	0.082	0.076	0.057

0805 Case Size

Order Multiple=5	Order Code	Price Each			
		5+	50+	250+	1K+
200 Volt d.c. COG, 0805 Case Size					
1.2	SMD129-4523	0.560	0.410	0.310	0.260
1.5	SMD129-4524	0.141	0.105	0.101	0.085
1.8	SMD129-4525	0.230	0.181	0.177	0.151
2.2	SMD129-4527	0.470	0.330	0.220	0.165

Order Multiple=5

pF	Order Code	Price Each			
		5+	50+	250+	1K+
200 Volt d.c. COG, 0805 Case Size					
2.7	SMD 129-4528	0.270	0.200	0.195	0.162
3.3	SMD 129-4530	0.280	0.200	0.193	0.159
3.9	SMD 129-4531	0.230	0.177	0.170	0.143
4.7	SMD 129-4534	0.350	0.280	0.270	0.230
5.6	SMD 129-4535	0.152	0.121	0.112	0.099
6.8	SMD 129-4537	0.250	0.179	0.162	0.132
8.2	SMD 129-4538	0.250	0.179	0.162	0.132
10	SMD 129-4516	0.250	0.179	0.120	0.092
12	SMD 129-4518	0.148	0.121	0.110	0.098
15	SMD 129-4521	0.330	0.230	0.200	0.183
18	SMD 129-4522	0.410	0.280	0.188	0.154
22	SMD 129-4526	0.290	0.220	0.200	0.166
39	SMD 129-4529	0.330	0.260	0.240	0.193
47	SMD 129-4533	0.192	0.140	0.131	0.109
68	SMD 129-4536	0.520	0.360	0.250	0.196
100	SMD 129-4517	0.780	0.540	0.370	0.290

1210 Case Size

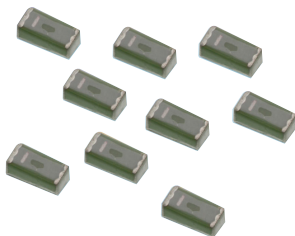
452086

Order Multiple=5

pF	Order Code	Price Each			
		5+	50+	250+	1K+
500 Volt d.c. COG, 1210 Case Size					
3.3	SMD 129-4549	1.19	0.88	0.82	0.70
3.9	SMD 129-4550	0.83	0.67	0.48	0.42
4.7	SMD 129-4552	1.52	1.07	0.94	0.81
5.6	SMD 129-4554	0.67	0.52	0.38	0.29
6.8	SMD 129-4557	0.71	0.53	0.49	0.42
10	SMD 129-4539	1.19	0.84	0.57	0.45
15	SMD 129-4542	0.55	0.41	0.38	0.33
18	SMD 129-4543	1.63	1.14	0.78	0.60
22	SMD 129-4545	0.60	0.47	0.45	0.39
27	SMD 129-4546	0.82	0.64	0.58	0.50
39	SMD 129-4548	0.51	0.40	0.38	0.33
47	SMD 129-4551	1.07	0.75	0.51	0.37
56	SMD 129-4553	0.51	0.40	0.38	0.33
82	SMD 129-4558	0.58	0.44	0.41	0.35
100	SMD 129-4540	0.58	0.44	0.41	0.35

ANC Series

Chip Dielectric Antennas



- Operating temperature -40 to 85°C



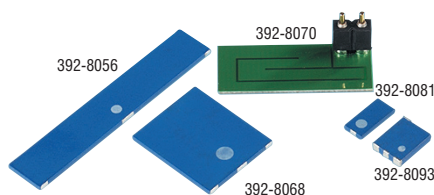
Frequency (MHz)	Bandwidth (MHz)	VSWR max.	Mfrs. List No.	Order Codes
2442	68	3	ANCG12G44SAA129	129-4723
2442	100	3.5	ANCV12G44SAA127	129-4724

452094

Bandwidth	Order Code	Price Each			
		1+	25+	100+	250+
68MHz	129-4723	1.06	0.86	0.83	0.80
100MHz	129-4724	0.71	0.55	0.45	0.37

Ceramic - RF & Microwave - Yageo

Surface Mount Ceramic Antennas



A range of some of the smallest surface mount Bluetooth/WLAN antennas.

- High Gain of 4 dBi
- Ceramic antennas optimized for 433MHz, and 870MHz.
- New 900/1800MHz dual-band antenna ideal for mobile phones.

- Bluetooth compatible 2.45MHz antenna, in both long and short versions
- Environmentally sound - manufactured using low-temperature co-fired ceramic (LTCC) with lead free terminations
- Operating temperature: -55°C to 125°C

Description	Order Code	Working Frequency	Bandwidth	Gain (dB)	Impedance
433MHz Antenna	392-8056	MHz433	20MHz	0.5	50Ω
870MHz Antenna	392-8068	MHz900	100MHz	1.5	50Ω
2.4GHz Bluetooth Antenna	392-8093	GHz2.45	≥100MHz	1.2	50Ω
0.9/1.8/1.9GHz Triple Band Antenna + IPEX	772-6082	GHz1.9	-	0.5	50Ω
0.9/1.8/1.9GHz Triple Band Antenna + MMCX	772-6090	GHz1.9	-	0.5	50Ω
ANTENNA, 5.3 X 2, 2.45GHZ	128-2672	GHz2.45	>100MHz	4	50Ω
ANTENNA, 3.2 X 1.6, 2.45GHZ	128-2673	GHz2.45	>100MHz	3.1	50Ω
ANTENNA, 12 X 4, 433MHZ	128-2674	MHz433	≥100MHz	0.5	50Ω

236430

Mfrs. List No.	Order Code	Price Each		
		1+	10+	100+
CAN4313121200431B	SMD 392-8056	11.51	10.88	10.43
CAN4313119000871B	SMD 392-8068	5.07	3.62	3.53
CAN4311111002451K	SMD 392-8093	3.87	2.57	2.31
CAN4313330009191B	772-6082	9.32	7.25	6.48
CAN4313330019191B	772-6090	13.28	10.34	9.24
CAN4311153002451K	SMD 128-2672	2.23	1.48	1.32
CAN4311712002451K	SMD 128-2673	1.72	1.13	1.02
CAN4311129200431K	SMD 128-2674	5.01	3.48	3.11

WLAN Ceramic Antenna

2.45 GHz



- Linear Polarisation
- Impedance: 50Ω

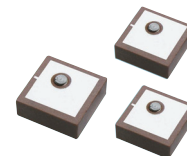
Bandwidth (MHz)	VSWR max.	Gain (dB)	Mfrs. List No.	Order Codes
70	2.5	4	CAN4311714002454K	177-9478
2.59	2	2.45	CAN4311851042453K	177-9479
2.51	—	7.42	CAN4311860052453K	177-9480
2.49	2.5	3	CAN4311881042453K	177-9481

600010

Bandwidth	Order Code	Price Each			
		1+	50+	100+	1K+
70MHz	177-9478	1.00	0.85	0.71	0.57
2.59GHz	177-9479	1.17	1.00	0.83	0.67
2.51GHz	177-9480	1.44	1.23	1.03	0.82
2.49GHz	177-9481	1.33	1.13	0.95	0.76

GPS Ceramic Antenna

1.575 GHz



- Right Hand Circular Polarisation
- Impedance: 50Ω

Bandwidth (MHz)	VSWR max.	Gain (dB)	Mfrs. List No.	Order Codes
9	2.5	1	CAN4313422031581B	177-9482
8	2	2.5	CAN4313423031581B	177-9483
10	2	4	CAN4313424031581B	177-9484

555912

Bandwidth	Order Code	Price Each			
		1+	25+	50+	100+
9MHz	177-9482	4.97	4.40	3.65	2.77
8MHz	177-9483	5.12	4.52	3.75	2.84
10MHz	177-9484	5.26	4.65	3.86	2.92

Ceramic - Multilayer Leaded - Multicomp

MCCR Series



Lead length=25.4min, Lead dia=0.508

- Cost effective dipped radial multilayer ceramic capacitors
- High reliability and performance
- Applications for COG dielectric tuned circuits and filters where low loss and stability are required
- X7R dielectric offers high capacitance values in compact sizes with good stability

Operating Temperature	COG		X7R	Z5U
	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C	-55°C to +125°C
Temperature coefficient	0±30ppm/°C for C>20pf	±20%	±10%	+30% -80%
Tolerance	±5%	±5%	±10%	±20%

N.B. For ease of selection capacitance values are listed in both pF and nF.

150	0.15	5	7.62	5.08	3.18	5.08	SR211A151JAR	110-0507
220	0.22	5	7.62	5.08	3.18	5.08	SR211A221JAR	110-0508
330	0.33	5	7.62	5.08	3.18	5.08	SR211A331JAR	110-0509
470	0.47	5	7.62	5.08	3.18	5.08	SR211A471JAR	110-0510
680	0.68	5	7.62	5.08	3.18	5.08	SR211A681JAR	110-0511
1000	1	5	7.62	5.08	3.18	5.08	SR211A102JAR	110-0512
1000	1	10	5.49	7.62	5.08	5.08	SR211A102KAR	110-0513
1500	1.5	5	7.62	5.08	3.18	5.08	SR211A152JAR	110-0514
2200	2.2	5	7.62	5.08	3.18	5.08	SR211A222JAR	110-0515
3300	3.3	5	7.62	5.08	3.18	5.08	SR211A332JAR	110-0516
10000	10	5	5.49	7.62	3.18	5.08	SR301A103JAR	110-0517

Order Multiple=5
100 Volt d.c. NPO

pF	Order Code	5+	50+	100+	500+	1K+
15	110-0501●	0.220	0.147	0.097	0.073	0.068
33	110-0502●	0.220	0.145	0.097	0.072	0.067
47	110-0503●	0.220	0.147	0.097	0.073	0.069
100	110-0504●	0.240	0.162	0.099	0.080	0.076
100	110-0505●	0.147	0.112	0.077	0.065	0.061
150	110-0507●	0.220	0.147	0.097	0.073	0.068
220	110-0508●	0.220	0.146	0.097	0.072	0.068
330	110-0509●	0.220	0.146	0.097	0.072	0.068
470	110-0510●	0.240	0.159	0.097	0.079	0.074
680	110-0511●	0.370	0.250	0.152	0.124	0.115
1000	110-0512●	0.270	0.179	0.114	0.088	0.083
1000	110-0513●	0.280	0.187	0.114	0.093	0.087
1500	110-0514●	0.720	0.480	0.290	0.240	0.230
2200	110-0515●	0.760	0.510	0.310	0.250	0.240
3300	110-0516●	0.710	0.480	0.290	0.240	0.220
10000	110-0517●	2.050	1.370	0.850	0.680	0.630

50 Volt d. c. X7R

μF	nF	Tolerance (%)	Dimensions			Lead	Mfrs. List No.	Order Code
			H	W	D	Pitch		
0.01	10	10	3.81	3.81	2.54	2.54	SR155C103KAR	110-0433
0.1	100	10	5.08	5.08	3.18	2.54	SR205C104KAR	110-0367

Order Multiple=5
50 Volt d.c. X7R

μF	Order Code	5+	50+	100+	500+	1K+
0.01	110-0433●	0.166	0.111	0.082	0.055	0.052
0.1	110-0367●	0.200	0.119	0.097	0.054	0.045

50 Volt d. c. X7R

μF	nF	Tolerance (%)	Dimensions			Lead	Mfrs. List No.	Order Code
			H	W	D	Pitch		
0.001	1	10	7.62	5.08	3.18	5.08	SR215C102KAR	110-0384
0.0022	2.2	10	7.62	5.08	3.18	5.08	SR215C222KAR	110-0386
0.0033	3.3	10	7.62	5.08	3.18	5.08	SR215C332KAR	110-0387
0.0047	4.7	10	7.62	5.08	3.18	5.08	SR215C472KAR	110-0388
0.01	10	10	7.62	5.08	3.18	5.08	SR215C103KAR	110-0389
0.022	22	10	7.62	5.08	3.18	5.08	SR215C223KAR	110-0390
0.033	33	10	7.62	5.08	3.18	5.08	SR215C333KAR	110-0391
0.047	47	10	7.62	5.08	3.18	5.08	SR215C473KAR	110-0392
0.1	100	10	7.62	5.08	3.18	5.08	SR215C104KAR	110-0393
0.22	220	10	5.49	7.62	3.81	5.08	SR305C224KAR	110-0394
0.33	330	10	5.49	7.62	3.81	5.08	SR305C334KAR	110-0395
0.47	470	10	7.62	5.08	3.81	5.08	SR305C474KAR	110-0396
1	1000	10	7.62	5.08	3.81	5.08	SR305C105KAR	110-0398

Order Multiple=5
50 Volt d.c. X7R

μF	Order Code	5+	50+	100+	500+	1K+
0.001	110-0384●	0.200	0.129	0.092	0.063	0.059
0.0022	110-0386●	0.230	0.153	0.098	0.076	0.071
0.0033	110-0387●	0.260	0.174	0.106	0.086	0.081
0.0047	110-0388●	0.240	0.160	0.102	0.079	0.075
0.01	110-0389●	0.240	0.162	0.099	0.080	0.076
0.022	110-0390●	0.270	0.184	0.114	0.092	0.085
0.033	110-0391●	0.270	0.184	0.114	0.092	0.085
0.047	110-0392●	0.200	0.135	0.092	0.067	0.063
0.1	110-0393●	0.200	0.135	0.097	0.068	0.063
0.22	110-0394●	0.800	0.490	0.400	0.230	0.220
0.33	110-0395●	1.190	0.790	0.490	0.400	0.370
0.47	110-0396●	1.140	0.760	0.500	0.380	0.360
1	110-0398●	2.160	1.460	0.880	0.720	0.680

100 Volt d. c. X7R

μF	nF	Tolerance (%)	Dimensions			Lead	Mfrs. List No.	Order Code
			H	W	D	Pitch		
0.001	1	10	3.81	3.81	2.54	2.54	SR151C102KAR	110-0377
0.0022	2.2	10	3.81	3.81	2.54	2.54	SR151C222KAR	110-0378
0.0047	4.7	10	3.81	3.81	2.54	2.54	SR151C472KAR	110-0379
0.01	10	10	3.81	3.81	2.54	2.54	SR151C103KAR	110-0380
0.01	10	10	5.08	5.08	3.18	2.54	SR201C103KAR	110-0519
0.01	10	20	5.08	5.08	3.18	2.54	SR201C103MAR	110-0521
0.022	22	10	5.08	5.08	3.18	2.54	SR201C223KAR	110-0381
0.033	33	10	5.08	5.08	3.18	2.54	SR201C333KAR	110-0438
0.047	47	10	5.08	5.08	3.18	2.54	SR201C473KAR	110-0382
0.1	100	10	5.08	5.08	3.18	2.54	SR201C104KAR	110-0383

Order Multiple=5
100 Volt d.c. X7R

μF	Order Code	5+	50+	100+	500+	1K+
0.001	110-0377●	0.190	0.128	0.078	0.063	0.059
0.0022	110-0378●	0.260	0.172	0.105	0.085	0.080
0.0047	110-0379●	0.260	0.171	0.105	0.084	0.079
0.01	110-0380●	0.183	0.123	0.092	0.061	0.057
0.01	110-0519●	0.240	0.160	0.098	0.079	0.074

Order Multiple=5
100 Volt d. c. X7R

μF	Order Code	5+	50+	100+	500+	1K+
0.01	110-0521●	0.330	0.220	0.135	0.110	0.096
0.022	110-0381●	0.370	0.250	0.155	0.126	0.119
0.033	110-0438●	0.350	0.240	0.144	0.117	0.110
0.047	110-0382●	0.300	0.200	0.123	0.100	0.095
0.1	110-0383●	0.300	0.200	0.124	0.101	0.095

100 Volt d. c. X7R

μF	nF	Tolerance (%)	Dimensions			Lead	Mfrs. List No.	Order Code
			H	W	D	Pitch		
0.001	1	10	7.62	5.08	3.18	5.08	SR211C102KAR	110-0406
0.0022	2.2	10	7.62	5.08	3.18	5.08	SR211C222KAR	110-0522
0.0047	4.7	10	7.62	5.08	3.18	5.08	SR211C472KAR	110-0523
0.0068	6.8	10	7.62	5.08	3.18	5.08	SR211C682KAR	110-0524
0.01	10	10	7.62	5.08	3.18	5.08	SR211C103KAR	110-0407
0.01	10	10	7.62	5.08	3.18	5.08	SR211C103MAR	110-0525
0.015	15	10	7.62	5.08	3.18	5.08	SR211C153KAR	110-0526
0.022	22	10	7.62	5.08	3.18	5.08	SR211C223KAR	110-0527
0.033	33	10	7.62	5.08	3.18	5.08	SR211C333KAR	110-0528
0.047	47	10	7.62	5.08	3.18	5.08	SR211C473KAR	110-0529
0.047	47	20	7.62	5.08	3.18	5.08	SR211C473MAR	110-0530
0.1	100	10	7.62	5.08	3.18	5.08	SR211C104KAR	110-0408
0.15	150	10	7.62	7.62	3.18	5.08	SR301C154KAR	110-0532

Order Multiple=5
100 Volt d. c. X7R

μF	Order Code	5+	50+	100+	500+	1K+
0.001	110-0406●	0.189	0.127	0.082	0.062	0.059
0.0022	110-0522●	0.200	0.136	0.083	0.068	0.063
0.0047	110-0523●	0.260	0.176	0.107	0.087	0.082
0.0068	110-0524●	0.260	0.171	0.109	0.084	0.079
0.01	110-0407●	0.240	0.161	0.099	0.080	0.075
0.01	110-0525●	0.230	0.151	0.092	0.075	0.056
0.015	110-0526●	0.330	0.230	0.137	0.111	0.105
0.022	110-0527●	0.410	0.270	0.167	0.136	0.124
0.033	110-0528●	0.490	0.330	0.200	0.163	0.153
0.047	110-0529●	0.280	0.190	0.115	0.094	0.088
0.047	110-0530●	0.200	0.154	0.106	0.090	0.085
0.1	110-0408●	0.250	0.165	0.127	0.082	0.077
0.15	110-0532●	1.250	0.840	0.530	0.420	0.400

50 Volt d. c. Z5U

μF	nF	Tolerance (%)	Dimensions			Lead	Mfrs. List No.	Order Code
			H	W	D	Pitch		
0.1	100	20	5.08	5.08	3.18	2.54	SR205E104MAR	110-0533

Order Multiple=5
50 Volt d. c. Z5U

μF	Order Code	5+	50+	100+	500+	1K+
0.1	110-0533●	0.127	0.076	0.059	0.036	0.034

63/50 Volt d. c. Z5U

μF	nF	Tolerance (%)	Dimensions			Lead	Mfrs. List No.	Order Code
			H	W	D	Pitch		
0.1	100	20	7.62	5.08	3.18	5.08	SR215E104MAR	110-0399
0.1	100	80	7.62	5.08	3.18	5.08	SR215E104ZAR	110-0534
0.22	220	20	7.62	5.08	3.18	5.08	SR215E224MAR	110-0400
0.33	330	20	7.62	5.08	3.18	5.08	SR215E334MAR	110-0401
0.47	470	20	7.62	5.08	3.18	5.08	SR215E474MAR	110-0402
0.68	680	20	7.62	7.62	3.81	5.08	SR305E684MAR	110-0441
1	1000	20	7.62	7.62	3.81	5.08	SR305E105MAR	110-0404
2.2	2200	20	7.62	7.62	3.81	5.08	SR305E225MAR	110-0405

Order Multiple=5
50 Volt d. c. Z5U

μF	Order Code	5+	50+	100+	500+	1K+
0.1	110-0399●	0.127	0.080	0.059	0.040	0.037
0.1	110-0534●	0.127	0.076	0.059	0.036	0.034
0.22	110-0400●	0.430	0.280	0.173	0.140	0.132
0.33	110-0401●	0.430	0.290	0.17		

Ceramic - Multilayer Leaded - AVX - continued

AR Series - continued

100 Volt d.c., X7R		Price Each				
Capacitance	Order Code	1+	10+	100+	500+	1K+
1nF	167-2249	0.68	0.45	0.27	0.22	0.21
10nF	167-2251	0.68	0.45	0.27	0.22	0.21
1µF	167-2256	7.78	5.22	3.18	2.58	2.42

200 Volt dc, C0G (NPO)	Tolerance	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
		H	W	D			
10pF	± 5%	5.08	5.08	3.175	5.08	AR212A100J4R*	167-2257
22pF	± 5%	5.08	5.08	3.175	5.08	AR212A220J4R*	167-2258
33pF	± 5%	5.08	5.08	3.175	5.08	AR212A330J4R*	167-2259
47pF	± 5%	5.08	5.08	3.175	5.08	AR212A470J4R*	167-2260
100pF	± 5%	5.08	5.08	3.175	5.08	AR212A101J4R*	167-2261
220pF	± 5%	5.08	5.08	3.175	5.08	AR212A221J4R*	167-2262

200 Volt d.c., C0G (NPO)		Price Each				
Capacitance	Order Code	1+	10+	100+	500+	1K+
10pF	167-2257	0.760	0.510	0.310	0.250	0.240
22pF	167-2258	0.760	0.510	0.310	0.250	0.240
33pF	167-2259	0.470	0.360	0.240	0.200	0.197
47pF	167-2260	0.760	0.510	0.310	0.250	0.240
100pF	167-2261	0.800	0.560	0.340	0.280	0.260
220pF	167-2262	0.520	0.390	0.270	0.240	0.220

SA - 'Spinguard' Series



Lead length = 20 mm.
Lead dia = 0.508

Banded box quantities = 4K pcs (108-996, 108-996 = 2K pcs)

- 'Spinguard' axial dipped multilayer ceramic capacitors
- Choice of dielectric, tolerance and voltage

Performance Characteristics

	NPO	X7R	Z5U
Operating Temperature	-55°C to +125°C	-55°C to +125°C	-25°C to +85°C
Temperature coefficient	0±30ppm/°C for C>20pF 0 +120-40ppm/°C for C≤20pF	±20%	+30%-80%
Insulation resistance	100000MΩ or 1000 sec. (MΩ uF) whichever is less	100000MΩ or 1000 sec. (MΩ uF) whichever is less	>100000MΩ or 1000 sec. (MΩ uF) whichever is less
Proof voltage	2.5VR	2.5VR	2VR
Climatic category (IEC)	55/125/56	55/125/56	25/085/56

N.B. For ease of selection, capacitance value is listed in both pF and nF, or µF and nF

pF	nF	Dimensions		Mfrs. List No.	Order Code
		L	Dia.		
1000	1	4.3	2.54	SA105A102JARTB	110-0434

Order Multiple=10

50 Volt d.c. NPO		Price Each				
pF	Order Code	10+	50+	100+	500+	1K+
1000	110-0434	0.210	0.142	0.087	0.070	0.066

pF	nF	Dimensions		Mfrs. List No.	Order Code
		L	Dia.		
470	0.47	4.32	2.54	SA101A471JARTB	110-0411

Order Multiple=10

100 Volt d.c. NPO		Price Each				
pF	Order Code	10+	50+	100+	500+	1K+
470	110-0411	0.200	0.134	0.081	0.067	0.062

pF	nF	Dimensions		Mfrs. List No.	Order Code
		L	Dia.		
10	0.01	4.32	2.54	SA102A100JARTB	110-0409
100	0.1	4.32	2.54	SA102A101JARTB	110-0410

Order Multiple=10

200 Volt d.c. NPO		Price Each				
pF	Order Code	10+	50+	100+	500+	1K+
10	110-0409	0.123	0.093	0.063	0.053	0.051
100	110-0410	0.189	0.127	0.077	0.062	0.059

µF	nF	Dimensions		Mfrs. List No.	Order Code
		L	Dia.		
0.01	10	4.32	2.54	SA105C103KARTB	110-0414

Order Multiple=10

50 Volt d.c. X7R		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.01	110-0414	0.178	0.120	0.073	0.059	0.055

µF	nF	Dimensions		Mfrs. List No.	Order Code
		L	Dia.		
0.001	1	4.32	2.54	SA101C102KARTB	110-0412

Order Multiple=10

100 Volt d.c. X7R		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.001	110-0412	0.172	0.116	0.070	0.057	0.054

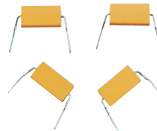
µF	nF	Dimensions		Mfrs. List No.	Order Code
		L	Dia.		
0.022	22	4.32	2.54	SA105E223MARTB	110-0416
0.1	100	4.32	2.54	SA105E104MARTB	110-0417
0.22	220	6.6	2.54	SA205E224MARTB	110-0418
0.47	470	7.37	3.81	SA305E474MARTB	110-0419
1	1000	7.37	3.81	SA305E105MARTB	110-0420

208411

Order Multiple=10

50 Volt d.c. Z5U		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.022	110-0416	0.172	0.115	0.071	0.057	0.054
0.1	110-0417	0.139	0.107	0.066	0.053	0.050
0.22	110-0418	0.300	0.200	0.122	0.099	0.094
0.47	110-0419	0.400	0.310	0.210	0.177	0.168
1	110-0420	0.810	0.540	0.330	0.270	0.250

MD Series - Diproguard



Ultra-low profile ceramic capacitors to provide effective decoupling of dual in-line IC's, designed to fit under the IC by fitting directly into the PCB or an IC socket. They may also be retrospectively fitted on top of the IC with its pins soldered to the IC pins to improve system performance of existing designs.

- Diproguard dual in-line package
- Compatible with standard IC packages

Style MD01	H	Dimensions		Style MD02	H	Dimensions		Order Code
		W	D			W	D	
nF	6.6mm	3.43mm	2.49mm	6.6mm	4.19mm	2.54mm		
1	50	X7R	± 10%	MDO15C102KAB	174-0729			
4.7	50	X7R	± 20%	MDO15C472MAB	174-0730			
10	50	X7R	± 10%	MDO15C103KAB	174-0731			
10	100	X7R	± 10%	MDO11C103KAB	669-465			
22	50	X7R	± 10%	MDO15C223KAB	174-0732			
47	50	X7R	± 10%	MDO15C473KAB	174-0733			
47	50	Z5U	± 20%	MDO15E473MAB	669-544			
100	50	X7R	± 10%	MDO15C104KAB	669-490			
100	50	X7R	± 20%	MDO15C104MAB	669-532			
100	50	Z5U	± 20%	MDO15E104MAB	669-556			
220	50	X7R	± 10%	MDO25C224KAB	174-0734			
470	50	Z5U	± 20%	MDO25E474MAB	174-0735			

478243

nF	Order Code	Price Each			
		1+	10+	50+	100+
1	NEW 174-0729 ▲	0.95	0.76	0.61	0.50
4.7	NEW 174-0730 ▲	0.77	0.61	0.50	0.41
10	NEW 174-0731 ▲	0.69	0.54	0.45	0.35
10	669-465 ▲	0.57	0.45	0.37	0.32
22	NEW 174-0732 ▲	1.11	0.89	0.73	0.58
47	NEW 174-0733 ▲	1.11	0.89	0.73	0.58
47	669-544 ▲	0.75	0.65	0.53	0.43
100	669-490 ▲	0.67	0.53	0.44	0.39
100	669-532 ▲	1.09	0.91	0.79	0.69
100	669-556 ▲	0.47	0.37	0.31	0.27
220	NEW 174-0734 ▲	1.54	1.23	1.00	0.81
470	NEW 174-0735 ▲	1.54	1.23	1.00	0.81

Ceramic - Multilayer Leaded - Kemet

C315, C317, C320, C322, C330, C333 and C340 - 'Gold Max' Series



Performance Characteristics

	NPO	X7R	Z5U
Operating Temperature Range	-55°C to +125°C	-55°C to +125°C	+10°C to +85°C
Temperature coefficient	± 30	± 15%	-56 to +22%
Tolerance	± 5%	± 10%	± 20%

N.B. For ease of selection, capacitance value is listed in both µF and nF, or pF and nF

100 Volt d. c. NPO		Dimensions		Lead Pitch	Mfrs. List No.	Order Code
pF	nF	H	D			
220	0.22	5.33	0.1	3.81	2.54	C315C221J1G5TA
470	0.47	5.33	0.1	3.81	2.54	C315C471J1G5TA
1000	1	5.33	0.1	3.81	2.54	C315C102J1G5TA

Order Multiple=10

100 Volt d.c. NPO		Price Each				
pF	Order Code	10+	50+	100+	500+	1K+
220	145-7636	0.240	0.160	0.112	0.085	0.067
470	145-7638	0.260	0.175	0.123	0.094	0.073
1000	145-7635	0.270	0.181	0.127	0.097	0.075

100 Volt d. c. NPO		Dimensions		Lead Pitch	Mfrs. List No.	Order Code
pF	nF	H	D			
10	0.01	5.84	0.1	3.81	5.08	C317C100J1G5TA
100	0.1	5.84	0.1	3.81	5.08	C317C101J1G5TA
220	0.22	5.84	0.1	3.81	5.08	C317C221J1G5TA
470	0.47	5.84	0.1	3.81	5.08	C317C471J1G5TA

Table with 8 columns: Value, nF, H, W, D, Pitch, Mfrs. List No., Order Code. Rows include 1000, 1000, 2200, 4700, 10000.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 100 Volt d.c. NPO.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 200 Volt d.c. NPO.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 200 Volt d.c. NPO.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 200 Volt d.c. NPO.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 200 Volt d.c. NPO.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 50 Volt d.c. X7R.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 50 Volt d.c. X7R.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 50 Volt d.c. X7R.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 50 Volt d.c. X7R.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 100 Volt d.c. X7R.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 100 Volt d.c. X7R.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 100 Volt d.c. X7R.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 100 Volt d.c. X7R.

Table with 7 columns: nF, Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 200 Volt d.c. X7R.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 200 Volt d.c. X7R.

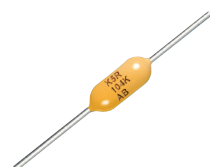
Table with 7 columns: nF, Tolerance (%), Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 50 Volt d.c. Z5U.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 50 Volt d.c. Z5U.

Table with 7 columns: nF, Tolerance (%), Dimensions (H, W, D), Pitch, Mfrs. List No., Order Code. Section: 50 Volt d.c. Z5U.

Table with 7 columns: Order Code, Value, Price Each, 10+, 50+, 100+, 500+, 1K+. Section: 50 Volt d.c. Z5U.

Aximax Series



High capacitance values in a small physical volume

Tolerance ± 10% Operating Temperature Range -55°C to +125°C



Ceramic - Multilayer Leaded - Kemet - continued

Aximax Series - continued

100 Volt d.c. NPO	Dimensions	Mfrs. List No.	Order Code
nF	L D		
0.3	4.32 2.54	C410C331K1G5TA	145-7716

Order Multiple=10

100 Volt d.c. NPO	Price Each					
nF	Order Code	10+	50+	100+	500+	+
0.3	SMD145-7716	0.112	0.100	0.086	0.059	--

50 Volt d.c. X7R	Dimensions	Mfrs. List No.	Order Code
nF	L D		
2.2	4.32 2.54	C410C222K5R5TA	145-7715
47	4.32 2.54	C410C473K5R5TA	145-7719
68	4.32 3.05	C412C683K5R5TA	145-7722
100	4.32 3.05	C412C104K5R5TA	145-7721
220	7.37 3.81	C430C224K5R5TA	145-7723

Order Multiple=10

50 Volt d.c. X7R	Price Each					
nF	Order Code	10+	50+	100+	500+	+
2.2	SMD145-7715	0.113	0.101	0.087	0.060	--
47	145-7719	0.126	0.111	0.098	0.070	--
68	SMD145-7722	0.147	0.129	0.111	0.077	--
100	145-7721	0.127	0.113	0.069	0.056	--
220	SMD145-7723	0.270	0.240	0.210	0.139	--

100 Volt d.c. X7R	Dimensions	Mfrs. List No.	Order Code
nF	L D		
1	4.32 2.54	C410C102K1R5TA	145-7713
4.7	4.32 2.54	C410C472K1R5TA	145-7717
10	4.32 2.54	C410C103K1R5TA	145-7714

486855

Order Multiple=10

100 Volt d.c. X7R	Price Each					
nF	Order Code	10+	50+	100+	500+	+
1	SMD145-7713	0.107	0.084	0.061	0.042	--
4.7	SMD145-7717	0.123	0.096	0.070	0.048	--
10	SMD145-7714	0.114	0.102	0.083	0.060	--

Ceramic - Multilayer Leaded - Vishay

Mono-Kap Series



- Radial multilayer ceramic capacitors
- Ultra reliability
- Compact package size
- Choice of dielectric characteristics



Performance Characteristics

	NPO	X7R
Operating Temperature	-55°C to +125°C	-55°C to +125°C
Temperature coefficient	±30ppm/°C	—
Capacitance Tolerance	±5%	±10%
Dielectric strength	2.5VR	2.5VR

N.B. For ease of selection, capacitance value is listed in both μf and nF, or nF and pF

50 Volt d.c. NPO	Dimensions	Mfrs. List No.	Order Code
pF	nF H W D Lead Dia Lead Pitch		
10	0.01 4 4 2.5 0.5 2.5	225230500109	114-1756
15	0.015 4 4 2.5 0.5 2.5	225230500159	114-1759
22	0.022 4 4 2.5 0.5 2.5	225230500229	114-1760
33	0.033 4 4 2.5 0.5 2.5	225230500339	114-1761
47	0.047 4 4 2.5 0.5 2.5	225230500479	114-1762
68	0.068 4 4 2.5 0.5 2.5	225230500689	114-1763
100	0.1 4 4 2.5 0.5 2.5	225230500101	114-1765
150	0.15 4 4 2.5 0.5 2.5	225230500151	114-1766
220	0.22 4 4 2.5 0.5 2.5	225230500221	114-1767
330	0.33 4 4 2.5 0.5 2.5	225230500331	114-1768
470	0.47 4 4 2.5 0.5 2.5	225230500471	114-1769
680	0.68 4 4 2.5 0.5 2.5	225230500681	114-1770
		225230500102	114-1771

Order Multiple=5

50 Volt d.c. NPO	Price Each						
pF	Order Code	5+	50+	100+	500+	1K+	3K+
10	114-1756	0.111	0.077	0.058	0.034	0.026	0.023
15	114-1759	0.113	0.077	0.059	0.031	0.025	0.022
22	114-1760	0.136	0.093	0.071	0.038	0.030	0.026
33	114-1761	0.136	0.093	0.071	0.038	0.030	0.026
47	114-1762	0.111	0.075	0.058	0.031	0.025	0.022
68	114-1763	0.095	0.066	0.049	0.028	0.022	0.020
100	114-1765	0.111	0.077	0.058	0.034	0.026	0.024
150	114-1766	0.136	0.095	0.072	0.042	0.030	0.026
220	114-1767	0.145	0.096	0.074	0.043	0.033	0.028
330	114-1768	0.171	0.107	0.080	0.046	0.035	0.031
470	114-1769	0.181	0.116	0.090	0.057	0.041	0.040
680	114-1770	0.173	0.115	0.084	0.052	0.040	0.037
1000	114-1771	0.340	0.240	0.200	0.106	0.085	0.084

50 Volt d.c. X7R	Dimensions	Mfrs. List No.	Order Code
μF	nF H W D Lead Dia Lead Pitch		
0.01	10 4 4 2.5 0.5 2.5	225232500103	114-1772
0.022	22 4 4 2.5 0.5 2.5	225232500223	114-1773
0.047	47 4 4 2.5 0.5 2.5	225232500473	114-1774
0.1	100 4 4 2.5 0.5 2.5	225232500104	114-1775
0.1	100 4 4 2.5 0.5 5	225232508104	114-1777
0.22	220 4 4 2.5 0.5 2.5	225232514224	114-1778

Order Multiple=5

50 Volt d.c. X7R	Price Each						
μF	Order Code	5+	50+	100+	500+	1K+	3K+
0.01	114-1772	0.106	0.073	0.055	0.030	0.025	0.022
0.022	114-1773	0.129	0.089	0.067	0.040	0.029	0.026
0.047	114-1774	0.130	0.086	0.066	0.036	0.028	0.025
0.1	114-1775	0.164	--	--	--	--	--
0.1	114-1777	0.164	0.125	0.088	0.051	0.042	0.034
0.22	114-1778	0.330	0.220	0.164	0.092	0.078	0.064

100 Volt d.c. X7R	Dimensions	Mfrs. List No.	Order Code
μF	nF H W D Lead Dia Lead Pitch		
0.001	1 4 4 2.5 0.5 2.5	225232600102	114-1779
0.0047	4.7 4 4 2.5 0.5 2.5	225232600472	114-1780
0.01	10 4 4 2.5 0.5 2.5	225232600103	114-1781
0.022	22 5 5 3.2 0.5 2.5	225232600223	114-1819
0.047	47 4 4 2.5 0.5 2.5	225232614473	114-1782
0.1	100 5 5 3.2 0.5 5	225232622104	114-1784

228221

Order Multiple=5

100 Volt d.c. X7R	Price Each						
μF	Order Code	5+	50+	100+	500+	1K+	3K+
0.001	114-1779	0.098	0.067	0.050	0.028	0.023	0.021
0.0047	114-1780	0.127	0.087	0.066	0.037	0.028	0.026
0.01	114-1781	0.126	0.087	0.066	0.038	0.029	0.028
0.022	114-1819	0.210	0.139	0.123	0.068	0.047	0.041
0.047	114-1782	0.270	0.210	0.147	0.086	0.068	0.061
0.1	114-1784	0.360	0.250	0.196	0.106	0.087	0.078

Capacitance Conversion Table

0.000001 μF	=	0.001 nF	=	1 pF
0.00001 μF	=	0.01 nF	=	10 pF
0.0001 μF	=	0.1 nF	=	100 pF
0.001 μF	=	1 nF	=	1000 pF
0.01 μF	=	10 nF	=	10000 pF
0.1 μF	=	100 nF	=	100000 pF
1 μF	=	1000 nF	=	1000000 pF
10 μF	=	10000 nF	=	10000000 pF
100 μF	=	100000 nF	=	100000000 pF

Ceramic - Disc & Plate - Multicomp

High capacitance per unit volume make these suitable for high density PCB applications. The choice in type of ceramic dielectric is selected depending on characteristics and performance required.

Low K

Suitable for applications where a linear temperature coefficient, high stability, close tolerance and low losses are important such as temperature compensation in tuned circuits and filters, or coupling/decoupling in high frequency circuits.

Medium K

Suitable for applications where a small non-linear change of capacitance with temperature is permissible and very low losses are not essential such as coupling and decoupling.

High K

Offering the highest volumetric efficiency and suitable for applications where low losses and high stability are not required, such as coupling and decoupling.

208412

Low K, 50 Volt d.c.



Lead length=25
Lead dia.=0.6

Operating temperature	-25°C to +85°C	Temperature coefficient	0 ± 60ppm/°C
Insulation resistance	10000 M Ω		

pF	Tol (±)	Dielectric	Body Dia.	Lead Pitch	Mfrs. List No.	Order Code
5	0.25pF	COG / NPO	5.5	2.5	MCCHU5050C5	941-1640
10	5%	COG / NPO	5.5	2.5	MCCHU5100J5	941-1658
15	5%	COG / NPO	5.5	2.5	MCCHU5150J5	941-1666
22	5%	COG / NPO	5.5	2.5	MCCHU5220J5	941-1674
33	5%	COG / NPO	5.5	2.5	MCCHU5330J5	941-1682
47	5%	COG / NPO	5.5	2.5	MCCHU5470J5	941-1690
68	5%	COG / NPO	6.5	2.5	MCCHU6680J5	941-1704
100	5%	COG / NPO	7.5	2.5	MCCHU7101J5	941-1712
150	5%	COG / NPO	7.5	2.5	MCCHU8151J5	941-1720
220	5%	COG / NPO	10.5	2.5	MCCHU0221J5	941-1739

		Price Each				
pF	Order Code	25+	100+	500+	1K+	10K+
5	941-1640	0.014	0.010	0.008	0.005	0.004
10	941-1658	0.030	0.022	0.016	0.010	0.007
15	941-1666	0.016	0.011	0.009	0.006	0.004
22	941-1674	0.033	0.024	0.018	0.012	0.008
33	941-1682	0.038	0.030	0.023	0.015	0.009
47	941-1690	0.038	0.030	0.023	0.015	0.009
68	941-1704	0.044	0.034	0.029	0.017	0.010
100	941-1712	0.053	0.041	0.034	0.024	0.012
150	941-1720	0.058	0.045	0.037	0.025	0.015
220	941-1739	0.082	0.059	0.049	0.036	0.023

Medium K, 50V d.c.

Operating temperature -25°C to +85°C Tolerance ±5%

pF	Dielectric	Body Dia	Lead Pitch	Mfrs. List No.	Order Code
100	Y5P	5.5	2.5	MCBU5101K5	941-1747
220	Y5P	5.5	2.5	MCBU5221K5	941-1755
330	Y5P	5.5	2.5	MCBU5331K5	941-1763
470	Y5P	5.5	2.5	MCBU5471K5	941-1771
1000	Y5P	5.5	2.5	MCBU5102K5	941-1780
2200	Y5P	6.5	5	MCBU6222K6	941-1798
3300	Y5P	7.5	5	MCBU7332K6	941-1801
4700	Y5P	8.5	5	MCBU8472K6	941-1810

		Price Each				
pF	Order Code	25+	100+	500+	1K+	10K+
100	941-1747	0.024	0.017	0.012	0.009	0.006
220	941-1755	0.024	0.017	0.012	0.009	0.006
330	941-1763	0.024	0.017	0.012	0.009	0.006
470	941-1771	0.024	0.017	0.012	0.009	0.006
1000	941-1780	0.024	0.017	0.012	0.009	0.006
2200	941-1798	0.016	0.012	0.009	0.006	0.004
3300	941-1801	0.046	0.034	0.029	0.017	0.011
4700	941-1810	0.052	0.040	0.033	0.023	0.012

High K, 50V d.c.

Operating temperature -25°C to +85°C Tolerance +5%5%

Insulation resistance 10000MΩ

pF	Dielectric	Body Dia	Lead Pitch	Mfrs. List No.	Order Code
1000	Z5V	5.5	2.5	MCFU5102Z5	941-1828
2200	Z5V	5.5	2.5	MCFU5222Z5	941-1836
4700	Z5V	5.5	2.5	MCFU5472Z5	941-1844
10000	Y5V	5.5	2.5	MCFYU5103Z5	941-1852
22000	Y5V	5.5	5	MCFYU5223Z6	941-1860
47000	Y5V	6.5	5	MCFYU6473Z6	941-1879
100000	Y5V	6.2	5	MCFYU6104Z6	941-1887

		Price Each				
pF	Order Code	25+	100+	500+	1K+	10K+
1000	941-1828	0.024	0.017	0.012	0.009	0.006
2200	941-1836	0.024	0.017	0.012	0.009	0.006
4700	941-1844	0.024	0.017	0.012	0.009	0.006
10000	941-1852	0.057	0.044	0.036	0.025	0.015
22000	941-1860	0.064	0.048	0.038	0.029	0.016
47000	941-1879	0.069	0.052	0.042	0.032	0.017
100000	941-1887	0.082	0.059	0.049	0.037	0.023

Ceramic - Disc & Plate - Panasonic

ECK Series - High Voltage



- ECK High voltage series
- Resin dipped ceramic disc
- Flame retardant insulating coating

Lead length=20

Operating temp.	1000V to 3000V	-25°C to +105°C	Insulation resistance @ 500V	10000MΩ
	4000V to 15000V	-25°C to +85°C	Proof voltage	1.5 VR
Tolerance	1000V to 3000V	±10%	Proof power factor	0.025
	4000V to 15000V	±20%		
Temp. coefficient	1000V to 3000V	±10%		
	4000V to 15000V	+20%30%		

1000 Volt d.c.

pF	nF	Body dia.	Body thickness	Lead pitch	Lead Dia.	Mfrs. List No.	Order Code
220	0.22	6	4.5	5	0.6	ECKA3A221KBP	969-7136
470	0.47	6	4.5	5	0.6	ECKA3A471KBP	969-7144
2200	2.2	12	4.5	5	0.6	ECKA3A222KBP	969-7160
4700	4.7	15.5	4.5	10	0.65	ECKA3A472KBP	969-7179

Order Multiple=10

1000 Volt d.c.

		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
220	969-7136	0.123	0.068	0.059	0.058	0.056	0.055
470	969-7144	0.129	0.112	0.074	0.072	0.070	0.069
2200	969-7160	0.240	0.184	0.092	0.087	0.086	0.084
4700	969-7179	0.440	0.250	0.176	0.152	0.148	0.144

† Subject to design change - to be supplied with kinked leads

2000 Volt d.c.

pF	nF	Body dia.	Body thickness	Lead pitch	Lead Dia.	Mfrs. List No.	Order Code
220	0.22	7	5	7.5	0.6	ECKA3D221KBP	969-7209
470	0.47	7	5	7.5	0.6	ECKA3D471KBP	969-7217
1000	1	10	5	7.5	0.6	ECKA3D102KBP	969-7225

2000 Volt d.c.

		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
220	969-7209	0.135	0.123	0.069	0.067	0.064	0.063
470	969-7217	0.182	0.150	0.100	0.097	0.095	0.093
1000	969-7225	0.270	0.230	0.120	0.109	0.097	0.093

† Subject to design change - to be supplied with kinked leads

3000 Volt d.c.

pF	nF	Body dia.	Body thickness	Lead pitch	Lead Dia.	Mfrs. List No.	Order Code
100	0.1	7.5	6	7.5	0.65	ECKA3F101KBP	969-7250
220	0.22	7.5	6	7.5	0.65	ECKA3F221KBP	969-7268
1000	1	12.5	6	7.5	0.65	ECKA3F102KBP	969-7284

Order Multiple=10

3000 Volt d.c.

		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
100	969-7250	0.150	0.129	0.092	0.090	0.088	0.086
220	969-7268	0.135	0.118	0.088	0.084	0.082	0.079
1000	969-7284	0.250	0.200	0.165	0.157	0.151	0.147

4000 Volt d.c.

pF	nF	Body dia.	Body thickness	Lead pitch	Lead Dia.	Mfrs. List No.	Order Code
470	0.47	8.5	7	7.5	0.65	ECKD3G471MDU	969-7314
1000	1	11.5	7	10	0.65	ECKD3G102MDU	969-7322
2200	2.2	16	7	10	0.65	ECKD3G222MDU	969-7330

4000 Volt d.c.

		Price Each					
pF	Order Code	10+	50+	100+	500+	1K+	10K+
470	969-7314	0.240	0.200	0.161	0.155	0.153	0.149
1000	969-7322	0.420	0.350	0.280	0.260	0.240	0.196
2200	969-7330	0.730	0.620	0.440	0.390	0.370	0.360

6000 Volt d.c.

pF	nF	Body dia.	Body thickness	Lead pitch	Lead Dia.	Mfrs. List No.	Order Code
470	0.47	11.5	8	10	0.8	ECKD3J471MDU	969-7365
2200	2.2	21.5	8	10	0.8	ECKD3J222MDU	969-7381

6000 Volt d.c.

		Price Each					
pF	Order Code	1+	50+	100+	500+	1K+	10K+
470	969-7365	0.43	0.36	0.29	0.27	0.25	0.20
2200	969-7381	0.94	0.80	0.56	0.51	0.49	0.48

15000 Volt d.c.

pF	nF	Body dia.	Body thickness	Lead pitch	Lead Dia.	Mfrs. List No.	Order Code
1000	1	19	10	10	0.8	ECKD4C102MDU	969-7470

15000 Volt d.c.

		Price Each					
pF	Order Code	1+	50+	100+	500+	1K+	10K+
1000	969-7470	1.44	1.27	1.13	1.07	1.04	1.02

Ceramic - Disc & Plate - Vishay

High Voltage, Low Loss (0.2% max.)

HV LDF series



- High voltage ceramic disc capacitors
- Low loss, max 0.2%
- High reliability
- High capacitance per unit volume

Operating temperature.	-30°C to +125°C	Insulation resistance	≤10,000 MΩ @ 500V dc
Capacitance tolerance	+10%	Dissipation factor	≤0.2%
Temperature coefficient(Y5R)	±15%	Climatic category	30/105/21(1000V)
Dielectric strength	200% of rated voltage		30/105/21(2000V)

N.B. For ease of selection, capacitance value is listed in both pF and nF

pF	nF	Body Dia.	Body Thickness	Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
1000 Volt d.c.							
150	0.15	6.5	4.5	5	0.6	228271114116	114-1785
220	0.22	6.5	4.5	5	0.6	228271114216	114-1786
330	0.33	7.5	4.5	5	0.6	228271114316	114-1787
470	0.47	7.5	4.5	5	0.6	228271114416	114-1789
680	0.68	8.5	4.5	5	0.6	228271114616	114-1791
1000	1	10	4.5	5	0.6	228271114026	114-1792
1500	1.5	11	4.5	5	0.6	228271114126	114-1793
2200	2.2	13.5	4.5	7.5	0.6	228271137226	114-1794
3300	3.3	17.5	4.5	7.5	0.6	228271137326	114-1795
4700	4.7	19	4.5	10	0.6	228271148426	114-1796
2000 Volt d.c.							
100	0.1	6.5	4.5	5	0.6	228271214016	114-1797
150	0.15	6.5	4.5	5	0.6	228271214116	114-1798
220	0.22	7.5	4.5	5	0.6	228271214216	114-1799
330	0.33	7.5	4.5	5	0.6	228271214316	114-1800
470	0.47	8.5	4.5	5	0.6	228271214416	114-1801



Ceramic - Disc & Plate - Vishay - continued

High Voltage, Low Loss (0.2% max.) - continued

HV LDF series - continued

pF	nF	Body Dia.	Body Thickness	Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
680	0.68	10	4.5	5	0.6	228271214616	114-1802
1000	1	11	4.5	5	0.6	228271214026	114-1803
1500	1.5	13.5	4.5	7.5	0.6	228271237126	114-1804
2200	2.2	17.5	4.5	7.5	0.6	228271237226	114-1805
3300	3.3	19	4.5	10	0.6	228271248326	114-1807

228224.498401

Order Multiple=5

Price Each

pF	Order Code	5+	50+	100+	500+	1K+	3K+
1000 Volt d.c.							
150	114-1785	0.059	0.049	0.045	0.034	0.030	0.026
220	114-1786	0.104	0.079	0.053	0.044	0.038	0.034
330	114-1787	0.134	0.102	0.069	0.057	0.049	0.044
470	114-1789	0.104	0.079	0.053	0.044	0.038	0.034
680	114-1791	0.098	0.074	0.050	0.042	0.036	0.031
1000	114-1792	0.122	0.113	0.081	0.067	0.058	0.051
1500	114-1793	0.132	0.100	0.067	0.056	0.048	0.043
2200	114-1794	0.300	0.230	0.155	0.129	0.110	0.098
3300	114-1795	0.136	0.127	0.124	0.110	0.097	0.077
4700	114-1796	0.370	0.280	0.191	0.171	0.136	0.122

2000 Volt d.c.

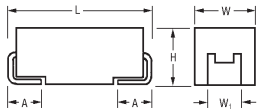
100	114-1797	0.112	0.085	0.057	0.048	0.042	0.036
150	114-1798	0.077	0.058	0.040	0.033	0.028	0.025
220	114-1799	0.139	0.106	0.071	0.059	0.051	0.046
330	114-1800	0.101	0.085	0.073	0.059	0.052	0.046
470	114-1801	0.146	--	--	--	--	--
680	114-1802	0.270	0.210	0.138	0.114	0.100	0.088
1000	114-1803	0.250	0.194	0.130	0.108	0.093	0.083
1500	114-1804	0.360	0.270	0.181	0.151	0.130	0.115
2200	114-1805	0.500	0.430	0.280	0.240	0.210	0.183
3300	114-1807	0.310	0.290	0.280	0.260	0.230	0.191

Tantalum - Surface Mount - Multicomp

Very high capacitance per unit volume with excellent electrical performance and stability against both temperature and time. Suitable for a wide range of general purpose applications such as coupling, decoupling filters and timing circuits. Care should be taken during connection as all units are polarity sensitive.

208421

MCCT Series



● General purpose

Case Code	L	W	H	A	W ₁	Reel Qty.	Tape Size
A	±0.2	+0.2 -0.1	+0.2 -0.1	+0.3 -0.2	±0.2	2000	8mm
B	3.2	1.6	1.6	0.8	1.2	2000	8mm
C	3.5	2.8	1.9	0.8	2.2	2000	8mm
D	6	3.2	2.6	1.3	2.2	500	12mm
	7.3	4.3	2.9	1.3	2.4	500	12mm

● Surface mount tantalum capacitors

µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
3.3	0.5	7	A	MCCTA335M006	119-0105
10	0.5	6	A	MCCTA106M006	119-0107
22	1.4	2.3	C	MCCTC226M006	119-0108
47	1.9	1.8	C	MCCTC476M006	119-0109

Order Multiple=5

6.3 Volt d.c.

Price Each

µF	Order Code	5+	50+	100+	500+	1K+
3.3	SMD119-0105	0.290	0.220	0.200	0.160	0.144
10	SMD119-0107	0.280	0.220	0.191	0.151	0.136
22	SMD119-0108	0.580	0.490	0.440	0.350	0.310
47	SMD119-0109	0.580	0.490	0.440	0.350	0.310

10 Volt d.c.

µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
4.7	0.5	5	A	MCCTA475M010	119-0110
6.8	0.7	3	B	MCCTB685M010	119-0112
10	1	2.5	B	MCCTB106M010	119-0113

Order Multiple=5

10 Volt d.c.

Price Each

µF	Order Code	5+	50+	100+	500+	1K+
4.7	SMD119-0110	0.300	0.240	0.210	0.168	0.153
6.8	SMD119-0112	0.270	0.220	0.200	0.154	0.138
10	SMD119-0113	0.360	0.300	0.250	0.200	0.181

16 Volt d.c.

µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
1	0.5	11	A	MCCTA105M016	119-0114
2.2	0.5	6.5	A	MCCTA225M016	119-0115
4.7	0.8	3.5	B	MCCTB475M016	119-0116
10	1.6	2.8	B	MCCTB106M016	119-0117
22	3.5	1.6	C	MCCTC226M016	119-0119
33	5.3	0.9	D	MCCTD336M016	119-0121
47	7.5	0.9	D	MCCTD476M016	119-0122

Order Multiple=5

16 Volt d.c.

Price Each

µF	Order Code	5+	50+	100+	500+	1K+
1	SMD119-0114	0.250	0.210	0.178	0.138	0.127
2.2	SMD119-0115	0.250	0.210	0.180	0.138	0.127
4.7	SMD119-0116	0.390	0.330	0.290	0.220	0.200
10	SMD119-0117	0.370	0.310	0.270	0.210	0.190
22	SMD119-0119	0.570	0.480	0.420	0.340	0.300
33	SMD119-0121	1.240	--	--	--	--
47	SMD119-0122	1.190	0.990	0.850	0.680	0.600

20 Volt d.c.

µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
2.2	0.5	3.5	B	MCCTB225M020	119-0123
3.3	0.7	3	B	MCCTB335M020	119-0124
4.7	1	3	B	MCCTB475M020	119-0125

Order Multiple=5

20 Volt d.c.

Price Each

µF	Order Code	5+	50+	100+	500+	1K+
2.2	SMD119-0123	0.162	0.132	0.120	0.092	0.083
3.3	SMD119-0124	0.360	0.300	0.250	0.200	0.181
4.7	SMD119-0125	0.360	0.300	0.270	0.210	0.185
22	SMD119-0126	1.380	1.140	1.000	0.780	0.710

25 Volt d.c.

µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
1	0.5	8	A	MCCTA105M025	119-0127
2.2	0.6	4.5	B	MCCTB225M025	119-0128
10	2.5	2.5	C	MCCTC106M025	119-0129

Order Multiple=5

25 Volt d.c.

Price Each

µF	Order Code	5+	50+	100+	500+	1K+
1	SMD119-0127	0.250	0.210	0.177	0.137	0.126
2.2	SMD119-0128	0.390	0.330	0.290	0.220	0.200
10	SMD119-0129	0.600	0.500	0.450	0.350	0.340

35 Volt d.c.

µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
0.1	0.5	24	A	MCCTA104M035	119-0132
0.22	0.5	18	A	MCCTA224M035	119-0133
0.47	0.5	12	A	MCCTA474M035	119-0134
1	0.5	6.5	B	MCCTB105M035	119-0135
2.2	0.8	3.5	C	MCCTC225M035	119-0136
4.7	1.6	2.2	C	MCCTC475M035	119-0137
6.8	2.4	1.3	D	MCCTD685M035	119-0138
10	3.5	1	D	MCCTD106M035	119-0139

208532

Order Multiple=5

35 Volt d.c.

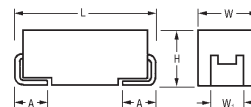
Price Each

µF	Order Code	5+	50+	100+	500+	1K+
0.1	SMD119-0132	0.510	0.420	0.370	0.290	0.280
0.22	SMD119-0133	0.230	0.198	0.180	0.135	0.122
0.47	SMD119-0134	0.390	0.320	0.290	0.220	0.200
1	SMD119-0135	0.400	0.340	0.290	0.220	0.210
2.2	SMD119-0136	0.330	0.280	0.240	0.197	0.180
4.7	SMD119-0137	0.680	0.560	0.500	0.390	0.370
6.8	SMD119-0138	0.690	0.590	0.530	0.440	0.390
10	SMD119-0139	1.230	1.020	0.890	0.710	0.630

Tantalum - Surface Mount - AVX

Surface Mount - TAJ Series

Standard Profile



Supplied on 8mm or 12mm embossed tape

- Tantalum surface mount
- For use with modern soldering and washing processes
- Latest miniature case sizes
- Laser marked and conform to **CECC 30801-005**

Operating temperature: -55°C to +85°C
 Tolerance: ±10%
 ESR measured at: 100kHz 25°C



Case Code	L ±0.2	W +0.2 -0.1	H +0.2 -0.1
A	3.2	1.6	1.6
B	3.5	2.8	1.9
C	6	3.2	2.6
D	7.3	4.3	2.9
E	7.3	4.3	4.1
V	7.3	6.1	3.45

2.5 Volt d.c. µF	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
100		1.4	A	TAJA107K002R	165-8139
100		1.4	B	TAJB107K002R	165-8149
150		1.6	B	TAJB157K002R	165-8151
220		300	D	TAJD227K002R	165-8170
330		300	D	TAJD337K002R	165-8173
470	9.4	0.2	C	TAJC477K002R	143-2384
470		200	D	TAJD477K002R	165-8176
680		200	C	TAJC687K002R	165-8166
680		200	E	TAJE687K002R	165-8185
1000		200	D	TAJD108M002R	165-8167
1500		200	D	TAJD158K002R	165-8169
1500		200	E	TAJE158K002R	165-8181
1500		200	V	TAJV158M002R	165-8308
2200		200	V	TAJV228M002R	165-8310

2.5 Volt d.c. µF	Order Code	1+	50+	100+	500+	1K+
100	SMD165-8139 ● RL	0.73	0.60	0.52	0.46	0.40
100	SMD165-8149 ● RL	0.37	0.32	0.27	0.25	0.22
150	SMD165-8151 ● RL	0.65	0.53	0.45	0.40	0.35
220	SMD165-8170 ● RL	1.03	0.86	0.75	0.62	0.54
330	SMD165-8173 ● RL	1.26	1.02	0.88	0.78	0.68
470	SMD143-2384 ●	0.96	0.87	0.81	0.76	0.71
470	SMD165-8176 ● RL	1.20	1.01	0.88	0.72	0.66
680	SMD165-8166 ● RL	1.51	1.23	1.06	0.94	0.81
680	SMD165-8185 ● RL	6.78	5.51	4.76	4.21	3.65
1000	SMD165-8167 ● RL	2.06	1.67	1.45	1.28	1.11
1500	SMD165-8169 ● RL	3.17	2.58	2.23	1.98	1.72
1500	SMD165-8181 ● RL	8.94	7.28	6.28	5.56	4.83
1500	SMD165-8308 ● RL	15.02	12.22	10.55	9.33	8.10
2200	SMD165-8310 ● RL	14.04	11.42	9.85	8.73	7.57

4 Volt d.c. µF	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
22		3	A	TAJA226K004R	143-2346
33	1.3	3	A	TAJA336K004R	196-952
47		2.6	A	TAJA476K004R	165-8921
47	1.9	2.4	B	TAJB476K004R	196-964
68		1.5	A	TAJA686K004R	165-8148
68		1.8	B	TAJB686K004R	165-8159
100		1.4	A	TAJA107K004R	165-8140
100	4	1.6	B	TAJB107K004R	196-988
220		1.1	B	TAJB227M004R	165-8156
220	8.8	1.2	C	TAJC227K004R	196-990
220		900	D	TAJD227K004R	165-8171
330		900	D	TAJD337K004R	165-8174
470	18.8	0.9	D	TAJD477K004R	143-2401
680	27.2	0.5	D	TAJD687K004R	143-2403
680		900	E	TAJE687K004R	165-8186
1000		0.4	E	TAJE108K004R	113-5047
1000		400	V	TAJV108K004R	165-8304
1500	60	0.2	E	TAJE158K004R	143-2407
1500		200	V	TAJV158M004R	165-8309

4 Volt d.c. µF	Order Code	1+	50+	100+	500+	1K+
22	SMD143-2346 ●	0.168	0.126	0.108	0.070	0.067
33	SMD196-952 ● RL	0.180	0.144	0.113	0.091	0.071
47	SMD165-8921 ● RL	0.360	0.300	0.260	0.230	0.199
47	SMD196-964 ● RL	0.360	0.260	0.220	0.168	0.144
68	SMD165-8148 ● RL	0.450	0.370	0.320	0.280	0.240
68	SMD165-8159 ● RL	0.690	0.560	0.480	0.430	0.370
100	SMD165-8140 ● RL	1.020	--	--	--	--
100	SMD196-988 ● RL	1.160	0.860	0.720	0.570	0.450
220	SMD165-8156 ● RL	0.620	0.510	0.440	0.390	0.340
220	SMD196-990 ● RL	0.850	0.690	0.600	0.580	0.550
220	SMD165-8171 ● RL	2.300	1.860	1.610	1.430	1.240
330	SMD165-8174 ● RL	3.630	2.950	2.550	2.260	1.960
470	SMD143-2401 ●	3.390	2.510	2.100	1.660	1.320
680	SMD143-2403 ●	2.270	1.690	1.410	1.110	0.880
680	SMD165-8186 ● RL	6.730	5.480	4.720	4.180	3.630
1000	SMD113-5047 ● RL	10.190	8.050	6.720	6.410	6.090
1000	SMD165-8304 ● RL	14.910	12.140	10.470	9.270	8.040
1500	SMD143-2407 ●	6.420	5.450	4.830	4.360	3.860
1500	SMD165-8309 ● RL	14.040	11.420	9.850	8.730	7.570

6.3 Volt d.c. µF	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
3.3		6	A	TAJA335M006RNJ	178-0978
4.7		6	A	TAJA475K006R	143-2350
10	0.6	4	A	TAJA106K006R	197-014
15		3.5	A	TAJA156K006R	165-8143
22	1.3	3	A	TAJA226K006R	197-038
22		2.3	B	TAJB226K006R	143-2361
33	2.1	2.5	A	TAJA336K006R	143-2348
33	2.1	2.2	B	TAJB336K006R	197-040
47	2.8	1.6	A	TAJA476K006R	143-2351
47		2	B	TAJB476K006R	165-8926

6.3 Volt d.c. µF	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
47		3	C	TAJC476K006R	197-051
68	4.2	1.8	B	TAJB686K006R	197-063
100		1.7	B	TAJB107K006R	113-5048
100	6.3	0.9	C	TAJC107K006R	143-2373
150		1.2	B	TAJB157M006R	165-8154
150	9.5	1.3	C	TAJC157K006R	197-075
150		900	D	TAJD157K006R	165-8168
220	13.9	1.2	C	TAJC227K006R	197-087
220		900	D	TAJD227K006R	165-8172
220		900	E	TAJE227K006R	165-8182
330		900	D	TAJD337K006R	165-8175
470		0.4	D	TAJD477K006R	113-5049
470		400	E	TAJE477K006R	165-8184
470		400	V	TAJV477K006R	165-8314
1000		400	V	TAJV108M006R	165-8305

6.3 Volt d.c. µF	Order Code	1+	50+	100+	500+	1K+
3.3	NEW 178-0978 ●	0.166	0.146	0.114	0.104	0.083
4.7	SMD143-2350 ●	0.310	--	--	--	--
10	SMD197-014 ● RL	0.410	0.300	0.250	0.197	0.157
15	SMD165-8143 ● RL	0.330	0.260	0.230	0.200	0.175
22	SMD197-038 ● RL	0.149	0.114	0.095	0.075	0.070
22	SMD143-2361 ●	0.540	0.400	0.330	0.260	0.210
33	SMD143-2348 ●	0.300	--	--	--	--
33	SMD197-040 ● RL	0.400	0.290	0.240	0.210	0.182
47	SMD143-2351 ●	0.360	0.300	0.260	0.230	0.198
47	SMD165-8926 ● RL	0.460	0.370	0.320	0.290	0.250
47	SMD197-051 ● RL	0.620	0.460	0.360	0.290	0.250
68	SMD197-063 ● RL	0.760	0.560	0.470	0.370	0.300
100	SMD113-5048 ● RL	0.930	0.840	0.770	0.620	0.490
100	SMD143-2373 ●	1.220	0.900	0.750	0.720	0.690
150	SMD165-8154 ● RL	0.680	--	--	--	--
150	SMD197-075 ● RL	1.970	1.460	1.220	1.140	1.080
150	SMD165-8168 ● RL	1.830	1.490	1.280	1.130	0.990
220	SMD197-087 ● RL	2.120	1.570	1.310	1.250	1.190
220	SMD165-8172 ● RL	2.360	1.910	1.650	1.470	1.270
220	SMD165-8182 ● RL	3.440	2.810	2.420	2.140	1.860
330	SMD165-8175 ● RL	3.310	2.700	2.330	2.060	1.790
470	SMD113-5049 ● RL	3.130	2.810	2.350	2.240	2.110
470	SMD165-8184 ● RL	6.380	5.190	4.480	3.960	3.440
470	SMD165-8314 ● RL	14.040	11.420	9.850	8.730	7.570
1000	SMD165-8305 ● RL	14.040	11.420	9.850	8.730	7.570

10 Volt d.c. µF	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
2.2	0.5	7	A	TAJA225K010R	498-646
3.3	0.5	5.5	A	TAJA335K010R	197-117
4.7	0.5	5	A	TAJA475K010R	498-658
4.7		3.5	B	TAJB475K010R	143-2365
6.8	0.7	3	B	TAJB685K010R	197-129
10	1	3	A	TAJA106K010R	197-130
10	1	2.5	B	TAJB106K010R	498-660
10		2	C	TAJC106K010R	143-2372
15	1.5	3.2	A	TAJA156K010R	143-2342
15	1.6	2.8	B	TAJB156K010R	197-142
22		3	A	TAJA226K010R	113-5050
22	2.2	2.4	B	TAJB226K010R	197-154
22	2.2	1.8	C	TAJC226K010R	498-671
33		1.7	A	TAJA336K010R	165-8145
33	3.3	1.8	B	TAJB336K010R	143-2363
33		1.6	C	TAJC336K010R	165-8929
47	4.7	1	3528-21	TAJB476K010R	143-2366
47	4.7	1.2	C	TAJC476K010R	197-166
47	4.7	0.9	D	TAJD476K010R	498-683
68	6.8	1.4	B	TAJB686K010R	143-2371
68	6.8	1.3	C	TAJC686K010R	197-178
100		1.4	B	TAJB107M010R	165-8150
100	10	1.2	C	TAJC107K010R	197-180
100	10	0.9	D	TAJD107K010R	498-695
150		0.9	C	TAJC157K010R	113-5051
150		900	E	TAJE157K010R	165-8179
220	22	0.9	D	TAJD227K010R	197-191
330		0.9	D	TAJD337K010R	113-5052
330	33	0.9	E	TAJE337K010R	197-208
470	47	0.5	7343-43	TAJE477K010R	143-2411

10 Volt d.c. µF	Order Code	1+	50+	100+	500+	1K+
2.2	SMD498-646 ● RL	0.490	0.360	0.300	0.230	0.187
3.3	SMD197-117 ● RL	0.380	0.290	0.240	0.188	0.150
4.7	SMD498-658 ● RL	0.430	0.320	0.270	0.210	0.167
4.7	SMD143-2365 ●	0.500	0.380	0.310	0.250	0.197
6.8	SMD197-129 ● RL	0.310	0.230	0.188	0.165	0.143
10	SMD197-130 ● RL	0				



Tantalum - Surface Mount - AVX - continued

Surface Mount – TAJ Series - continued

Standard Profile - continued

10 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
47	SMD143-2366	0.890	0.650	0.550	0.430	0.340
47	SMD197-166 RL	0.430	0.320	0.270	0.260	0.240
47	SMD498-683 RL	0.730	0.570	0.490	0.470	0.440
68	SMD143-2371	0.840	0.620	0.520	0.410	0.330
68	SMD197-178 RL	1.270	0.940	0.780	0.740	0.710
100	SMD165-8150 RL	0.590	0.480	0.410	0.370	0.320
100	SMD197-180 RL	1.270	0.940	0.780	0.740	0.710
100	SMD498-695 RL	1.970	1.460	1.220	1.140	1.090
150	SMD113-5051 RL	1.230	1.100	1.000	0.980	0.940
150	SMD165-8179 RL	2.470	2.070	1.800	1.490	1.330
220	SMD197-191 RL	2.670	1.980	1.660	1.570	1.480
330	SMD113-5052 RL	3.320	2.930	2.650	2.510	2.380
330	SMD197-208 RL	4.160	3.290	2.840	2.720	2.610
470	SMD143-2411	7.170	5.310	4.440	4.220	4.020

16 Volt d.c.	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
1	0.5	11	A	TAJA105K016R	498-701
1.5	0.5	8	A	TAJA155K016R	197-221
2.2	0.5	6.5	A	TAJA225K016R	197-233
2.2	0.5	5.5	B	TAJB225K016R	197-245
3.3	0.5	5	A	TAJA335K016R	197-257
4.7	0.8	3.5	B	TAJB475K016R	498-725
6.8		3.5	A	TAJA685K016R	165-8923
6.8		2.5	B	TAJB685K016R	165-8158
10	1.6	3	3216-18	TAJA106K016R	143-2339
10	1.6	2.8	B	TAJB106K016R	498-737
10	1.6	2	C	TAJC106K016R	197-270
15		2	A	TAJA156M016R	165-8144
15	2.4	2.5	B	TAJB156K016R	197-282
22	3.5	2.3	B	TAJB226K016R	197-294
22	3.5	1.6	C	TAJC226K016R	197-300
22	3.5	1.1	D	TAJD226K016R	498-749
33		2.1	B	TAJB336K016R	113-5054
33	5.2	1.5	C	TAJC336K016R	197-312
33	5.3	0.9	D	TAJD336K016R	498-750
47	7.5	1.4	C	TAJC476K016R	197-324
47	7.5	0.9	D	TAJD476K016R	498-762
68		1.3	C	TAJC686K016R	113-5055
68	10.8	0.9	D	TAJD686K016R	197-336
100	16	0.9	D	TAJD107K016R	197-348
100	16	1	E	TAJE107K016R	498-774
150	24	0.9	D	TAJD157K016R	197-350
150		300	E	TAJE157K016R	165-8180
220		0.5	E	TAJE227K016R	113-5056
220	35.2	0.9	V	TAJV227K016R	143-2481

16 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
1	SMD498-701 RL	0.450	0.330	0.280	0.220	0.173
1.5	SMD197-221 RL	0.200	0.144	0.120	0.092	0.080
2.2	SMD197-233 RL	0.430	0.320	0.270	0.210	0.167
2.2	SMD197-245 RL	0.310	0.230	0.190	0.169	0.146
3.3	SMD197-257 RL	0.430	0.320	0.270	0.210	0.167
4.7	SMD197-269 RL	0.410	0.300	0.250	0.197	0.157
4.7	SMD498-725 RL	0.540	0.390	0.330	0.260	0.210
6.8	SMD165-8923 RL	0.320	0.270	0.230	0.200	0.176
6.8	SMD165-8158 RL	0.410	0.330	0.290	0.250	0.220
10	SMD143-2339	0.500	0.370	0.310	0.250	0.196
10	SMD498-737 RL	0.550	0.410	0.340	0.270	0.220
10	SMD197-270 RL	0.490	0.360	0.300	0.270	0.260
15	SMD165-8144 RL	0.520	0.420	0.360	0.320	0.280
15	SMD197-282 RL	0.610	0.450	0.380	0.300	0.240
22	SMD197-294 RL	0.550	0.410	0.340	0.270	0.220
22	SMD197-300 RL	0.400	0.310	0.280	0.260	0.250
22	SMD498-749 RL	1.620	1.200	1.000	0.950	0.900
33	SMD113-5054 RL	0.960	0.710	0.590	0.470	0.370
33	SMD197-312 RL	0.630	0.470	0.400	0.370	0.350
33	SMD498-750 RL	0.490	0.360	0.300	0.280	0.260
47	SMD197-324 RL	1.010	0.750	0.630	0.590	0.570
47	SMD498-762 RL	0.840	0.620	0.520	0.500	0.460
68	SMD113-5055 RL	1.570	1.210	1.010	0.800	0.640
68	SMD197-336 RL	1.140	--	--	--	--
100	SMD197-348 RL	1.310	0.970	0.810	0.760	0.740
100	SMD498-774 RL	1.920	1.420	1.190	1.140	1.120
150	SMD197-350 RL	3.280	2.430	2.030	1.920	1.840
150	SMD165-8180 RL	3.440	2.810	2.420	2.140	1.860
220	SMD113-5056 RL	8.330	6.170	5.160	4.880	4.630
220	SMD143-2481	7.830	6.650	5.900	5.320	4.720

20 Volt d.c.	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
0.1		25	R	TAJR104K020R	113-5082
1	0.5	9	A	TAJA105K020R	197-361
2.2		5.3	A	TAJA225K020R	165-8916
2.2	0.5	3.5	B	TAJB225K020R	197-373
3.3	0.7	3	B	TAJB335K020R	197-385

20 Volt d.c.	DC Leakage	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
4.7	1	4	A	TAJA475K020R	197-397
4.7	1	3	B	TAJB475K020R	197-403
4.7	1.4	1.4	C	TAJC475K020R	178-0981
6.8	1.4	2.5	A	TAJA685K020R	143-2353
6.8	1.4	2	C	TAJC685K020R	498-786
10	2	2.1	B	TAJB106K020R	197-427
10	2	1.9	C	TAJC106K020R	498-798
15	3	2	B	TAJB156K020R	197-439
15		1.7	C	TAJC156K020R	178-0982
22		1.8	B	TAJB226K020R	113-5057
22	4.4	1.6	C	TAJC226K020R	197-440
22	4	0.9	D	TAJD226K020R	498-804
33	6.6	1.5	C	TAJC336K020R	197-452
33		0.9	D	TAJD336K020R	165-8932
47		0.9	C	TAJC476K020R	165-8930
47	9.4	0.9	D	TAJD476K020R	197-464
47	9.4	1	E	TAJE476K020R	498-816
68	13.6	0.9	D	TAJD686K020R	143-2402
68		0.9	E	TAJE686K020R	165-8935
100		0.9	D	TAJD107K020R	113-5058
100		0.4	E	TAJE107K020R	165-8933
100		900	V	TAJV107K020R	165-8303
150	30	0.3	E	TAJE157K020R	143-2406
150		500	V	TAJV157K020R	165-8307

20 Volt d.c.	DC Leakage	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
0.1		0.310	0.250	0.210	0.198	0.179
1		0.460	0.340	0.280	0.220	0.177
2.2		0.350	0.290	0.250	0.220	0.189
2.2		0.189	0.144	0.120	0.095	0.080
3.3		0.500	0.380	0.310	0.250	0.197
4.7		0.490	0.360	0.300	0.230	0.187
4.7		0.500	0.380	0.310	0.250	0.197
4.7	NEW 178-0981	0.430	0.360	0.300	0.260	0.220
6.8		0.500	0.370	0.310	0.240	0.194
6.8		0.430	0.340	0.310	0.290	0.270
10		0.500	0.370	0.310	0.250	0.196
10		0.460	0.340	0.290	0.280	0.250
15		0.270	0.210	0.168	0.138	0.128
15	NEW 178-0982	0.460	0.400	0.320	0.280	0.230
22		0.630	0.470	0.390	0.310	0.250
22		1.010	0.750	0.630	0.590	0.560
22		0.860	0.680	0.550	0.540	0.510
33		1.010	0.750	0.630	0.610	0.570
33		1.050	0.860	0.740	0.650	0.570
47		1.430	1.170	1.000	0.880	0.770
47		0.760	0.560	0.470	0.450	0.430
47		2.430	1.850	1.530	1.300	1.270
68		2.320	1.720	1.440	1.380	1.310
68		2.130	1.940	1.810	1.700	1.570
100		3.280	2.430	2.030	1.930	1.820
100		5.390	4.380	3.790	3.350	2.900
100		11.260	9.040	7.740	6.600	6.030
150		5.550	4.110	3.430	3.270	3.090
150		14.040	11.420	9.850	8.730	7.570

25 Volt d.c.	DC Leakage Current (µA)	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
0.47	0.5	14	A	TAJA474K025R	498-828
0.68	0.5	10	A	TAJA684K025R	498-830
1	5	8	A	TAJA105K025R	197-476
1.5	0.5	7.5	A	TAJA155K025R	197-488
1.5	0.5	5	B	TAJB155K025R	498-841
2.2	0.5	7	A	TAJA225K025R	197-490
2.2	0.6	4.5	B	TAJB225K025R	498-853
3.3			C	TAJC335K025R	178-0983
4.7		3.1	A	TAJA475K025R	165-8146
4.7	1.1	2.8	B	TAJB475K025R	197-506
4.7	1.2	2.4	C	TAJC475K025R	498-877
6.8		2.8	B	TAJB685K025R	113-5059
6.8		2	C	TAJC685K025R	165-8163
10	2.5	1.8	C	TAJC106K025R	197-518
10	2.5	1.2	D	TAJD106K025R	498-890
15		1.6	C	TAJC156K025R	165-8161
15	3.8	1	D	TAJD156K025R	498-907
22		1.4	C	TAJC226K025R	113-5060
22	5.5	0.9	D	TAJD226K025R	197-520
33	8.3	0.9	D	TAJD336K025R	143-2397
33		0.9	E	TAJE336K025R	165-8934
47		0.9	D	TAJD476K025R	197-531
47	11.7	0.9	E	TAJE476K025R	165-8183
68		17	E	TAJE686K025R	143-2413
68	17	0.9	V	TAJV686K025R	143-2484

25 Volt d.c.	DC Leakage	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
0.47		1.010	0.750	0.630	0.490	0.390
0.68		0.330	0.230	0.198	0.150	0.132
1		0.490	0.360	0.300	0.230	0.187
1.5		0.460	0.340	0.280	0.220	0.177
1.5		0.320	0.230	0.186	0.144	0.126
2.2		0.490	0.360	0.300	0.230	0.187
2.2		0.220	0.159	0.133	0.105	0.083
3.3						

10 Volt d.c.	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
22 ± 10%	2.2	2.2	T	TAJT226K010R	143-2468
22 ± 10%		600	W	TAJW226K010R	165-8327
33 ± 10%		1.6	W	TAJW336K010R	165-8332
47 ± 10%		1.4	W	TAJW476K010R	113-5079
47 ± 10%		500	Y	TAJY476K010R	165-8361
100 ± 10%	10	0.4	W	TAJW107K010R	143-2488
100 ± 10%	10	0.9	Y	TAJY107K010R	121-6578
100 ± 10%		0.9	X	TAJX107K010R	113-5080
150 ± 10%		300	F	TAJF157K010R	165-8188
150 ± 20%		300	X	TAJX157M010R	165-8340
220 ± 10%		0.5	Y	TAJY227K010R	113-5081

Order Multiple=5	Price Each					
µF	Order Code	5+	50+	100+	500+	1K+

10 Volt d.c.	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
1	1.11	0.82	0.69	0.54	0.43
1	0.35	0.30	0.26	0.22	0.21
1.5	0.46	0.37	0.33	0.29	0.25
1.5	0.58	0.48	0.41	0.36	0.31
2.2	0.49	0.41	0.34	0.31	0.27
3.3	0.45	0.36	0.32	0.28	0.24
3.3	0.55	0.45	0.39	0.34	0.30
3.3	0.60	0.49	0.42	0.37	0.32
4.7	0.57	0.49	0.44	0.40	0.39
4.7	0.53	0.43	0.37	0.33	0.29
6.8	0.49	0.41	0.34	0.31	0.27
10	0.63	0.57	0.49	0.48	0.40
10	0.65	0.53	0.46	0.41	0.35
10	0.54	0.47	0.43	0.37	0.33
10	0.55	0.40	0.35	0.31	0.26
15	0.72	0.58	0.50	0.45	0.39
15	1.12	0.92	0.79	0.70	0.60
22	0.72	0.58	0.50	0.45	0.39
22	1.23	1.00	0.86	0.77	0.67
33	1.53	1.25	1.07	0.96	0.82
47	2.07	1.69	1.41	1.11	1.07
47	1.84	1.55	1.35	1.11	0.99
100	1.78	1.45	1.25	1.10	0.96
100	1.89	1.45	1.10	0.87	0.63
100	2.62	1.95	1.63	1.28	1.22
150	2.38	1.93	1.66	1.48	1.28
150	2.42	1.97	1.70	1.51	1.31
220	2.82	2.34	1.96	1.54	1.46

16 Volt d.c.	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
0.68 ± 10%		25	R	TAJR684K016R	165-8238
0.68 ± 10%		25	S	TAJS684K016R	165-8272
1 ± 10%		20	R	TAJR105K016R	165-8936
2.2 ± 10%		6	S	TAJS225K016R	165-8257
3.3 ± 10%	0.5	5	R	TAJR335K016R	143-2440
4.7 ± 10%	0.8	5	P	TAJP475K016R	143-2427
4.7 ± 10%	0.8	4.5	S	TAJS475K016R	143-2459
4.7 ± 10%		3.1	T	TAJT475K016R	165-8295
6.8 ± 10%		2.4	S	TAJS685K016R	165-8276
10 ± 10%	1.6	2	W	TAJW106K016R	121-6587
15 ± 20%		2	T	TAJT156M016R	165-8284
15 ± 10%		700	W	TAJW156K016R	165-8322
33 ± 10%	5.3	1.5	W	TAJW336K016R	121-6589
33 ± 10%		900	Y	TAJY336K016R	165-8355
47 ± 10%		400	W	TAJW476K016R	165-8338
47 ± 10%	7.5	0.9	X	TAJX476K016R	143-2502
47 ± 10%		700	Y	TAJY476K016R	165-8362
68 ± 10%		400	F	TAJF686K016R	165-8194
68 ± 10%	10.9	0.6	X	TAJX686K016R	143-2504
68 ± 10%		900	Y	TAJY686K016R	165-8367
100 ± 20%		400	F	TAJF107M016R	165-8187
100 ± 10%	16	0.9	Y	TAJY107K016R	143-2506
150 ± 20%			Y	TAJY157M016R	165-8349

Order Multiple=5	Price Each					
µF	Order Code	5+	50+	100+	500+	1K+

16 Volt d.c.	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
0.68	0.50	0.41	0.35	0.31	0.27
0.68	0.58	0.48	0.41	0.36	0.31
1	0.86	0.70	0.60	0.53	0.47
2.2	0.55	0.45	0.39	0.34	0.30
3.3	0.48	0.40	0.34	0.30	0.26
4.7	0.53	0.43	0.37	0.33	0.28
4.7	0.33	0.29	0.27	0.24	0.22
4.7	0.65	0.53	0.46	0.41	0.35
6.8	0.76	0.62	0.54	0.48	0.42
10	1.30	--	--	--	--
15	1.08	0.88	0.76	0.67	0.58
15	1.30	1.06	0.92	0.81	0.70
33	1.35	--	--	--	--
33	2.15	1.75	1.51	1.34	1.17
47	1.83	1.49	1.28	1.13	0.99
47	1.07	1.00	0.94	0.85	0.81
47	2.07	1.68	1.45	1.29	1.12
68	2.34	1.90	1.64	1.46	1.26

Order Multiple=5	Price Each					
µF	Order Code	5+	50+	100+	500+	1K+

16 Volt d.c.	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
68	1.61	1.43	1.28	1.09	1.01
68	2.04	1.66	1.44	1.27	1.10
100	2.37	1.93	1.67	1.48	1.28
100	1.86	1.58	1.41	1.27	1.12
150	3.51	2.85	2.45	2.17	1.88

Order Multiple=5	Price Each					
µF	Order Code	5+	50+	100+	500+	1K+

20 Volt d.c.	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
0.1	0.310	0.250	0.210	0.198	0.179
0.1	0.410	0.350	0.310	0.270	0.230
0.15	0.590	0.480	0.420	0.360	0.320
0.22	0.580	0.480	0.420	0.360	0.310
0.33	0.250	0.210	0.179	0.158	0.137
0.33	0.540	0.500	0.460	0.430	0.410
0.68	0.580	0.480	0.410	0.360	0.310
0.68	0.600	0.490	0.420	0.370	0.320
1	0.400	0.260	0.220	0.200	0.172
1	0.560	0.390	0.330	0.300	0.250
1.5	0.590	0.480	0.420	0.360	0.320
1.5	0.540	0.440	0.370	0.330	0.290
1.5	0.580	0.480	0.410	0.360	0.310
2.2	0.510	0.420	0.350	0.310	0.270
3.3	0.600	0.490	0.420	0.370	0.320
6.8	0.770	0.630	0.540	0.480	0.420
22	2.040	1.660	1.440	1.270	1.100
33	2.150	1.750	1.510	1.340	1.170
47	1.710	1.380	1.200	1.060	0.920

25 Volt d.c.	DC Leakage Current (µA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
0.15 ± 10%		24	R	TAJR154K025R	165-8214
0.22 ± 10%		21	R	TAJR224K025R	165-8223
0.33 ± 10%		17	R	TAJR334K025R	165-8229
0.47 ± 10%		15	R	TAJR474K025R	165-8235
0.47 ± 10%		14	S	TAJS474K025R	165-8264
0.68 ± 10%		13	R	TAJR684K025R	165-8239
0.68 ± 10%		10	S	TAJS684K025R	165-8274
1 ± 10%		11	P	TAJP105K025R	165-8202
1 ± 10%		8	R	TAJR105K025R	165-8211
1 ± 10%		8	S	TAJS105K025R	165-8245
1.5 ± 10%		5	T	TAJT155K025R	165-8282
2.2 ± 10%	0.6	4.5	T	TAJT225K025R	143-2467
3.3 ± 10%	0.8	3.5	T	TAJT335K025R	143-2469
3.3 ± 10%		1.6	W	TAJW335K025R	165-8329
4.7 ± 10%		1.2	W	TAJW475K025R	165-8334
10 ± 10%		1.8	W	TAJW106K025R	113-5083
22 ± 10%		900	Y	TAJY226K025R	165-8351
33 ± 10%	8.3	0.5	Y	TAJY336K025R	143-2510

Order Multiple=5	Price Each					
µF	Order Code	5+	50+	100+	500+	1K+

25 Volt d.c.	ESR (Ω)	Case Size	Mfrs. List No.	Order Code	
0.15	0.54	0.44	0.37	0.33	0.29
0.22	0.50	0.42	0.35	0.32	0.27
0.33	0.49	0.40	0.34	0.30	0.26
0.47	0.51	0.42	0.35	0.31	0.27
0.47	0.44	0.37	0.33	0.28	0.25
0.68	0.54	0.44	0.39	0.33	0.29
0.68	0.44	0.37	0.33	0.28	0.25
1	0.59	0.48	0.42	0.36	0.32
1	0.54	0.44	0.37	0.33	0.29
1	0.44	0.37	0.33	0.28	0.25
1.5	0.60	0.49	0.42	0.37	0.32
2.2	0.45	0.40	0.36	0.31	0.28
3.3	0.35	0.31	0.28	0.24	0.22

Passive Components

7

Capacitors



Tantalum - Surface Mount - AVX - continued

TAJ Series - Low Profile - continued

Order Multiple=5		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
25 Volt d.c.						
3.3	SMD 165-8329	1.09	0.89	0.77	0.69	0.59
4.7	SMD 165-8334	1.32	1.07	0.93	0.82	0.71
10	SMD 113-5083	2.07	1.69	1.41	1.11	1.07
22	SMD 165-8351	2.07	1.68	1.45	1.29	1.12
33	SMD 143-2510	2.92	2.38	2.06	1.82	1.58

μF	Tolerance	DC Leakage Current (μA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
0.1	± 10%	29	24	R	TAJR104K035R	165-8210
0.1	± 10%	0.5	24	S	TAJS104K035R	143-2445
0.15	± 10%		24	R	TAJR154K035R	165-8215
0.22	± 10%		21	R	TAJR224K035R	165-8224
0.33	± 10%		17	R	TAJR334K035R	165-8230
0.33	± 10%		15	S	TAJS334K035R	165-8259
0.47	± 10%		15	R	TAJR474K035R	165-8236
0.47	± 10%		12	S	TAJS474K035R	165-8265
1	± 10%	0.5	7.5	S	TAJS105K035R	143-2446
2.2	± 10%		4.2	T	TAJT225K035R	113-5084
3.3	± 10%		1.6	W	TAJW335K035R	165-8330
6.8	± 10%		900	Y	TAJY685K035R	165-8365
10	± 10%	3.5	1	Y	TAJY106K035R	143-2505
15	± 10%		600	Y	TAJY156K035R	165-8345

Order Multiple=5		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
35 Volt d.c.						
0.1	SMD 165-8210	0.47	0.39	0.33	0.29	0.25
0.1	SMD 143-2445	0.61	0.50	0.43	0.38	0.33
0.15	SMD 165-8215	0.45	0.36	0.32	0.28	0.24
0.22	SMD 165-8224	0.49	0.41	0.34	0.31	0.27
0.33	SMD 165-8230	0.47	0.39	0.33	0.29	0.25
0.33	SMD 165-8259	0.58	0.48	0.41	0.36	0.31
0.47	SMD 165-8236	0.42	0.34	0.30	0.26	0.24
0.47	SMD 165-8265	0.58	0.48	0.41	0.36	0.31
1	SMD 143-2446	0.51	0.43	0.38	0.35	0.31
2.2	SMD 113-5084	0.77	0.63	0.61	0.55	0.50
3.3	SMD 165-8330	1.12	0.95	0.82	0.70	0.62
6.8	SMD 165-8365	2.11	1.72	1.48	1.31	1.13
10	SMD 143-2505	2.47	2.01	1.74	1.53	1.33
15	SMD 165-8345	2.47	2.07	1.80	1.49	1.33

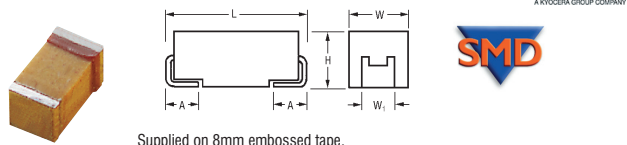
μF	Tolerance	DC Leakage Current (μA)	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
0.1	± 10%	19	16	S	TAJS104K050R	165-8243
0.15	± 10%		16	S	TAJS154K050R	165-8249
0.22	± 10%		13	S	TAJS224K050R	165-8255
0.33	± 10%		11	T	TAJT334K050R	165-8288
0.47	± 10%	9.5	9.5	T	TAJT474K050R	165-8292
1	± 10%	4.4	4.4	W	TAJW105K050R	165-8316
1.5	± 10%		3.1	W	TAJW155K050R	165-8320
6.8	± 10%	3.4	0.9	Y	TAJY685K050R	143-2514

Order Multiple=5		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
50 Volt d.c.						
0.1	SMD 165-8243	0.58	0.48	0.41	0.36	0.31
0.15	SMD 165-8249	0.58	0.48	0.42	0.36	0.31
0.22	SMD 165-8255	0.80	0.66	0.56	0.50	0.44
0.33	SMD 165-8288	0.82	0.67	0.57	0.51	0.44
0.47	SMD 165-8292	0.98	0.80	0.69	0.61	0.53
1	SMD 165-8316	1.03	0.86	0.75	0.63	0.57
1.5	SMD 165-8320	1.48	1.21	1.04	0.92	0.80
6.8	SMD 143-2514	2.56	2.08	1.79	1.59	1.37

Order Multiple=5		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
50 Volt d.c.						
0.1	SMD 165-8243	0.58	0.48	0.41	0.36	0.31
0.15	SMD 165-8249	0.58	0.48	0.42	0.36	0.31
0.22	SMD 165-8255	0.80	0.66	0.56	0.50	0.44
0.33	SMD 165-8288	0.82	0.67	0.57	0.51	0.44
0.47	SMD 165-8292	0.98	0.80	0.69	0.61	0.53
1	SMD 165-8316	1.03	0.86	0.75	0.63	0.57
1.5	SMD 165-8320	1.48	1.21	1.04	0.92	0.80
6.8	SMD 143-2514	2.56	2.08	1.79	1.59	1.37

RL FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

TAC Microchip™ Series



Supplied on 8mm embossed tape. Reel=500pcs

- Tantalum capacitor
- Volumetric efficiency, space and weight saving
- Applications include portable computers and mobile communication
- Enhanced ESR and high frequency operation
- Equivalent high frequency performance to larger sized product

Case Code	L	W	H	Case Code	L	W	H
A	±0.2	+0.2-0.1	+0.2-0.1	L	±0.2	+0.2-0.1	+0.2-0.1
H	3.2	1.6	1.6	R	1.6	0.85	0.85
K	2	1.35	1	L	2.05	1.35	1.35
	1	0.5	0.5	T	3.5	2.8	1.2

μF @ 120Hz	Voltage d.c.	Leakage μA (Max)	ESR Max (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
2.5 Volt d.c.						
3.3	2	0.5	15	K	TACK335M002QTA	165-8067
3.3	2	0.5	7.5	L	TACL335K002XTA	165-8085
4.7	2	0.5	15	K	TACK475M002QTA	165-8069
4.7	2	0.5	7.5	L	TACL475K002XTA	165-8093
6.8	2	0.5	15	K	TACK685M002QTA	165-8071
6.8	2	0.5	7.5	L	TACL685K002XTA	165-8100
10	2	0.5	15	L	TACL106K002XTA	165-8073
10	2.5	0.5	5	U	TACU106M002XTA	165-8134
22	2	0.5	5	R	TACR226K002XTA	165-8114
33	2	0.7	5	R	TACR336K002XTA	165-8121
47	2	0.9	5	R	TACR476K002XTA	165-8126
68	2	1.4	5	R	TACR686M002XTA	165-8132
150	2	3	1	A	TACA157M002XTA	165-8058
3 Volt d.c.						
2.2	3	0.5	15	K	TACK225M003QTA	165-8066
2.2	3	0.5	7.5	L	TACL225K003XTA	165-8081
3.3	3	0.5	15	K	TACK335M003QTA	165-8068
3.3	3	0.5	7.5	L	TACL335K003XTA	165-8087
4.7	3	0.5	15	K	TACK475M003QTA	113-5270
4.7	3	0.5	7.5	L	TACL475K003XTA	165-8094
6.8	3	0.5	7.5	L	TACL685K003XTA	165-8101
10	3	0.5	7.5	L	TACL106K003XTA	165-8075
15	3	0.5	5	R	TACR156K003XTA	165-8110
22	3	0.7	7.5	L	TACL226M003XTA	165-8084
22	3	0.7	5	R	TACR226K003XTA	165-8115
33	3	1	5	R	TACR336K003XTA	165-8122
47	3	1.5	5	R	TACR476K003XTA	165-8127
68	3	2	5	R	TACR686M003XTA	165-8133
100	3	3	1	A	TACA107M003XTA	165-8057
100	3	3	5	R	TACR107M003XTA	113-5276
220	3	6.6	1	T	TACT227M003XTA	113-5285
4 Volt d.c.						
1.5	4	0.5	10	L	TACL155M004XTA	121-6604
1.5	4	0.5	7.5	L	TACL155K004XTA	165-8077
2.2	4	0.5	7.5	L	TACL225K004XTA	165-8082
3.3	4	0.5	7.5	L	TACL335K004XTA	165-8088
4.7	4	0.5	7.5	L	TACL475K004XTA	165-8095
4.7	4	0.5	5	U	TACU475M004XTA	165-8136
6.8	4	0.5	7.5	L	TACL685K004XTA	165-8102
10	4	0.5	7.5	J	TACJ106M004XTA	165-8065
10	4	0.5	7.5	L	TACL106M004XTA	165-8076
10	4	0.5	5	R	TACR106K004XTA	165-8107
15	4	0.6	7.5	L	TACL156M004XTA	165-8080
15	4	0.6	5	R	TACR156K004XTA	165-8111
22	4	0.9	7.5	L	TACL226M004XTA	113-5273
22	4	0.9	5	R	TACR226K004XTA	165-8117
33	4	1.3	5	H	TACH336M004XTA	165-8063
47	4	1.9	5	R	TACR476M004XTA	165-8915
68	4	2.7	1	A	TACA686M004XTA	165-8059
6.3 Volt d.c.						
1	6.3	0.5	15	K	TACK105M006QTA	165-8904
1	6.3	0.5	7.5	L	TACL105K006XTA	165-8072
1	6.3	0.5	10	L	TACL105M006XTA	121-6605
1.5	6.3	0.5	7.5	L	TACL155K006XTA	165-8078
2.2	6.3	0.5	15	K	TACK225M006QTA	113-5088
2.2	6.3	0.5	7.5	L	TACL225K006XTA	165-8083
3.3	6.3	0.5	7.5	L	TACL335K006XTA	165-8089
3.3	6.3	0.5	5	U	TACU335M006XTA	165-8135
6.8	6.3	0.5	7.5	L	TACL685K006XTA	165-8103
6.8	6.3	0.5	5	R	TACR685K006XTA	165-8129
15	6.3	0.9	5	H	TACH156M006XTA	165-8061
15	6.3	0.9	7.5	L	TACL156M006XTA	113-5274
15	6.3	0.9	5	R	TACR156K006XTA	165-8112
22	6.3	1.4	5	H	TACH226M006XTA	113-5093
22	6.3	1.4	5	R	TACR226K006XTA	165-8118
33	6.3	2.1	5	R	TACR336K006XTA	165-8124
47	6.3	3	5	R	TACR476M006XTA	113-5094
100	6.3	6.3	1	T	TACT107M006XTA	113-5286
10 Volt d.c.						
0.47	10	0.5	7.5	L	TACL474K010XTA	165-8091
0.68	10	0.5	10	L	TACL684M10XBJ	121-6606



Tantalum - Surface Mount - AVX - continued

TPS Series - High Performance - Low ESR - continued

µF	ESR Max. (mΩ) @ 100kHz	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
10 Volt d.c.					
330	60	33	E	TPSE337K010R0060	301-8520
330	40	33	V	TPSV337K010R0040	143-2651
470	45	47	E	TPSE477K010R0045	143-2635
16 Volt d.c.					
2.2	1800	0.5	A	TPSA225K016R1800	143-2568
4.7	800	0.8	B	TPSB475K016R0800	143-2587
6.8	1500	1.1	A	TPSA685K016R1500	143-2574
10	800	1.6	B	TPSB106K016R0800	113-5112
22	250	3.5	C	TPSC226K016R0250	143-2600
22	375	3.5	C	TPSC226K16R0375	570-394
22	500	3.5	W	TPSW226K016R0500	143-2657
33	225	5.3	C	TPSC336K016R0225	143-2603
33	300	5.3	C	TPSC336K16R0300	301-8544
47	350	7.5	C	TPSC476K016R0350	113-5113
47	80	7.5	D	TPSD476K016R0080	113-5205
47	150	8.1	D	TPSD476K16R0150	570-400
68	150	10.9	D	TPSD686K16R0150	301-8556
68	200	10.9	Y	TPSY686K016R0200	143-2666
100	60	16	D	TPSD107K016R0060	143-2609
150	100	24	D	TPSD157K016R0100	113-5114
100	150	16	D	TPSD107K16R0150	301-8568
100	100	16	E	TPSE107K16R0100	570-412
150	45	24	V	TPSV157K016R0045	143-2650
220	100	35.2	E	TPSE227K016R0100	143-2630
220	50	35.2	V	TPSV227K016R0050	113-5208
220	75	35.2	V	TPSV227K016R0075	113-5115
20 Volt d.c.					
1	6000	0.5	R	TPSR105K020R6000	143-2637
4.7	1.8	0.9	A	TPSA475K020R1800	143-2572
10	1000	2	B	TPSB106K020R1000	143-2577
15	450	3	C	TPSC156K020R0450	570-424
22	150	4.4	C	TPSC226K020R0150	113-5209
33	200	6.6	D	TPSD336K020R0200	570-436
47	100	6.6	D	TPSD476K020R0100	113-5210
47	70	9.4	E	TPSE476K020R0070	143-2634
47	150	9.4	E	TPSE476K020R0150	301-8570
68	125	13.6	E	TPSE686K20R0125	301-8581
68	200	13.6	E	TPSE686K20R0200	570-448
100	150	20	E	TPSE107K020R0150	113-5116
100	60	20	V	TPSV107K020R0060	113-5117
25 Volt d.c.					
2.2	1.2	0.6	B	TPSB225K025R1200	143-2582
10	300	2.5	C	TPSC106K025R0300	143-2595
10	500	2.5	C	TPSC106K025R0500	570-450
15	300	3.8	C	TPSC156K025R0300	143-2597
22	200	5.5	D	TPSD226K025R0200	570-461
22	100	5.5	D	TPSD226K025R0100	113-5118
33	100	8.3	D	TPSD336K025R0100	113-5213
33	175	8.3	E	TPSE336K025R0175	143-2632
33	200	8.3	E	TPSE336K25R0200	570-473
47	150	11.8	D	TPSD476K025R0150	143-2617
47	250	11.8	D	TPSD476K25R0250	301-8593
68	200	17	E	TPSE686K025R0200	113-5121
68	125	17	E	TPSE686K025R0125	113-5214
68	95	17	V	TPSV686K025R0095	113-5122
35 Volt d.c.					
1	3000	0.5	A	TPSA105K035R3000	113-5123
1	2000	0.5	B	TPSB105K035R2000	143-2575
4.7	600	1.6	C	TPSC475K035R0600	570-485
68	125	17	E	TPSE686K025R0125	113-5214
10	300	3.5	D	TPSD106K035R0300	143-2608
10	200	3.5	E	TPSE106K35R0200	301-8600
15	100	5.3	D	TPSD156K035R0100	143-2610
15	300	5.3	D	TPSD156K35R0300	570-497
22	400	7.7	D	TPSD226K35R0400	301-8611
22	300	7.7	E	TPSE226K35R0200	570-503
22	125	7.7	E	TPSE226K035R0125	113-5124
33	200	11.6	D	TPSD336K035R0200	143-2616
33	300	11.6	D	TPSD336K35R0300	301-8623
33	100	11.6	E	TPSE336K035R0100	113-5217
47	200	16.5	E	TPSE476K035R0200	113-5125
50 Volt d.c.					
1	2500	0.5	C	TPSC105K050R2500	143-2594
2.2	1200	1.1	D	TPSD225K050R1200	143-2613
3.3	800	1.7	D	TPSD335K050R0800	143-2615
4.7	300	2.4	D	TPSD475K050R0300	113-5218
6.8	500	3.4	D	TPSD685K050R0500	143-2621
10	500	5	E	TPSE106K050R0500	143-2624
15	250	5	E	TPSE156M050R0250	143-2627

208633

2.5 Volt d.c.		Price Each				
µF	Order Code	1+	10+	100+	250+	500+
220	SMD 143-2584	0.530	0.440	0.390	0.340	0.300
4 Volt d.c.						
µF		1+	10+	100+	250+	500+
47	SMD 143-2573	0.920	0.730	0.620	0.470	0.380
470	SMD 143-2619	9.090	6.740	5.630	5.350	5.090
680	SMD 143-2623	5.580	4.880	3.560	3.380	3.210
1000	SMD 113-5098	4.490	3.970	3.350	3.040	2.420
6.3 Volt d.c.						
10	SMD 143-2638	0.650	--	--	--	--
22	SMD 113-5099	0.330	--	--	--	--
47	SMD 113-5100	0.390	0.350	0.310	0.290	0.260
68	SMD 143-2593	0.740	0.650	0.460	0.370	0.330
100	SMD 143-2579	0.720	0.580	0.510	0.450	0.390
100	SMD 301-8490	0.600	0.530	0.470	0.430	0.400
100	SMD 113-5101	0.920	0.820	0.720	0.660	0.530
150	SMD 570-333	1.970	1.480	1.210	0.940	0.810
220	SMD 143-2601	1.420	1.190	1.040	0.930	0.820
330	SMD 113-5198	1.400	1.250	1.110	1.010	0.900
330	SMD 570-345	1.730	1.510	1.210	1.000	0.900
470	SMD 113-5102	1.960	1.740	1.540	1.410	1.340
470	SMD 113-5103	2.520	2.230	1.990	1.820	1.440
680	SMD 143-2636	5.900	4.780	3.760	3.580	3.400
1000	SMD 143-2649	9.130	--	--	--	--
10 Volt d.c.						
4.7	SMD 113-5104	0.260	0.240	0.200	0.194	0.172
10	SMD 143-2565	0.700	0.520	0.440	0.350	0.280
10	SMD 113-5105	0.270	0.250	0.210	0.200	0.187
15	SMD 143-2567	0.530	0.400	0.390	0.350	0.260
22	SMD 143-2583	1.270	0.940	0.780	0.620	0.490
22	SMD 113-5106	0.310	--	--	--	--
33	SMD 143-2586	1.220	0.900	0.750	0.590	0.470
33	SMD 570-357	1.120	0.850	0.680	0.530	0.460
33	SMD 113-5201	0.630	0.560	0.490	0.450	0.400
47	SMD 143-2591	0.710	0.570	0.500	0.440	0.390
47	SMD 570-369	0.460	0.400	0.350	0.320	0.300
100	SMD 113-5108	0.960	--	--	--	--
100	SMD 570-370	0.710	0.600	0.540	0.470	0.420
100	SMD 113-5109	1.120	0.990	0.880	0.810	0.630
150	SMD 301-8507	2.450	1.850	1.500	1.150	1.010
150	SMD 113-5202	1.030	0.920	0.870	0.800	0.710
150	SMD 143-2628	1.310	1.100	0.970	0.860	0.760
150	SMD 143-2662	1.770	1.490	1.300	1.160	1.030
220	SMD 143-2614	2.740	2.230	1.930	1.710	1.480
220	SMD 113-5110	1.120	0.990	0.880	0.810	0.630
220	SMD 570-382	1.520	1.310	1.150	1.050	0.980
220	SMD 113-5111	2.620	--	--	--	--
330	SMD 143-2633	4.960	4.040	3.480	3.080	2.670
330	SMD 301-8520	6.700	5.040	4.100	3.150	2.740
330	SMD 143-2651	2.980	2.680	2.390	2.170	1.980
470	SMD 143-2635	8.290	7.440	6.620	6.090	5.510
16 Volt d.c.						
2.2	SMD 143-2568	1.010	0.750	0.630	0.490	0.390
4.7	SMD 143-2587	0.500	0.410	0.350	0.310	0.270
6.8	SMD 143-2574	0.910	0.670	0.560	0.440	0.350
10	SMD 113-5112	0.850	0.760	0.600	0.480	0.380
22	SMD 143-2600	1.220	--	--	--	--
22	SMD 570-394	0.560	--	--	--	--
22	SMD 143-2657	0.950	0.850	0.620	0.490	0.440
33	SMD 143-2603	1.140	0.930	0.800	0.710	0.610
33	SMD 301-8544	0.380	0.330	0.290	0.270	0.250
47	SMD 113-5113	0.670	0.590	0.510	0.470	0.370
47	SMD 113-5205	0.980	0.880	0.780	0.710	0.680
47	SMD 570-400	0.710	0.600	0.540	0.470	0.420
68	SMD 301-8556	0.960	0.840	0.740	0.670	0.630
68	SMD 143-2666	1.930	1.680	1.220	0.990	0.860
100	SMD 143-2609	2.570	2.090	1.810	1.600	1.390
150	SMD 113-5114	2.100	1.840	1.600	1.420	1.150
100	SMD 301-8568	0.900	0.770	0.680	0.600	0.560
100	SMD 570-412	1.360	--	--	--	--
150	SMD 143-2650	4.380	3.840	2.790	2.230	2.000
220	SMD 143-2630	9.550	7.070	5.910	5.620	5.330
220	SMD 113-5208	4.670	--	--	--	--
220	SMD 113-5115	4.340	--	--	--	--
20 Volt d.c.						
1	SMD 143-2637	0.420	0.350	0.300	0.260	0.230
4.7	SMD 143-2572	0.530	0.450	0.330	0.270	0.184
10	SMD 143-2577	0.690	0.620	0.460	0.360	0.270
15	SMD 570-424	0.590	0.490	0.440	0.380	0.350
22	SMD 113-5209	0.920	0.820	0.720	0.660	0.530
33	SMD 570-436	0.730	0.640	0.570	0.520	0.480
47	SMD 113-5210	0.980	0.880	0.780	0.710	0.560



Tantalum - Surface Mount - AVX - continued

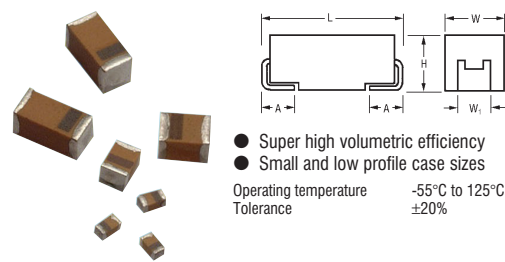
TPM Multianode - continued

Ultra Low ESR Capacitor - continued

Capacitance (µF)	Order Code	Price Each				
		1+	50+	100+	400+	800+
35 Volt d.c.						
22	SMD 113-5216 RL	4.89	4.32	4.12	3.86	3.53
22	SMD 113-5249 RL	5.40	4.82	4.57	4.15	3.86
33	SMD 165-8949 RL	7.52	6.33	5.52	4.94	4.37
33	SMD 113-5250 RL	4.89	4.32	4.12	3.86	3.53
47	SMD 165-8951 RL	11.03	9.28	8.10	7.25	6.34
47	SMD 113-5251 RL	5.23	4.66	4.41	4.04	3.78
50 Volt d.c.						
10	SMD 113-5252 RL	5.26	4.68	4.44	4.05	3.80
15	SMD 165-8474 RL	19.91	16.95	14.63	12.96	11.23
15	SMD 165-8476 RL	17.89	15.83	13.86	12.27	10.65
22	SMD 165-8480 RL	17.20	15.22	13.42	11.88	10.31
22	SMD 165-8481 RL	15.63	13.85	12.12	10.73	9.31

TLC Series

Tantalum Solid Electrolytic Chip Capacitor



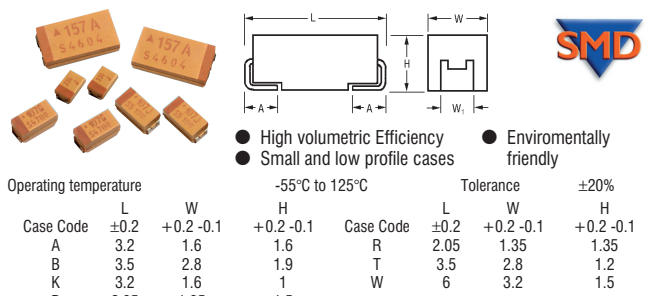
Capacitance µF	ESR (Ω) @ 100 kHz	Case Size	Mfrs. List No.	Order Code
2.5 Volt d.c.				
47	7.5	0603	TLCL476M002XTA	165-8395
3 Volt d.c.				
10	15	0402	TLCK106M003QTA	165-8388
47	7.5	0603	TLCL476M003XTA	165-8397
4 Volt d.c.				
10	7.5	0603	TLCL106M004XTA	165-8386
10	15	0602	TLCL106M004XTA	165-8406
33	7.5	0603	TLCL336M004XTA	165-8394
68	5	0805	TLCR686M004XTA	165-8401
220	1	1411	TLCT227M004XTA	165-8404
6.3 Volt d.c.				
4.7	15	0402	TLCK475M006QTA	165-8391
10	15	0602	TLCL106M006XTA	165-8407
47	5	0805	TLCH476M006XTA	165-8385
10 Volt d.c.				
2.2	15	0402	TLCK225M010QTA	165-8389
4.7	7.5	0603	TLCL475M010XTA	165-8387
15	5	0805	TLCH156M010XTA	165-8382
15	7.5	0603	TLCL156M010XTA	165-8393
22	7.5	0803	TLCL226M010XTA	165-8398
33	5	0805	TLCH336M010XTA	165-8383
100	1	1411	TLCT107M010XTA	165-8403
16 Volt d.c.				
0.47	15	0402	TLCK474M016QTA	165-8390
10	2	1206	TLCL106M016XTA	165-8405
20 Volt d.c.				
10	5	0805	TLCL106M020XTA	165-8399
25 Volt d.c.				
1	7.5	0603	TLCL105M025XTA	165-8392
2.2	5	0805	TLCL225M025XTA	165-8400

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
2.5 Volt d.c.						
47	SMD 165-8395 RL	2.47	2.01	1.73	1.53	1.33
4 Volt d.c.						
10	SMD 165-8386 RL	2.00	--	--	--	--
10	SMD 165-8406 RL	1.35	1.11	0.96	0.84	0.74
33	SMD 165-8394 RL	2.22	1.80	1.55	1.37	1.20
68	SMD 165-8401 RL	7.34	6.17	5.33	4.71	4.09
220	SMD 165-8404 RL	8.27	7.00	6.04	5.35	4.64
6.3 Volt d.c.						
4.7	SMD 165-8391 RL	2.59	2.11	1.82	1.61	1.40
10	SMD 165-8407 RL	1.35	1.14	0.99	0.87	0.76
47	SMD 165-8385 RL	2.90	2.36	2.04	1.81	1.57
10 Volt d.c.						
2.2	SMD 165-8389 RL	2.59	2.11	1.82	1.61	1.40
4.7	SMD 165-8387 RL	2.00	1.71	1.47	1.30	1.13
15	SMD 165-8382 RL	3.28	2.66	2.30	2.04	1.77
15	SMD 165-8393 RL	1.49	1.21	1.04	0.93	0.80
22	SMD 165-8398 RL	2.29	1.95	1.69	1.49	1.29
33	SMD 165-8383 RL	3.48	2.84	2.44	2.16	1.88

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
100	SMD 165-8403 RL	8.27	7.00	6.04	5.35	4.64
16 Volt d.c.						
0.47	SMD 165-8390 RL	2.61	2.21	1.90	1.69	1.47
10	SMD 165-8405 RL	3.58	2.91	2.51	2.23	1.92
20 Volt d.c.						
10	SMD 165-8399 RL	3.63	2.95	2.55	2.26	1.96
25 Volt d.c.						
1	SMD 165-8392 RL	1.63	1.33	1.14	1.01	0.88
2.2	SMD 165-8400 RL	3.66	2.97	2.57	2.28	1.98

TLJ Series

Tantalum Solid Electrolytic Chip Capacitor



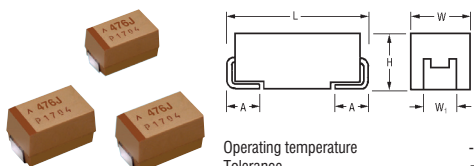
Case Code	L ±0.2	W ±0.2-0.1	H ±0.2-0.1	Case Code	L ±0.2	W ±0.2-0.1	H ±0.2-0.1
A	3.2	1.6	1.6	R	2.05	1.35	1.35
B	3.5	2.8	1.9	T	3.5	2.8	1.2
K	3.2	1.6	1	W	6	3.2	1.5
P	2.05	1.35	1.5				

Capacitance µF	ESR (mΩ) @ 100kHz	Case Size	Mfrs. List No.	Order Code
2.5 Volt d.c.				
220	1.1	T	TLJT227M002R1100	165-8456
4 Volt d.c.				
33	3	R	TLJR336M004R3000	165-8439
47	1.5	K	TLJK476M004R1500	165-8427
47	3	P	TLJP476M004R3000	165-8431
47	3000	R	TLJR476M004R3000	113-5254
68	1.2	K	TLJK686M004R1200	165-8428
68	3	P	TLJP686M004R3000	165-8434
68	1.5	S	TLJS686M004R1500	165-8448
100	500	A	TLJA107M004R0500	113-5255
100	800	G	TLJG107M004R0800	165-8415
100	1.4	S	TLJS107M004R1400	165-8444
150	800	A	TLJA157M004R0800	165-8409
150	800	T	TLJT157M004R0800	165-8453
220	900	H	TLJH227M004R0900	165-8419
220	1.1	T	TLJT227M004R1100	165-8457
330	200	W	TLJW337M004R0200	165-8461
6.3 Volt d.c.				
22	3.5	R	TLJR226M006R3500	165-8436
33	3	P	TLJP336M006R3000	165-8430
33	3000	R	TLJR336M006R3000	113-5256
47	1500	K	TLJK476M006R1500	143-2549
47	2.5	P	TLJP476M006R2500	165-8432
47	3.2	R	TLJR476M006R3200	165-8442
47	1.5	S	TLJS476M006R1500	165-8446
68	500	A	TLJA686M006R0500	165-8412
68	800	G	TLJG686M006R0800	165-8417
68	600	T	TLJT686M006R0600	165-8458
100	500	A	TLJA107M006R0500	113-5257
100	800	A	TLJA107M006R0800	165-8408
100	800	T	TLJT107M006R0800	165-8450
150	900	A	TLJA157M006R0900	165-8410
150	1.2	T	TLJT157M006R1200	165-8454
220	0.5	B	TLJB227M006R0500	165-8413
220	200	W	TLJW227M006R0200	165-8460
10 Volt d.c.				
10	3000	R	TLJR106M010R3000	113-5258
15	2	R	TLJR156M010R2000	165-8435
22	1.8	K	TLJK226M010R1800	165-8424
22	3.8	N	TLJN226M010R3800	165-8429
22	3.8	R	TLJR226M010R3800	165-8437
33	1.5	K	TLJK336M010R1500	165-8425
33	3.5	R	TLJR336M010R3500	165-8441
33	1.5	S	TLJS336M010R1500	165-8445
47	0.6	A	TLJA476M010R0600	165-8411
47	1.5	G	TLJG476M010R1500	165-8416
47	3.2	P	TLJP476M010R3200	165-8433
47	1.5	S	TLJS476M010R1500	165-8447
47	600	T	TLJT476M010R0600	113-5261
100	0.9	H	TLJH107M010R0900	165-8418
150	500	B	TLJB157M010R0500	113-5262
150	150	W	TLJW157M010R0150	165-8459
150	200	W	TLJW157M010R0200	113-5263
16 Volt d.c.				
10	2.2	S	TLJS106M016R2200	165-8443
22	1.1	T	TLJT226M016R1000	165-8455
20 Volt d.c.				
10	1	T	TLJT106M020R1000	165-8449

µF	Order Code	Price Each				
		5+	50+	100+	500+	2K+
2.5 Volt d.c						
220	SMD165-8456 ● RL	1.630	1.480	1.330	1.190	1.030
4 Volt d.c						
33	SMD165-8439 ● RL	0.660	0.600	0.570	0.490	0.450
47	SMD165-8427 ● RL	1.030	0.920	0.800	0.740	0.650
47	SMD165-8431 ● RL	0.770	0.720	0.650	0.580	0.500
47	SMD113-5254 ● RL	0.230	0.200	0.183	0.167	0.158
68	SMD165-8428 ● RL	1.030	0.920	0.800	0.740	0.650
68	SMD165-8434 ● RL	0.770	0.720	0.650	0.590	0.530
68	SMD165-8448 ● RL	1.040	0.960	0.870	0.760	0.700
100	SMD113-5255 ● RL	0.550	0.440	0.380	0.340	0.290
100	SMD165-8415 ● RL	1.040	0.960	0.860	0.760	0.670
100	SMD165-8444 ● RL	1.460	1.280	1.180	1.070	0.970
150	SMD165-8409 ● RL	1.150	1.040	0.960	0.830	0.760
150	SMD165-8453 ● RL	1.330	1.200	1.080	0.970	0.890
220	SMD165-8419 ● RL	1.630	1.480	1.330	1.200	1.080
220	SMD165-8457 ● RL	1.800	1.630	1.480	1.310	1.140
330	SMD165-8461 ● RL	2.220	1.970	1.790	1.610	1.400
6.3 Volt d.c						
22	SMD165-8436 ● RL	0.390	0.340	0.310	0.280	0.250
33	SMD165-8430 ● RL	0.660	0.600	0.560	0.490	0.440
33	SMD113-5256 ● RL	0.510	0.470	0.430	0.400	0.380
47	SMD143-2549 ●	1.260	1.060	0.940	0.850	0.750
47	SMD165-8432 ● RL	0.720	0.650	0.590	0.520	0.460
47	SMD165-8442 ● RL	0.920	0.800	0.750	0.650	0.600
47	SMD165-8446 ● RL	0.830	0.750	0.660	0.600	0.530
68	SMD165-8412 ● RL	0.580	0.530	0.470	0.430	0.370
68	SMD165-8417 ● RL	0.970	0.880	0.770	0.710	0.620
68	SMD165-8458 ● RL	1.040	0.960	0.870	0.760	0.700
100	SMD113-5257 ● RL	1.520	1.330	1.200	1.070	1.030
100	SMD165-8408 ● RL	0.990	0.880	0.770	0.720	0.630
100	SMD165-8450 ● RL	1.330	1.200	1.080	0.970	0.890
150	SMD165-8410 ● RL	1.640	1.490	1.340	1.200	1.100
150	SMD165-8454 ● RL	1.520	1.350	1.240	1.090	0.970
220	SMD165-8413 ● RL	1.200	1.010	0.860	0.770	0.670
220	SMD165-8460 ● RL	1.850	1.690	1.530	1.360	1.200
10 Volt d.c						
10	SMD113-5258 ● RL	0.610	0.550	0.470	0.460	0.380
15	SMD165-8435 ● RL	0.600	0.550	0.490	0.450	0.390
22	SMD165-8424 ● RL	1.520	1.350	1.240	1.090	0.970
22	SMD165-8429 ● RL	0.970	0.880	0.770	0.710	0.620
22	SMD165-8437 ● RL	0.710	0.630	0.570	0.500	0.470
33	SMD165-8425 ● RL	1.030	0.920	0.800	0.750	0.660
33	SMD165-8441 ● RL	0.430	0.390	0.340	0.310	0.280
33	SMD165-8445 ● RL	0.830	0.750	0.660	0.600	0.530
47	SMD165-8411 ● RL	0.600	0.500	0.430	0.390	0.330
47	SMD165-8416 ● RL	0.920	0.800	0.750	0.650	0.570
47	SMD165-8433 ● RL	0.720	0.650	0.590	0.520	0.460
47	SMD165-8447 ● RL	1.200	1.070	0.970	0.870	0.760
47	SMD113-5261 ● RL	1.300	1.130	1.030	0.920	0.880
100	SMD165-8418 ● RL	1.630	1.480	1.330	1.190	1.030
150	SMD113-5262 ● RL	1.350	1.150	1.090	0.970	0.920
150	SMD165-8459 ● RL	1.460	1.280	1.180	1.060	0.920
150	SMD113-5263 ● RL	1.670	1.520	1.330	1.210	1.150
16 Volt d.c						
10	SMD165-8443 ● RL	0.960	0.830	0.760	0.660	0.590
22	SMD165-8455 ● RL	0.990	0.880	0.770	0.710	0.620
20 Volt d.c						
10	SMD165-8449 ● RL	1.250	1.120	1.040	0.930	0.800

TCJ Series

Tantalum Solid Electrolytic Chip Capacitor



- Tantalum solid electrolytic chip capacitor with a conductive polymer electrode
- Low ESR
- Safe non-ignition failure mode
- Increased capacitance retention compared to conventional MnO₂ electrode capacitors

Case Code	L	W	H	C	L	W	H
A	±0.2	+0.2-0.1	+0.2-0.1	H	6.0	3.2	2.6
B	3.2	1.6	1.6	R	3.5	2.8	1.5
	3.5	2.8	1.9		2.05	1.3	1.2

Capacitance µF	ESR (mΩ) @ 100kHz	Case Size	Mfrs. List No.	Order Code
2.5 Volt d.c				
68	250	A	TCJA686M002R0250	165-8373
100	200	A	TCJA107M002R0200	165-8369
100	70	B	TCJB107M002R0070	165-8375
4 Volt d.c				
15	300	A	TCJA156M004R0300	165-8370
33	300	A	TCJA336M004R0300	165-8371
47	200	A	TCJA476M004R0200	165-8940
68	250	A	TCJA686M004R0250	165-8374
68	70	B	TCJB686M004R0070	113-5227
100	70	B	TCJB107M004R0070	113-5228
100	150	T	TCJT107M004R0150	143-2536
6.3 Volt d.c				
10	300	A	TCJA106M006R0300	113-5229
10	500	R	TCJR106M006R0500	143-2533
47	200	A	TCJA476M006R0200	143-2522
47	70	B	TCJB476M006R0070	113-5230
47	120	T	TCJT476M006R1020	165-8381
68	55	B	TCJB686M006R0055	165-8377
68	70	B	TCJB686M006R0070	113-5232
100	45	B	TCJB107M006R0045	165-8376
100	70	B	TCJB107M006R0070	113-5233
150	200	H	TCJH157M006R0200	143-2532
10 Volt d.c				
4.7	500	R	TCJR475M010R0500	143-2534
4.7	500	K	TCJK475M010R0500	165-8378
10	300	A	TCJA106M010R0300	113-5234
15	200	A	TCJA156M010R0200	143-2519
22	300	B	TCJB226M010R0300	113-5236
33	200	B	TCJB336M010R0200	113-5237
33	100	C	TCJC336M010R0100	143-2529
47	70	B	TCJB476M010R0070	113-5238
16 Volt d.c				
10	200	A	TCJA106M016R0200	165-8938
10	150	T	TCJT106M016R0150	143-2535
22	150	B	TCJB226M016R0150	143-2526
16 Volt d.c				
1	500	P	TCJP105M025R0500	165-8379

424902

µF	Order Code	5+	50+	100+	500+	1K+
2.5 Volt d.c.						
68	SMD165-8373 ● RL	1.53	1.25	1.07	0.96	0.82
100	SMD165-8369 ● RL	1.61	1.31	1.13	1.01	0.87
100	SMD165-8375 ● RL	2.11	1.75	1.51	1.34	1.17
4 Volt d.c.						
15	SMD165-8370 ● RL	0.73	0.66	0.57	0.50	0.49
33	SMD165-8371 ● RL	1.06	0.89	0.77	0.69	0.59
47	SMD165-8940 ● RL	1.31	1.06	0.92	0.81	0.71
68	SMD165-8374 ● RL	1.53	1.25	1.07	0.96	0.82
68	SMD113-5227 ● RL	0.36	0.32	0.29	0.27	0.24
100	SMD113-5228 ● RL	0.48	0.43	0.42	0.39	0.35
100	SMD143-2536 ●	0.59	0.54	0.50	0.47	0.43
6.3 Volt d.c.						
10	SMD113-5229 ● RL	0.40	0.36	0.35	0.32	0.30
10	SMD143-2533 ●	1.73	1.57	1.39	1.25	1.13
47	SMD143-2522 ●	1.72	1.56	1.36	1.25	1.01
47	SMD113-5230 ● RL	0.65	0.53	0.49	0.44	0.40
47	SMD165-8381 ● RL	1.65	1.35	1.17	1.03	0.89
47	SMD165-8377 ● RL	1.66	1.48	1.30	1.18	1.10
68	SMD113-5232 ● RL	0.47	0.42	0.37	0.33	0.31
100	SMD165-8376 ● RL	2.93	2.38	2.06	1.82	1.58
100	SMD113-5233 ● RL	0.48	0.43	0.42	0.37	0.35
150	SMD143-2532 ●	0.73	0.67	0.62	0.58	0.54
10 Volt d.c.						
4.7	SMD143-2534 ●	0.77	0.72	0.63	0.60	0.54
4.7	SMD165-8378 ● RL	1.52	1.29	1.11	0.99	0.85
10	SMD113-5234 ● RL	0.40	0.36	0.35	0.32	0.30
15	SMD143-2519 ●	0.46	0.44	0.42	0.40	0.39
22	SMD113-5236 ● RL	0.33	0.30	0.26	0.24	0.22
33	SMD113-5237 ● RL	0.48	0.43	0.42	0.37	0.34
33	SMD143-2529 ●	0.88	0.82	0.73	0.67	0.62
47	SMD113-5238 ● RL	0.65	0.53	0.49	0.44	0.40
16 Volt d.c.						
10	SMD165-8938 ● RL	0.97	0.79	0.68	0.60	0.52
10	SMD143-2535 ●	1.64	1.51	1.33	1.20	1.05
22	SMD143-2526 ●	2.22	1.92	1.61	1.27	1.01
25 Volt d.c.						
1	SMD165-8379 ● RL	2.17	1.79	1.54	1.36	1.19

Over 100 latest technologies added online everyday

See our pick of the hottest products and latest technologies in 'What's New?' at www.farnell.co.uk





Tantalum - Surface Mount - AVX - continued

AVX TRJ Series

Professional Tantalum Chip Capacitor



The TRJ surface mount series employs established Tantalum technology together with new process improvements and advanced manufacturing techniques. This robust series enables extension of the guaranteed 0.5% reliability level to 1000 hours at rated voltage, rated temperature and 0.1Ω/volt circuit impedance. The moisture penetration barrier, thicker external dielectric layer and modified manganising process make the capacitor more robust against higher thermo-mechanical stresses during assembly process (lead-free" soldering) and also more robust against more severe working conditions in Automotive, Medical, Aerospace, Military and other applications. Lower ESR options are now available within the professional TRJ while achieving reliability levels twice that of standard tantalum devices. This enables designers of power supplies in long life expectancy applications to use tantalum capacitors with the combined benefits of enhanced reliability (0.5%/1000hrs) and low ESR.

Operating temperature -25°C to +125°C Tolerance ± 10%

6.3 Volt d.c.	ESR (mΩ) max. @ 100kHz	Case Size	Mfrs. List No.	Order Code
10	2200	A	TRJA106K006R	167-2448
10	1500	A	TRJA106K006R1500	167-2449
15	2030	A	TRJA156K006R	167-2462
15	1500	A	TRJA156K006R1500	167-2463
15	2030	B	TRJB156K006R	167-2520
15	700	B	TRJB156K006R0700	167-2521
22	1700	A	TRJA226K006R	167-2477
22	900	A	TRJA226K006R0900	167-2478
22	1880	B	TRJB226K006R	167-2533
22	600	B	TRJB226K006R0600	167-2534
33	1740	B	TRJB336K006R	167-2547
33	600	B	TRJB336K006R0600	167-2548
47	1620	B	TRJB476K006R	167-2561
47	500	B	TRJB476K006R0500	167-2562
47	540	C	TRJC476K006R	167-2612
47	250	C	TRJC476K006R0250	167-2613
68	490	C	TRJC686K006R	167-2623
68	200	C	TRJC686K006R0200	167-2624
100	440	C	TRJC107K006R	167-2579
100	300	C	TRJC107K006R0300	167-2580
150	500	C	TRJC157K006R	167-2590
150	300	C	TRJC157K006R0300	167-2591
150	400	D	TRJD157K006R	167-2639
150	150	D	TRJD157K006R0150	167-2640
220	360	D	TRJD227K006R	167-2650
220	150	D	TRJD227K006R0150	167-2651
330	330	E	TRJE337K006R	167-2686
330	150	E	TRJE337K006R0150	167-2687
470	250	E	TRJE477K006R	167-2692
470	200	E	TRJE477K006R0200	167-2693

6.3 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
10	SMD167-2448 RL	0.44	0.36	0.31	0.27	0.24
10	SMD167-2449 RL	0.65	0.52	0.45	0.40	0.34
15	SMD167-2462 RL	0.44	0.36	0.31	0.27	0.24
15	SMD167-2463 RL	0.69	0.55	0.48	0.43	0.36
15	SMD167-2520 RL	0.52	0.43	0.36	0.32	0.28
15	SMD167-2521 RL	0.73	0.59	0.52	0.45	0.40
22	SMD167-2477 RL	0.49	0.40	0.34	0.30	0.26
22	SMD167-2478 RL	0.52	0.44	0.39	0.34	0.30
22	SMD167-2533 RL	0.43	0.35	0.31	0.28	0.25
22	SMD167-2534 RL	0.65	0.54	0.47	0.43	0.37
33	SMD167-2547 RL	0.65	0.53	0.46	0.41	0.35
33	SMD167-2548 RL	0.71	0.59	0.51	0.46	0.42
47	SMD167-2561 RL	0.69	0.55	0.48	0.43	0.36
47	SMD167-2562 RL	1.00	0.81	0.71	0.62	0.54
47	SMD167-2612 RL	0.97	0.78	0.68	0.60	0.52
47	SMD167-2613 RL	1.07	0.89	0.79	0.71	0.62
68	SMD167-2623 RL	1.00	0.81	0.71	0.62	0.54
68	SMD167-2624 RL	1.10	0.93	0.80	0.73	0.65
100	SMD167-2579 RL	1.01	0.82	0.71	0.62	0.54
100	SMD167-2580 RL	1.69	1.37	1.19	1.05	0.91
150	SMD167-2590 RL	1.36	1.11	0.96	0.84	0.74
150	SMD167-2591 RL	1.98	1.61	1.38	1.23	1.07
150	SMD167-2639 RL	1.70	1.38	1.19	1.05	0.92
150	SMD167-2640 RL	2.47	2.01	1.73	1.53	1.33
220	SMD167-2650 RL	1.86	1.51	1.30	1.15	1.00
220	SMD167-2651 RL	2.48	2.02	1.74	1.54	1.33
330	SMD167-2686 RL	3.13	2.55	2.19	1.95	1.69
330	SMD167-2687 RL	4.60	3.74	3.23	2.86	2.49
470	SMD167-2692 RL	3.80	3.09	2.66	2.36	2.05
470	SMD167-2693 RL	5.56	4.53	3.91	3.46	3.01

10 Volt d.c.	ESR (mΩ) max. @ 100kHz	Case Size	Mfrs. List No.	Order Code
4.7	3160	A	TRJA475K010R	167-2491
4.7	2000	A	TRJA475K010R2000	167-2492
6.8	2650	A	TRJA685K010R	167-2503
6.8	1800	A	TRJA685K010R1800	167-2504
10	2200	A	TRJA106K010R	167-2450

10	1800	A	TRJA106K010R1800	167-2451
10	2200	B	TRJB106K010R	167-2511
10	800	B	TRJB106K010R0800	167-2512
15	1800	A	TRJA156K010R	167-2464
15	1000	A	TRJA156K010R1000	167-2465
15	2030	B	TRJB156K010R	167-2522
15	600	B	TRJB156K010R0600	167-2523
22	1800	B	TRJB226K010R	167-2535
22	700	B	TRJB226K010R0700	167-2536
33	1000	B	TRJB336K010R	167-2549
33	650	B	TRJB336K010R0650	167-2550
33	590	C	TRJC336K010R	167-2603
33	300	C	TRJC336K010R0300	167-2604
47	540	C	TRJC476K010R	167-2616
47	300	C	TRJC476K010R0300	167-2615
68	490	C	TRJC686K010R	167-2625
68	300	C	TRJC686K010R0300	167-2626
100	200	C	TRJC107K010R0200	167-2582
100	440	D	TRJD107K010R	167-2631
100	150	D	TRJD107K010R0150	167-2632
150	400	D	TRJD157K010R	167-2641
150	150	D	TRJD157K010R0150	167-2643
150	440	E	TRJE157K010R	167-2677
150	150	E	TRJE157K010R0150	167-2679
220	360	E	TRJE227K010R	167-2683
220	150	E	TRJE227K010R0150	167-2684
330	300	E	TRJE337K010R	167-2688

10 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
4.7	SMD167-2491 RL	0.410	0.320	0.280	0.250	0.220
4.7	SMD167-2492 RL	0.490	0.420	0.350	0.320	0.280
6.8	SMD167-2503 RL	0.330	0.270	0.240	0.210	0.185
6.8	SMD167-2504 RL	0.650	0.520	0.450	0.400	0.340
10	SMD167-2450 RL	0.440	0.360	0.310	0.270	0.240
10	SMD167-2451 RL	0.690	0.560	0.480	0.430	0.370
10	SMD167-2511 RL	0.520	0.430	0.360	0.320	0.280
10	SMD167-2512 RL	0.800	0.660	0.560	0.500	0.440
15	SMD167-2464 RL	0.360	0.310	0.270	0.240	0.210
15	SMD167-2465 RL	0.520	0.440	0.390	0.340	0.300
15	SMD167-2522 RL	0.430	0.350	0.310	0.280	0.250
15	SMD167-2523 RL	0.840	0.690	0.590	0.520	0.460
22	SMD167-2535 RL	0.580	0.470	0.410	0.360	0.310
22	SMD167-2536 RL	0.670	0.570	0.500	0.440	0.400
33	SMD167-2549 RL	0.690	0.550	0.480	0.430	0.360
33	SMD167-2550 RL	1.000	0.810	0.710	0.620	0.540
33	SMD167-2603 RL	0.840	0.690	0.590	0.520	0.460
33	SMD167-2604 RL	1.400	1.140	0.990	0.870	0.760
47	SMD167-2614 RL	0.960	0.780	0.680	0.600	0.520
47	SMD167-2615 RL	1.100	0.930	0.800	0.730	0.650
68	SMD167-2625 RL	0.880	0.740	0.660	0.580	0.510
68	SMD167-2626 RL	1.730	1.400	1.210	1.070	0.930
100	SMD167-2582 RL	1.930	1.580	1.360	1.210	1.040
100	SMD167-2631 RL	1.170	0.990	0.860	0.770	0.690
100	SMD167-2632 RL	2.380	1.930	1.670	1.480	1.280
150	SMD167-2641 RL	1.800	1.470	1.270	1.120	0.980
150	SMD167-2643 RL	2.660	2.160	1.870	1.650	1.440
150	SMD167-2677 RL	2.170	1.820	1.590	1.410	1.260
150	SMD167-2679 RL	4.220	3.440	2.960	2.630	2.280
220	SMD167-2683 RL	2.440	2.050	1.800	1.600	1.410
220	SMD167-2684 RL	1.730	1.640	1.570	1.500	1.430
330	SMD167-2688 RL	3.730	3.040	2.620	2.320	2.020

16 Volt d.c.	ESR (mΩ) max. @ 100kHz	Case Size	Mfrs. List No.	Order Code
2.2	4550	A	TRJA225K016R	167-2470
2.2	3500	A	TRJA225K016R3500	167-2471
3.3	3740	A	TRJA335K016R	167-2482
3.3	3500	A	TRJA335K016R3500	167-2483
4.7	3160	A	TRJA475K016R	167-2493
4.7	2000	A	TRJA475K016R2000	167-2494
4.7	3160	B	TRJB475K016R	167-2553
4.7	1500	B	TRJB475K016R1500	167-2554
6.8	2000	A	TRJA685K016R	167-2505
6.8	1500	A	TRJA685K016R1500	167-2506
10	2200	B	TRJB106K016R	167-2513
10	800	B	TRJB106K016R0800	167-2515
15	2030	B	TRJB156K016R	167-2524
15	800	B	TRJB156K016R0800	167-2525
22	1100	B	TRJB226K016R	167-2537
22	600	B	TRJB226K016R0600	167-2539
22	700	C	TRJC226K016R	167-2594
22	350	C	TRJC226K016R0350	167-2595
33	590	C	TRJC336K016R	167-2606
33	300	C	TRJC336K016R0300	167-2607
47	540	C	TRJC476K016R	167-2616
47	350	C	TRJC476K016R0350	167-2618
47	540	D	TRJD476K016R	167-2661
47	200	D	TRJD476K016R0200	167-2662
68	490	D	TRJD686K016R	167-2667
68	150	D	TRJD686K016R0150	167-2668
100	150	D	TRJD107K016R0150	167-2634
100	440	E	TRJE107K016R	167-2673
100	150	E	TRJE107K016R0150	167-2674
150	300	E	TRJE157K016R	167-2681
150	150	E	TRJE157K016R0150	167-2682

Capacitance	Case Size	Mfrs. List No.	Order Code
100nF	A	THJA104K035RJN	167-2408
150nF	A	THJA154K035RJN	167-2412
220nF	A	THJA224K035RJN	167-2413
330nF	A	THJA334K035RJN	167-2414
0.47µF	B	THJB474K035RJN	167-2420
0.68µF	B	THJB684K035RJN	167-2421

527895

Order Code	Price Each				
	1+	50+	100+	500+	1K+
20 Volt d.c.					
3.3µF SMD 167-2419 RL	0.95	0.77	0.67	0.58	0.51
15µF SMD 167-2425 RL	1.95	1.58	1.36	1.21	1.05
33µF SMD 167-2434 RL	3.32	2.79	2.43	2.17	1.92
25 Volt d.c.					
1µF SMD 167-2409 RL	0.35	0.31	0.25	0.23	0.20
2.2µF SMD 167-2418 RL	0.89	0.73	0.63	0.56	0.49
6.8µF SMD 167-2429 RL	1.71	1.38	1.20	1.06	0.92
10µF SMD 167-2422 RL	0.92	--	--	--	--
22µF SMD 167-2432 RL	4.09	3.32	2.87	2.54	2.21
33µF SMD 167-2436 RL	3.21	2.70	2.35	2.10	1.87
470nF SMD 167-2415 RL	0.59	0.48	0.42	0.36	0.32
680nF SMD 167-2416 RL	0.51	0.43	0.37	0.34	0.30
35 Volt d.c.					
1µF SMD 167-2410 RL	0.72	0.58	0.50	0.45	0.39
1µF SMD 167-2417 RL	0.53	0.48	0.34	0.30	0.26
1.5µF SMD 167-2424 RL	1.22	0.99	0.85	0.76	0.66
15µF SMD 167-2431 RL	3.05	2.49	2.14	1.89	1.64
2.2µF SMD 167-2426 RL	1.17	0.96	0.82	0.73	0.63
3.3µF SMD 167-2427 RL	1.32	1.07	0.93	0.82	0.71
4.7µF SMD 167-2428 RL	0.83	0.74	0.56	0.50	0.45
6.8µF SMD 167-2438 RL	2.00	1.63	1.40	1.25	1.08
10µF SMD 167-2430 RL	1.38	1.21	1.02	0.92	0.80
22µF SMD 167-2433 RL	4.05	3.29	2.84	2.52	2.18
33µF SMD 167-2439 RL	6.38	5.19	4.47	3.96	3.44
100nF SMD 167-2408 RL	0.63	0.52	0.45	0.40	0.34
150nF SMD 167-2412 RL	0.68	0.55	0.48	0.43	0.36
220nF SMD 167-2413 RL	0.68	0.55	0.48	0.43	0.36
330nF SMD 167-2414 RL	0.72	0.58	0.51	0.45	0.39
0.47µF SMD 167-2420 RL	0.77	0.62	0.54	0.48	0.42
0.68µF SMD 167-2421 RL	0.81	0.66	0.57	0.51	0.44

TAW Series

Tantalum Solid Electrolytic Fused Capacitors



TAW Fused Tantalum Capacitors offer protection from possible damaging short circuit failure modes. This is accomplished with an internal fuse using thin film technology that is in series with the capacitor. The AVX fused tantalum offers lower ESR limits than competitive fused tantalum capacitors.

Max. operating temperature	-55°C to +125°C	Tolerance	± 10%	
Capacitance	ESR (mΩ)	Case Size	Mfrs. List No.	Order Code
10 Volt d.c.				
47µF	500	D	TAWD476K010R0500	167-2697
100µF	500	D	TAWD107K010R0500	167-2699
16 Volt d.c.				
33µF	600	D	TAWD336K016R0600	167-2700
25 Volt d.c.				
10µF	600	D	TAWD106K025R0600	167-2698
50 Volt d.c.				
6.8µF	700	D	TAWD685K050R0700	167-2701

527902

Order Code	Price Each				
	1+	10+	100+	500+	1K+
10 Volt d.c.					
47µF SMD 167-2697 RL	3.42	2.78	2.40	2.12	1.84
100µF SMD 167-2699 RL	3.72	3.03	2.61	2.31	2.01
16 Volt d.c.					
33µF SMD 167-2700 RL	3.49	2.84	2.45	2.17	1.88
25 Volt d.c.					
10µF SMD 167-2698 RL	3.61	2.93	2.54	2.25	1.95
50 Volt d.c.					
6.8µF SMD 167-2701 RL	4.44	3.62	3.12	2.77	2.39

Help us to help the environment



This catalogue has been printed on paper certified from a sustainable source. Please recycle after use.

Tantalum - Surface Mount - Kemet

T491 Series



- Precision molded tantalum capacitors
- Symmetrical, compliant terminations
- Laser-marked case
- Halogen free epoxy
- 10% Tolerance (* = ±20%)



4 Volt d.c.	Current DC	ESR (Ω)	Mfrs. List No.	Order Code	
µF		@ 100kHz			
15	0.6	3.5	B	T491B156K004AT	179-3868
33	1.3	4.0	A	T491A336K004AT	145-7424
100	4	4	A	T491A107M004AT*	179-3867
330	13.2	0.9	C	T491C337K004AT	179-3869
1000	40	0.2	E	T491E108M004AT	145-7521
1000	40	0.5	X	T491X108K004AT	179-3870

* 20% tolerance for this part

Order Multiple=5

4 Volt d.c.	Order Code	5+	100+	250+	500+	1K+
15	179-3868	0.094	0.086	0.079	0.069	0.052
33	SMD 145-7424	0.166	0.115	0.100	0.089	0.072
100	179-3867	0.300	0.260	0.240	0.210	0.158
330	179-3869	0.620	0.550	0.510	0.450	0.330
1000	SMD 145-7521	4.290	3.210	2.770	2.540	2.100
1000	179-3870	1.730	1.520	1.390	1.220	0.920

6.3 Volt d.c.	Current DC	ESR (Ω)	Case Size	Mfrs. List No.	Order Code
µF	(µA)	@ 100kHz			
10	0.6	4.0	A	T491A106K006AT	145-7412
10	0.6	3.5	B	T491B106K006AT	145-7434
47	3.0	3.5	A	T491A476M006AT*	145-7429
47	2.9	2.0	B	T491B476K006AT	145-7456
47	3	4.4	T	T491T476K006AT	179-3873
68	5	4	A	T491A688K006AT	179-3872
100	6.3	3.0	B	T491B107K006AT	145-7438
220	13.2	1.2	C	T491C227K006AT	145-7477
330	19.8	0.4	D	T491D337K006AT	145-7509
470	28.2	0.4	X	T491X477K006AT	145-7547
680	42	0.6	X	T491X687K006ZT	179-3874

* 20% tolerance for this part

Order Multiple=5

6.3 Volt d.c.	Order Code	5+	100+	250+	500+	1K+
10	SMD 145-7412	0.104	0.081	0.069	0.066	0.052
10	SMD 145-7434	0.147	0.117	0.096	0.078	0.066
47	SMD 145-7429	0.490	0.360	0.300	0.270	0.220
47	SMD 145-7456	0.290	0.230	0.187	0.167	0.136
47	179-3873	0.500	0.450	0.410	0.350	0.270
68	179-3872	0.210	0.180	0.165	0.144	0.108
100	SMD 145-7438	0.570	0.460	0.370	0.320	0.280
220	SMD 145-7477	1.240	0.980	0.800	0.630	0.550
330	SMD 145-7509	1.240	0.980	0.800	0.630	0.550
470	SMD 145-7547	1.750	1.380	1.130	0.890	0.780
680	179-3874	1.260	1.110	1.020	0.880	0.670

10 Volt d.c.	Current DC	ESR (Ω)	Mfrs. List No.	Order Code	
µF	(µA)				
2.2	0.5	8.0	A	T491A225K010AT	145-7417
4.7	0.5	5.0	A	T491A475K010AT	145-7427
10	1.0	4.0	A	T491A106K010AT	145-7413
10	1	15	S	T491S106K010AT	179-3875
10		30	R	T491R106K010AT	167-9292
15	1.5	6	A	T491A156K010AT	179-3876
22	2.2	6.0	A	T491A226K010AT	145-7420
22	2.2	2.4	B	T491B226K010AT	145-7446
47	4.7	0.8	D	T491D476K010AT	145-7514
47	4.7	1.0	B	T491B476K010AT	145-7458
47	4.7	1.2	C	T491C476K010AT	145-7485
47	4.7	2.2	U	T491U476K010AT	179-3877
68	6.8	1.2	C	T491C686K010AT	145-7489
100	10.0	1.2	C	T491C107K010AT	145-7465
100	10	0.7	D	T491D107K010AT	145-7492
100	10	0.7	U	T491U107K010AT	179-3878
150	15.0	0.7	D	T491D157K010AT	145-7497
150	15	0.7	V	T491V157K010AT	179-3880
220	22.0	0.5	D	T491D227K010AT	145-7505
220	22		C	T491C227K010AT	179-3879

Order Multiple=5

10 Volt d.c.	Order Code	5+	100+	250+	500+	1K+
2.2	SMD 145-7417	0.102	0.077	0.069	0.059	0.049
4.7	SMD 145-7427	0.101	0.080	0.066	0.056	0.047
10	SMD 145-7413	0.136	0.108	0.088	0.070	0.061
10	NEW SMD 167-9292	0.700	0.490	0.310	0.250	0.220
10	179-3875	0.560	0.500	0.460	0.400	0.300
15	179-3876	0.094	0.080	0.074	0.064	0.048
22	SMD 145-7420	0.290	0.220	0.186	0.174	0.148
22	SMD 145-7446	0.195	0.155	0.126	0.105	0.088
47	SMD 145-7514	0.410	0.320	0.260	0.210	0.176
47	SMD 145-7458	0.560	0.430	0.370	0.330	0.290

Passive Components

7

Capacitors



Tantalum - Surface Mount - Kemet - continued

T491 Series - continued

Order Multiple=5

10 Volt d.c.		Price Each				
µF	Order Code	5+	100+	250+	500+	1K+
47	SMD 145-7485	0.440	0.340	0.280	0.220	0.193
47	179-3877	0.880	0.780	0.710	0.620	0.470
68	SMD 145-7489	0.500	0.400	0.320	0.260	0.230
100	SMD 145-7465	1.130	0.890	0.740	0.580	0.500
100	SMD 145-7492	0.450	0.350	0.290	0.230	0.189
100	179-3878	1.130	1.000	0.920	0.800	0.600
150	SMD 145-7497	0.570	0.460	0.370	0.330	0.290
150	179-3880	0.780	0.700	0.630	0.550	0.420
220	SMD 145-7505	1.230	0.980	0.800	0.630	0.550
220	179-3879	0.660	0.580	0.530	0.470	0.350

16 Volt d.c.	Current DC (µA)	ESR (Ω) @ 100kHz	Case style	Mfrs. List No.	Order Code
1	0.5	10.0	A	T491A105K016AT	145-7406
1.5	0.5	8.0	A	T491A155K016AT	145-7415
2.2	0.5	6.0	A	T491A225K016AT	145-7418
3.3	0.5	5.0	A	T491A335K016AT	145-7423
4.7	0.8	4.0	A	T491A475K016AT	145-7428
4.7	0.8	3.5	B	T491B475K016AT	145-7453
4.7	0.8	5	T	T491T475K016AT	179-3881
6.8	1.1	3.5	A	T491A685K016AT	145-7431
10	1.6	7.0	A	T491A106K016AT	145-7414
10	1.6	7	A	T491A106M016AT*	165-0980
10	1.6	2.8	B	T491B106K016AT	145-7436
10	1.6	1.8	C	T491C106K016AT	145-7461
10	1.6	8	T	T491T106K016AT	179-3882
15	2.4	2.5	B	T491B156K016AT	145-7440
15	2.4	1.8	C	T491C156K016AT	145-7467
22	3.6	2.2	B	T491B226K016AT	145-7447
22	3.6	1.6	C	T491C226K016AT	145-7474
22	3.6	0.8	D	T491D226K016AT	145-7499
22	3.6	3	U	T491U226K016AT	179-3884
33	5.3	1.2	C	T491C336K016AT	145-7479
33	5.3	0.8	D	T491D336K016AT	145-7507
47	7.5	1.2	C	T491C476K016AT	145-7486
47	7.5	0.8	D	T491D476K016AT	145-7515
47	7.5	0.7	V	T491V476K016AT	179-3886
68	10.9	0.7	D	T491D686K016AT	145-7520
68	10.9	0.7	V	T491V686K016AT	179-3887
100	16.0	0.7	D	T491D107K016AT	145-7493
100	16	1	C	T491C107K016ZT	179-3885
100	16	0.7	V	T491V107K016AT	179-3888
150	24.0	0.5	X	T491X157K016AT	145-7532
220	35.2	0.9	D	T491D227K016ZT	179-3889

* 20% tolerance for this part

Order Multiple=5

16 Volt d.c.		Price Each				
µF	Order Code	5+	100+	250+	500+	1K+
1	SMD 145-7406	0.106	0.084	0.069	0.059	0.049
1.5	SMD 145-7415	0.102	0.077	0.069	0.059	0.049
2.2	SMD 145-7418	0.107	0.085	0.070	0.059	0.049
3.3	SMD 145-7423	0.103	0.082	0.068	0.056	0.047
4.7	SMD 145-7428	0.200	0.150	0.125	0.101	0.081
4.7	SMD 145-7453	0.146	0.116	0.095	0.075	0.066
4.7	179-3881	0.560	0.500	0.460	0.400	0.300
6.8	SMD 145-7431	0.129	0.103	0.084	0.067	0.058
10	SMD 145-7414	0.174	0.138	0.113	0.089	0.078
10	SMD 165-0980	0.139	0.122	0.106	0.097	0.085
10	SMD 145-7436	0.154	0.123	0.100	0.079	0.069
10	SMD 145-7461	0.230	0.185	0.151	0.132	0.109
10	179-3882	0.660	0.580	0.530	0.470	0.350
15	SMD 145-7440	0.193	0.154	0.126	0.109	0.092
15	SMD 145-7467	0.300	0.240	0.198	0.156	0.136
22	SMD 145-7447	0.330	0.270	0.220	0.169	0.147
22	SMD 145-7474	0.280	0.220	0.181	0.142	0.125
22	SMD 145-7499	0.400	0.310	0.260	0.210	0.176
22	179-3884	1.100	0.970	0.880	0.780	0.580
33	SMD 145-7479	0.450	0.350	0.290	0.230	0.200
33	SMD 145-7507	0.370	0.300	0.240	0.210	0.176
47	SMD 145-7486	0.420	0.320	0.270	0.250	0.198
47	SMD 145-7515	0.450	0.350	0.290	0.230	0.176
47	179-3886	0.950	0.830	0.760	0.670	0.500
68	SMD 145-7520	0.500	0.400	0.320	0.270	0.230
68	179-3887	0.690	0.610	0.560	0.490	0.360
100	SMD 145-7493	0.560	0.450	0.370	0.330	0.290
100	179-3885	0.400	0.340	0.320	0.280	0.210
100	179-3888	1.260	1.110	1.020	0.880	0.670
150	SMD 145-7532	1.070	0.850	0.700	0.620	0.520
220	179-3889	0.780	0.700	0.630	0.550	0.420

20 Volt d.c.	Current DC (µA)	ESR (Ω) @ 100kHz	Case style	Mfrs. List No.	Order Code
1	0.5	9.0	A	T491A105K020AT	145-7407
2.2	0.5	7.0	A	T491A225K020AT	145-7419
2.2	0.5	3.5	B	T491B225K020AT	145-7441
4.7	1.0	3.0	B	T491B475K020AT	145-7454
4.7	1.0	2.4	C	T491C475K020AT	145-7480
6.8	1.4	2.5	B	T491B685K020AT	145-7459
10	2.0	2.1	B	T491B106K020AT	145-7437
10	2.0	1.8	C	T491C106K020AT	145-7462
10	2	1.8	U	T491U106K020AT	179-3890
22	4.4	1.2	C	T491C226K020AT	145-7475
22	4.4	0.8	D	T491D226K020AT	145-7502
33	6.6	0.8	D	T491D336K020AT	145-7508
47	9.4	0.9	C	T491C476K020AT	179-3891
47	9.4	0.7	D	T491D476K020AT	145-7516
68	13.6	0.7	X	T491X686K020AT	145-7551
100	20.0	0.5	X	T491X107K020AT	145-7526

Order Multiple=5

20 Volt d.c.		Price Each				
µF	Order Code	5+	100+	250+	500+	1K+
1	SMD 145-7407	0.100	0.080	0.066	0.056	0.047
2.2	SMD 145-7419	0.107	0.085	0.069	0.056	0.048
2.2	SMD 145-7441	0.130	0.103	0.088	0.078	0.066
4.7	SMD 145-7454	0.134	0.106	0.088	0.078	0.066
4.7	SMD 145-7480	0.250	0.198	0.163	0.129	0.111
6.8	SMD 145-7459	0.136	0.107	0.088	0.079	0.066
10	SMD 145-7437	0.220	0.172	0.141	0.111	0.088
10	SMD 145-7462	0.250	0.193	0.158	0.126	0.108
10	179-3890	0.880	0.780	0.710	0.620	0.470
22	SMD 145-7475	0.340	0.280	0.230	0.183	0.156
22	SMD 145-7502	0.460	0.360	0.290	0.230	0.176
33	SMD 145-7508	0.660	0.490	0.410	0.370	0.310
47	SMD 145-7516	0.440	0.340	0.290	0.230	0.196
47	179-3891	0.690	0.610	0.560	0.490	0.360
68	SMD 145-7551	0.610	0.480	0.430	0.400	0.340
100	SMD 145-7526	1.260	1.000	0.820	0.650	0.560

25 Volt d.c.	Current DC (µA)	ESR (Ω) @ 100kHz	Case style	Mfrs. List No.	Order Code
0.47	0.5	14.0	A	T491A474K025AT	145-7425
1	0.5	8.0	A	T491A105K025AT	145-7409
1	0.3	18	S	T491S105K025AT	179-3892
2.2	0.6	4.5	B	T491B225K025AT	145-7442
3.3	0.8	1.5	A	T491A335K025AT	179-3893
4.7	1.2	1.5	B	T491B475K025AT	145-7455
4.7	1.2	2.4	C	T491C475K025AT	145-7483
6.8	1.7	1.9	C	T491C685K025AT	145-7487
10	2.5	1.5	C	T491C106K025AT	145-7463
10	2.5	1.0	D	T491D106K025AT	145-7490
10	2.5	3	B	T491B106K025AT	179-3894
15	3.8	1.5	C	T491C156K025AT	145-7468
15	3.8	1.0	D	T491D156K025AT	145-7495
22	5.5	0.8	D	T491D226K025AT	145-7503
22	5.5	0.7	V	T491V226K025AT	179-3897
33	8.3	1.2	C	T491C336K025AT	179-3896
47	11.8	0.7	D	T491D476K025AT	145-7517
47	11.8	0.7	X	T491X476K025AT	145-7545

Order Multiple=5

25 Volt d.c.		Price Each				
µF	Order Code	5+	100+	250+	500+	1K+
0.47	SMD 145-7425	0.102	0.078	0.069	0.059	0.049
1	SMD 145-7409	0.200	0.150	0.125	0.101	0.081
1	179-3892	0.560	0.500	0.460	0.400	0.300
2.2	SMD 145-7442	0.143	0.113	0.093	0.083	0.070
3.3	179-3893	0.250	0.220	0.200	0.177	0.133
4.7	SMD 145-7455	0.290	0.230	0.190	0.167	0.136
4.7	SMD 145-7483	0.390	0.290	0.250	0.230	0.162
6.8	SMD 145-7487	0.290	0.230	0.186	0.147	0.128
10	SMD 145-7463	0.270	0.220	0.177	0.149	0.123
10	SMD 145-7490	0.410	0.320	0.270	0.210	0.176
10	179-3894	0.400	0.340	0.320	0.280	0.210
15	SMD 145-7468	0.390	0.300	0.250	0.194	0.170
15	SMD 145-7495	0.400	0.310	0.260	0.210	0.176
22	SMD 145-7503	0.460	0.360	0.300	0.240	0.176
22	179-3897	0.950	0.830	0.760	0.670	0.500
33	179-3896	0.530	0.470	0.430	0.370	0.280
47	SMD 145-7517	0.980	0.780	0.630	0.500	0.440
47	SMD 145-7545	1.090	0.870	0.710	0.620	0.520

35 Volt d.c.	Current DC (µA)	ESR (Ω) @ 100kHz	Case style	Mfrs. List No.	Order Code
0.1	0.5	20.0	A	T491A104K035AT	145-7402
0.33	0.5	15.0	A	T491A334K035AT	145-7422
0.47	0.5	12.0	A	T491A474K035AT	145-7426
1	0.5	7.5	A	T491A105K035AT	145-7411
1	0.5	5.0	B	T491B105K035AT	145-7432
2.2	0.8	4.0			

35 Volt d.c.	Current DC	ESR (Ω)			
10	3.5	1.0	D	T491D106K035AT	145-7491
10	3.5	2	V	T491V106K035AT	179-3899
22	7.7	0.7	D	T491D226K035AT	145-7504
47	16.5	0.5	E	T491E476K035AT	145-7522
47	16.5	0.6	X	T491X476K035AT	145-7546

Order Multiple=5

35 Volt d.c.	Price Each					
μF	Order Code	5+	100+	250+	500+	1K+
0.1	SMD 145-7402	0.102	0.081	0.067	0.056	0.047
0.33	SMD 145-7422	0.189	0.143	0.119	0.094	0.075
0.47	SMD 145-7426	0.109	0.081	0.073	0.069	0.055
1	SMD 145-7411	0.136	0.108	0.088	0.070	0.061
1	SMD 145-7432	0.154	0.122	0.100	0.079	0.069
2.2	SMD 145-7443	0.220	0.172	0.140	0.110	0.097
2.2	SMD 145-7472	0.310	0.240	0.200	0.157	0.137
3.3	179-3898	0.187	0.166	0.152	0.133	0.100
4.7	SMD 145-7484	0.300	0.240	0.194	0.154	0.134
4.7	SMD 145-7510	0.410	0.320	0.260	0.210	0.176
6.8	SMD 145-7518	0.410	0.320	0.260	0.210	0.179
10	SMD 145-7464	0.500	0.400	0.320	0.260	0.230
10	SMD 145-7491	0.480	0.370	0.310	0.250	0.176
10	179-3899	0.950	0.830	0.760	0.670	0.500
22	SMD 145-7504	0.990	0.790	0.650	0.500	0.450
47	SMD 145-7522	4.770	3.980	3.360	2.750	2.440
47	SMD 145-7546	1.980	1.570	1.290	1.020	0.890

50 Volt d.c.	Current DC	ESR (Ω)		Mfrs. List No.	Order Code
μF	(μA)	@ 100kHz			
0.1	0.5	20	A	T491A104K050AT	179-3900
0.22	0.5	14	B	T491B224K050AT	179-3902
0.33	0.5	10.0	B	T491B334K050AT	145-7448
0.68	0.5	8	B	T491B684K050AT	179-3903
1	0.5	5.5	C	T491C105K050AT	145-7460
1	0.5	6	B	T491B105K050AT	179-3904
1	0.5	6	V	T491V105K050AT	179-3905
2.2	1.1	2.5	D	T491D225K050AT	145-7498
4.7	2.4	1.4	D	T491D475K050AT	145-7511
15	7.5	0.7	X	T491X156K050AT	145-7529

486857

Order Multiple=5

50 Volt d.c.	Price Each					
μF	Order Code	5+	100+	250+	500+	1K+
0.1	179-3900	0.114	0.104	0.097	0.084	0.063
0.22	179-3902	0.210	0.180	0.165	0.144	0.108
0.33	SMD 145-7448	0.330	0.270	0.220	0.172	0.150
0.68	179-3903	0.310	0.280	0.250	0.220	0.166
1	SMD 145-7460	0.710	0.530	0.460	0.420	0.360
1	179-3904	0.310	0.280	0.250	0.220	0.166
1	179-3905	1.410	1.250	1.140	1.000	0.750
2.2	SMD 145-7498	0.830	0.620	0.540	0.490	0.410
4.7	SMD 145-7511	1.270	0.950	0.830	0.750	0.630
15	SMD 145-7529	4.220	3.220	2.750	2.540	2.110

RL FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

B45196 Series - Standard



- Long life surface mount Tantalum chip capacitors
- Flame retardant plastic case **UL94V-0**
- Suitable for Vapour phase, IR and Wave soldering
- Laser marked and conform to **CECC 30801-801/CECC 30801-802**



Case Code	Length	Width	Height	Reel Qty.	Tape Size
A	3.2	1.6	1.6	2000	8
B	3.5	2.8	1.9	2000	12
C	6	3.2	2.6	750	12
D	7.3	4.3	2.9	750	12
E	7.3	4.3	4.1	400	12

Tolerance ± 10%
 Operating temperature -55°C to +125°C
 Impedance measured at 100kHz 20°C
 Supplied on 180mm diameter reel and on 8mm or 12mm tape

4 Volt d.c.	DC Leakage Current (μA)	Impedance @ 100kHz (Ω)	Case Size	Mfrs. List No.	Order Code
1000	40	0.6	E	B45196H0108K509	975-1840

4 Volt d.c.	Price Each					
μF	Order Code	1+	50+	100+	500+	1K+
1000	SMD 975-1840	2.61	2.26	2.00	1.77	1.54

6.3 Volt d.c.	DC Leakage Current (μA)	Impedance @ 100kHz (Ω)	Case Size	Mfrs. List No.	Order Code
22	1.4	2	C	B45196E1226K309	975-3761
47	3	1.1	D	B45196E1476K409	975-3770
68	4.3	0.8	D	B45196E1686K409	975-3788

6.3 Volt d.c.	Price Each					
μF	Order Code	1+	50+	100+	500+	1K+
22	SMD 975-3761	0.360	0.290	0.240	0.187	0.163
47	SMD 975-3770	0.520	0.420	0.330	0.270	0.240
68	SMD 975-3788	0.520	0.420	0.340	0.270	0.240

10 Volt d.c.	DC Leakage Current (μA)	Impedance @ 100kHz (Ω)	Case Size	Mfrs. List No.	Order Code
2.2	0.5	7	A	B45196E2225K109	975-3796
10	1	3.8	A	B45196H2106K109	975-1041
4.7	0.5	4.5	B	B45196E2475K209	975-3800
10	1	2.4	C	B45196E2106K309	975-3818
15	1.5	2	C	B45196E2156K309	975-3826
33	3.3	1.1	D	B45196E2336K409	975-3834
47	4.7	0.8	D	B45196E2476K409	975-3842
100	10	0.8	D	B45196H2107K409	975-3850

10 Volt d.c.	Price Each					
μF	Order Code	1+	50+	100+	500+	1K+
2.2	SMD 975-3796	0.188	0.150	0.123	0.097	0.084
10	SMD 975-1041	0.230	0.176	0.144	0.118	0.105
4.7	SMD 975-3800	0.220	0.168	0.138	0.109	0.095
10	SMD 975-3818	0.320	0.260	0.210	0.168	0.147
15	SMD 975-3826	0.370	0.300	0.250	0.193	0.168
33	SMD 975-3834	0.620	0.500	0.410	0.310	0.280
47	SMD 975-3842	0.600	0.480	0.390	0.300	0.270
100	SMD 975-3850	0.800	0.600	0.480	0.410	0.360

16 Volt d.c.	DC Leakage Current (μA)	Impedance @ 100kHz (Ω)	Case Size	Mfrs. List No.	Order Code
1	0.5	10	A	B45196E3105K109	975-3869
3.3	0.6	5	B	B45196E3335K209	975-3877
4.7	0.8	3.5	B	B45196E3475K209	975-3885
10	1	2.5	B	B45196H3106K209	975-3893
10	1.6	2	C	B45196E3106K309	975-3907
22	3.6	1.1	D	B45196E3226K409	975-3915
33	5.3	1	D	B45196E3336K409	975-3923
47	7.5	0.8	D	B45196H3476K409	975-3931

16 Volt d.c.	Price Each					
μF	Order Code	1+	50+	100+	500+	1K+
1	SMD 975-3869	0.167	0.133	0.109	0.086	0.075
3.3	SMD 975-3877	0.220	0.170	0.138	0.109	0.096
4.7	SMD 975-3885	0.230	0.178	0.146	0.115	0.100
10	SMD 975-3893	0.260	--	--	--	--
10	SMD 975-3907	0.370	0.300	0.240	0.190	0.166
22	SMD 975-3915	0.520	0.420	0.330	0.270	0.240
33	SMD 975-3923	0.600	0.480	0.400	0.300	0.270
47	SMD 975-3931	0.730	0.570	0.460	0.380	0.340

25 Volt d.c.	DC Leakage Current (μA)	Impedance @ 100kHz (Ω)	Case Size	Mfrs. List No.	Order Code
0.47	0.5	13	A	B45196E5474K109	975-3940
1	0.5	7	A	B45196H5105K109	975-3958
1.5	0.6	5	B	B45196E5155K209	975-3966
2.2	0.9	2.8	B	B45196E5225K209	975-3974
3.3	1.2	2.3	C	B45196E5335K309	975-3982
4.7	2.5	1.2	C	B45196E5475K309	975-3990
10	0.5	8	D	B45196E5106K409	975-4008

25 Volt d.c.	Price Each					
μF	Order Code	1+	50+	100+	500+	1K+
0.47	SMD 975-3940	0.165	0.131	0.108	0.085	0.074
1	SMD 975-3958	0.200	0.156	0.119	0.102	0.090
1.5	SMD 975-3966	0.130	--	--	--	--
2.2	SMD 975-3974	0.260	--	--	--	--
3.3	SMD 975-3982	0.340	0.280	0.220	0.175	0.153
4.7	SMD 975-3990	0.330	0.270	0.220	0.172	0.149
10	SMD 975-4008	0.620	0.500	0.410	0.310	0.280

35 Volt d.c.	DC Leakage Current (μA)	Impedance @ 100kHz (Ω)	Case Size	Mfrs. List No.	Order Code
0.1	0.5	28	A	B45196E6104K109	975-4016
0.47	0.5	11	B	B45196E6474K209	975-4024
1	0.5	7	B	B45196E6105K209	975-4032
2.2	0.8	3.2	C	B45196E6225K309	975-4040
3.3	1.2	2.4	C	B45196E6335K309	975-4059
4.7	1.7	1.5	D	B45196E6475K409	975-4067
6.8	2.4	1.2	D	B45196E6685K409	975-4075
10	3.5	1	D	B45196E6106K409	975-4083
15	5.3	0.8	D	B45196H6156K409	975-4091
22	7.7	0.8	E	B45196H6226K509	975-4105

35 Volt d.c.	Price Each					
μF	Order Code	1+	50+	100+	500+	1K+
0.1	SMD 975-4016	0.190	0.153	0.125	0.099	0.086
0.47	SMD 975-4024	0.230	0.183	0.149	0.119	0.103
1	SMD 975-4032	0.250	0.199	0.162	0.128	0.111
2.2	SMD 975-4040	0.410	0.310	0.270	0.210	0.180
3.3	SMD 975-4059	0.360	0.290	0.240	0.187	0.163
4.7	SMD 975-4067	0.610	0.490	0.400	0.310	0.280
6.8	SMD 975-4075	0.500	0.410	0.320	0.260	0.230
10	SMD 975-4083	0.610	0.490	0.400	0.310	0.270
15	SMD 975-4091	0.770	0.610			

Tantalum - Surface Mount - Kemet - continued

B45194 Series - Low Profile



- Maximum height 2mm
- High capacitance per unit volume
- Low leakage current, low self-inductance, low dissipation factor
- Suitable for vapour phase, IR and wave soldering
- V case size has same foot print as D case



Tolerance		±10%		Impedance measured at 100kHz 20°C	
Operating temperature		-55°C to +125°C		Supplied on 180mm diameter reel	
Case Code	V	Length	Width	Height	Reel Qty
		7.3	4.3	2.0	1000
					Tape Size
					12mm
μF	Impedance (Ω)	DC Leakage Current (μA)	Case Size	Mfrs. List No.	Order Code
6.3 Volt d.c.					
330	0.7	21	V	B45194E1337K409	416-0332
10 Volt d.c.					
150	0.7	15	V	B45194E2157K409	121-9095
220	0.7	22	V	B45194E2227K409	416-0356
16 Volt d.c.					
68	0.7	11	V	B45194E3686K409	121-9096

Capacitance		Price Each				
μF	Order Code	1+	50+	100+	250+	500+
6.3 Volt d.c.						
330	SMD 416-0332	2.24	1.70	1.38	1.15	1.04
10 Volt d.c.						
150	SMD 121-9095	2.12	1.61	1.31	1.09	0.99
220	SMD 416-0356	2.12	1.61	1.31	1.09	0.99
16 Volt d.c.						
68	SMD 121-9096	2.12	1.61	1.31	1.09	0.99

B45192 Series - Low Profile, Low ESR



- Maximum height of 1.5mm
- High volumetric efficiency
- Low ESR, for use in telecommunication and other low ESR application with height constraint
- Low leakage current, low self-inductance, low dissipation factor
- Suitable for vapour phase, IR and wave soldering
- W and X case sizes has same foot print as C and D case



Tolerance		±10%		ESR measured at 100kHz 20°C	
Operating temperature		-55°C to +125°C		Supplied on 180mm diameter reel	
Case Code	Length (mm)	Width (mm)	Height (mm)	Reel Qty	Tape Size
W	6.0	3.2	1.5	1250	
X	7.3	4.3	1.5	1250	12mm
ESR (mΩ)	DC Leakage Current (μA)	Case Size	Mfrs. List No.	Order Code	
10 Volt d.c.					
47	400	4.7	W	B45192R2476K309	975-1742
16 Volt d.c.					
33	400	5.3	W	B45192R3336K309	975-1769

Capacitance		Price Each				
μF	Order Code	1+	50+	100+	250+	500+
10 Volt d.c.						
47	SMD 975-1742	1.73	0.76	0.66	0.61	0.56
16 Volt d.c.						
33	SMD 975-1769	1.73	0.76	0.66	0.61	0.56

T495 Series - Low ESR Tantalum



- Designed for Very Low ESR
- Extended Values for Low ESR
- High Surge & Ripple Current Capability
- 100% Accelerated Steady-State Aging
- 100% Surge Current Test
- Low Equivalent Series Inductance



Characteristics	Dimensions (mm)		
Case size	L	W	H
C	L = 6	W = 3.2	H = 2.5
D	L = 7.3	W = 4.3	H = 2.8
V	L = 7.3	W = 4.3	H = 2
X	L = 7.3	W = 4.3	H = 4
Tolerance	±10%		
Dielectric type	Tantalum		

406040

				Price Each			
μF	Resistance	Case	Order Code	1+	25+	50+	100+
		size					
6 Volts d.c.							
100	150mohm	C	SMD 922-9230	0.68	0.55	0.49	0.42
470	65mohm	X	SMD 922-9361	4.15	3.53	2.59	2.41
6.3 Volts d.c.							
330	200mohm	C	SMD 167-9287	1.17	0.81	0.53	0.41
100	50mohm	D	SMD 135-8513	3.50	2.96	2.56	2.08
150	40mohm	V	SMD 135-8518	3.93	1.70	1.09	0.80
1000	100mohm	X	SMD 167-9288	4.04	2.88	1.92	1.45
10 Volts d.c.							
22	1.5ohm	B	SMD 167-9290	0.96	0.71	0.47	0.36
22	245mohm	C	SMD 167-9289	1.07	0.83	0.56	0.42
100	100mohm	D	SMD 922-9256	1.22	0.90	0.75	0.61
100	100mohm	V	SMD 135-8514	4.98	3.88	3.23	2.56
150	50mohm	D	SMD 128-8218	2.13	1.44	1.08	0.85
220	125mohm	D	SMD 922-9280	1.92	1.42	1.19	1.04
220	100mohm	X	SMD 922-9337	2.52	1.87	1.56	1.42
16 Volts d.c.							
10	1.6ohm	B	SMD 167-9291	0.89	0.66	0.44	0.32
47	150mohm	D	SMD 922-9299	0.92	0.75	0.65	0.57
100	100mohm		SMD 146-3352	0.96	0.91	0.72	--
100	125mohm	D	SMD 922-9264	1.24	1.01	0.87	0.77
100	100mohm	X	SMD 922-9310	2.43	1.80	1.50	1.26
20 Volts d.c.							
10	400mohm	C	SMD 128-8223	1.60	1.08	0.80	0.66
33	100mohm	D	SMD 128-8224	1.55	1.03	0.77	0.62
47	150mohm	X	SMD 922-9353	2.23	1.65	1.38	1.14
25 Volts d.c.							
6.8	400mohm	C	SMD 128-8225	0.76	0.52	0.37	0.30
35 Volts d.c.							
3.3	525mohm	C	SMD 128-8219	1.64	1.09	0.83	0.68
10	300mohm	D	SMD 922-9248	1.06	0.87	0.75	0.66
10	250mohm	X	SMD 922-9302	2.05	1.67	1.46	1.27
22	300mohm	D	SMD 922-9272	1.33	1.29	1.25	1.22
22	275mohm	X	SMD 922-9329	2.43	1.80	1.50	1.26
50 Volts d.c.							
4.7	300mohm	X	SMD 922-9345	4.58	4.31	3.82	3.41
6.8	190mohm	D	SMD 128-8220	3.30	2.21	1.65	1.23
15	200mohm	X	SMD 135-8517	13.14	10.23	8.52	6.74

B45197 Series - Low ESR



- Low ESR (equivalent series resistance) version of B45196 series
- Long life surface mount tantalum chip capacitors
- Suitable for vapour phase, IR and wave soldering
- Laser marked and conform to **CECC 30801-805**



Tolerance: ±10%		ESR measured at 100kHz 20°C			
Operating temperature: -55°C to 125°C		Supplied in 180mm diameter reel			
Case Code	Length	Width	Height		
A	3.2	1.6	1.6		
B	3.5	2.8	1.9		
C	6	3.2	2.6		
D	7.3	4.3	2.9		
E	7.3	4.3	4.1		
μF	ESR @ 100kHz (mΩ)	DC Leakage Current (μA)	Case Size	Mfrs. List No.	Order Code
10 Volt d.c.					
2.2	1800	0.5	A	B45010A2259K188	135-8544
100	100	10	D	B45197A2107K409	975-1050
220	100	22	E	B45197A2227K509	975-1068
330	100	33	E	B45197A2337K509	975-1076
470	100	47.0	E	B45197A2477K509	975-1190
16 Volt d.c.					
15	2500	2.4	A	B45016A1569K258	135-8548
33	350	5.3	B	B45016B3369K357	135-8545
47	180	7.5	D	B45197A3476K409	975-1092
100	100	16	E	B45197A3107K509	975-1084
220	100	35.2	E	B45197A3227K509	975-1203
20 Volt d.c.					
4.7	1800	0.9	A	B45020A4759K188	135-8549
68	200	13.6	E	B45197A4686K509	975-1106
25 Volt d.c.					
4.7	530	1.2	C	B45197A5475K309	975-1122
10	750	2.5	B	B45025B1069K757	135-8550
22	230	5.5	D	B45197A5226K409	975-1114
35 Volt d.c.					
4.7	1000	1.6	B	B45035B4759K108	135-8551
10	260	3.5	D	B45197A6106K409	975-1130
22	260	7.7	E	B45197A6226K509	975-1149

228455

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	250+	500+
10 Volt d.c.						
2.2	SMD 135-8544	0.60	0.49	0.41	0.31	--
100	SMD 975-1050	1.17	0.88	0.70	0.60	0.52
220	SMD 975-1068	2.35	1.77	1.43	1.22	1.07
330	SMD 975-1076	2.35	1.77	1.44	1.22	1.07
470	SMD 975-1190	3.69	2.81	2.26	1.92	1.70
16 Volt d.c.						
15	SMD 135-8548	0.56	0.45	0.37	0.28	--
33	SMD 135-8545	0.80	0.65	0.53	0.39	--
47	SMD 975-1092	0.88	0.65	0.55	0.46	0.41
100	SMD 975-1084	2.09	1.77	1.45	1.14	0.99
220	SMD 975-1203	3.16	2.40	1.93	1.65	1.45
20 Volt d.c.						
4.7	SMD 135-8549	0.56	0.48	0.39	0.28	--
68	SMD 975-1106	2.44	1.85	1.50	1.25	1.11
25 Volt d.c.						
4.7	SMD 975-1122	0.70	0.53	0.43	0.37	0.32
10	SMD 135-8550	0.81	0.66	0.49	0.39	--
22	SMD 975-1114	1.22	0.90	0.75	0.65	0.56
35 Volt d.c.						
4.7	SMD 135-8551	0.93	0.79	0.63	0.48	--
10	SMD 975-1130	1.31	1.00	0.81	0.68	0.61
22	SMD 975-1149	2.07	1.64	1.34	1.06	0.93

B45396 Series - Multiple Anode Tantalum



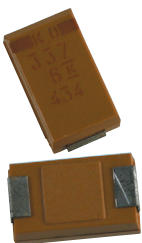
- Very low ESR, as low as 30mΩ to 35mΩ
- Excellent for DC/DC converters and other very low ESR applications
- High ripple current, up to 3 A
- 100% Inrush tested
- Supplied on 180mm diameter reel



Tolerance ±10%		ESR measured at 100kHz 20°C					
Operating temperature -55°C to +125°C		Case Code	Length	Width	Height	Reel Qty.	Tape Size
		E	4.1	7.3	4.3	400	12
ESR (mΩ)	DC Leakage Current (µA)	Case Size	Mfrs. List No.		Order Code		
4 Volt d.c.	680 30	E	B45396R0687K509		975-1777		
6.3 Volt d.c.	470 30	E	B45396R1477K509		975-1785		

Capacitance		Price Each				
µF	Order Code	1+	50+	100+	400+	800+
4 Volt d.c.						
680	SMD 975-1777	3.20	2.97	2.77	2.60	2.48
6.3 Volt d.c.						
470	SMD 975-1785	4.67	4.15	3.72	3.40	3.18

T520 Series-Tantalum Polymer



Case size	Dimensions (mm)		
	L	W	H
A	3.2	1.6	1.6
B	3.5	2.8	1.9
C	6	3.2	2.5
D	7.3	4.3	2.8
V	7.3	4.3	1.9
X	7.3	4.3	4
Y	7.3	4.3	4

Tolerance ±20%
Operating Temperature -55 to +105°C

- Surface Mount Replacement for Aluminium Capacitors
- High Frequency Cap Retention
- No-Ignition Failure Mode
- 100% Surge Current Tested
- 100% Accelerated Steady State Aging
- Self-Healing Mechanism
- Volumetrically Efficient



Resistance (ESR)		Case size	Order Code	Price Each			
µF	ESR	size	Order Code	1+	25+	50+	100+
2.5 Volt d.c.							
68	70mohm	A	SMD 110-8332	0.270	0.230	0.184	0.162
4 Volt d.c.							
47	70mohm	A	SMD 110-8331	1.070	0.790	0.660	0.520
220	45mohm	B	SMD 110-8333	1.360	1.090	0.910	0.720
220	45mohm	V	SMD 128-1670	2.610	2.280	1.940	1.580
470	12mohm	D	SMD 922-9620	3.280	2.680	2.330	2.040
680	12mohm	D	SMD 128-8226	4.990	3.660	2.780	2.220

Resistance (ESR)		Case size	Order Code	Price Each			
µF	ESR	size	Order Code	1+	25+	50+	100+
6 Volt d.c.							
22	90mohm	A	SMD 110-8329	0.890	0.720	0.590	0.480
33	70mohm	A	SMD 110-8330	1.070	0.790	0.660	0.520
47	40mohm	B	SMD 922-9566	1.310	0.970	0.810	0.640
150	45mohm	B	SMD 110-8334	1.360	1.050	0.880	0.690
330	15mohm	D	SMD 922-9612	1.780	1.550	1.370	1.220
6.3 Volt d.c.							
120	35mohm	B	SMD 135-8520	1.340	1.080	0.890	0.690
150	45mohm	V	SMD 128-1673	3.790	2.810	2.350	1.850
130	15mohm	V	SMD 135-8521	5.040	4.040	3.350	2.540
10 Volt d.c.							
10	80mohm	A	SMD 157-2644	1.290	1.030	0.850	0.660
22	80mohm	A	SMD 157-2646	1.360	1.060	0.830	0.610
33	25mohm	B	SMD 135-8530	1.490	1.150	0.960	0.760
47	35mohm	B	SMD 157-2648	1.490	1.190	0.990	0.740
100	25mohm	C	SMD 135-8525	1.900	1.470	1.240	0.990
100	40mohm	B	SMD 922-9574	1.360	1.050	0.880	0.690
100	18mohm	D	SMD 922-9582	2.480	2.020	1.760	1.540
150	25mohm	D	SMD 922-9590	1.740	1.470	1.250	1.110
220	18mohm	D	SMD 922-9604	2.430	1.800	1.500	1.260
330	25mohm	X	SMD 922-9647	5.780	4.920	4.340	3.830
16 Volt d.c.							
10	100mohm	B	SMD 167-9286	1.090	0.690	0.470	0.350
47	35mohm	D	SMD 922-9639	3.540	2.620	2.190	1.730
47	45mohm	W	SMD 110-8338	2.160	1.870	1.630	1.450
150	40mohm	X	SMD 135-8528	9.780	7.810	6.500	5.140
20 Volt d.c.							
22	45mohm	V	SMD 135-8529	4.320	3.450	2.870	2.260

T521 Series - High Voltage Polymer



- High Voltage (20V - 35V)
- Stable temperature characteristics
- Safe failure mode
- Low ESR (125mOhm)



Dimensions L = 7.3 W = 4.3 H = 1.9
Tolerance ± 20%

Capacitance		Price Each				
µF	Order Code	1+	25+	50+	100+	500+
15	SMD 169-5345	3.71	3.04	2.63	2.31	2.02
47	NEW 179-3826	4.60	3.89	3.36	2.88	2.53

B45294 Series - Polymer Tantalum



- Very low ESR, as low as 35mΩ to 45mΩ
- Enhanced high ESR stability versus temperature
- Enhanced high capacity stability versus frequency
- High ripple current: 1700mA rms at 100kHz, 20°C to +105°C
- V case size has same foot print as D case, with maximum height of 2mm
- Supplied on 180mm diameter reel



Tolerance ±20%		Operating temperature -55°C to +105°C		ESR measured at 100kHz 20°C		
Case Code	Length	Width	Height	Reel Qty.	Tape Size	
V	7.3	4.3	2.0	1000	12mm	
ESR (mΩ)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code		
6.3 Volt d.c.	100 45	63	V	B45294R1107M409		975-1858

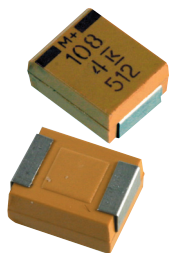
Capacitance		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
6.3 Volt d.c.						
100	SMD 975-1858	0.88	0.79	0.68	0.62	0.57

element14 | www.element-14.com

The solutions are out there, you just haven't registered yet

Tantalum - Surface Mount - Kemet - continued

T510 Series—Multi Anode Low ESR Tantalum



- Ultra-Low ESR
- New E/7260 Case with ESR
- Up to 4 amps Ripple Current
- 100% Surge Current Test
- 100% Accelerated Steady-State Aging

Characteristics		Dimensions (mm)		
Case size		L	W	H
E		3.6	7	3.6
X		7.3	6	4
Tolerance		± 10%*		
* 9229450 is ±20% tolerance				

406048

µF	Resistance (ESR)	Case size	Order Code	Price Each			
				1+	25+	50+	100+
4 Volts d.c.							
1000	18mohm	E	SMD922-9450 RL	7.06	5.98	5.30	4.72
6 Volts d.c.							
470	30mohm	X	SMD922-9485 RL	7.62	6.75	6.46	6.08
10 Volts d.c.							
330	35mohm	X	SMD922-9477 RL	7.20	5.89	5.10	4.46
16 Volts d.c.							
220	25mohm	X	SMD179-3863	5.96	5.26	4.83	4.21
20 Volts d.c.							
100	40mohm	X	SMD179-3864	5.96	5.26	4.83	4.21
35 Volts d.c.							
22	80mohm	X	SMD110-8339 RL	9.43	8.38	8.01	7.52
47	50mohm	E	SMD110-8341 RL	9.43	8.38	8.01	7.52
50 Volts d.c.							
10	90mohm	X	SMD179-3865	6.12	5.40	4.95	4.32

T530 Series—Multi Anode Tantalum Polymer



- High Frequency Capacitance Retention
- Non-Ignition Failure Mode
- Moulded Case (pick-and-place precision)
- 100% Accelerated Steady State Aging
- 100% Surge Current Testing
- Utilizes Multiple Tantalum Anode Technology
- Volumetric Efficiency
- Use Up to 80% of Rated Voltage (20% De-rating)
- Self-Healing Mechanism

Dimensions(mm) X Case		L	W	H
Dimensions(mm) D Case		L	W	H
Tolerance		± 20%		
		4.3	7.3	4
		4.3	7.3	2.8

406054

µF	Case	Resistance (ESR)	Order Code	Price Each			
				1+	25+	50+	100+
3 Volts d.c.							
1500	X	8mohm	SMD922-9728 RL	6.32	6.04	5.64	5.29
4 Volts d.c.							
680	X	6mohm	SMD922-9752 RL	9.91	9.43	7.97	7.48
6 Volts d.c.							
470	X	6mohm	SMD922-9744 RL	9.53	9.07	7.66	7.19
10 Volts d.c.							
220	D	6mohm	NEW 179-3866	5.49	4.85	4.44	3.88
330	X	6mohm	SMD922-9736 RL	9.91	9.43	7.97	7.48

Tantalum - Surface Mount - Vishay

293D Series



- Compatible with automatic Pick & Place equipment
- Optical character recognition qualified

Operating Temperature -55°C to +125°C
Capacitance Tolerance ± 10%

Case Code	Length	Width	Height	Reel Qty.	Case Code	Length	Width	Height	Reel Qty.
A	1.6	3.2	1.6	2000	D	2.8	7.3	4.3	500
B	1.9	3.5	2.8	2000	E	4	7.3	4.3	400
C	2.5	6	3.2	500					

6.3 Volt d.c.	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
10	3.4	0.6	A	293D106X96R3A2TE3	175-4143
15	2.9	0.9	A	293D156X96R3A2TE3	175-4144
15	2.5	0.9	B	293D156X96R3B2TE3	175-4145
22	2.9	1.3	A	293D226X96R3A2TE3	175-4146

6.3 Volt d.c.	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
22	2	1.3	B	293D226X96R3B2TE3	175-4147
22	1.8	1.3	C	293D226X96R3C2TE3	175-4148
33	2.5	2	A	293D336X96R3A2TE3	175-4149
33	1.9	2	B	293D336X96R3B2TE3	175-4150
47	1.9	2.8	B	293D476X96R3B2TE3	175-4151
47	1.4	2.8	C	293D476X96R3C2TE3	175-4152
100	1.7	6	B	293D107X96R3B2TE3	175-4153
150	0.7	9	C	293D157X96R3C2TE3	175-4155
150	0.6	9	D	293D157X96R3D2TE3	175-4156
220	0.6	13.2	D	293D227X96R3D2TE3	175-4157
220	0.5	13.2	E	293D227X96R3E2TE3	175-4158
330	0.6	19.8	D	293D337X96R3D2TE3	175-4159
330	0.5	19.8	E	293D337X96R3E2TE3	175-4160
470	1.5	28.2	E	293D477X96R3E2TE3	175-4161

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	250+	2K+
10	SMD175-4143	0.104	--	--	--	--
15	SMD175-4144	0.124	0.113	0.103	0.080	0.057
15	SMD175-4145	0.135	0.123	0.112	0.101	0.066
22	SMD175-4146	0.112	0.104	0.102	0.079	0.056
22	SMD175-4147	0.169	0.146	0.136	0.113	0.079
22	SMD175-4148	0.240	0.210	0.190	0.167	0.123
33	SMD175-4149	0.126	0.115	0.105	0.084	0.063
33	SMD175-4150	0.169	0.146	0.136	0.113	0.079
47	SMD175-4151	0.240	0.210	0.189	0.156	0.122
47	SMD175-4152	0.290	0.270	0.240	0.200	0.157
100	SMD175-4153	0.210	--	--	--	--
150	SMD175-4155	0.340	0.310	0.280	0.250	0.178
150	SMD175-4156	0.510	0.460	0.420	0.350	0.260
220	SMD175-4157	0.520	0.480	0.430	0.360	0.270
220	SMD175-4158	0.860	0.780	0.710	0.600	0.450
330	SMD175-4159	0.670	0.600	0.550	0.470	0.340
330	SMD175-4160	0.860	0.780	0.710	0.600	0.450
470	SMD175-4161	1.260	--	--	--	--

10 Volt d.c.	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
4.7	3.4	0.5	B	293D475X9010B2TE3	175-4162
10	2.5	1	B	293D106X9010B2TE3	175-4163
10	1.8	1	C	293D106X9010C2TE3	175-4164
22	2.5	2.2	A	293D226X9010A2TE3	175-4165
33	0.8	3.3	D	293D336X9010D2TE3	175-4167
47	1.8	4.7	B	293D476X9010B2TE3	175-4168
47	1.1	4.7	C	293D476X9010C2TE3	175-4169
100	0.6	10	D	293D107X9010D2TE3	175-4170
220	0.6	22	D	293D227X9010D2TE3	175-4171
220	0.5	22	E	293D227X9010E2TE3	175-4172
330	0.5	33	E	293D337X9010E2TE3	175-4173

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	250+	2K+
4.7	SMD175-4162	0.126	--	--	--	--
10	SMD175-4163	0.135	0.123	0.112	0.101	0.066
10	SMD175-4164	0.240	0.210	0.190	0.167	0.123
22	SMD175-4165	0.114	0.104	0.094	0.073	0.062
33	SMD175-4167	0.380	0.340	0.310	0.270	0.200
47	SMD175-4168	0.220	--	--	--	--
47	SMD175-4169	0.290	0.270	0.240	0.200	0.157
100	SMD175-4170	0.350	--	--	--	--
220	SMD175-4171	0.650	0.580	0.530	0.450	0.330
220	SMD175-4172	0.860	0.780	0.710	0.600	0.450
330	SMD175-4173	1.350	1.220	1.100	0.930	0.700

16 Volt d.c.	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
1	9.3	0.5	A	293D105X9016A2TE3	175-4174
1.5	6.7	0.5	A	293D155X9016A2TE3	175-4175
2.2	5.9	0.5	A	293D225X9016A2TE3	175-4176
2.2	4.6	0.5	B	293D225X9016B2TE3	175-4177
3.3	5	0.5	A	293D335X9016A2TE3	175-4179
4.7	5	0.8	A	293D475X9016A2TE3	175-4181
10	3	1.6	A	293D106X9016A2TE3	175-4182
10	2	1.6	B	293D106X9016B2TE3	175-4183
15	2	2.4	B	293D156X9016B2TE3	175-4184
15	1.5	2.4	C	293D156X9016C2TE3	175-4185
22	1.9	3.5	B	293D226X9016B2TE3	175-4186
22	1.4	3.5	C	293D226X9016C2TE3	175-4187
22	0.8	3.5	D	293D226X9016D2TE3	175-4188
33	1.8	5.3	B	293D336X9016B2TE3	175-4189
33	0.7	5.3	D	293D336X9016D2TE3	175-4190
47	1	7.5	C	293D476X9016C2TE3	175-4192
100	0.6	16	D	293D107X9016D2TE3	175-4193
100	0.6	16	E	293D107X9016E2TE3	175-4194
150	0.5	24	E	293D157X9016E2TE3	175-4195

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	250+	2K+
1	SMD175-4174	0.096	0.085	0.074	0.064	0.053
1.5	SMD175-4175	0.100	0.088	0.078	0.066	0.055
2.2	SMD175-4176	0.094	0.083	0.073	0.062	0.052
2.2	SMD175-4177	0.135	0.123	0.112	0.101	0.066
3.3	SMD175-4179	0.100	0.088	0.078	0.066	0.055

Order Multiple=5

16 Volt d.c.

µF	Order Code	5+	50+	100+	250+	2K+
4.7	SMD 175-4181	0.096	0.085	0.074	0.064	0.053
10	SMD 175-4182	0.129	0.118	0.106	0.083	0.059
10	SMD 175-4183	0.135	0.123	0.112	0.101	0.066
15	SMD 175-4184	0.169	0.146	0.136	0.113	0.079
15	SMD 175-4185	0.240	0.210	0.190	0.167	0.123
22	SMD 175-4186	0.157	0.147	0.136	0.115	0.084
22	SMD 175-4187	0.240	0.210	0.190	0.167	0.123
22	SMD 175-4188	0.380	0.340	0.310	0.270	0.200
33	SMD 175-4189	0.200	0.192	0.169	0.146	0.113
33	SMD 175-4190	0.380	0.340	0.310	0.270	0.200
47	SMD 175-4192	0.340	0.310	0.280	0.250	0.178
100	SMD 175-4193	0.510	0.470	0.430	0.350	0.270
100	SMD 175-4194	0.860	--	--	--	--
150	SMD 175-4195	1.130	1.040	0.930	0.790	0.590

20 Volt d.c.

µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
2.2	5.9	0.5	A	293D225X9020A2TE3	175-4196
2.2	3.5	0.5	B	293D225X9020B2TE3	175-4197
3.3	5.9	0.7	A	293D335X9020A2TE3	175-4198
3.3	3	0.7	B	293D335X9020B2TE3	175-4199
4.7	5	0.9	A	293D475X9020A2TE3	175-4200
4.7	2.9	0.9	B	293D475X9020B2TE3	175-4201
4.7	2.3	0.9	C	293D475X9020C2TE3	175-4202
10	2.1	2	B	293D106X9020B2TE3	175-4203
15	2.3	3	B	293D156X9020B2TE3	175-4204
33	1	6.6	C	293D336X9020C2TE3	175-4205
47	0.7	9.4	D	293D476X9020D2TE3	175-4206
47	0.6	9.4	E	293D476X9020E2TE3	175-4207
100	0.5	20	E	293D107X9020E2TE3	175-4209

Order Multiple=5

20 Volt d.c.

µF	Order Code	5+	50+	100+	250+	2K+
2.2	SMD 175-4196	0.115	--	--	--	--
2.2	SMD 175-4197	0.135	0.123	0.112	0.101	0.066
3.3	SMD 175-4198	0.100	0.088	0.078	0.066	0.055
3.3	SMD 175-4199	0.135	0.123	0.112	0.101	0.066
4.7	SMD 175-4200	0.124	--	--	--	--
4.7	SMD 175-4201	0.169	0.146	0.136	0.113	0.079
4.7	SMD 175-4202	0.240	0.210	0.190	0.167	0.123
10	SMD 175-4203	0.169	0.146	0.136	0.113	0.079
15	SMD 175-4204	0.240	0.210	0.189	0.156	0.122
33	SMD 175-4205	0.310	0.280	0.260	0.210	0.156
47	SMD 175-4206	0.350	0.320	0.290	0.250	0.187
47	SMD 175-4207	0.860	0.780	0.710	0.600	0.450
100	SMD 175-4209	1.060	0.970	0.870	0.740	0.550

25 Volt d.c.

µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
1	7.6	0.5	A	293D105X9025A2TE3	175-4211
1.5	6.7	0.5	A	293D155X9025A2TE3	175-4212
1.5	4.6	0.5	B	293D155X9025B2TE3	175-4213
2.2	6.3	0.6	A	293D225X9025A2TE3	175-4214
4.7	2.8	1.2	B	293D475X9025B2TE3	175-4215
4.7	2	1.2	C	293D475X9025C2TE3	175-4216
10	1	2.5	D	293D106X9025D2TE3	175-4217
15	1.2	3.8	C	293D156X9025C2TE3	175-4218
33	0.7	8.3	D	293D336X9025D2TE3	175-4219

Order Multiple=5

25 Volt d.c.

µF	Order Code	5+	50+	100+	250+	2K+
1	SMD 175-4211	0.100	0.088	0.078	0.066	0.055
1.5	SMD 175-4212	0.103	0.101	0.089	0.078	0.055
1.5	SMD 175-4213	0.135	0.123	0.112	0.101	0.066
2.2	SMD 175-4214	0.124	0.113	0.103	0.080	0.057
4.7	SMD 175-4215	0.156	--	--	--	--
4.7	SMD 175-4216	0.240	0.210	0.190	0.167	0.123
10	SMD 175-4217	0.380	0.340	0.310	0.270	0.200
15	SMD 175-4218	0.340	--	--	--	--
33	SMD 175-4219	0.710	0.630	0.580	0.490	0.350

35 Volt d.c.

µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
0.22	15	0.5	A	293D224X9035A2TE3	175-4220
0.47	10	0.5	A	293D474X9035A2TE3	175-4222
0.47	8	0.5	B	293D474X9035B2TE3	175-4223
1	7.5	0.5	A	293D105X9035A2TE3	175-4224
1	5	0.5	B	293D105X9035B2TE3	175-4225
1.5	3.8	0.5	C	293D155X9035C2TE3	175-4226
2.2	3.8	0.8	B	293D225X9035B2TE3	175-4227
2.2	2.9	0.8	C	293D225X9035C2TE3	175-4228
3.3	3.5	1.2	B	293D335X9035B2TE3	175-4229
3.3	2.1	1.2	C	293D335X9035C2TE3	175-4230
4.7	1.3	1.6	D	293D475X9035D2TE3	175-4231
10	1.6	3.5	C	293D106X9035C2TE3	175-4232
15	0.7	5.3	D	293D156X9035D2TE3	175-4234
22	0.6	7.7	D	293D226X9035D2TE3	175-4235

Order Multiple=5

35 Volt d.c.

µF	Order Code	5+	50+	100+	250+	2K+
0.22	SMD 175-4220	0.124	0.113	0.103	0.080	0.057
0.47	SMD 175-4222	0.124	0.113	0.103	0.080	0.057
0.47	SMD 175-4223	0.135	0.123	0.112	0.101	0.066
1	SMD 175-4224	0.115	--	--	--	--
1	SMD 175-4225	0.126	--	--	--	--
1.5	SMD 175-4226	0.240	0.210	0.190	0.167	0.123
2.2	SMD 175-4227	0.144	0.133	0.121	0.100	0.078
2.2	SMD 175-4228	0.240	0.210	0.190	0.167	0.123
3.3	SMD 175-4229	0.169	0.146	0.136	0.113	0.079
3.3	SMD 175-4230	0.240	0.210	0.190	0.167	0.123
4.7	SMD 175-4231	0.380	--	--	--	--
10	SMD 175-4232	0.270	0.250	0.230	0.189	0.134
15	SMD 175-4234	0.510	0.460	0.420	0.350	0.260
22	SMD 175-4235	0.720	0.640	0.590	0.500	0.360

50 Volt d.c.

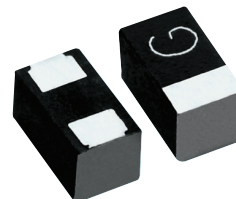
µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Case Size	Mfrs. List No.	Order Code
0.47	8.4	0.5	B	293D474X9050B2TE3	175-4236
1	6.7	0.5	B	293D105X9050B2TE3	175-4237
1	4.6	0.5	C	293D105X9050C2TE3	175-4238
2.2	2.9	1.1	C	293D225X9050C2TE3	175-4239
2.2	2.1	1.1	D	293D225X9050D2TE3	175-4240
3.3	2.5	1.7	C	293D335X9050C2TE3	175-4241
10	0.8	5	D	293D106X9050D2TE3	175-4242

Order Multiple=5

50 Volt d.c.

µF	Order Code	5+	50+	100+	250+	2K+
0.47	SMD 175-4236	0.190	0.177	0.155	0.133	0.100
1	SMD 175-4237	0.190	0.177	0.155	0.133	0.100
1	SMD 175-4238	0.310	0.290	0.260	0.220	0.167
2.2	SMD 175-4239	0.340	0.310	0.280	0.240	0.178
2.2	SMD 175-4240	0.600	0.550	0.490	0.430	0.310
3.3	SMD 175-4241	0.320	0.290	0.260	0.220	0.166
10	SMD 175-4242	0.990	0.890	0.800	0.680	0.500

298D Series - MicroTan™



- Solid tantalum chip capacitors
- MICROTan™ lead frame-less molded



Operating Temperature -55°C to +85°C

µF	L	W	H	Tolerance	Case Size	Mfrs. List No.	Order Code
4 Volt d.c.							
220	2.4	1.45	1.1	±20%	P	298D227X0004P2T	156-5124
6.3 Volt d.c.							
10	1.6	0.85	0.8	±10%	M	298D106X96R3M2T	156-5120
10 Volt d.c.							
10	1.6	0.85	0.8	±20%	M	298D106X0010M2T	156-5121
15	1.6	0.85	0.8	±20%	M	298D156X0010M2T	156-5122
16 Volt d.c.							
1	1.6	0.85	0.8	±10%	M	298D105X9016M2T	156-5119

Order Multiple=5

µF	Order Code	1+	50+	100+	500+	1K+
4 Volt d.c.						
220	SMD 156-5124	1.95	1.38	1.06	0.82	0.65
6.3 Volt d.c.						
10	SMD 156-5120	0.84	0.68	0.55	0.47	0.42
22	SMD 156-5123	0.74	0.59	0.49	0.43	0.42
10 Volt d.c.						
10	SMD 156-5121	1.11	0.88	0.72	0.63	0.54
15	SMD 156-5122	1.11	0.88	0.72	0.63	0.54
16 Volt d.c.						
1	SMD 156-5119	0.63	0.52	0.43	0.40	0.36

FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

TR3 Series



- Solid Tantalum Surface Mount Capacitors
- High Ripple Current carrying capability
- Low ESR

Operating Temperature -55°C to +125°C





Tantalum - Surface Mount - Vishay - continued

TR3 Series - continued

Case Code	Length	Width	Height	Reel Qty.	Case Code	Length	Width	Height	Reel Qty.
A	1.6	3.2	1.6	2000	D	2.8	7.3	4.3	500
B	1.9	3.5	2.8	2000	E	4	7.3	4.3	400
C	2.5	6	3.2	500					

6.3 Volt d.c. μ F	Max ESR @ 100kHz (Ω)	DC Leakage Current (μ A)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
10	1.5	0.6	$\pm 20\%$	A	TR3A106M6R3C1500	175-4041
33	0.6	2	$\pm 10\%$	A	TR3A336K6R3C0600	175-4042
47	0.5	2.8	$\pm 10\%$	B	TR3B476K6R3C0500	175-4043
47	0.25	2.8	$\pm 10\%$	C	TR3C476K6R3C0250	175-4044
68	0.5	4.1	$\pm 10\%$	B	TR3B686K6R3C0500	175-4045
100	0.4	6	$\pm 10\%$	B	TR3B107K6R3C0400	175-4046
100	0.5	6	$\pm 10\%$	B	TR3B107K6R3C0500	175-4047
100	1.5	6	$\pm 20\%$	B	TR3B107M6R3C1500	175-4048
100	0.15	6	$\pm 10\%$	C	TR3C107K6R3C0150	175-4049
100	0.3	6	$\pm 10\%$	C	TR3C107K6R3C0300	175-4050
330	0.05	19.8	$\pm 10\%$	D	TR3D337K6R3C0050	175-4052
330	0.045	19.8	$\pm 10\%$	D	TR3D337K6R3C0045	175-4053
470	0.065	28.2	$\pm 10\%$	E	TR3E477K6R3C0065	175-4054

Order Multiple=5

6.3 Volt d.c. μ F	Order Code	5+	50+	100+	250+	2K+
10	SMD175-4041	0.178	0.167	0.144	0.122	0.089
33	SMD175-4042	0.187	--	--	--	--
47	SMD175-4043	0.250	0.230	0.200	0.180	0.135
47	SMD175-4044	0.240	0.220	0.198	0.166	0.125
68	SMD175-4045	0.250	0.220	0.199	0.166	0.121
100	SMD175-4046	0.310	0.280	0.260	0.210	0.156
100	SMD175-4047	0.199	0.178	0.157	0.136	0.104
100	SMD175-4048	0.250	0.230	0.210	0.178	0.136
100	SMD175-4049	0.310	0.290	0.260	0.230	0.156
100	SMD175-4050	0.290	0.260	0.240	0.199	0.146
330	SMD175-4052	0.780	0.710	0.630	0.540	0.410
330	SMD175-4053	0.870	0.790	0.720	0.610	0.450
470	SMD175-4054	1.130	1.030	0.930	0.790	0.580

10 Volt d.c. μ F	Max ESR @ 100kHz (Ω)	DC Leakage Current (μ A)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
4.7	1.4	0.5	$\pm 10\%$	A	TR3A475K010C1400	175-4055
10	0.9	1	$\pm 10\%$	A	TR3A106K010C0900	175-4056
10	1.8	1	$\pm 10\%$	A	TR3A106K010C1800	175-4057
10	0.8	1	$\pm 10\%$	B	TR3B106K010C0800	175-4058
15	1	1.5	$\pm 10\%$	A	TR3A156K010C1000	175-4059
22	1	2.2	$\pm 10\%$	A	TR3A226K010C1000	175-4060
22	0.5	2.2	$\pm 10\%$	B	TR3B226K010C0500	175-4061
22	0.4	2.2	$\pm 10\%$	C	TR3C226K010C0400	175-4062
47	0.35	4.7	$\pm 10\%$	C	TR3C476K010C0350	175-4064
100	0.1	10	$\pm 10\%$	C	TR3C107K010C0100	175-4065
100	0.2	10	$\pm 10\%$	C	TR3C107K010C0200	175-4066
100	0.05	10	$\pm 10\%$	D	TR3D107K010C0050	175-4067
100	0.065	10	$\pm 10\%$	D	TR3D107K010C0065	175-4068
100	0.08	10	$\pm 10\%$	D	TR3D107K010C0080	175-4069
100	0.08	10	$\pm 20\%$	D	TR3D107M010C0080	175-4070
100	0.1	10	$\pm 10\%$	E	TR3E107K010C0100	175-4071
100	0.15	10	$\pm 10\%$	D	TR3D107K010C0150	175-4072
150	0.05	15	$\pm 10\%$	D	TR3D157K010C0050	175-4073
150	0.15	15	$\pm 10\%$	D	TR3D157K010C0150	175-4074
220	0.05	22	$\pm 10\%$	D	TR3D227K010C0050	175-4076
220	0.1	22	$\pm 10\%$	D	TR3D227K010C0100	175-4077
220	0.15	22	$\pm 10\%$	D	TR3D227K010C0150	175-4078
330	0.06	33	$\pm 20\%$	E	TR3E337M010C0060	175-4079
330	0.125	33	$\pm 20\%$	D	TR3D337M010C0125	175-4080
470	0.1	47	$\pm 10\%$	E	TR3E477K010C0100	175-4081

Order Multiple=5

10 Volt d.c. μ F	Order Code	5+	50+	100+	250+	2K+
4.7	SMD175-4055	0.168	0.157	0.145	0.122	0.089
10	SMD175-4056	0.200	0.192	0.169	0.146	0.102
10	SMD175-4057	0.178	0.167	0.144	0.122	0.089
10	SMD175-4058	0.187	--	--	--	--
15	SMD175-4059	0.189	0.177	0.156	0.133	0.100
22	SMD175-4060	0.170	0.146	0.135	0.113	0.090
22	SMD175-4061	0.200	0.178	0.156	0.134	0.100
22	SMD175-4062	0.250	0.220	0.200	0.167	0.122
47	SMD175-4064	0.260	0.240	0.210	0.178	0.134
100	SMD175-4065	0.300	--	--	--	--
100	SMD175-4066	0.310	--	--	--	--
100	SMD175-4067	0.870	0.790	0.720	0.600	0.450
100	SMD175-4068	0.660	0.600	0.550	0.460	0.340
100	SMD175-4069	0.480	0.440	0.390	0.330	0.250
100	SMD175-4070	0.480	0.440	0.390	0.330	0.250
100	SMD175-4071	1.260	1.150	1.040	0.880	0.640
100	SMD175-4072	0.450	0.420	0.360	0.310	0.240
150	SMD175-4073	0.810	0.750	0.660	0.570	0.430
150	SMD175-4074	0.460	0.420	0.370	0.320	0.240
220	SMD175-4076	0.990	0.910	0.810	0.690	0.510

Order Multiple=5

10 Volt d.c. μ F	Order Code	5+	50+	100+	250+	2K+
220	SMD175-4077	0.700	0.630	0.570	0.490	0.360
220	SMD175-4078	0.650	0.600	0.520	0.460	0.330
330	SMD175-4079	1.290	1.160	1.050	0.890	0.650
330	SMD175-4080	0.950	--	--	--	--
470	SMD175-4081	1.570	1.420	1.280	1.090	0.810

16 Volt d.c. μ F	Max ESR @ 100kHz (Ω)	DC Leakage Current (μ A)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
2.2	4	0.5	$\pm 10\%$	A	TR3A225K016C4000	175-4082
4.7	2	0.8	$\pm 10\%$	A	TR3A475K016C2000	175-4083
10	0.6	1.6	$\pm 10\%$	C	TR3C106K016C0600	175-4084
10	0.8	1.6	$\pm 10\%$	B	TR3B106K016C0800	175-4085
10	1.7	1.6	$\pm 10\%$	A	TR3A106K016C1700	175-4086
22	0.375	3.5	$\pm 10\%$	C	TR3C226K016C0375	175-4088
22	0.6	3.5	$\pm 10\%$	B	TR3B226K016C0600	175-4089
47	0.2	7.5	$\pm 10\%$	D	TR3D476K016C0200	175-4100
47	0.35	7.5	$\pm 10\%$	C	TR3C476K016C0350	175-4090
47	0.35	7.5	$\pm 20\%$	C	TR3C476M016C0350	175-4091
68	0.07	10.9	$\pm 20\%$	D	TR3D686M016C0070	175-4092
100	0.1	16	$\pm 10\%$	D	TR3D107K016C0100	175-4093
100	0.125	16	$\pm 10\%$	D	TR3D107K016C0125	175-4094
100	0.15	16	$\pm 10\%$	D	TR3D107K016C0150	175-4095
150	0.1	24	$\pm 10\%$	D	TR3D157K016C0100	175-4096
220	0.1	35.2	$\pm 10\%$	E	TR3E227K016C0100	175-4097

Order Multiple=5

16 Volt d.c. μ F	Order Code	5+	50+	100+	250+	2K+
2.2	SMD175-4082	0.158	0.146	0.135	0.112	0.079
4.7	SMD175-4083	0.168	0.157	0.134	0.122	0.089
10	SMD175-4084	0.210	0.194	0.171	0.150	0.107
10	SMD175-4085	0.199	0.176	0.166	0.143	0.100
10	SMD175-4086	0.162	0.141	0.130	0.109	0.087
22	SMD175-4088	0.240	0.220	0.198	0.166	0.125
22	SMD175-4089	0.210	0.194	0.172	0.151	0.108
47	SMD175-4100	0.330	0.300	0.270	0.230	0.166
47	SMD175-4090	0.300	0.270	0.250	0.210	0.157
47	SMD175-4091	0.280	0.250	0.230	0.199	0.146
68	SMD175-4092	0.800	0.740	0.650	0.560	0.420
100	SMD175-4093	0.670	0.600	0.540	0.460	0.340
100	SMD175-4094	0.500	0.460	0.420	0.350	0.270
100	SMD175-4095	0.440	0.400	0.350	0.300	0.220
150	SMD175-4096	0.950	0.870	0.780	0.660	0.490
220	SMD175-4097	1.050	0.960	0.870	0.740	0.550

20 Volt d.c. μ F	Max ESR @ 100kHz (Ω)	DC Leakage Current (μ A)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
4.7	1.8	0.9	$\pm 10\%$	A	TR3A475K020C1800	175-4101
10	1	2	$\pm 10\%$	B	TR3B106K020C1000	175-4102
10	0.5	2	$\pm 10\%$	C	TR3C106K020C0500	175-4103
47	0.175	9.4	$\pm 10\%$	D	TR3D476K020C0175	175-4104

Order Multiple=5

20 Volt d.c. μ F	Order Code	5+	50+	100+	250+	2K+
4.7	SMD175-4101	0.178	0.167	0.144	0.122	0.089
10	SMD175-4102	0.210	0.191	0.169	0.146	0.112
10	SMD175-4103	0.260	0.240	0.210	0.179	0.135
47	SMD175-4104	0.470	--	--	--	--

25 Volt d.c. μ F	Max ESR @ 100kHz (Ω)	DC Leakage Current (μ A)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
10	0.3	2.5	$\pm 10\%$	C	TR3C106K025C0300	175-4106
10	0.5	2.5	$\pm 10\%$	C	TR3C106K025C0500	175-4107
10	0.6	2.5	$\pm 10\%$	C	TR3C106K025C0600	175-4108
10	0.4	2.5	$\pm 10\%$	D	TR3D106K025C0400	175-4109
15	0.275	3.8	$\pm 10\%$	D	TR3D156K025C0275	175-4110
22	0.4	5.5	$\pm 10\%$	C	TR3C226K025C0400	175-4111
22	0.3	5.5	$\pm 20\%$	D	TR3D226M025C0300	175-4112
33	0.2	8.3	$\pm 10\%$	D	TR3D336K025D0200	175-4113
33	0.4	8.3	$\pm 10\%$	D	TR3D336K025C0400	175-4114
33	0.175	6.6	$\pm 10\%$	E	TR3E336K025C0175	175-4115
47	0.15	11.8	$\pm 10\%$	D	TR3D476K025C0150	175-4116
47	0.25	11.8	$\pm 10\%$	D	TR3D476K025C0250	175-4118

Order Multiple=5

||
||
||

35 Volt d.c. µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
1	3	0.5	± 10%	A	TR3A105K035C3000	175-4119
2.2	2.5	0.8	± 10%	B	TR3B225K035C2500	175-4120
4.7	0.6	1.6	± 10%	C	TR3C475K035C0600	175-4121
10	0.45	3.5	± 10%	C	TR3C106K035C0450	175-4122
10	0.125	3.5	± 10%	D	TR3D106K035C0125	175-4123
10	0.25	3.5	± 10%	D	TR3D106K035C0250	175-4124
10	0.26	3.5	± 10%	D	TR3D106K035C0260	175-4125
10	0.4	3.5	± 10%	D	TR3D106K035C0400	175-4126
10	200		± 10%		TR3E106K035C0200	175-4127
10	250		± 10%		TR3E106K035C0250	175-4128
22	0.3	7.7	± 10%	D	TR3D226K035C0300	175-4131
22	0.4	7.7	± 20%	D	TR3D226M035C0400	175-4132
22	0.2	7.7	± 10%	E	TR3E226K035C0200	175-4133
22	0.26	7.7	± 10%	E	TR3E226K035C0260	175-4134
22	0.3	7.7	± 10%	E	TR3E226K035C0300	175-4135

Order Multiple=5

35 Volt d.c. µF	Order Code	5+	50+	100+	250+	2K+
1	SMD 175-4119	0.147	0.136	0.126	0.105	0.074
2.2	SMD 175-4120	0.200	0.177	0.167	0.134	0.101
4.7	SMD 175-4121	0.300	0.270	0.250	0.210	0.158
10	SMD 175-4122	0.500	0.460	0.420	0.350	0.260
10	SMD 175-4123	0.650	0.600	0.540	0.460	0.340
10	SMD 175-4124	0.520	0.470	0.430	0.350	0.270
10	SMD 175-4125	0.520	0.470	0.430	0.350	0.270
10	SMD 175-4126	0.350	0.320	0.290	0.260	0.189
10	SMD 175-4127	0.710	0.640	0.580	0.490	0.360
10	SMD 175-4128	0.640	0.580	0.520	0.450	0.330
22	SMD 175-4131	0.600	0.550	0.490	0.430	0.310
22	SMD 175-4132	0.650	--	--	--	--
22	SMD 175-4133	0.930	0.850	0.760	0.640	0.480
22	SMD 175-4134	0.760	0.700	0.620	0.520	0.390
22	SMD 175-4135	0.570	0.530	0.470	0.400	0.290

50 Volt d.c. µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
4.7	0.3	2.4	± 10%	D	TR3D475K050C0300	175-4136
4.7	0.3	2.4	± 10%	E	TR3E475K050C0300	175-4137
10	0.3	5	± 20%	E	TR3E106M050C0300	175-4138
10	0.4	5	± 10%	E	TR3E106K050C0400	175-4139

Order Multiple=5

50 Volt d.c. µF	Order Code	5+	50+	100+	250+	500+
4.7	SMD 175-4136	1.04	0.94	0.85	0.73	0.53
4.7	SMD 175-4137	0.98	0.89	0.80	0.70	0.50
10	SMD 175-4138	1.17	1.05	0.95	0.81	0.60
10	SMD 175-4139	1.20	1.09	0.98	0.84	0.62

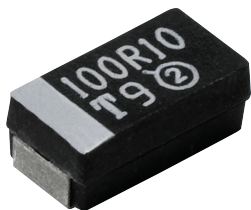
63 Volt d.c. µF	Max ESR @ 100kHz (Ω)	DC Leakage Current (µA)	Capacitance Tolerance	Case Size	Mfrs. List No.	Order Code
4.7	0.7	3	± 20%	D	TR3D475M063DC0700	175-4140
10	0.6	6.3	± 20%	E	TR3E106M063EC0600	175-4141

545055

Order Multiple=5

63 Volt d.c. µF	Order Code	5+	50+	100+	250+	500+
4.7	SMD 175-4140	0.78	0.71	0.63	0.55	0.40
10	SMD 175-4141	1.94	1.76	1.58	1.35	1.01

T83 Series



New **VISHAY**

- Weibull Grading and Surge Current Test options
- Standard and Low ESR options

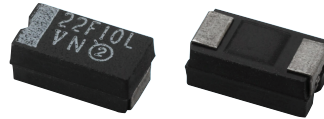
Operating Temperature -55°C to +125°C
Capacitance Tolerance ± 10%

Dimensions µF H W D	Max. DC Leakage Current (µA)	Max. ESR @ 25°C, 100 kHz (Ω)	Reel Qty.	Mfrs. List No.	Order Code
6.3 Volt d.c.					
47 1.9 3.5 2.8	2.8	2	2000	T83B476K6R3EBZL	175-4243
16 Volt d.c.					
10 2.5 6 3.2	16	1.8	500	T83C106K016EBZS	175-4244
25 Volt d.c.					
47 2.8 7.3 4.3	11.8	0.6	500	T83D476K025EBZL	175-4246
35 Volt d.c.					
22 4 7.3 4.3	7.7	0.6	400	T83E226K035EBZL	175-4247

545069

Order Multiple=5 µF	Order Code	5+	50+	100+	250+	2K+
6.3 Volt d.c.						
47	SMD 175-4243	6.45	5.86	5.28	4.49	3.32
16 Volt d.c.						
10	SMD 175-4244	5.72	5.20	4.68	3.98	2.94
25 Volt d.c.						
47	SMD 175-4246	8.67	7.88	7.10	6.04	4.47
35 Volt d.c.						
22	SMD 175-4247	8.03	7.30	6.57	5.59	4.13

893D Series



New **VISHAY**

- Solid Tantalum Chip Capacitors

Operating Temperature -55°C to +125°C Reel Qty. 500
Capacitance Tolerance ± 20%

Dimensions µF H W D	Max. DC Leakage Current (µA)	Max. ESR @ 25°C, 100 kHz (Ω)	Mfrs. List No.	Order Code
16 Volt d.c.				
10 2.5 6 3.2	1.6	1.8	893D106X0016C2TE3	175-4032
20 Volt d.c.				
22 2.8 7.3 4.3	4.4	0.7	893D226X0020D2TE3	175-4033
25 Volt d.c.				
47 2.5 6 3.2	1.2	1.9	893D475X0025C2TE3	175-4034
35 Volt d.c.				
2.2 2.5 6 3.2	0.8	2.9	893D225X0035C2TE3	175-4035
10 2.8 7.3 4.3	3.5	0.8	893D106X0035D2TE3	175-4036
50 Volt d.c.				
1 2.5 6 3.2	0.5	4.4	893D105X0050C2TE3	175-4037
3.3 2.8 7.3 4.3	1.7	1.6	893D335X0050D2TE3	175-4039

545050

µF	Order Code	1+	10+	100+	250+	500+
16 Volt d.c.						
10	SMD 175-4032	1.89	1.72	1.55	1.32	0.97
20 Volt d.c.						
22	SMD 175-4033	2.75	2.50	2.25	1.92	1.42
25 Volt d.c.						
4.7	SMD 175-4034	1.72	1.57	1.41	1.20	0.89
35 Volt d.c.						
2.2	SMD 175-4035	1.72	1.57	1.41	1.20	0.89
10	SMD 175-4036	2.75	2.50	2.25	1.92	1.42
50 Volt d.c.						
1	SMD 175-4037	0.67	0.61	0.55	0.46	0.34
3.3	SMD 175-4039	3.54	3.21	2.89	2.46	1.82

Conformally Coated



- High CV for case size
- Low leakage current
- To compliment the standard 595D series, 591D offers low ESR, 597D ultra low ESR with dual anode and 592D offers a low profile package

Operating Temperature -55°C to +125°C

Dimensions µF L W H	Tolerance	Case Size	Mfrs. List No.	Order Code
4 Volt d.c.				
470 7.3 4.4 2	± 20%	V	597D477X0004V2T	156-5106
680 7.3 4.4 4	± 20%	E	597D687X0004E2T	156-5109
1000 7.3 4.4 4	± 20%	E	597D108X0004E2T	156-5094
1500 7.3 6 3.6	± 20%	R	597D158X0004R2T	156-5098
6.3 Volt d.c.				
15 3.5 1.8 1.4	± 10%	A	595D156X96R3A2T	116-6792
22 3.8 2.7 1.85	± 10%	B	595D226X96R3B2T	116-6795
33 4 2.8 1.2	± 20%	B	591D336X06R3B2T15H	156-5083
100 6.9 3.2 2.5	± 10%	C	595D107X96R3C2T	116-6796
330 7.3 4.4 2	± 20%	V	597D337X06R3V2T	156-5105
470 7.1 3.2 2	± 20%	C	592D477X06R3C2T20H	156-5093
470 7.3 4.4 4	± 20%	E	597D477X06R3E2T	156-5108
680 7.2 6 2	± 20%	R	592D687X06R3R2T20H	156-5092
680 7.3 4.4 4	± 20%	E	597D687X06R3E2T	156-5111
1000 14.5 7.37 2	± 20%	X	592D108X06R3X2T20H	156-5090
1000 7.2 6 2	± 20%	R	592D108X06R3R2T20H	156-5091
1000 7.3 6 3.6	± 20%	R	597D108X06R3R2T	156-5097
1500 14.5 7.37 2	± 20%	X	592D158X06R3X2T20H	156-5088
1500 7.2 6 2	± 20%	R	592D158X06R3R2T20H	156-5089
2200 14.5 7.37 2	± 20%	X	592D228X06R3X2T20H	156-5087
10 Volt d.c.				
2.2 2 8 1.2	± 10%	T	595D225X9010T2T	116-6800
10 3.5 1.8 1.4	± 10%	A	595D106X9010A2T	116-6801
10 3.7 1.8 1.2	± 20%	T	591D106X0010A2T15H	156-5082
68 6.9 3.2 2.5	± 10%	C	595D686X9010C2T	116-6804

Tantalum - Surface Mount - Vishay - continued

Conformally Coated - continued

μF	Dimensions			Tolerance	Case Size	Mfrs. List No.	Order Code
	L	W	H				
10 Volt d.c.							
330	7.3	4.4	4	± 20%	E	597D337X0010E2T	156-5104
470	7.3	4.4	4	± 20%	E	597D477X0010E2T	156-5107
680	7.3	6	3.6	± 20%	R	597D687X0010R2T	156-5110
16 Volt d.c.							
4.7	3.5	1.8	1.4	± 10%	A	595D475X9016A2T	116-6805
10	3.8	2.7	1.8	± 10%	B	595D106X9016B2T	116-6806
10	6.8	3.2	1.5	± 10%	C	592D106X9016C2T15H	116-6807
100	7.2	4.3	2.8	± 10%	D	595D107X9016D2T	116-6809
150	6.9	8	3.5	± 10%	R	595D157X9016R2T	116-6810
220	7.3	4.4	4	± 20%	E	597D227X0016E2T	156-5101
20 Volt d.c.							
1	2	1.2	1.2	± 10%	T	595D105X9020T2T	116-6811
2.2	3.5	1.4	1.2	± 10%	A	595D225X9020A2T	116-6812
25 Volt d.c.							
2.2	3.7	2.6	1.5	± 10%	A	592D225X9025B2T15H	116-6817
15	6.9	3.2	2.5	± 10%	A	595D156X9025C2T	116-6818
68	7.2	6	2	± 10%	R	591D686X9025R2T20H	156-5086
68	7.3	6	3.6	± 20%	R	597D686X0025R2T	156-5117
35 Volt d.c.							
1	3.5	1.8	1.4	± 10%	A	595D105X9035A2T	116-6819
1	2.8	1.5	1.2	± 10%	A	592D105X9035A2T15H	116-6820
2.2	3.8	2.7	1.8	± 10%	B	595D225X9035B2T	116-6821
15	7.2	4.3	2.8	± 10%	D	595D156X9035D2T	116-6823
33	6.9	8	3.5	± 10%	R	595D336X9035R2T	116-6824
47	7.3	6	3.6	± 20%	R	597D476X0035R2T	156-5116
50 Volt d.c.							
22	7.3	6	3.6	± 20%	R	597D226X0050R2T	156-5100
33	7.3	6	4.7	± 20%	F	597D336X0050F2T	156-5103
47	7.3	6	6	± 20%	Z	597D476X0050Z2T	156-5113
63 Volt d.c.							
22	7.3	6	4.7	± 20%	F	597D226X0063F2T	156-5112

Price Each

μF	Order Code	1+	50+	100+	500+	1K+
4 Volt d.c.						
470	SMD156-5106	2.24	1.98	1.65	1.32	1.08
680	SMD156-5109	3.63	3.13	2.54	2.32	2.18
1000	SMD156-5094	4.36	3.75	3.06	2.80	2.27
1500	SMD156-5098	5.12	4.54	3.65	2.93	2.39
6.3 Volt d.c.						
15	SMD116-6792	1.59	1.21	1.00	0.81	0.71
22	SMD116-6795	1.58	1.34	1.14	1.04	0.98
33	SMD156-5083	0.95	0.84	0.76	0.68	0.63
100	SMD116-6796	3.80	2.86	2.35	1.95	1.69
330	SMD156-5105	2.85	2.44	1.95	1.51	1.20
470	SMD156-5093	2.67	2.26	2.12	1.88	1.58
470	SMD156-5108	5.95	5.13	4.07	3.15	2.50
680	SMD156-5092	7.19	6.13	5.70	5.02	4.04
680	SMD156-5111	4.59	3.89	3.13	2.52	2.05
1000	SMD156-5090	5.44	4.78	4.40	3.54	2.90
1000	SMD156-5091	6.59	4.66	3.57	2.77	2.22
1000	SMD156-5097	6.55	5.63	4.38	3.39	2.69
1500	SMD156-5088	6.73	5.74	5.37	4.72	3.81
1500	SMD156-5089	6.28	5.52	4.99	4.01	3.28
2200	SMD156-5087	8.46	7.25	6.73	5.76	4.57
10 Volt d.c.						
2.2	SMD116-6800	2.60	1.97	1.59	1.32	1.15
10	SMD116-6801	1.22	0.93	0.76	0.62	0.54
10	SMD156-5082	2.33	1.65	1.26	0.98	0.78
68	SMD116-6804	3.80	2.86	2.35	1.95	1.69
330	SMD156-5104	6.01	5.15	4.10	3.17	2.52
470	SMD156-5107	5.01	4.42	3.74	3.13	2.55
680	SMD156-5110	6.55	5.63	4.57	4.17	3.33
16 Volt d.c.						
4.7	SMD116-6805	1.59	1.21	1.00	0.81	0.71
10	SMD116-6806	1.67	1.27	1.04	0.85	0.75
10	SMD116-6807	3.26	2.47	1.99	1.69	1.43
100	SMD116-6809	5.08	3.84	3.13	2.62	2.25
150	SMD116-6810	8.34	6.30	5.14	4.31	3.68
220	SMD156-5101	5.95	5.13	3.94	3.06	2.42
20 Volt d.c.						
1	SMD116-6811	2.93	2.23	1.80	1.51	1.28
2.2	SMD116-6812	1.59	1.21	1.00	0.81	0.71
25 Volt d.c.						
2.2	SMD116-6817	0.87	0.70	0.60	0.51	0.44
15	SMD116-6818	2.04	1.74	1.49	1.39	1.28
68	SMD156-5086	2.25	2.02	1.82	1.63	1.47
68	SMD156-5117	5.43	4.79	3.99	3.21	2.62

μF	Order Code	1+	50+	100+	500+	1K+
35 Volt d.c.						
1	SMD116-6819	1.16	0.95	0.81	0.69	0.61
1	SMD116-6820	1.58	1.21	0.99	0.80	0.71
2.2	SMD116-6821	1.67	1.27	1.04	0.85	0.75
15	SMD116-6823	5.08	3.84	3.13	2.62	2.25
33	SMD116-6824	8.34	6.30	5.14	4.31	3.68
47	SMD156-5116	7.19	6.14	5.02	4.23	3.36
50 Volt d.c.						
22	SMD156-5100	8.03	6.89	5.63	4.69	3.72
33	SMD156-5103	10.62	9.01	6.89	5.34	4.23
47	SMD156-5113	10.31	8.83	7.19	6.30	5.00
63 Volt d.c.						
22	SMD156-5112	12.55	10.75	8.76	7.39	5.87

594D Series



New



- Large capacitance rating range
- Lowest ESR for a surface mount tantalum chip capacitor
- Case code compatibility with EIA 535BAC and CECC30801 molded chips

Operating temperature: -55°C to +85°C
 Tolerance: ± 10%

μF	ESR Max. (mΩ) @ 100kHz	DC Leakage Current (μA)	Dimensions (mm)			Reel Qty.	Mfrs. List No.	Order Code
			H	W	D			
6.3 Volt d.c.								
120	0.085	6.3	2.5	3.2	7.1	500	594D127X96R3C2T	175-3997
1000	0.03	63	3.5	6	7.2	600	594D108X96R3R2T	175-3998
10 Volt d.c.								
47	0.4	4.7	1.9	2.8	4	2000	594D476X9010B2T	175-3999
68	0.1	6.8	2.5	3.2	7.1	500	594D686X9010C2T	175-4000
680	0.045	68	3.5	6	7.2	600	594D687X9010R2T	175-4001
16 Volt d.c.								
47	0.11	7.5	2.5	3.2	7.1	500	594D476X9016C2T	175-4003
100	0.08	16	2.5	3.2	7.1	500	594D107X9016C2T	175-4004
100	0.075	16	1.9	4.3	7.5	500	594D107X9016D2T	175-4005
20 Volt d.c.								
120	0.08	24	3.5	6	7.2	600	594D127X9020R2T	175-4006
25 Volt d.c.								
100	0.09	25	3.5	6	7.2	600	594D107X9025R2T	175-4007
35 Volt d.c.								
33	0.2	11.6	3.5	6	7.2	600	594D336X9035R2T	175-4008
47	0.2	16.6	3.5	6	7.2	600	594D476X9035R2T	175-4009
50 Volt d.c.								
4.7	0.8	2.4	2.5	3.2	7.1	500	594D475X9050C2T	175-4010
6.8	0.45	3.4	1.9	4.3	7.5	500	594D685X9050D2T	175-4011

Price Each

μF	Order Code	1+	10+	100+	250+	500+
6.3 Volt d.c.						
120	SMD175-3997	1.88	1.71	1.54	1.31	0.97
1000	SMD175-3998	7.17	6.51	5.87	4.99	3.69
10 Volt d.c.						
47	SMD175-3999	1.49	1.35	1.22	1.04	0.77
68	SMD175-4000	1.88	1.71	1.54	1.31	0.97
680	SMD175-4001	7.17	6.51	5.87	4.99	3.69
16 Volt d.c.						
47	SMD175-4003	1.88	1.71	1.54	1.31	0.97
100	SMD175-4004	2.28	2.07	1.86	1.58	1.18
100	SMD175-4005	2.66	2.42	2.18	1.86	1.37
20 Volt d.c.						
120	SMD175-4006	5.98	5.44	4.90	4.17	3.08
25 Volt d.c.						
100	SMD175-4007	7.17	6.51	5.87	4.99	3.69
35 Volt d.c.						
33	SMD175-4008	5.98	5.44	4.90	4.17	3.08
47	SMD175-4009	7.17	6.51	5.87	4.99	3.69
50 Volt d.c.						
4.7	SMD175-4010	2.07	1.88	1.70	1.45	1.07
6.8	SMD175-4011	2.93	2.66	2.40	2.05	1.51

Technical information at your fingertips

Over 420,000 technical datasheets available online.

Visit www.farnell.co.uk and look for the Tech Info heading in your search results.



T95 Series



New



- High reliability; Weibull grading available
 - Standard and Low ESR options
- Operating Temperature -55°C to +85°C
 Capacitance Tolerance ± 10%
 Reel Qty 600

Dimensions	Max. DC	Max. ESR @	Mfrs. List No.	Order Code
µF H W D	Leakage Current (µA)	25°C, 100 kHz (Ω)		
10 Volt d.c.				
330 1.3 1.83 7.2	33	0.13	T95R337K010ESAL	175-4248
50 Volt d.c.				
15 1.3 1.83 7.2	7.5	0.4	T95R156K050ESAL	175-4249
22 1.3 1.83 7.2	11	0.39	T95R226K050EABL	175-4250

Order Multiple=5

Price Each

µF	Order Code	5+	50+	100+	250+	600+
10 Volt d.c.						
330	SMD 175-4248▲	8.14	7.40	6.66	5.67	4.19
50 Volt d.c.						
15	SMD 175-4249▲	8.53	7.76	6.98	5.95	4.40
22	SMD 175-4250▲	14.02	12.75	11.47	9.77	7.22

ESR (mΩ)				
470	35	D	NOSD477M002R0035	165-8046
470	100	E	NOSE477M002R0100	165-8052
4 Volt d.c.				
33	600	B	NOSB336M004R0600	165-8031
47	300	C	NOSC476M004R0300	165-8038
100	70	C	NOSC107M004R0070	113-5164
100	100	X	NOSX107M004R0100	113-5165
150	90	C	NOSC157M004R0090	113-5166
220	60	D	NOSD227M004R0060	113-5171
220	40	D	NOSD227M004R0040	165-8041
330	35	D	NOSD337M004R0035	165-8045
330	100	D	NOSD337M004R0100	113-5172
470	100	D	NOSD477M004R0100	165-8047
470	75	E	NOSE477M004R0075	113-5173
6.3 Volt d.c.				
10	800	A	NOSA106M006R0800	143-2318
10	1000	A	NOSA106M006R1000	165-8029
10	2000	A	NOSA106M006R2000	113-5175
22	600	B	NOSB226M006R0600	113-5176
33	600	B	NOSB336M006R0600	113-5177
33	250	W	NOSW336M006R0250	113-5178
47	300	C	NOSC476M006R0300	143-2324
68	200	C	NOSC686M006R0200	113-5179
68	100	Y	NOSY686M006R0100	165-8056
100	150	C	NOSC107M006R0150	143-2323
100	80	D	NOSD107M006R0080	113-5180
150	50	D	NOSD157M006R0050	165-8039
150	70	D	NOSD157M006R0070	113-5182
220	45	D	NOSD227M006R0045	165-8042
220	60	D	NOSD227M006R0060	143-2327
220	100	D	NOSD227M006R0100	113-5183
220	100	E	NOSE227M006R0100	165-8048
330	100	E	NOSE337M006R0100	165-8051
470	75	V	NOSV477M006R0075	113-5186

T97 Series



New



- Ultra-low ESR
 - High reliability; Weibull failure rate grading available
- Operating Temperature -55°C to +85°C
 Capacitance Tolerance ± 10%
 Rating Voltage 50V
 Reel Qty 300

Dimensions	Max. DC	Max. ESR @	Mfrs. List No.	Order Code
µF H W D	Leakage Current (µA)	25°C, 100 kHz (Ω)		
50 Volt d.c.				
22 3.6 6 7.3	11	0.17	T97R226K050ESB	175-4251
33 4.7 6 7.3	17	0.15	T97F336K050EAA	175-4252

Order Multiple=5

Price Each

µF	Order Code	5+	50+	100+	250+	300+
50 Volt d.c.						
22	SMD 175-4251▲	8.59	7.81	7.03	5.99	4.42
33	SMD 175-4252▲	12.73	11.57	10.41	8.87	6.56

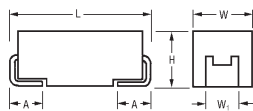
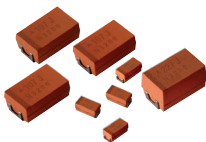
µF	Order Code	5+	50+	100+	500+	1K+
1.8 Volt d.c.						
100	SMD 165-8030● RL	0.45	0.40	0.39	0.33	0.29
100	SMD 165-8053● RL	0.87	0.77	0.72	0.63	0.59
220	SMD 165-8034● RL	0.76	0.72	0.65	0.57	0.52
220	SMD 165-8055● RL	1.15	1.08	0.97	0.87	0.77
2.5 Volt d.c.						
47	SMD 165-8032● RL	0.40	0.39	0.36	0.31	0.29
68	SMD 165-8054● RL	0.93	0.87	0.76	0.66	0.63
150	SMD 165-8033● RL	0.76	0.72	0.65	0.57	0.52
220	SMD 165-8035● RL	0.75	0.66	0.63	0.57	0.49
330	SMD 165-8043● RL	2.41	2.24	2.04	1.79	1.63
330	SMD 165-8044● RL	0.73	0.68	0.62	0.54	0.50
470	SMD 165-8046● RL	1.57	1.46	1.33	1.17	1.06
470	SMD 165-8052● RL	1.88	1.77	1.61	1.40	1.28
4 Volt d.c.						
33	SMD 165-8031● RL	0.40	0.39	0.36	0.31	0.29
47	SMD 165-8038● RL	0.65	0.60	0.54	0.48	0.42
100	SMD 113-5164● RL	0.71	0.64	0.58	0.55	0.53
100	SMD 113-5165● RL	1.56	1.38	1.24	1.13	1.06
150	SMD 113-5166● RL	0.43	0.41	0.40	0.38	0.36
220	SMD 165-8041● RL	2.41	2.24	2.04	1.79	1.63
220	SMD 113-5171● RL	0.91	0.80	0.74	0.70	0.68
330	SMD 165-8045● RL	2.41	2.24	2.04	1.79	1.63
470	SMD 165-8047● RL	1.36	1.25	1.15	1.03	0.93
330	SMD 113-5172● RL	2.22	2.00	1.79	1.72	1.61
470	SMD 113-5173● RL	2.04	1.83	1.68	1.61	1.54
6.3 Volt d.c.						
10	SMD 143-2318●	0.44	0.35	0.31	0.27	0.24
10	SMD 165-8029● RL	0.36	0.33	0.29	0.27	0.25
10	SMD 113-5175● RL	0.50	0.43	0.37	0.35	0.34
22	SMD 113-5176● RL	0.44	0.41	0.38	0.36	0.34
33	SMD 113-5177● RL	0.29	0.26	0.24	0.22	0.21
33	SMD 113-5178● RL	0.44	0.41	0.39	0.35	0.33
47	SMD 143-2324●	0.68	0.55	0.48	0.42	0.37
68	SMD 113-5179● RL	0.40	0.35	0.32	0.30	0.28
68	SMD 165-8056● RL	1.51	1.36	1.25	1.09	1.02
100	SMD 143-2323●	1.06	0.86	0.74	0.66	0.57
100	SMD 113-5180● RL	1.28	1.18	1.06	1.01	0.99
150	SMD 165-8039● RL	2.41	2.24	2.04	1.79	1.63
150	SMD 113-5182● RL	0.91	0.80	0.74	0.70	0.68
220	SMD 165-8042● RL	2.32	--	--	--	--
220	SMD 143-2327●	2.01	1.82	1.57	1.39	1.21
220	SMD 113-5183● RL	2.29	2.00	1.83	1.73	1.67
220	SMD 165-8048● RL	1.62	1.51	1.35	1.20	1.11
330	SMD 165-8051● RL	1.81	1.70	1.55	1.35	1.23
470	SMD 113-5186● RL	2.99	2.70	2.46	2.34	2.24

Niobium Oxide - AVX

Niobium Oxide - Low ESR



OxiCap™ NOS Series



- Niobium Oxide surface mount capacitors
- Low ESR
- Reduced voltage derating
- Failed OxiCap™ will not burn up to category voltage

Operating temperature	-55°C to 125°C			Tolerance			±20%
Case Size	L	W	H	Case Size	±0.2	+0.2 -0.1	+0.2 -0.1
A	±0.2	+0.2 -0.1	+0.2 -0.1	E	7.3	4.3	4.1
B	3.2	1.6	1.6	W	6	3.2	1.5
C	3.5	2.8	1.9	X	7.3	4.3	1.5
D	6.0	3.2	2.6	Y	7.3	4.3	2
	7.3	4.3	2.9				

µF	ESR (mΩ) @ 100kHz	Case	Mfrs. List No.	Order Code
1.8 Volt d.c.				
100	350	B	NOSB107M001R0350	165-8030
100	150	W	NOSW107M001R0150	165-8053
220	125	C	NOSC227M001R0125	165-8034
220	100	X	NOSX227M001R0100	165-8055
2.5 Volt d.c.				
47	500	B	NOSB476M002R0500	165-8032
68	150	W	NOSW686M002R0150	165-8054
150	150	C	NOSC157M002R0150	165-8033
220	125	C	NOSC227M002R0125	165-8035
330	35	D	NOSD337M002R0035	165-8043
330	100	D	NOSD337M002R0100	165-8044

Over half a million products available online

Passive Components

7

Capacitors



Niobium Oxide - AVX - continued

AVX Engineering Designer Kits Tantalum and Oxicap™ (Niobium Oxide)



A range of 12 engineering kits giving the user maximum range choice with enough samples to be useful during test and development. Once used, each product in the kits can be replenished through Farnell InOne using the order code printed on each sample bag. Also included with the kit is a full range card and a data CD Rom.

Description	No. of Values	Resistance Values	Mfrs List No.	Order Code
TPS + TPM series	28 Values	1µF to 1000µF	TANTLOWESR001F	113-5224
TAJ series	30 Values	4.7µF to 1000µF	TANTTAJ001F	113-5043
TPM series	22 values	22µF to 1500µF	TANTTPM001F	113-5239
TPS series	30 Values	1µF to 1000µF	TANTTPS001F	113-5096
Low profile TAJ, TAC + NOJ series	30 Values	0.47µF to 330µF	TANTLOWPROF001F	113-5068
TPS, TPM, NOS + NOM series	30 Values	10µF to 1500µF	TANTPOWER001F	113-5194
NOS series	30 Values	10µF to 1000µF	OXICAPNOS001F	113-5151
NOJ series	30 Values	4.7µF to 1000µF	OXICAPNOJ001F	113-5126
NOS + NOJ series	22 values	4.7µF to 1000µF	OXICAPMIX001F	113-5187
TCJ series	12 values	22µF to 100µF	TANTTCJ001F	113-5225

424868

Order Code	Price Each	
	1+	3+
113-5224	80.07	67.78
113-5043	83.27	70.49
113-5239	62.37	52.76
113-5096	59.97	50.73
113-5068	80.07	67.78
113-5194	83.27	70.49
113-5151	34.24	31.63
113-5126	36.96	31.26
113-5187	34.24	31.63
113-5225	59.97	50.73

Tantalum - Leaded - Multicomp

CB Series



- General purpose
- Wide temperature range
- Resin dipped tantalum capacitors

Lead dia. = 0.5, Lead pitch = 5.0

Operating temperature 125-55°C to +55°C to +85°C (6.3V) Tolerance ±20%

6.3 Volt d.c.	Dimensions	DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
µF	H Dia.	Current (µA)	@ 100kHz 20°C		
10	7 4.5	0.5	6	CB0J106M2CCB	970-8200
22	8 5	1.1	3.7	CB0J226M2FCB	970-8219
47	9 6	2.4	2.0	CB0J476M2HCB	970-8227
68	11 7.5	3.4	1.8	CB0J686M2JCB	970-8235
100	12 8	5.0	1.6	CB0J107M2KCB	970-8243

Order Multiple=5

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
10	970-8200	0.200	0.181	0.141	0.130	0.116
22	970-8219	0.290	0.220	0.193	0.154	0.141
47	970-8227	0.480	0.400	0.360	0.290	0.260
68	970-8235	0.790	0.670	0.580	0.470	0.440
100	970-8243	1.050	0.880	0.760	0.600	0.570

10 Volt d.c.	Dimensions	DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
µF	H Dia.	Current (µA)	@ 100kHz 20°C		
4.7	6.5 4.5	0.5	8.0	CB1A475M2BCB	970-8251
10	7 5	0.8	5.0	CB1A106M2DCB	970-8260
22	8.5 5.5	1.7	2.7	CB1A226M2GCB	970-8278
33	9 6	2.6	2.1	CB1A336M2HCB	970-8286
47	11 7.5	3.7	1.7	CB1A476M2JCB	970-8294
100	14 9	8.0	1.0	CB1A107M2LCB	970-8308

Order Multiple=5

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
4.7	970-8251	0.178	0.130	0.116	0.104	0.092
10	970-8260	0.300	0.230	0.210	0.155	0.141
22	970-8278	0.390	0.310	0.290	0.220	0.210
33	970-8286	0.480	0.400	0.360	0.290	0.260
47	970-8294	0.330	0.290	0.250	0.200	0.187
100	970-8308	1.640	1.340	1.170	0.960	0.840

16 Volt d.c.	Dimensions	DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
µF	H Dia.	Current (µA)	@ 100kHz 20°C		
2.2	6 4	0.5	8.0	CB1C225M2ACB	970-8316
4.7	7 4.5	0.6	5.0	CB1C475M2CCB	970-8324
6.8	7 5	0.8	4.0	CB1C685M2DCB	970-8332
10	8 5	1.2	3.2	CB1C106M2FCB	970-8340
22	9 6	2.8	2.0	CB1C226M2HCB	970-8359
33	11 7.5	4.2	1.6	CB1C336M2JCB	970-8367
47	12 8	6.0	1.3	CB1C476M2KCB	970-8375
68	14 9	8.7	1.0	CB1C686M2LCB	970-8383
100	15 10	12.8	0.8	CB1C107M2MCB	970-8391

Order Multiple=5

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
2.2	970-8316	0.178	0.130	0.118	0.104	0.077
4.7	970-8324	0.178	0.130	0.116	0.104	0.077
6.8	970-8332	0.178	0.130	0.118	0.104	0.077
10	970-8340	0.300	0.230	0.210	0.154	0.141
22	970-8359	0.390	0.310	0.290	0.220	0.210
33	970-8367	0.480	0.400	0.360	0.290	0.260
47	970-8375	0.790	0.670	0.580	0.470	0.440
68	970-8383	1.370	1.080	0.940	0.770	0.680
100	970-8391	1.640	1.340	1.170	0.960	0.840

25 Volt d.c.	Dimensions	DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
µF	H Dia.	Current (µA)	@ 100kHz 20°C		
1	6 4	0.5	10	CB1E105M2ACB	970-8405
2.2	7 4.5	0.5	6.0	CB1E225M2CCB	970-8413
4.7	8 5	0.9	4.0	CB1E475M2FCB	970-8421
6.8	8.5 5.5	6.8	3.1	CB1E685M2GCB	970-8430
10	10 6.5	2.0	2.5	CB1E106M2ICB	970-8448
15	11 7.5	3.0	2.0	CB1E156M2JCB	970-8456
22	12 8	4.4	1.5	CB1E226M2KCB	970-8464
33	14 9	6.6	1.2	CB1E336M2LCB	970-8472

Order Multiple=5

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
1	970-8405	0.178	0.130	0.116	0.104	0.077
2.2	970-8413	0.178	0.130	0.116	0.104	0.077
4.7	970-8421	0.290	0.230	0.210	0.154	0.141
6.8	970-8430	0.290	0.220	0.193	0.155	0.141
10	970-8448	0.390	0.310	0.290	0.220	0.210
15	970-8456	0.480	0.400	0.360	0.290	0.260
22	970-8464	1.050	0.880	0.760	0.600	0.570
33	970-8472	1.130	0.940	0.800	0.670	0.590

35 Volt d.c.	Dimensions	DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
µF	H Dia.	Current (µA)	@ 100kHz 20°C		
0.1	6 4	0.5	26	CB1V104M2ACB	970-8480
0.22	6 4	0.5	17	CB1V224M2ACB	970-8499
0.33	6 4	0.5	15	CB1V334M2ACB	970-8502
0.47	6 4	0.5	13	CB1V474M2ACB	970-8510
1	6.5 4.5	0.5	8.0	CB1V105M2BCB	970-8529
2.2	7.5 5	0.6	5.0	CB1V225M2ECB	970-8537
3.3	8 5	0.9	4.0	CB1V335M2FCB	970-8545
4.7	8.5 5.5	4.7	3.0	CB1V475M2GCB	970-8553
6.8	10 6.5	1.9	2.5	CB1V685M2ICB	970-8561
10	11 7.5	2.8	2.0	CB1V106M2JCB	970-8570
15	12 8	4.2	1.6	CB1V156M2KCB	970-8588
22	14 9	6.1	1.3	CB1V226M2LCB	970-8596
47	15 10.5	10	0.8	CB1V476M2NCB	970-8600

240948

Order Multiple=5

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
0.1	970-8480	0.178	0.130	0.116	0.104	0.077
0.22	970-8499	0.178	0.130	0.116	0.104	0.077
0.33	970-8502	0.178	0.130	0.116	0.104	0.077
0.47	970-8510	0.178	0.130	0.116	0.104	0.077
1	970-8529	0.178	0.130	0.116	0.104	0.077
2.2	970-8537	0.200	0.181	0.141	0.130	0.116
3.3	970-8545	0.290	0.230	0.210	0.154	0.141
4.7	970-8553	0.390	0.310	0.290	0.220	0.210
6.8	970-8561	0.480	0.400	0.360	0.290	0.260
10	970-8570	0.500	0.420	0.370	0.300	0.290
15	970-8588	1.050	0.880	0.760	0.600	0.570
22	970-8596	1.640	1.340	1.170	0.960	0.840
47	970-8600	3.020	2.490	2.180	1.760	1.710

Tantalum - Leaded - AVX

TAP Series - Professional Resin Dipped



Lead dia.=0.5
Lead pitch=5.0

Operating temperature -55°C± to +85°C at rated voltage and up to 125°C with appropriate voltage derating
Climatic category 55/125/56
Tolerance ±20%

6.3 Volt d.c.		Dimensions		DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
μ F	H	Dia	Current (μ A)	@ 100kHz 20°C			
10	9	4.5	0.5	6	TAP106M006CCS-LF	110-0451	
22	10.5	5	1.1	3.7	TAP226M006CCS-LF	110-0453	
47	11.5	6	2.3	2	TAP476M006CCS-LF	110-0454	
100	12	7	5	1.6	TAP107M006CCS-LF	110-0455	

Order Multiple=5

6.3 Volt d.c.		Price Each	
μ F	Order Code	5+	50+
10	110-0451	0.54	0.44
22	110-0453	0.65	0.53
47	110-0454	0.79	0.65
100	110-0455	1.67	1.36

10 Volt d.c.		Dimensions		DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
μ F	H	Dia	Current (μ A)	@ 100kHz 20°C			
4.7	8.5	4.5	0.5	8	TAP475M010CCS-LF	110-0456	
10	10	5	0.8	5	TAP106M010CCS-LF	110-0457	
22	10.5	5.5	1.7	2.7	TAP226M010CCS-LF	110-0458	
33	11.5	6	2.6	2.1	TAP336M010CCS-LF	110-0459	
47	11.5	6.5	3.7	1.7	TAP476M010CCS-LF	110-0460	
68	12	7	5.4	1.3	TAP686M010CCS-LF	110-0461	
100	14	8.5	8	1	TAP107M010CCS-LF	110-0462	

Order Multiple=5

10 Volt d.c.		Price Each	
μ F	Order Code	5+	50+
4.7	110-0456	0.360	0.290
10	110-0457	0.500	0.410
22	110-0458	0.740	0.600
33	110-0459	0.930	0.770
47	110-0460	1.120	0.930
68	110-0461	1.670	1.360
100	110-0462	2.540	2.070

16 Volt d.c.		Dimensions		DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
μ F	H	Dia	Current (μ A)	@ 100kHz 20°C			
2.2	8.5	4.5	0.5	8	TAP225M016CCS-LF	110-0463	
3.3	8.5	4.5	0.5	6	TAP335M016CCS-LF	110-0465	
4.7	9	4.5	0.6	5	TAP475M016CCS-LF	110-0466	
6.8	10	5	0.8	4	TAP685M016CCS-LF	110-0467	
10	10.5	5	1.2	3.2	TAP106M016CCS-LF	110-0468	
15	10.5	5.5	1.9	2.5	TAP156M016CCS-LF	110-0469	
22	10.5	5.5	1.7	2.7	TAP226M016CCS-LF	110-0470	
33	11.5	6	4.2	1.6	TAP336M016CCS-LF	110-0471	
47	13	8	6	1.3	TAP476M016CCS-LF	110-0472	
68	14	9	8.7	1	TAP686M016CCS-LF	110-0473	

Order Multiple=5

16 Volt d.c.		Price Each	
μ F	Order Code	5+	50+
2.2	110-0463	0.450	0.370
3.3	110-0465	0.360	0.290
4.7	110-0466	0.450	0.360
6.8	110-0467	0.320	0.270
10	110-0468	0.680	0.570
15	110-0469	0.690	0.560
22	110-0470	0.570	0.470
33	110-0471	0.760	0.620
47	110-0472	2.560	2.160
68	110-0473	2.610	2.120

25 Volt d.c.		Dimensions		DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
μ F	H	Dia	Current (μ A)	@ 100kHz 20°C			
2.2	8.5	4.5	0.5	6	TAP225M025CCS-LF	110-0474	
3.3	9	4.5	0.6	5	TAP335M025CCS-LF	110-0475	
4.7	10	5	0.9	4	TAP475M025CCS-LF	110-0477	
6.8	10.5	5	1.3	3.1	TAP685M025CCS-LF	110-0478	
10	10.5	5.5	2	2.5	TAP106M025CCS-LF	110-0479	
15	11.5	6	3	2	TAP156M025CCS-LF	110-0480	
22	12	7	4.4	1.5	TAP226M025CCS-LF	110-0481	
33	13	8	6.6	1.2	TAP336M025CCS-LF	110-0482	

Order Multiple=5

25 Volt d.c.		Price Each	
μ F	Order Code	5+	50+
2.2	110-0474	0.370	0.300
3.3	110-0475	0.460	0.370
4.7	110-0477	0.330	0.280
6.8	110-0478	0.330	0.290
10	110-0479	0.650	0.530
15	110-0480	0.830	0.680
22	110-0481	1.630	1.330
33	110-0482	1.040	0.890

35 Volt d.c. COG		Dimensions		DC Leakage	Impedance (Ω)	Mfrs. List No.	Order Code
μ F	H	Dia	Current (μ A)	@ 100kHz 20°C			
0.1	8.5	4.5	0.5	8	TAP104M035CCS-LF	110-0483	
0.15	8.5	4.5	0.5	21	TAP154M035CCS-LF	110-0484	
0.22	8.5	4.5	0.5	17	TAP224M035CCS-LF	110-0485	
0.33	8.5	4.5	0.5	15	TAP334M035CCS-LF	110-0486	
0.47	8.5	4.5	0.5	13	TAP474M035CCS-LF	110-0487	
1	8.5	4.5	0.5	8	TAP105M035CCS-LF	110-0489	
1.5	8.5	4.5	0.5	6	TAP155M035CCS-LF	110-0491	
2.2	9	4.5	0.6	5	TAP225M035CCS-LF	110-0492	

3.3	10	5	0.9	4	TAP335M035CCS-LF	110-0493
4.7	10.5	5.5	1.3	3	TAP475M035CCS-LF	110-0494
6.8	11.5	6	1.9	2.5	TAP685M035CCS-LF	110-0495
10	11.5	6	2.8	2	TAP106M035CCS-LF	110-0496
15	12	7	4.2	1.6	TAP156M035CCS-LF	110-0497

208474

Order Multiple=5

35 Volt d.c.		Price Each	
μ F	Order Code	5+	50+
0.1	110-0483	0.370	0.300
0.15	110-0484	0.360	0.300
0.22	110-0485	0.430	--
0.33	110-0486	0.380	0.310
0.47	110-0487	0.400	0.320
1	110-0489	0.430	0.360
1.5	110-0491	0.370	0.300
2.2	110-0492	0.520	0.440
3.3	110-0493	0.490	0.400
4.7	110-0494	0.630	0.510
6.8	110-0495	0.800	0.660
10	110-0496	1.110	0.910
15	110-0497	1.560	1.270

TAP – CECC Release



Operating temp. -55°C to +85°C at rated voltage and up to 125°C with appropriate voltage d.c. rating
Climatic category 55/125/56

Lead dia.=0.5, Lead pitch=5.0

These products are available to fully documented release, upon request

10 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0542	2.71	2.22
22	110-0544	1.38	1.30
220	110-0545	12.39	10.08

16 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0547	1.68	1.59
47	110-0548	10.24	8.34
100	110-0549	21.03	19.83

16 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0542	2.71	2.22
22	110-0544	1.38	1.30
220	110-0545	12.39	10.08

16 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0547	1.68	1.59
47	110-0548	10.24	8.34
100	110-0549	21.03	19.83

16 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0547	1.68	1.59
47	110-0548	10.24	8.34
100	110-0549	21.03	19.83

16 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0547	1.68	1.59
47	110-0548	10.24	8.34
100	110-0549	21.03	19.83

25 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0550	3.06	2.49
220	110-0552	19.92	16.20

25 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0554	3.41	2.78
47	110-0557	20.03	16.30

25 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
10	110-0554	3.41	2.78
47	110-0557	20.03	16.30

25 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
2.2	110-0558	1.63	1.39
33	110-0560	2.96	2.73
47	110-0561	10.11	9.53

35 Volt d.c.		Price Each	
μ F	Order Code	1+	50+
1	110-0562	0.5	0.5
2.2	110-0563	0.6	0.6
4.7	110-0564	1.3	1.3
10	110-0565	2.8	2.8
22	110-0566	6.1	6.1
47	110-0568	10	10



Tantalum - Leaded - AVX - continued

TAP – CECC Release - continued

35 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
1	110-0562	2.21	1.86	1.62	1.46	1.28
2.2	110-0563	2.29	1.86	1.61	1.43	1.24
4.7	110-0564	3.08	2.62	2.32	2.10	1.85
10	110-0565	4.67	3.80	3.28	2.90	2.52
22	110-0566	14.98	12.19	10.51	9.31	8.07
47	110-0568	20.92	18.39	16.29	14.72	13.03

35 Volt d.c.	Tolerance ±20%	DC Leakage Current (µA)	Impedance (Ω) 100kHz 20°C	Mfrs. List No.	Order Code
µF	H Dia				
0.1	4.8 4.5	0.5	26	TAP104M035CCSY-LF	110-0569
0.22	8.5 4.5	0.5	17	TAP224M035CCSY-LF	110-0570
1	8.5 4.5	0.5	8	TAP105M035CCSY-LF	110-0572
2.2	9 4.5	0.5	5	TAP225M035CCSY-LF	110-0573
10	11.5 6	2.8	2	TAP106M035CCSY-LF	110-0574
22	14 8.5	6.1	1.3	TAP226M035CCSY-LF	110-0576
47	16 9	10	0.8	TAP476M035CCSY-LF	110-0578

35 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
0.1	110-0569	2.22	1.80	1.56	1.38	1.20
0.22	110-0570	2.22	1.82	1.57	1.39	1.21
1	110-0572	2.31	1.87	1.62	1.44	1.25
2.2	110-0573	0.89	0.82	0.63	0.56	0.54
10	110-0574	3.92	3.19	2.75	2.44	2.11
22	110-0576	5.59	5.15	4.86	4.07	3.75
47	110-0578	26.22	21.33	18.41	16.30	14.13

50 Volt d.c.	Tolerance ±20%	DC Leakage Current (µA)	Impedance (Ω) 100kHz 20°C	Mfrs. List No.	Order Code
µF	H Dia				
1	10 5	0.5	8	TAP105M050CCSY-LF	110-0582
2.2	10.5 5.5	0.8	3.5	TAP225M050CCSY-LF	110-0583
4.7	11.5 6.5	1.8	2.5	TAP475M050CCSY-LF	110-0585
10	13 8	4	1.6	TAP106M050CCSY-LF	110-0586
22	14 9	8.8	1	TAP226M050CCSY-LF	110-0587

50 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
1	110-0582	1.93	1.58	1.34	1.03	0.91
2.2	110-0583	2.21	2.12	1.93	1.61	1.50
4.7	110-0585	7.19	--	--	--	--
10	110-0586	9.63	8.89	8.38	7.02	6.47
22	110-0587	18.49	15.04	12.98	11.49	9.97

Order Multiple = 5

6.3 Volt d.c.		Price Each				
µF	Order Code	5+	50+	250+	500+	1K+
100	145-7594	1.96	1.80	1.45	0.98	0.89

10 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
10	8.4 5.0	2.54	0.8	T350C106K010AT	145-7577
22	8.9 5.5	2.54	1.8	T350E226K010AT	145-7584

Order Multiple = 5

10 Volt d.c.		Price Each				
µF	Order Code	5+	50+	250+	500+	1K+
10	145-7577	0.56	0.50	0.47	0.40	0.33
22	145-7584	0.85	0.76	0.57	0.36	0.32
	145-7588	0.25	--	--	--	--

16 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
2.2	7.1 4.5	2.54	0.5	T350A225K016AT	145-7570
4.7	7.6 4.5	2.54	0.6	T350B475K016AT	145-7576
22	9.9 6.0	2.54	2.6	T350F226K016AT	145-7587
47	12.7 8.4	5.08	5.6	T350J476K016AT	145-7599

Order Multiple = 5

16 Volt d.c.		Price Each				
µF	Order Code	5+	50+	250+	500+	1K+
2.2	145-7570	0.42	0.37	0.30	0.25	0.22
4.7	145-7576	0.31	0.29	0.26	0.23	0.20
22	145-7587	0.81	0.73	0.68	0.60	0.54
47	145-7599	2.54	2.29	2.01	1.58	1.38

25 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
2.2	7.6 4.5	2.54	0.5	T350B225K025AT	145-7575
4.7	8.4 5.0	2.54	0.9	T350C475K025AT	145-7579
10	8.9 5.5	2.54	2.0	T350E106K025AT	145-7582
15	10.2 6.3	2.54	3.0	T350G156K025AT	145-7593
22	10.2 7.6	2.54	4.4	T350H226K025AT	145-7595

Order Multiple = 5

25 Volt d.c.		Price Each				
µF	Order Code	5+	50+	250+	500+	1K+
10	145-7582	0.67	0.60	0.57	0.50	0.40
15	145-7593	1.79	1.61	1.34	1.06	0.92
2.2	145-7575	0.52	0.47	0.40	0.30	0.27
22	145-7595	2.28	2.05	1.86	1.49	1.30
4.7	145-7579	0.59	0.53	0.46	0.29	0.26

35 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
0.1	7.1 4.5	2.54	0.5	T350A104K035AT	145-7568
1	7.1 4.5	2.54	0.5	T350A105K035AT	145-7569
2.2	8.4 5.0	2.54	0.6	T350C225K035AT	145-7578
3.3	8.6 5.0	2.54	0.9	T350D335K035AT	145-7581
4.7	8.9 5.5	2.54	1.3	T350E475K035AT	145-7586
6.8	9.9 6.0	2.54	1.9	T350F685K035AT	145-7590
10	10.2 6.3	2.54	2.8	T350G106K035AT	145-7591
22	13.5 8.9	5.08	6.2	T350K226K035AT	145-7600
33	16.0 8.9	5.08	9.2	T350L336K035AT	145-7601

Order Multiple = 5

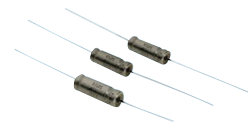
35 Volt d.c.		Price Each				
µF	Order Code	5+	50+	250+	500+	1K+
0.1	145-7568	0.530	0.460	0.370	0.300	0.260
1	145-7569	0.310	0.290	0.260	0.230	0.181
2.2	145-7578	0.520	0.470	0.430	0.340	0.300
3.3	145-7581	0.660	0.580	0.480	0.370	0.320
4.7	145-7586	0.910	0.760	0.620	0.500	0.440
6.8	145-7590	0.770	0.710	0.660	0.560	0.490
10	145-7591	1.550	1.290	1.060	0.840	0.730
22	145-7600	2.740	2.480	2.260	1.850	1.610
33	145-7601	5.070	4.560	3.710	2.940	2.560

50 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
1	7.6 4.5	2.54	0.5	T350B105K050AT	145-7574

Order Multiple = 5

50 Volt d.c.		Price Each				
µF	Order Code	5+	50+	250+	500+	1K+
1	145-7574	0.53	0.50	0.45	0.36	0.31

TWA Series – Wet Electrolytic Tantalum



The TWA series is an axial leaded wet electrolytic tantalum capacitor and represents a new level of high CV (capacitance / voltage) previously unavailable in this technology.

Body Dia. = 10.31mm, W = 19.46mm
Lead Length = 57.15mm, Dia 0.64mm

Operating temperature -55°C to +125°C
Tolerance ± 10%

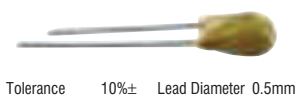
Capacitance µF	DC Leakage Current (µA)	Impedance (Ω) @ 120Hz -55°C	ESR (Ω) @ 120Hz	Mfrs. List No.	Order Code
25V dc					
1200	20	7	0.65	TWAD128K025CBSZ0000	177-1754
30V dc					
1000	25	7	0.7	TWAD108K030CBSZ0000	177-1755
50V dc					
470	25	10	0.75	TWAD477K050CBSZ0000	177-1756
60V dc					
390	25	15	0.9	TWAD397K060CBSZ0000	177-1757
75V dc					
330	30	12	1	TWAD337K075CBSZ0000	177-1758
100V dc					
150	25	22	1.6	TWAD157K100CBSZ0000	177-1761
125V dc					
100	25	35	1.8	TWAD107K125CBSZ0000	177-1762

Price Each		1+	5+	10+	+	+
Order Code	All Values	62.27	56.66	49.81	--	--

Tantalum - Leaded - Kemet



T350 Series



- 55°C à +85°C
- Tolerance : ±10%
- Ø broche : 0,5mm

6.3 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
100	10.2 7.6	2.54	4.8	T350H107K006AT	145-7594

T356 Series



- Dipped Tantalum
- 5mm pitch

Tolerance 10±%

6.3 Volt d.c.	Dimensions H Dia.	Lead Pitch	DC Leakage Current (µA)	Mfrs. List No.	Order Code
µF					
100	11.9 7.6	4.8	4.8	T356H107K006AT	145-7619

Order Multiple = 5

6.3 Volt d.c.

µF	Order Code	Price Each				
		5+	100+	250+	500+	1K+
100	145-7619	1.64	1.44	1.29	1.14	1.03

10 Volt d.c.

µF	Dimensions		DC Leakage Current (µA)	Mfrs. List No.	Order Code
	H	Dia.			
47	11.9	7.6	3.8	T356H476K010AT	145-7622

Order Multiple = 5

10 Volt d.c.

µF	Order Code	Price Each				
		5+	100+	250+	500+	1K+
47	145-7622	1.76	1.56	1.38	1.09	0.95

16 Volt d.c.

µF	Dimensions		DC Leakage Current (µA)	Mfrs. List No.	Order Code
	H	Dia.			
10	10.2	5.5	1.3	T356E106K016AT	145-7612
22	11.2	6	2.6	T356F226K016AT	145-7616
47	14	8.4	5.6	T356J476K016AT	145-7623
100	18.1	8.9	10	T356L107K016AT	145-7629

Order Multiple = 5

16 Volt d.c.

µF	Order Code	Price Each				
		5+	100+	250+	500+	1K+
10	145-7612	0.35	0.34	0.29	0.26	0.22
22	145-7616	0.52	0.46	0.44	0.38	0.34
47	145-7623	1.54	1.35	1.27	1.20	1.05
100	145-7629	7.04	6.16	5.03	3.97	3.46

25 Volt d.c.

µF	Dimensions		DC Leakage Current (µA)	Mfrs. List No.	Order Code
	H	Dia.			
4.7	9.6	5	0.9	T356C475K025AT	145-7611
10	10.2	5.5	2.0	T356E106K025AT	145-7613
22	11.9	7.6	4.4	T356H226K025AT	145-7620
47	15.5	8.9	9.4	T356K476K025AT	145-7626

Order Multiple = 5

25 Volt d.c.

µF	Order Code	Price Each				
		5+	100+	250+	500+	1K+
4.7	145-7611	0.57	0.49	0.40	0.30	0.27
10	145-7613	0.65	0.57	0.51	0.46	0.33
22	145-7620	1.32	1.30	1.08	0.94	0.87
47	145-7626	3.52	3.09	2.57	2.48	1.72

35 Volt d.c.

µF	Dimensions		DC Leakage Current (µA)	Mfrs. List No.	Order Code
	H	Dia.			
100nF	8.6	4.5	0.5	T356A104K035AT	145-7602
1	8.6	4.5	0.5	T356A105K035AT	145-7604
2.2	9.6	5	0.6	T356C225K035AT	145-7610
10	11.4	6.3	2.8	T356G106K035AT	145-7618
22	15.5	8.9	6.2	T356K226K035AT	145-7625
33	18.1	8.9	9.2	T356L336K035AT	145-7631
47	18.8	10.2	10	T356M476K035AT	145-7633

Order Multiple = 5

35 Volt d.c.

µF	Order Code	Price Each				
		5+	100+	250+	500+	1K+
100nF	145-7602	0.490	0.410	0.330	0.270	0.230
1	145-7604	0.320	0.280	0.230	0.220	0.149
2.2	145-7610	0.300	0.270	0.250	0.220	0.196
10	145-7618	0.930	0.810	0.700	0.550	0.480
22	145-7625	1.600	1.400	1.270	1.120	0.990
33	145-7631	5.510	4.660	3.820	3.020	2.630
47	145-7633	4.300	3.780	3.420	3.050	2.770

50 Volt d.c.

µF	Dimensions		DC Leakage Current (µA)	Mfrs. List No.	Order Code
	H	Dia.			
10	15.5	8.9	4.0	T356K106K050AT	145-7624

Order Multiple = 5

50 Volt d.c.

µF	Order Code	Price Each				
		5+	100+	250+	500+	1K+
10	145-7624	2.60	2.28	2.15	2.03	1.80

Tantalum - Leaded - Vishay

489D Series



- Large capacitance range
 - Encapsulated in a hard orange epoxy resin
 - Large variety of lead styles available
 - Low impedance and ESR at high frequencies
- Operating temperature -55°C to +85°C
Tolerance ± 20%

Capacitance µF	Dimensions (mm)		DC Leakage Current (µA)	Mfrs. List No.	Order Code
	Height	Width			
Lead Spacing = 2.5mm / Lead Length = 20mm					
10V					
10	7.5	4	0.5	489D106X0010B1VE3	175-3974
16V					
10	8	4.5	2.4	489D106X0016C1VE3	175-3975
22	9	5	5.2	489D226X0016D1VE3	175-3977

Capacitance	Dimensions (mm)			DC Leakage	Order
	Height	Width	Depth		
25V					
1	7	3.7	1	489D105X0025A1VE3	175-3978
2.2	7.5	4	1	489D225X0025B1VE3	175-3979
10	9	5	3.7	489D106X0025D1VE3	175-3980
35V					
0.022	7	3.7	1	489D224X0035A1VE3	175-3981
1	7.5	4	1	489D105X0035B1VE3	175-3982
4.7	9	5	2.4	489D475X0035D1VE3	175-3983
10	11	6	5.2	489D106X0035F1VE3	175-3984

Lead Spacing = 5mm / Lead Length = 5.5mm

Capacitance	Dimensions (mm)			DC Leakage	Order
	Height	Width	Depth		
10V					
10	11.5	4	1.5	489D106X0010B6VE3	175-3985
16V					
10	12	4.5	2.4	489D106X0016C6VE3	175-3986
22	13	5	5.2	489D226X0016D6VE3	175-3987
25V					
1	11	3.7	1	489D105X0025A6VE3	175-3989
2.2	11.5	4	1	489D225X0025B6VE3	175-3991
10	13	5	3.7	489D106X0025D6VE3	175-3992
35V					
0.022	11	3.7	1	489D224X0035A6VE3	175-3993
1	11.5	4	1	489D105X0035B6VE3	175-3994
4.7	13	5	2.4	489D475X0035D6VE3	175-3995
10	15	6	5.2	489D106X0035F6VE3	175-3996

Order Multiple = 5

µF	Order Code	Price Each				
		5+	25+	50+	100+	500+
Lead Spacing = 2.5mm / Lead Length = 20mm						
10V						
10	175-3974	0.480	0.440	0.400	0.330	0.250
16V						
10	175-3975	0.610	0.560	0.500	0.430	0.310
22	175-3977	1.090	1.000	0.890	0.760	0.560
25V						
1	175-3978	0.370	0.340	0.300	0.260	0.192
2.2	175-3979	0.370	0.340	0.300	0.260	0.192
10	175-3980	0.910	0.820	0.740	0.620	0.470
35V						
0.022	175-3981	0.370	0.340	0.300	0.260	0.192
1	175-3982	0.370	0.340	0.300	0.260	0.192
4.7	175-3983	0.770	0.700	0.630	0.540	0.400
10	175-3984	1.210	1.090	0.990	0.840	0.620

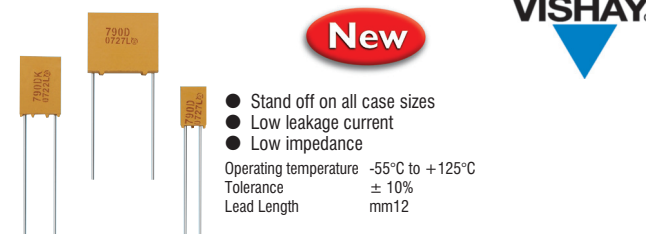
Lead Spacing = 5mm / Lead Length = 5.5mm

Capacitance	Dimensions (mm)			DC Leakage	Order
	Height	Width	Depth		
10V					
10	11.5	4	1.5	489D106X0010B6VE3	175-3985
16V					
10	12	4.5	2.4	489D106X0016C6VE3	175-3986
22	13	5	5.2	489D226X0016D6VE3	175-3987
25V					
1	11	3.7	1	489D105X0025A6VE3	175-3989
2.2	11.5	4	1	489D225X0025B6VE3	175-3991
10	13	5	3.7	489D106X0025D6VE3	175-3992
35V					
0.022	11	3.7	1	489D224X0035A6VE3	175-3993
1	11.5	4	1	489D105X0035B6VE3	175-3994
4.7	13	5	2.4	489D475X0035D6VE3	175-3995
10	15	6	5.2	489D106X0035F6VE3	175-3996

Lead Spacing = 5mm / Lead Length = 5.5mm

Capacitance	Dimensions (mm)			DC Leakage	Order
	Height	Width	Depth		
10V					
10	11.5	4	1.5	489D106X0010B6VE3	175-3985
16V					
10	12	4.5	2.4	489D106X0016C6VE3	175-3986
22	13	5	5.2	489D226X0016D6VE3	175-3987
25V					
1	11	3.7	1	489D105X0025A6VE3	175-3989
2.2	11.5	4	1	489D225X0025B6VE3	175-3991
10	13	5	3.7	489D106X0025D6VE3	175-3992
35V					
0.022	11	3.7	1	489D224X0035A6VE3	175-3993
1	11.5	4	1	489D105X0035B6VE3	175-3994
4.7	13	5	2.4	489D475X0035D6VE3	175-3995
10	15	6	5.2	489D106X0035F6VE3	175-3996

790D Series



- Stand off on all case sizes
 - Low leakage current
 - Low impedance
- Operating temperature -55°C to +125°C
Tolerance ± 10%
Lead Length mm12

µF	DC Leakage Current (µA)	Body Dimensions (mm)			Lead Dimensions (mm)		Mfrs. List No.	Order Code
		Height	Width	Depth	Spacing	Dia		
6.3V								
150	9.4	10.5	12.3	7.3	10.16	0.6	790D157X96R3C2BE3	175-4012
10V								
33	3.3	10.5	7.3	4.8	5.08	0.5	790D336X9010B2BE3	175-4013
100	10	10.5	12.3	7.3	10.16	0.6	790D107X9010C2BE3	175-4015
16V								
3.3	1	7.3	4.7	4.2	2.54	0.5	790D335X9016A2BE3	175-4016
22	3.5	10.5	7.3	4.8	5.08	0.5	790D226X9016B2BE3	175-4017
68	10.8	10.5	12.3	7.3	10.16	0.6	790D686X9016C2BE3	175-4018
20V								
47	9.4	10.5	12.3	7.3	10.16	0.6	790D476X9020C2BE3	175-4019



Tantalum - Leaded - Vishay - continued

790D Series - continued

	DC Leakage	Body Dimensions (mm)				Lead Dimensions (mm)		Order
25V								
10	2.5	10.5	7.3	4.8	5.08	0.5	790D106X9025B2BE3	175-4020
22	5.5	10.5	7.3	4.8	5.08	0.5	790D226X9025B2BE3	175-4021
33	8.2	10.5	12.3	7.3	10.16	0.6	790D336X9025C2BE3	175-4022
40V								
1	1	7.3	4.7	4.2	2.54	0.5	790D105X9040A2BE3	175-4023
2.2	1	10.5	7.3	4.8	5.08	0.5	790D225X9040B2BE3	175-4024
4.7	1.8	10.5	7.3	4.8	5.08	0.5	790D475X9040B2BE3	175-4025
6.8	2.7	10.5	7.3	4.8	5.08	0.5	790D685X9040B2BE3	175-4027
10	4	10.5	12.3	7.3	10.16	0.6	790D106X9040C2BE3	175-4028
22	8.8	10.5	12.3	7.3	10.16	0.6	790D226X9040C2BE3	175-4029
50V								
3.3	1.6	10.5	7.3	4.8	5.08	0.5	790D335X9050B2BE3	175-4030
10	5	10.5	12.3	7.3	10.16	0.6	790D106X9050C2BE3	175-4031

544665

µF	Order Code	1+	10+	100+	250+	500+
6.3V						
150	175-4012	5.91	5.38	4.84	4.12	3.59
10V						
33	175-4013	1.90	1.74	1.56	1.33	1.15
100	175-4015	5.91	5.38	4.84	4.12	3.59
16V						
3.3	175-4016	1.31	1.19	1.07	0.92	0.79
22	175-4017	1.90	1.74	1.56	1.33	1.15
68	175-4018	5.91	5.38	4.84	4.12	3.59
20V						
47	175-4019	5.91	5.38	4.84	4.12	3.59
25V						
10	175-4020	1.90	1.74	1.56	1.33	1.15
22	175-4021	1.90	1.74	1.56	1.33	1.15
33	175-4022	5.91	5.38	4.84	4.12	3.59
40V						
1	175-4023	1.31	1.19	1.07	0.92	0.79
2.2	175-4024	1.90	1.74	1.56	1.33	1.15
4.7	175-4025	1.90	1.74	1.56	1.33	1.15
6.8	175-4027	1.90	1.74	1.56	1.33	1.15
10	175-4028	5.91	5.38	4.84	4.12	3.59
22	175-4029	5.91	5.38	4.84	4.12	3.59
50V						
3.3	175-4030	2.29	2.08	1.87	1.59	1.38
10	175-4031	6.55	5.95	5.36	4.57	3.97

CTS13 Series



- Solid tantalum capacitors in hermetically sealed cases
- Low leakage current
- High operational stability

µF	Operating temperature -55°C to +55°C			Tolerance ±10%		Order Code
	L	Dia	Lead Dia	Mftrs. List No.		
10 Volt d.c.						
4.7	10.2	3.8	0.5	CTS13475X9010A2P		118-7278
33	15	5.1	0.5	CTS13336X9010B2P		118-7279
100	20.5	7.7	0.6	CTS13107X9010C		118-7280
220	24	9.3	0.6	CTS13227X9010D		118-7281
16 Volt d.c.						
3.3	10.2	3.8	0.5	CTS13335X9016A		118-7282
22	15	5.1	0.5	CTS13226X9016B		118-7285
68	20.5	7.7	0.6	CTS13686X9016C		118-7286
20 Volt d.c.						
2.2	10.2	3.8	0.5	CTS13225X9020A		118-7287
15	15	5.1	0.5	CTS13156X9020B		118-7288
47	20.5	7.7	0.6	CTS13476X9020C		118-7289
100	24	9.3	0.6	CTS13107X9020D		118-7290
40 Volt d.c.						
0.1	10.2	3.8	0.5	CTS13104X9040A		118-7291
1	10.2	3.8	0.5	CTS13105X9040A		118-7292
2.2	15	5.1	0.5	CTS13225X9040B		118-7294
3.3	15	5.1	0.5	CTS13335X9040B		118-7295
4.7	15	5.1	0.5	CTS13475X9040B		118-7297
6.8	15	5.1	0.5	CTS13685X9040B		118-7298
10	20.5	7.7	0.6	CTS13106X9040C		118-7299
22	20.5	7.7	0.6	CTS13226X9040C		118-7300
47	24	9.3	0.6	CTS13476X9040D		118-7301

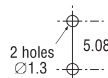
208573

µF	Order Code	1+	25+	50+	100+	500+
10 Volt d.c.						
4.7	118-7278	1.50	1.13	0.95	0.76	0.68
33	118-7279	1.22	1.17	1.11	1.06	1.00
100	118-7280	4.48	3.39	2.76	2.31	1.99
220	118-7281	14.46	10.97	8.93	7.46	6.39

µF	Order Code	1+	25+	50+	100+	500+
16 Volt d.c.						
3.3	118-7282	1.54	1.17	0.97	0.88	0.85
22	118-7285	2.31	1.73	1.41	1.18	1.02
68	118-7286	6.71	5.09	4.14	3.46	2.99
20 Volt d.c.						
2.2	118-7287	1.19	0.98	0.82	0.77	0.75
15	118-7288	4.10	3.11	2.55	2.11	1.79
47	118-7289	6.76	5.12	4.17	3.49	3.01
100	118-7290	10.33	9.66	8.48	7.67	7.03
40 Volt d.c.						
0.1	118-7291	1.33	1.03	0.84	0.70	0.65
1	118-7292	1.77	1.43	1.23	1.05	0.95
2.2	118-7294	1.90	1.49	1.25	1.06	0.92
3.3	118-7295	1.21	1.14	1.10	1.04	0.98
4.7	118-7297	4.32	3.39	2.71	2.21	1.97
6.8	118-7298	4.70	3.71	2.96	2.42	2.14
10	118-7299	7.23	5.81	4.91	4.20	3.67
22	118-7300	10.15	7.71	6.28	5.25	4.50
47	118-7301	13.05	10.39	8.71	7.42	6.46

Trimmers

Miniature Ceramic



Drilling plan



- Ultra miniature ceramic trimmer capacitor
- 5mm Pitch

H (above board) = 6.0, Body dia = 5.0, W (max) = 5.8

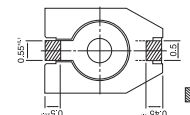
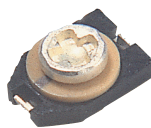
Capacitance (pF)	Insulation resistance		Operating temperature		Voltage Rating V dc	Order Code
	Min.	Max.	Q Min. @ 1MHz	Temperature Coefficient ppm/°C		
1.5	6	10MΩ	300	NPO ±250	200	121-9027
2.8	12.5	10MΩ	300	N600 ±250	200	121-9028
3.5	20	10MΩ	300	N750 ±300	200	121-9031
5	30	10MΩ	300	N1500 ±300	200	121-9032
5.5	50	10MΩ	300	N1500 ±500	200	121-9033

208608

Order Multiple = 5

Capacitance (pF)	Colour	Order Code	5+	100+	1K+	5K+
1.5	Red	121-9027	0.76	0.65	0.55	0.53
2.8	Nil	121-9028	0.76	0.65	0.55	0.53
3.5	Blue	121-9031	0.76	0.65	0.55	0.53
5	Yellow	121-9032	0.76	0.65	0.55	0.53
5.5	Green	121-9033	0.76	0.65	0.55	0.53

CT22 Series - Surface Mount



Supplied on 12mm embossed tape (reel=2000pcs)
L=3.0, W=2.5, H=1.3

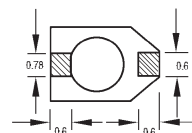
- Ultra small surface mount trimmers capacitors
- Fully washable and suitable for use with reflow soldering
- Extremely low profile 1.3mm

Capacitance	Operating temperature		Temperature Coefficient		Voltage Rating V dc	Mftrs. List No.	Order Code
	Min.	Max.	ppm/°C	Q Min. @ 1 MHz			
2.5	5	+85°C	±500	150	25	CT22E-05C-W2-P	118-9325
3	10	+85°C	±500	150	25	CT22E-10A-W2-P	118-9326
5	20	+85°C	±500	150	25	CT22E-20C-W2-P	118-9327

208649

Capacitance (pF)	Order Code	1+	25+	100+	500+	1K+
2.5	SMD 118-9325	0.70	0.58	0.50	0.44	0.39
3	SMD 118-9326	0.72	0.58	0.48	0.41	0.36
5	SMD 118-9327	0.77	0.62	0.51	0.44	0.39

CTZ3 Series - Surface Mount



L=4.5, W=3.2, H=1.8
Supplied on 12mm embossed tape (reel=1000pcs)

- Surface mount trimmer capacitors
- Fully washable and suitable for use with reflow soldering
- Extremely low profile of 1.8mm

Operating temperature -25°C to +85°C

Capacitance Min.	Capacitance Max.	Temperature Coefficient ppm/°C	Q Min. @ 1MHz	Voltage Rating V dc	Mfrs. List No.	Order Code
1	3	±500	300	25	CTZ3E-03A-W1-PF	118-9301
1.5	5	±500	300	25	CTZ3E-05A-W1-PF	118-9302
5	20	±500	300	25	CTZ3E-20C-W1-PF	118-9304
5	30	±500	300	25	CTZ3E-30C-W1-PF	118-9305
5	40	±500	300	25	CTZ3E-40C-W1-PF	118-9306

208443

Order Multiple=5

Capacitance		Order Code	Price Each				
Min.	Max.		5+	25+	100+	500+	1K+
1	3	SMD 118-9301	0.76	0.60	0.50	0.44	0.39
1.5	5	SMD 118-9302	0.82	0.66	0.54	0.47	0.41
5	20	SMD 118-9304	0.72	0.57	0.43	0.24	0.22
5	30	SMD 118-9305	0.61	0.49	0.41	0.35	0.31
5	40	SMD 118-9306	0.85	0.68	0.56	0.48	0.43

High Power Capacitor



- To meet high power application due to withstanding voltage 550Vdc
- Extremely high self resonant frequency. (More than 3GHz at 1.5pF setting)
- High Q value in more than VHF,UHF and Micro wave band. (More than 200 in 500MHz, C max.)

Applications:

- High frequency electric circuit
- High power radio transmission
- Transmitting power amplifier for Cellular Base Station

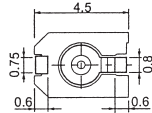
4.2(W)x5.2(L)x2.6max,4(H)mm

Inductance (min) pF	Inductance (max) pF	Volts V	Mfrs. List No.	Order Code
0.4	1.5	250	TZW4Z1R5A001R00	111-5036

423318

Order Code	Price Each				
	1+	25+	50+	250+	500+
SMD 111-5036	7.40	5.33	4.45	3.89	3.27

TZC03 Series – Surface Mount



- Low profile surface mount ceramic trimmer capacitor
- Compatible with both auto-placement and reflow soldering processes
- Colour coded for easy selection
- Easily adjusted using standard trimming tool

Operating temperature -25°C to +85°C

Capacitance Min.	Capacitance Max.	Temperature Coefficient ppm/°C	Q Min. @ 1MHz	Voltage Rating V dc	Mfrs. List No.	Order Code
1.4	3	NPO±300	300	100	TZC3Z030A110B00	952-8687
2	6	NPO±300	500	100	TZC3Z060A110B00	952-8695
3	10	NPO±300	500	100	TZC3R100A110B00	952-8679
5	20	NPO±500	300	100	TZC3P200A110B00	952-8652
6	30	NPO±500	300	100	TZC3P300A110B00	952-8660

227186

Order Multiple=5

Capacitance (pF)		Colour	Order Code	Price Each			
Min.	Max.			5+	100+	500+	1K+
1.4	3	Brown	SMD 952-8687	1.04	0.79	0.65	0.57
2	6	Blue	SMD 952-8695	1.09	0.91	0.82	0.73
3	10	White	SMD 952-8679	0.47	0.34	0.33	0.30
5	20	Red	SMD 952-8652	1.04	0.79	0.65	0.57
6	30	Green	SMD 952-8660	1.03	0.78	0.63	0.57

TZB Series — Surface Mount



- Washable chip trimmer capacitor
- Thermosetting resin case

Operating temperature -25°C to +85°C

L=4.5, W=4.0, H=3.0
Supplied on 12mm embossed tape (reel=500 pcs)

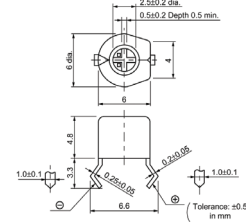
Capacitance Min.	Capacitance Max.	Temperature Coefficient ppm/°C	Q Min. @ 1MHz	Voltage Rating V dc	Mfrs. List No.	Order Code
1.4	3	±200	300	100	TZB4Z030AB10R00	952-8610
2	6	±200	300	100	TZB4Z060AB10R00	952-8628
3	10	±300	300	100	TZB4Z100AB10R00	952-8636
4	25	±300	300	50	TZB4Z250AB10R00	952-8644
4.5	20	±500	300	100	TZB4R200AB10R00	176-0635
6.5	30	±500	300	100	TZB4P300AB10R00	176-0636
8.5	40	±400	500	100	TZB4P400AB10R00	176-0637
7	50	±500	300	100	TZB4R500AB10R00	176-0638

208441

Order Multiple=5

Capacitance (pF) Colour		Order Code	Price Each					
Min.	Max.		Code	5+	50+	100+	500+	1K+
1.4	3	Brown	SMD 952-8610	0.80	0.66	0.59	0.44	0.38
2	6	Blue	SMD 952-8628	0.92	0.65	0.43	0.32	0.27
3	10	White	SMD 952-8636	1.00	0.76	0.51	0.38	0.32
4	25	Black	SMD 952-8644	1.66	1.30	0.87	0.65	0.55
4.5	20	Green	NEW SMD 176-0635	0.53	0.47	0.40	0.27	--
6.5	30	Green	NEW SMD 176-0636	0.53	0.47	0.40	0.27	--
8.5	40	Red	NEW SMD 176-0637	0.53	0.47	0.40	0.27	--
7	50	Yellow	NEW SMD 176-0638	0.89	0.78	0.68	0.46	--

TZ03 Series – Miniature Ceramic



Tolerance +50%, -0%
Voltage Rating 100V dc

Q (min) 500 at 1MHz Cmax
(6pF to 50pF = 300 at 1MHz Cmax)

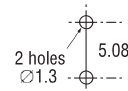
Mfrs. List No.	Order Code	Mfrs. List No.	Order Code
TZ03Z050F169B00	= 168-5436	TZ03R300F169B00	= 168-5439
TZ03T110F169B00	= 168-5437	TZ03Z500F169B00	= 168-5440
TZ03R200F169B00	= 168-5438		

528630

Order Multiple=5

Capacitance Range		Order Code	Price Each				
Min.	Max.		5+	50+	100+	500+	1K+
1.5pF	5pF	168-5436	0.490	0.450	0.330	0.250	0.210
3pF	10pF	168-5437	0.490	0.450	0.320	0.240	0.200
4.2pF	20pF	168-5438	0.490	0.450	0.330	0.250	0.210
5.2pF	30pF	168-5439	0.490	0.440	0.290	0.220	0.183
6pF	50pF	168-5440	0.680	0.630	0.520	0.480	0.450

BFC2 809 05 Series - PTFE Film



Drilling plan

H (above board)=11, W=7.4, D=6.7

Voltage rating 300V d.c. Climatic category (IEC68) 40/125/21
Q min @ 1MHz 300 Operating temperature -40°C to +125°C

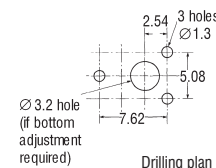
N.B. Flux Guard treatment to prevent flux penetration.

Mfrs. List No: BFC280905215 = 121-5713 BFC280905217 = 121-5714

208611

Capacitance (pF)		Colour	Order Code	Price Each			
Min.	Max.			1+	100+	1K+	3K+
1	3.5	Orange	121-5713	1.04	0.68	0.64	0.62
2	18	Red	121-5714	2.97	--	--	--

BFC 809 080 Series - PTFE Film



H (above board)=11, W=7.4, D=6.7

Voltage rating 300V d.c. Climatic category (IEC68) 40/125/21
Q min @ 1MHz 300 Operating temperature -40°C to +125°C

Mfrs. List No: BFC280908002 = 121-5715 BFC280908003 = 121-5716

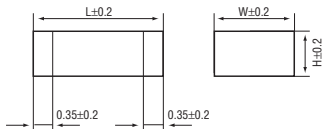
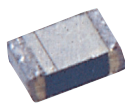
208612

Capacitance (pF)		Colour	Order Code	Price Each			
Min.	Max.			Code	1+	100+	1K+
4	40	Yellow	121-5715	4.13	2.96	2.33	2.03
5	57	Blue	121-5716	6.65	--	--	--

Film - Plastic

ECHU Series - Plastic Film Surface Mount

Panasonic



- Metallised polyphenylene sulphide film capacitors
- Stack construction
- Wide temperature range
- Capacitance tolerance options ±5% or ±2%

Operating temperature: -55°C to +125°C
 Soldering: Reflow only
 Insulation resistance: 3000MΩ @ 50V dc

Withstand voltage: Rated voltage x 175% for 1-5s
 Dissipation factor: 0.6% max. @ 1kHz 20°C

nF	μF	H	W	L	Mfrs. List No.	Order Code
0603 Case Size						
10 V d.c. ±2%						
3.3	0.0033	0.7	0.8	1.6	ECHU01332GX5	174-4758
3.9	0.0039	0.7	0.8	1.6	ECHU01392GX5	174-4759
4.7	0.0047	0.7	0.8	1.6	ECHU01472GX5	174-4760
5.6	0.0056	0.7	0.8	1.6	ECHU01562GX5	174-4761
16 V d.c. ±2%						
1	0.001	0.7	0.8	1.6	ECHU1C102GX5	174-4762
1.2	0.0012	0.7	0.8	1.6	ECHU1C122GX5	174-4763
1.5	0.0015	0.7	0.8	1.6	ECHU1C152GX5	174-4764
1.8	0.0018	0.7	0.8	1.6	ECHU1C182GX5	174-4765
2.2	0.0022	0.7	0.8	1.6	ECHU1C222GX5	174-4766
2.7	0.0027	0.7	0.8	1.6	ECHU1C272GX5	174-4767
0805 Case Size						
10 V d.c. ±2%						
6.8	0.0068	0.9	1.25	2	ECHU01682GX5	174-4769
8.2	0.0082	0.9	1.25	2	ECHU01822GX5	174-4771
10	0.01	0.9	1.25	2	ECHU01103GX5	174-4772
12	0.012	0.9	1.25	2	ECHU01123GX5	174-4773
15	0.015	0.9	1.25	2	ECHU01153GX5	174-4774
18	0.018	0.9	1.25	2	ECHU01183GX5	174-4775
22	0.022	0.9	1.25	2	ECHU01223GX5	174-4776
27	0.027	0.9	1.25	2	ECHU01273GX5	174-4777
16 V d.c. ±2%						
3.3	0.0033	0.9	1.25	2	ECHU1C332GX5	969-4838
3.9	0.0039	0.9	1.25	2	ECHU1C392GX5	969-4846
4.7	0.0047	0.9	1.25	2	ECHU1C472GX5	969-4854
5.6	0.0056	0.9	1.25	2	ECHU1C562GX5	969-4862
6.8	0.0068	0.9	1.25	2	ECHU1C682GX5	969-4870
8.2	0.0082	1.1	1.25	2	ECHU1C822GX5	969-4889
10	0.01	1.1	1.25	2	ECHU1C103GX5	969-4897
16 V d.c. ±5%						
3.3	0.0033	0.9	1.25	2	ECHU1C332JX5	969-5010
10	0.01	1.1	1.25	2	ECHU1C103JX5	969-5028
50 V d.c. ±2%						
0.1	0.0001	0.9	1.25	2	ECHU1H101GX5	969-5125
0.15	0.00015	0.9	1.25	2	ECHU1H151GX5	969-5133
0.18	0.00018	0.9	1.25	2	ECHU1H181GX5	119-8329
0.22	0.00022	0.9	1.25	2	ECHU1H221GX5	969-5141
0.27	0.00027	0.9	1.25	2	ECHU1H271GX5	119-8330
0.33	0.00033	0.9	1.25	2	ECHU1H331GX5	969-5150
0.47	0.00047	0.9	1.25	2	ECHU1H471GX5	969-5168
0.56	0.00056	0.9	1.25	2	ECHU1H561GX5	969-5176
0.68	0.00068	0.9	1.25	2	ECHU1H681GX5	969-5184
0.82	0.00082	0.9	1.25	2	ECHU1H821GX5	119-8332
1	0.001	0.9	1.25	2	ECHU1H102GX5	969-5192
1.2	0.0012	0.9	1.25	2	ECHU1H122GX5	174-4778
1.5	0.0015	0.9	1.25	2	ECHU1H152GX5	969-5206
1.8	0.0018	0.9	1.25	2	ECHU1H182GX5	969-5214
2.2	0.0022	0.9	1.25	2	ECHU1H222GX5	969-5222
2.7	0.0027	0.9	1.25	2	ECHU1H272GX5	969-5230
50 V d.c. ±5%						
0.1	0.0001	0.9	1.25	2	ECHU1H101JX5	969-5249
0.47	0.00047	0.9	1.25	2	ECHU1H471JX5	969-5257
1	0.001	0.9	1.25	2	ECHU1H102JX5	969-5265
1.2	0.0012	0.9	1.25	2	ECHU1H122JX5	969-5273
2.2	0.0022	0.9	1.25	2	ECHU1H222JX5	969-5290
1206 Case Size						
16 V d.c. ±2%						
12	0.012	0.9	1.6	3.2	ECHU1C123GX5	119-8323
15	0.015	0.9	1.6	3.2	ECHU1C153GX5	969-4900
18	0.018	0.9	1.6	3.2	ECHU1C183GX5	174-4779
22	0.022	0.9	1.6	3.2	ECHU1C223GX5	969-4919
27	0.027	1.1	1.6	3.2	ECHU1C273GX5	969-4927
33	0.033	1.1	1.6	3.2	ECHU1C333GX5	969-4935
39	0.039	1.5	1.6	3.2	ECHU1C393GX5	969-4943
47	0.047	1.5	1.6	3.2	ECHU1C473GX5	969-4951
16 V d.c. ±5%						
18	0.018	0.9	1.6	3.2	ECHU1C183JX5	969-5036
22	0.022	0.9	1.6	3.2	ECHU1C223JX5	969-5044
33	0.033	1.1	1.6	3.2	ECHU1C333JX5	969-5060
39	0.039	1.5	1.6	3.2	ECHU1C393JX5	969-5079
47	0.047	1.5	1.6	3.2	ECHU1C473JX5	969-5087
50 V d.c. ±2%						
3.3	0.0033	0.9	1.6	3.2	ECHU1H332GX5	969-5303
3.9	0.0039	0.9	1.6	3.2	ECHU1H392GX5	969-5311
4.7	0.0047	0.9	1.6	3.2	ECHU1H472GX5	969-5320
5.6	0.0056	0.9	1.6	3.2	ECHU1H562GX5	969-5338
6.8	0.0068	0.9	1.6	3.2	ECHU1H682GX5	969-5346
8.2	0.0082	1.1	1.6	3.2	ECHU1H822GX5	969-5354
10	0.01	1.1	1.6	3.2	ECHU1H103GX5	969-5362

nF	μF	H	W	L	Mfrs. List No.	Order Code
50 V d.c. ±5%	10	1.1	1.6	3.2	ECHU1H103JX5	969-5389

1210 Case Size						
16 V d.c. ±2%						
56	0.056	1.5	2.5	3.2	ECHU1C563GX5	969-4960
68	0.068	1.5	2.5	3.2	ECHU1C683GX5	969-4986
82	0.082	2.1	2.5	3.2	ECHU1C823GX5	969-4994
100	0.1	2.1	2.5	3.2	ECHU1C104GX5	969-5001
16 V d.c. ±5%						
100	0.1	1.5	2.5	3.2	ECHU1C104JX5	969-5117
50 V d.c. ±2%						
12	0.012	1.1	2.5	3.2	ECHU1H123GX5	174-4780
15	0.015	1.1	2.5	3.2	ECHU1H153GX5	969-5397
18	0.018	1.5	2.5	3.2	ECHU1H183GX5	174-4782
22	0.022	1.5	2.5	3.2	ECHU1H223GX5	969-5400
27	0.027	1.5	2.5	3.2	ECHU1H273GX5	969-5419
33	0.033	2.1	2.5	3.2	ECHU1H333GX5	969-5427
39	0.039	2.1	2.5	3.2	ECHU1H393GX5	174-4783

50 V d.c. ±5%						
15	0.015	1.1	2.5	3.2	ECHU1H153JX5	119-8346
22	0.022	1.5	2.5	3.2	ECHU1H223JX5	969-5443
39	0.039	2.1	2.5	3.2	ECHU1H393JX5	969-5478

2416 Case Size						
50 V d.c. ±2%						
180	0.18	2.8	4.1	6	ECHU1H184G09	969-5567

10 V d.c. ±2%						
----------------------	--	--	--	--	--	--

Price Each

nF	Order Code	1+	50+	100+	500+	1K+
10 Volt d.c. ±2%						
3.3	NEW SMD 174-4758	0.210	0.178	0.154	0.141	0.128
3.9	NEW SMD 174-4759	0.220	0.187	0.161	0.147	0.134
4.7	NEW SMD 174-4760	0.220	0.187	0.161	0.147	0.134
5.6	NEW SMD 174-4761	0.220	0.187	0.161	0.147	0.134
6.8	NEW SMD 174-4769	0.220	0.187	0.164	0.151	0.136
8.2	NEW SMD 174-4771	0.230	0.197	0.172	0.157	0.142
10	NEW SMD 174-4772	0.240	0.210	0.175	0.160	0.146
12	NEW SMD 174-4773	0.240	0.210	0.175	0.160	0.146
15	NEW SMD 174-4774	0.250	0.230	0.189	0.173	0.157
18	NEW SMD 174-4775	0.250	0.230	0.189	0.173	0.157
22	NEW SMD 174-4776	0.250	0.230	0.189	0.173	0.157
27	NEW SMD 174-4777	0.390	0.330	0.290	0.260	0.240

16 Volt d.c. ±5%						
3.3	SMD 969-5010	RL	0.230	0.179	0.137	0.120
10	SMD 969-5028	RL	0.310	0.230	0.168	0.145
18	SMD 969-5036	RL	0.310	0.230	0.165	0.142
22	SMD 969-5044	RL	0.340	0.250	0.184	0.158
33	SMD 969-5060	RL	0.370	0.270	0.200	0.174
39	SMD 969-5079	RL	0.197	0.185	0.174	0.135
47	SMD 969-5087	RL	0.410	0.300	0.220	0.187
100	SMD 969-5117	RL	0.550	0.410	0.300	0.260

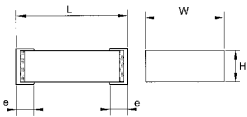
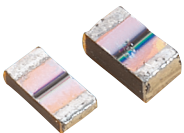
16 Volt d.c. ±2%						
1	NEW SMD 174-4762	0.210	0.178	0.154	0.141	0.128
1.2	NEW SMD 174-4763	0.210	0.178	0.154	0.141	0.128
1.5	NEW SMD 174-4764	0.210	0.178	0.154	0.141	0.128
1.8	NEW SMD 174-4765	0.210	0.178	0.154	0.141	0.128
2.2	NEW SMD 174-4766	0.210	0.178	0.154	0.141	0.128
2.7	NEW SMD 174-4767	0.210	0.178	0.154	0.141	0.128
3.3	SMD 969-4838	RL	0.290	0.230	0.164	0.141
3.9	SMD 969-4846	RL	0.300	0.230	0.164	0.131
4.7	SMD 969-4854	RL	0.300	0.230	0.162	0.124
5.6	SMD 969-4862	RL	0.300	0.230	0.164	0.125
6.8	SMD 969-4870	RL	0.300	0.230	0.164	0.131
8.2	SMD 969-4889	RL	0.300	0.250	0.181	0.156
10	SMD 969-4897	RL	0.320	0.250	0.176	0.129
12	SMD 119-8323	RL	0.230	0.220	0.139	0.120
15	SMD 969-4900	RL	0.330	0.270	0.193	0.147
18	NEW SMD 174-4779	0.250	0.230	0.189	0.173	0.157
22	SMD 969-4919	RL	0.360	0.270	0.200	0.156
27	SMD 969-4927	RL	0.390	0.300	0.220	0.176
33	SMD 969-4935	RL	0.390	0.300	0.220	

nF	Order Code	1+	50+	100+	500+	1K+
50 Volt d.c.±5%						
15	SMD119-8346	0.400	0.290	0.230	0.185	0.150
22	SMD969-5443	0.410	0.300	0.240	0.189	0.162
39	SMD969-5478	0.410	0.310	0.240	0.210	0.200
50 Volt d.c.±2%						
0.1	SMD969-5125	0.280	0.210	0.168	0.131	0.122
0.15	SMD969-5133	0.280	0.210	0.168	0.131	0.126
0.18	SMD119-8329	0.280	0.210	0.183	0.133	0.123
0.22	SMD969-5141	0.290	0.220	0.158	0.136	0.114
0.27	SMD119-8330	0.240	0.230	0.197	0.147	0.135
0.33	SMD969-5150	0.280	0.210	0.168	0.131	0.122
0.47	SMD969-5168	0.290	0.220	0.158	0.136	0.115
0.56	SMD969-5176	0.280	0.210	0.183	0.133	0.123
0.68	SMD969-5184	0.280	0.210	0.176	0.131	0.122
0.82	SMD119-8332	0.280	0.210	0.176	0.131	0.121
1	SMD969-5192	0.290	0.220	0.158	0.125	0.114
1.2	NEW SMD174-4778	0.230	0.197	0.165	0.152	0.138
1.5	SMD969-5206	0.290	0.220	0.158	0.136	0.118
1.8	SMD969-5214	0.220	0.192	0.144	0.126	0.124
2.2	SMD969-5222	0.290	0.220	0.158	0.122	0.118
2.7	SMD969-5230	0.290	0.220	0.156	0.119	0.115
3.3	SMD969-5303	0.320	0.270	0.193	0.140	0.137
3.9	SMD969-5311	0.250	0.230	0.174	0.149	0.135
4.7	SMD969-5320	0.360	0.270	0.196	0.162	0.158
5.6	SMD969-5338	0.350	0.270	0.200	0.172	0.152
6.8	SMD969-5346	0.350	0.270	0.200	0.172	0.152
8.2	SMD969-5354	0.370	0.300	0.210	0.181	0.162
10	SMD969-5362	0.390	0.300	0.210	0.162	0.158
12	NEW SMD174-4780	0.370	0.330	0.280	0.250	0.240
15	SMD969-5397	0.410	0.300	0.220	0.200	0.199
18	NEW SMD174-4782	0.450	0.400	0.330	0.310	0.280
22	SMD969-5400	0.440	0.320	0.240	0.200	0.186
27	SMD969-5419	0.430	0.320	0.240	0.200	0.185
33	SMD969-5427	0.500	0.370	0.270	0.210	0.200
39	NEW SMD174-4783	0.520	0.450	0.390	0.350	0.320
180	SMD969-5567	0.870	0.810	0.740	0.610	0.590

RL FREE Re-reeling service. Only buy what you need and improve assembly efficiency. For more information visit www.farnell.com

ECPU Series - Plastic Film Surface Mount - 16 Volt d.c.

Panasonic



Supplied on 8mm embossed tape. Reel = 3k pcs, C≤0.33µF, 2k pcs, C≤0.33µF

- Submicron film surface mount capacitors
- Low ESR
- Stacked film construction
- Non-polarised
- High capacitance per unit volume
- Tantalum alternative for noise suppression and coupling

Operating temperature -40°C to +85°C Insulation resistance @ 10Vdc C≤0.33µF, 1000MΩ
 Capacitance tolerance ±20% C≤0.33µF, 300MΩ x µF
 Rated voltage 16 Volt d.c. Withstand voltage Rated voltage x 175% for 1-5s
 Soldering Reflow Dissipation factor 1.5% max. @ 1kHz 20°C

Dimensions				Case Size	Mfrs. List No.	Order Code
µF	L	W	H			
0.1	2	1.25	1	T(0805)	ECPU1C104MA5	969-4250
0.15	3.2	1.6	0.8	A(1206)	ECPU1C154MA5	969-4269
0.22	3.2	1.6	0.8	A(1206)	ECPU1C224MA5	969-4277
0.33	3.2	1.6	1	A(1206)	ECPU1C334MA5	969-4285
0.47	3.2	1.6	1.4	A(1206)	ECPU1C474MA5	969-4293
0.68	3.2	1.6	1.4	A(1206)	ECPU1C684MA5	969-4307
1	3.2	2.5	1.4	B(1210)	ECPU1C105MA5	969-4315

218779

Order Multiple=5

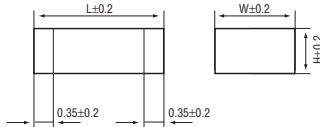
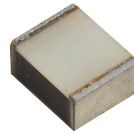
Price Each						
µF	Order Code	5+	50+	100+	500+	1K+
0.1	SMD969-4250	0.300	0.230	0.166	0.142	0.128
0.15	SMD969-4269	0.360	0.270	0.199	0.171	0.154
0.22	SMD969-4277	0.430	0.310	0.230	0.200	0.175
0.33	SMD969-4285	0.430	0.310	0.230	0.200	0.177
0.47	SMD969-4293	0.490	0.360	0.260	0.230	0.200
0.68	SMD969-4307	0.490	0.360	0.260	0.230	0.200
1	SMD969-4315	0.540	0.410	0.290	0.250	0.210

Capacitance Conversion Table

0.000001µF	=	0.001nF	=	1pF
0.00001µF	=	0.01nF	=	10pF
0.0001µF	=	0.1nF	=	100pF
0.001µF	=	1nF	=	1000pF
0.01µF	=	10nF	=	10000pF
0.1µF	=	100nF	=	100000pF
1µF	=	1000nF	=	1000000pF
10µF	=	10000nF	=	10000000pF
100µF	=	100000nF	=	100000000pF

ECWU Series - Plastic Film Surface Mount

Panasonic



- Polyethylene film surface mount capacitors
- Suitable for reflow soldering
- Stacked film construction
- General purpose, coupling and bypass applications
- Small physical size

Operating temperature -40°C to +85°C Insulation resistance 3000MΩ
 Capacitance tolerance ±10% Withstand voltage Rated voltage x 150% for 1-5s
 Soldering Reflow Dissipation factor 1% max. @ 1kHz 20°C

µF	Dimensions			Mfrs. List No.	Order Code
	L	W	H		
100V d.c. 3122 Case Size					
470	4	5.5	7.7	ECWU1474KCV	119-8355
100V d.c. 3925 Case Size					
1000	5.1	6.3	9.8	ECWU1105KCV	119-8356
250V d.c. 1913 Case Size					
1	1.4	3.3	4.8	ECWU2102V16	174-4839
1.2	1.4	3.3	4.8	ECWU2122V16	174-4840
1.5	1.4	3.3	4.8	ECWU2152V16	174-4841
1.8	1.4	3.3	4.8	ECWU2182V16	174-4842
2.2	1.4	3.3	4.8	ECWU2222V16	174-4843
2.7	1.4	3.3	4.8	ECWU2272V16	174-4844
3.3	1.4	3.3	4.8	ECWU2332V16	174-4845
3.9	1.4	3.3	4.8	ECWU2392V16	174-4846
4.7	1.4	3.3	4.8	ECWU2472V16	174-4848
5.6	1.4	3.3	4.8	ECWU2562V16	174-4849
6.8	1.4	3.3	4.8	ECWU2682V16	174-4850
8.2	1.4	3.3	4.8	ECWU2822V16	174-4851
10	1.4	3.3	4.8	ECWU2103V16	174-4852
12	1.4	3.3	4.8	ECWU2123V16	174-4853
15	1.4	3.3	4.8	ECWU2153V16	174-4854
18	2	3.3	4.8	ECWU2183V16	174-4855
22	2	3.3	4.8	ECWU2223V16	174-4856
27	2.4	3.3	4.8	ECWU2273V16	174-4857
33	2.8	3.3	4.8	ECWU2333V16	174-4858
250V d.c. 2416 Case Size					
39	2	4.1	6	ECWU2393V16	174-4861
47	2.4	4.1	6	ECWU2473V16	174-4862
56	2.8	4.1	6	ECWU2563V16	174-4863
68	3.2	4.1	6	ECWU2683V16	174-4864
250V d.c. 2420 Case Size					
82	3.2	5	6	ECWU2823V16	174-4865
100	3.2	5	6	ECWU2104KC9	119-8358
100	3.8	5	6	ECWU2104V16	174-4866
120	4.5	5	6	ECWU2124V16	174-4867
250V d.c. 6140 Case Size					
1000	4.2	10	15.2	ECWU2105KCZ	119-8359

234313

Price Each						
nF	Order Code	1+	50+	100+	500+	1K+
470	SMD119-8355	1.33	1.06	0.88	0.77	0.75
1	NEW SMD174-4839	0.59	0.51	0.43	0.33	0.28
1.2	NEW SMD174-4840	0.59	0.51	0.43	0.33	0.28
1.5	NEW SMD174-4841	0.59	0.51	0.43	0.33	0.28
1.8	NEW SMD174-4842	0.59	0.51	0.43	0.33	0.28
2.2	NEW SMD174-4843	0.59	0.51	0.43	0.33	0.28
2.7	NEW SMD174-4844	0.59	0.51	0.43	0.33	0.28
3.3	NEW SMD174-4845	0.59	0.51	0.43	0.33	0.28
3.9	NEW SMD174-4846	0.59	0.51	0.43	0.33	0.28
4.7	NEW SMD174-4848	0.59	0.51	0.43	0.33	0.28
5.6	NEW SMD174-4849	0.59	0.51	0.43	0.33	0.28
6.8	NEW SMD174-4850	0.59	0.51	0.43	0.33	0.28
8.2	NEW SMD174-4851	0.59	0.51	0.43	0.33	0.28
10	NEW SMD174-4852	0.59	0.51	0.43	0.33	0.28
12	NEW SMD174-4853	0.59	0.51	0.43	0.33	0.28
15	NEW SMD174-4854	0.59	0.51	0.43	0.33	0.28
18	NEW SMD174-4855	0.66	0.56	0.47	0.37	0.31
22	NEW SMD174-4856	0.66	0.56	0.47	0.37	0.31
27	NEW SMD174-4857	0.73	0.62	0.52	0.43	0.34
33	NEW SMD174-4858	0.73	0.62	0.52	0.43	0.34
39	NEW SMD174-4861	0.88	0.75	0.62	0.50	0.43
47	NEW SMD174-4862	0.88	0.75	0.62	0.50	0.43
56	NEW SMD174-4863	0.89	0.77	0.63	0.52	0.43
68	NEW SMD174-4864	0.94	0.80	0.68	0.53	0.45
82	NEW SMD174-4865	1.18	1.00	0.83	0.67	0.55

Over half a million products available online



Film - Plastic - continued

ECWU Series - Plastic Film Surface Mount - continued

nF	Order Code	1+	50+	100+	500+	1K+
100	NEW SMD 174-4866 ●	1.23	1.05	0.87	0.71	0.58
120	NEW SMD 174-4867 ●	1.23	1.05	0.87	0.71	0.58
100	SMD 119-8358 ● RL	1.07	0.79	0.56	0.46	0.45
1000	SMD 119-8356 ● RL	1.80	1.68	1.29	1.07	1.04
1000	SMD 119-8359 ● RL	3.34	2.61	1.96	1.37	1.34

ECV Plastic Film



Lead pitch=5, Lead dia.=0.5, Lead length=20

- Stacked Metallized Plastic Film Capacitor
- Small size and large capacitance
- Excellent electric characteristics in non-inductive construction
- Ideal for noise suppression for logic circuits

Operating temperature -40°C to +105°C Insulation resistance $C \leq 0.33\mu\text{F}$ 30000M Ω min.
 Capacitance tolerance $\pm 5\%$ $C > 0.33\mu\text{F}$ 10000M Ω min.

N.B. For ease of selection, capacitance value is listed in both μF and nF.

50 Volt d.c.		Dimensions			Mftrs. List No.	Order Code
μF	nF	H	W	D		
0.01	10	5	7.3	3.2	ECQV1H103JL	166-9200
0.012	12	5	7.3	3.2	ECQV1H123JL	166-9201
0.015	15	5	7.3	3.2	ECQV1H153JL	166-9202
0.018	18	5	7.3	3.2	ECQV1H183JL	166-9203
0.022	22	5	7.3	3.2	ECQV1H223JL	166-9204
0.047	47	5	7.3	3.2	ECQV1H473JL	174-4826
0.068	68	5	7.3	3.2	ECQV1H683JL	174-4827
0.1	100	5	7.3	4	ECQV1H104JL	174-4828
0.22	220	5.5	7.3	4.8	ECQV1H224JL	174-4829
0.33	330	7	7.3	5.2	ECQV1H334JL	174-4830
0.47	470	7.3	7.3	6	ECQV1H474JL	174-4831
0.68	680	10	7.3	6.5	ECQV1H684JL	174-4832
1	1000	11	7.3	8	ECQV1H105JL	174-4833
2.2	2200	12	10.2	7.9	ECQV1H225JL	174-4834

50 Volt d.c.		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
0.01	166-9200 ●	0.074	0.063	0.052	0.041	0.029
0.012	166-9201 ●	0.086	0.074	0.059	0.043	0.032
0.015	166-9202 ●	0.081	0.068	0.056	0.041	0.028
0.018	166-9203 ●	0.089	0.077	0.062	0.050	0.033
0.022	166-9204 ●	0.090	0.077	0.062	0.050	0.033
0.047	NEW 174-4826 ●	0.056	0.046	0.038	0.031	0.025
0.068	NEW 174-4827 ●	0.056	0.046	0.038	0.031	0.025
0.1	NEW 174-4828 ●	0.056	0.046	0.038	0.031	0.025
0.22	NEW 174-4829 ●	0.084	0.070	0.058	0.046	0.038
0.33	NEW 174-4830 ●	0.103	0.086	0.072	0.057	0.048
0.47	NEW 174-4831 ●	0.122	0.103	0.086	0.069	0.057
0.68	NEW 174-4832 ●	0.168	0.148	0.124	0.098	0.082
1	NEW 174-4833 ●	0.240	0.210	0.174	0.139	0.116
2.2	NEW 174-4834 ●	0.940	0.800	0.680	0.530	0.450

50 Volt d.c.		Dimensions			Mftrs. List No.	Order Code
μF	nF	H	W	D		
0.056	56	6.8	7.5	3.2	ECQV1J563JM	174-4836
0.1	100	7	7.5	3.2	ECQV1J104JM	174-4837

Order Multiple=5

63 Volt d.c.		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
0.056	NEW 174-4836 ●	0.056	0.050	0.042	0.033	0.031
0.1	NEW 174-4837 ●	0.056	0.050	0.042	0.036	0.034

100 Volt d.c.		Dimensions			Mftrs. List No.	Order Code
μF	nF	H	W	D		
0.01	10	7	7.5	3.2	ECQV1103JM	166-9192
0.015	15	7	7.5	3.2	ECQV1153JM	166-9193
0.022	22	7	7.5	3.2	ECQV1223JM	166-9194
0.033	33	7	7.5	3.2	ECQV1333JM	166-9195
0.056	56	7	7.5	3.2	ECQV1563JM	174-4838
0.068	68	7	7.5	4	ECQV1683JM	166-9197
0.1	100	7	7.5	4.5	ECQV1104JM	166-9198

Order Multiple=5

100 Volt d.c.		Price Each				
μF	Order Code	5+	50+	100+	500+	1K+
0.01	166-9192 ●	0.098	0.085	0.069	0.052	0.040
0.015	166-9193 ●	0.098	0.085	0.069	0.052	0.040
0.022	166-9194 ●	0.098	0.085	0.069	0.052	0.040
0.033	166-9195 ●	0.098	0.085	0.069	0.052	0.040
0.056	NEW 174-4838 ●	0.056	0.052	0.043	0.034	0.029
0.068	166-9197 ●	0.098	0.085	0.069	0.052	0.040
0.1	166-9198 ●	0.153	0.130	0.104	0.071	0.060

Film - Polyester (PET)

2220 Series - Surface Mount



- Metallised polyester film surface mount
- Applications include signal coupling and bypassing
- Flame retardant plastic case
- Low profile high reliability



Tolerance $\pm 20\%$
 Climatic category 55/100/21
 Operating temperature -55°C to +100°C
 Case tolerance ± 0.2

μF	nF	Dimensions			Qty Per Reel	Mftrs. List No.	Order Code
		H	W	D			
0.01	10	5.7	5.1	3.5	800	SMD2220 100V 0.01UF	100-5950
0.022	22	5.7	5.1	3.5	800	SMD2220 100V 0.022UF	100-5951
0.033	33	5.7	5.1	2.5	800	SMD2220 100V 0.033UF	100-5952
0.047	47	5.7	5.1	3	650	SMD2220 100V 0.047UF	100-5953
0.068	68	5.7	5.1	3	650	SMD2220 100V 0.068UF	100-5954
0.1	100	5.7	5.1	4	500	SMD2220 100V 0.1UF	100-5955

Order Multiple=5

100 Volt d.c.		Price Each				
μF	Order Code	5+	10+	50+	100+	500+
0.01	SMD 100-5950 ●	0.330	0.290	0.260	0.186	0.176
0.022	SMD 100-5951 ●	0.330	0.290	0.260	0.186	0.175
0.033	SMD 100-5952 ●	0.330	0.290	0.260	0.185	0.175
0.047	SMD 100-5953 ●	0.340	0.300	0.270	0.210	0.180
0.068	SMD 100-5954 ●	0.370	0.340	0.320	0.240	0.198
0.1	SMD 100-5955 ●	0.450	0.360	0.340	0.280	0.210

MMC Series - Surface Mount



- Metallised polyester film surface mount



Tolerance $\pm 10\%$
 Operating temperature -55°C to +100°C

Case 2220	nF	μF	Dimensions			Mftrs. List No.	Order Code
			H	W	D		
10	0.01	2.5	5	5.7	MMC5.7 103K100J31TR12	175-3053	
22	0.022	2.5	5	5.7	MMC5.7 223K100J31TR12	175-3054	
33	0.033	2.5	5	5.7	MMC5.7 333K100J31TR12	175-3055	
47	0.047	2.5	5	5.7	MMC5.7 473K100J31TR12	175-3056	
68	0.068	2.5	5	5.7	MMC5.7 683K100J33TR12	175-3057	
100	0.1	4	5	5.7	MMC5.7 104K100J35TR12	175-3059	

Order Multiple=5

Case 2220		Price Each				
nF	Order Code	5+	50+	250+	500+	3K1+
10	SMD 175-3053 ●	0.250	0.220	0.200	0.171	0.126
22	SMD 175-3054 ●	0.250	0.230	0.200	0.172	0.127
33	SMD 175-3055 ●	0.250	0.230	0.210	0.175	0.129
47	SMD 175-3056 ●	0.250	0.230	0.210	0.176	0.130
68	SMD 175-3057 ●	0.260	0.240	0.210	0.181	0.133
100	SMD 175-3059 ●	0.270	0.250	0.220	0.188	0.139

Case 2824	nF	μF	Dimensions			Mftrs. List No.	Order Code
			H	W	D		
120	0.12	2.5	6	7.3	MMC7.3 124K50K31 TR12	175-3061	
150	0.15	2.5	6	7.3	MMC7.3 154K50K31 TR12	175-3062	
180	0.18	3	6	7.3	MMC7.3 184K50K33 TR12	175-3063	
220	0.22	3	6	7.3	MMC7.3 224K50K33 TR12	175-3064	
270	0.27	3	6	7.3	MMC7.3 274K50K35 TR12	175-3065	
330	0.33	3.5	6	7.3	MMC7.3 334K50K35 TR12	175-3066	
390	0.39	3.5	6	7.3	MMC7.3 394K50K35 TR12	175-3067	
470	0.47	3.5	6	7.3	MMC7.3 474K50K35 TR12	175-3068	
560	0.56	4.5	6	7.3	MMC7.3 564K50K37 TR12	175-3069	
680	0.68	4.5	6	7.3	MMC7.3 684K50K37 TR12	175-3070	
820	0.82	4.5	6	7.3	MMC7.3 824K50K37 TR12	175-3072	
1000	1	4.5	6	7.3	MMC7.3 105K50K37 TR12	175-3073	

63 Volt d.c.		Dimensions			Mftrs. List No.	Order Code
nF	μF	H	W	D		
100	0.1	2.5	6	7.3	MMC7.3 104K63K31TR12	175-3076
150	0.15	2.5	6	7.3	MMC7.3 154K63K31TR12	175-3077
220	0.22	3	6	7.3	MMC7.3 224K63K33TR12	175-3078
330	0.33	3.5	6	7.3	MMC7.3 334K63K35TR12	175-3079
470	0.47	3.5	6	7.3	MMC7.3 474K63K35TR12	175-3080

100 Volt d.c.		Dimensions			Mftrs. List No.	Order Code
nF	μF	H	W	D		
10	0.01	2.5	6	7.3	MMC7.3 103K100K31TR12	175-3074
68	0.068	2.5	6	7.3	MMC7.3 683K100K31TR12	175-3075

Order Multiple=5

Case 2824	Order Code	5+	50+	250+	500+	3K1+
50 Volt d.c.						
10	SMD 175-3053	0.250	0.220	0.200	0.171	0.126
120	SMD 175-3061	0.290	0.260	0.240	0.200	0.148
150	SMD 175-3062	0.300	0.280	0.250	0.210	0.156
180	SMD 175-3063	0.320	0.290	0.260	0.220	0.164
220	SMD 175-3064	0.350	0.320	0.290	0.240	0.181
270	SMD 175-3065	0.350	0.320	0.290	0.250	0.183
330	SMD 175-3066	0.360	0.330	0.290	0.250	0.186
390	SMD 175-3067	0.360	0.330	0.300	0.260	0.189
470	SMD 175-3068	0.390	0.340	0.310	0.260	0.196
560	SMD 175-3069	0.420	0.390	0.340	0.290	0.220
680	SMD 175-3070	0.440	0.410	0.360	0.310	0.230
820	SMD 175-3072	0.450	0.410	0.360	0.310	0.230
1000	SMD 175-3073	0.470	0.430	0.390	0.330	0.240

Case 4036	Order Code	5+	50+	250+	500+	800+
50 Volt d.c.						
100	SMD 175-3081	0.56	0.51	0.46	0.40	0.29
120	SMD 175-3082	0.56	0.51	0.46	0.39	0.29
150	SMD 175-3084	0.56	0.51	0.46	0.40	0.29
180	SMD 175-3085	0.56	0.51	0.46	0.40	0.29
220	SMD 175-3086	0.57	0.52	0.47	0.40	0.29
270	SMD 175-3087	0.57	0.52	0.47	0.40	0.29
330	SMD 175-3088	0.57	0.52	0.47	0.40	0.29
390	SMD 175-3089	0.58	0.53	0.48	0.41	0.30
470	SMD 175-3090	0.59	0.54	0.49	0.42	0.31
560	SMD 175-3091	0.60	0.54	0.49	0.42	0.31
680	SMD 175-3092	0.61	0.55	0.50	0.43	0.31
820	SMD 175-3093	0.62	0.57	0.51	0.44	0.32
1000	SMD 175-3094	0.78	0.71	0.63	0.54	0.40
1200	SMD 175-3096	0.66	0.60	0.54	0.46	0.34
1500	SMD 175-3097	0.69	0.62	0.56	0.48	0.35

MKS02 Series



- MKS02 metallised polyester
- Sub miniature 2.5mm lead spacing
- Flame retardant case to **UL94V-0**

Lead length=5, Lead dia.=0.4, Lead Pitch=2.5

Operating temp.	-55°C to +100°C	Climatic category	55/100/21
Insulation resistance	C < 0.033µF @ 50V 3750mΩ @ 63V 10000mΩ C ≥ 0.033µF 5000 sec (MΩ µF)	Tolerance	±20%
Temp. coefficient	+330ppm/°C (+20% to +70°C)	Power factor @	1kHz, 20°C 0.008

N.B. For ease of selection, capacitance value is listed in both µF and nF.

µF	nF	D	W	H	Order Code
0.01	10	2.5	4.6	7	100-6000
0.015	15	2.5	4.6	7	100-5999
0.022	22	2.5	4.6	7	100-6001
0.033	33	2.5	4.6	7	100-6002
0.047	47	2.5	4.6	7	100-6003
0.068	68	3	4.6	7.5	100-5998
0.1	100	3	4.6	7.5	100-6004



Order Multiple=5

63 Volt d.c.	Order Code	5+	25+	50+	100+	500+	1K+
0.01	100-6000	0.200	0.182	0.173	0.152	0.121	0.102
0.015	100-5999	0.270	0.260	0.230	0.180	0.164	0.139
0.022	100-6001	0.250	0.220	0.210	0.176	0.156	0.139
0.033	100-6002	0.260	0.230	0.210	0.179	0.160	0.142
0.047	100-6003	0.260	0.230	0.210	0.178	0.159	0.141
0.068	100-5998	0.300	0.280	0.260	0.250	0.193	0.165
0.1	100-6004	0.300	0.280	0.260	0.230	0.188	0.160

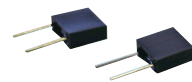
250 Volt d.c.	nF	H	W	D	Order Code
1000	1	7	4.6	2.5	151-9318
2200	2.2	7	4.6	2.5	151-9320
3300	3.3	7	4.6	2.5	151-9321
6800	6.8	7	4.6	2.5	151-9322

Order Multiple=5

250 Volt d.c.	Order Code	5+	25+	50+	100+	500+
1000	151-9318	0.250	0.200	0.175	0.154	0.137
2200	151-9320	0.310	0.260	0.220	0.193	0.173
3300	151-9321	0.250	0.200	0.175	0.154	0.137
6800	151-9322	0.142	0.121	0.107	0.095	0.086

Polyester Capacitors

5mm



Voltage Rating
Tolerance
Lead Pitch

63V
± 10%
5mm



- A range of industry standard 5mm pitch metallised polyester capacitors
- Stacked construction
- Epoxy resin encapsulated in flame retardant plastic cases with stand-off feet
- Excellent value for money

nF	µF	H	W	D	Mfrs. List No.	Order Code
1	0.001	6.5	7.2	2.5	MCPBSFC-1J102KA45	168-5470
2.2	0.0022	6.5	7.2	2.5	MCPBSFC-1J222KA45	168-5471
4.7	0.0047	6.5	7.2	2.5	MCPBSFC-1J472KA45	168-5472
10	0.01	6.5	7.2	2.5	MCPBSFC-1J103KA45	168-5473
22	0.022	6.5	7.2	2.5	MCPBSFC-1J223KA45	168-5474
47	0.047	6.5	7.2	2.5	MCPBSFC-1J473KA45	168-5475
100	0.1	6.5	7.2	2.5	MCPBSFC-1J104KA45	168-5476
220	0.22	6.5	7.2	2.5	MCPBSFC-1J224KA45	168-5477
471	0.471	6.5	7.2	2.5	MCPBSFC-1J4474KB45	168-5479
1000	1	10	7.2	5	MCPBSFC-1J105KB45	168-5481

µF	Order Code	10+	50+	100+	250+	1K+
0.001	168-5470	0.088	0.084	0.068	0.061	0.052
0.0022	168-5471	0.088	0.084	0.068	0.061	0.052
0.0047	168-5472	0.088	0.084	0.068	0.061	0.052
0.01	168-5473	0.092	0.087	0.070	0.062	0.053
0.022	168-5474	0.088	0.084	0.068	0.061	0.052
0.047	168-5475	0.088	0.084	0.068	0.061	0.052
0.1	168-5476	0.089	0.085	0.069	0.061	0.052
0.22	168-5477	0.104	0.099	0.079	0.071	0.060
0.471	168-5479	0.198	0.188	0.151	0.136	0.115
1	168-5481	0.260	0.250	0.198	0.178	0.151

MKS2 Series



- MKS2 metallised polyester capacitor
- Flame retardant case to **UL94V-0**

Lead length=6
Lead dia.=0.5
Lead pitch=5

Operating temperature	-55°C to +100°C	Tolerance	±10%
Temperature coefficient	+330ppm/°C (+20°C to +70°C)	Power factor @	0.008
Climatic category	55/100/21	1kHz, 20°C	(for C ≥ 1.0µF: 0.01)

N.B. For ease of selection, capacitance value is listed in both µF and nF.

50 Volt d.c. (30 Volt a.c.)	µF	nF	Order Code	H	W	D
	2.2	2200	107-422	13	7.2	7.2
	3.3	3300	107-423	13	7.2	7.2

50 Volt d.c.	µF	Order Code	1+	25+	100+	1K+	5K+
2.2		107-422	2.23	2.05	1.92	1.63	1.54
3.3		107-423	2.84	2.64	2.44	2.06	2.00

µF	nF	Order Code	H	W	D
0.015	15	100-6016	6.5	7.2	2.5
0.01	10	100-6018	6.5	7.2	2.5
0.022	22	100-6020	6.5	7.2	2.5
0.033	33	100-6023	6.5	7.2	2.5
0.047	47	100-6025	6.5	7.2	2.5
0.068	68	100-6026	6.5	7.2	2.5



Film - Polyester (PET) - continued

MKS2 Series - continued

µF	nF	Order Code	H	W	D
0.15	150	100-6029	6.5	7.2	3.5
0.1	100	100-6030	6.5	7.2	2.5
0.22	220	100-6033	7.5	7.2	3.5
0.33	330	100-6036	8.5	7.2	4.5
0.47	470	100-6038	9.5	7.2	5
0.68	680	100-6039	9.5	7.2	5
1	1000	100-6040	10	7.2	5.5

Order Multiple=5

63 Volt d.c.

µF	Order Code	5+	25+	100+	1K+	5K+
0.015	100-6016	0.220	0.200	0.181	0.146	0.133
0.01	100-6018	0.210	0.193	0.173	0.139	0.119
0.022	100-6020	0.280	0.250	0.220	0.174	0.158
0.033	100-6023	0.183	0.157	0.142	0.119	0.098
0.047	100-6025	0.260	0.210	0.194	0.165	0.133
0.068	100-6026	0.210	0.180	0.157	0.126	0.112
0.15	100-6029	0.350	0.300	0.260	0.210	0.180
0.1	100-6030	0.270	0.250	0.210	0.171	0.146
0.22	100-6033	0.610	0.500	0.440	0.390	0.300
0.33	100-6036	0.560	0.500	0.460	0.360	0.310
0.47	100-6038	0.710	0.590	0.540	0.450	0.400
0.68	100-6039	0.930	0.820	0.720	0.570	0.500
1	100-6040	1.070	0.940	0.850	0.710	0.570

100 Volt d.c. (63 Volt a.c.)

µF	nF	H	W	D	Order Code
0.01	10	6.5	7.2	2.5	100-6017
0.022	22	6.5	7.2	2.5	100-6019
0.047	47	6.5	7.2	2.5	100-6024
0.15	150	8.5	7.2	4.5	100-6028
0.1	100	7.5	7.2	3	100-6031
0.22	220	8.5	7.2	5	100-6032
0.33	330	9.5	7.2	5.5	100-6035
0.47	470	10	7.2	7.2	100-6037

208616

Order Multiple=5

100 Volt d.c.

µF	Order Code	5+	25+	100+	1K+	5K+
0.01	100-6017	0.310	0.220	0.188	0.142	0.122
0.022	100-6019	0.300	0.210	0.181	0.146	0.133
0.047	100-6024	0.290	0.220	0.177	0.142	0.122
0.15	100-6028	0.350	0.290	0.260	0.230	0.210
0.1	100-6031	0.310	0.230	0.210	0.172	0.149
0.22	100-6032	0.450	0.340	0.310	0.250	0.210
0.33	100-6035	0.570	0.480	0.450	0.350	0.310
0.47	100-6037	0.730	0.550	0.530	0.450	0.400

630 Volt d.c.

µF	nF	H	W	D	Order Code
0.001	1	7.5	7.2	3	151-9302
0.0022	2.2	7.5	7.2	3	151-9304
0.01	10	11.5	7.2	5.5	151-9308

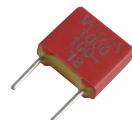
494466

Order Multiple=5

630 Volt d.c.

nF	Order Code	5+	25+	100+	1K+	5K+
1	151-9302	0.106	0.088	0.075	0.067	0.059
2.2	151-9304	0.106	0.088	0.075	0.067	0.059
10	151-9308	0.157	0.130	0.112	0.099	0.087

FKS2 Series - 100 Volt d.c. (63 Volt a.c.)



- FKS2 polyester film capacitors
- Flame retardant case to **UL94V-0**

Lead length=6
Lead dia.=0.5
Lead pitch=5

Operating temperature	-55°C to +100°C	Climatic category	55/100/56
Insulation resistance	30000MΩ	Tolerance	±20%
Temperature coefficient	+330ppm/°C (+20°C to +70°C)	Power factor @ 1 kHz, 20°C	0.007

N.B. For ease of selection, capacitance value is listed in both pF and nF.

pF	nF	H	W	D	Order Code
1000	1	6.5	7.2	2.5	100-5992
1500	1.5	6.5	7.2	2.5	100-5993
2200	2.2	6.5	7.2	2.5	100-5949
3300	3.3	6.5	7.2	2.5	100-5994
4700	4.7	6.5	7.2	2.5	100-5995
6800	6.8	6.5	7.2	2.5	100-5997
10000	10	7.5	7.2	3	100-5991

208617

Order Multiple=5

pF	Order Code	5+	25+	100+	1K+	5K+
1000	100-5992	0.210	0.165	0.150	0.122	0.105
1500	100-5993	0.230	0.182	0.164	0.135	0.116
2200	100-5949	0.210	0.172	0.161	0.128	0.108
3300	100-5994	0.220	0.176	0.155	0.129	0.103
4700	100-5995	0.192	0.145	0.137	0.111	0.086
6800	100-5997	0.210	0.168	0.149	0.123	0.099
10000	100-5991	0.196	0.157	0.142	0.115	0.099

MKS2/FKP2/FKS2 Kit



- Kit contains 18 values
- MKS2 FKP2 and FKS2 ranges
- Can be restocked when required

Kit contains 20 each of the following :-

- MKS2 0.01µF/63V, 0.022µF/63V, 0.047µF/63V, 0.1µF/63V, 0.22µF/63V, 0.47µF/63V, 1µF/63V, 2.2µF/50V*
- FKP2 100pF/100V, 220pF/100V, 470pF/100V, 1000pF/100V, 2200pF/100V, 4700pF/63V, 10000pF/63V
- FKS2 1000pF/100V, 2200pF/100V, 4700pF/100V

* = 10 pieces only

208435

Order Code	1+	5+	10+
100-6066	88.49	81.96	77.82

R82 Series

ARCOTRONICS GROUP
A KEMET Company



- Metallised polyester film capacitor
- D.C. multipurpose applications
- Typical applications: by-passing, blocking, coupling, decoupling, timing and oscillator circuits

Lead Pitch 5mm
Tolerance ± 5%
Lead Length 17mm

50 Volt

nF	µF	H	W	D	Mfrs. List No.	Order Code
2200	2.2	11	7	6	R82CC4220Z370J	167-9398
3300	3.3	13	7	7	R82CC4330Z330J	167-9400
4700	4.7	13	7	7	R82CC4470Z330J	167-9401

50 Volts

µF	Order Code	10+	50+	100+	250+	500+
2.2	167-9398	0.91	0.45	0.30	0.23	0.22
3.3	167-9400	1.40	0.70	0.47	0.35	0.32
4.7	167-9401	1.93	0.96	0.64	0.51	0.50

63 Volt

nF	µF	H	W	D	Mfrs. List No.	Order Code
100	0.1	7	7	3	R82DC3100Z350J	167-9402
220	0.22	7	7	3	R82DC3220Z360J	167-9404
330	0.33	8	7	4	R82DC3330Z360J	167-9406
470	0.47	8	7	4	R82DC3470Z360J	167-9407
680	0.68	10	7	5	R82DC3680Z360J	167-9408
1000	1	10	7	5	R82DC4100Z360J	167-9409
1500	1.5	11	7	6	R82DC4150Z360J	167-9410

63 Volts

µF	Order Code	10+	50+	100+	250+	500+
0.1	167-9402	0.068	--	--	--	--
0.22	167-9404	0.088	--	--	--	--
0.33	167-9406	0.133	--	--	--	--
0.47	167-9407	0.148	0.074	0.049	0.036	0.035
0.68	167-9408	0.270	0.137	0.092	0.069	0.066
1	167-9409	0.260	0.127	0.085	0.063	0.059
1.5	167-9410	0.420	--	--	--	--

100 Volt

nF	µF	H	W	D	Mfrs. List No.	Order Code
1	0.001	7	7	3	R82EC1100Z350J	167-9411
1.5	0.0015	7	7	3	R82EC1150Z350J	167-9412
2.2	0.0022	7	7	3	R82EC1220Z350J	167-9413
3.3	0.0033	7	7	3	R82EC1330Z350J	167-9414
4.7	0.0047	7	7	3	R82EC1470Z350J	167-9415
6.8	0.0068	7	7	3	R82EC1680Z350J	167-9416
10	0.01	7	7	3	R82EC2100Z350J	167-9418
15	0.015	7	7	3	R82EC2150Z350J	167-9419
22	0.022	7	7	3	R82EC2220Z350J	167-9420
47	0.047	7	7	3	R82EC2470Z360J	167-9422
68	0.068	7	7	3	R82EC2680Z360J	167-9423
100	0.1	7	7	3	R82EC3100Z370J	167-9424
150	0.15	8	7	4	R82EC3150Z370J	167-9426
220	0.22	8	7	4	R82EC3220Z370J	167-9427
470	0.47	10	7	5	R82EC3470Z370J	167-9431
680	0.68	10	7	5	R82EC3680Z370J	167-9432
1000	1	11	7	6	R82EC4100Z370J	167-9433

100 Volts		Price Each				
µF	Order Code	10+	50+	100+	250+	500+
0.001	167-9411	0.068	--	--	--	--
0.0015	167-9412	0.058	0.029	0.020	0.017	0.015
0.0022	167-9413	0.068	--	--	--	--
0.0033	167-9414	0.058	0.029	0.020	0.017	0.015
0.0047	167-9415	0.068	0.033	0.023	0.020	0.018
0.0068	167-9416	0.058	--	--	--	--
0.01	167-9418	0.068	--	--	--	--
0.015	167-9419	0.054	0.027	0.018	0.016	0.015
0.022	167-9420	0.058	0.029	0.020	0.016	0.014
0.047	167-9422	0.068	--	--	--	--
0.068	167-9423	0.054	--	--	--	--
0.1	167-9424	0.070	--	--	--	--
0.15	167-9426	0.092	0.046	0.031	0.024	0.023
0.22	167-9427	0.113	0.058	0.039	0.031	0.030
0.47	167-9431	0.178	0.090	0.060	0.048	0.046
0.68	167-9432	0.260	--	--	--	--
1	167-9433	0.340	--	--	--	--

250 Volt		Dimensions			Mfrs. List No.	Order Code
nF	µF	H	W	D		
6.8	0.0068	7	7	3	R82IC1680Z350J	167-9434
15	0.015	7	7	3	R82IC2150Z350J	167-9436
22	0.022	8	7	4	R82IC2220Z350J	167-9437
33	0.033	8	7	4	R82IC2330Z350J	167-9438
47	0.047	10	7	5	R82IC2470Z350J	167-9439
150	0.15	11	7	6	R82IC3150Z350J	167-9440

250 Volts		Price Each				
µF	Order Code	10+	50+	100+	250+	500+
0.0068	167-9434	0.077	0.039	0.026	0.022	0.020
0.015	167-9436	0.084	0.042	0.028	0.021	0.020
0.022	167-9437	0.104	0.050	0.033	0.026	0.025
0.033	167-9438	0.099	0.050	0.033	0.026	0.025
0.047	167-9439	0.124	0.062	0.041	0.034	0.032
0.15	167-9440	0.210	0.102	0.068	0.058	0.057

400 Volt		Dimensions			Mfrs. List No.	Order Code
nF	µF	H	W	D		
1	0.001	7	7	3	R82MC1100Z350J	167-9441
1.5	0.0015	7	7	3	R82MC1150Z350J	167-9443
3.3	0.0033	7	7	3	R82MC1330Z350J	167-9445
4.7	0.0047	7	7	3	R82MC1470Z350J	167-9446
10	0.01	8	7	4	R82MC2100Z350J	167-9447
15	0.015	10	7	5	R82MC2150Z350J	167-9448
22	0.022	10	7	5	R82MC2220Z350J	167-9449
33	0.033	10	7	5	R82MC2330Z350J	167-9450
47	0.047	11	7	6	R82MC2470Z350J	167-9451

400 Volts		Price Each				
µF	Order Code	10+	50+	100+	250+	500+
0.001	167-9441	0.082	0.041	0.028	0.021	0.020
0.0015	167-9443	0.077	--	--	--	--
0.0033	167-9445	0.082	0.041	0.028	0.021	0.020
0.0047	167-9446	0.095	--	--	--	--
0.01	167-9447	0.102	0.050	0.034	0.025	0.024
0.015	167-9448	0.124	0.062	0.041	0.034	0.032
0.022	167-9449	0.146	0.071	0.048	0.036	0.034
0.033	167-9450	0.151	0.075	0.050	0.040	0.039
0.047	167-9451	0.198	0.097	0.065	0.049	0.046

MKT 470 Series



- Blocking and coupling signals
 - Filter networks
 - Potted with epoxy resin
 - Flame retardant case
- Operating temperature -55°C to +125°C
 Tolerance ±5%
 Climatic category 55/125/56
 Basic specification IEC60384-2 long life
- Lead dia. = 0.5, Supplied on paper tape

63 Volt d.c.		Dimensions			Lead Pitch	Mfrs. List No.	Order Code
nF	µF	H	W	D			
68	0.068	6.5	7.2	2.5	5	BFC247076683	116-6035
100	0.1	6.5	7.2	2.5	5	BFC247076104	116-6036
150	0.15	8	7.2	3.5	5	BFC247076154	116-6038
220	0.22	8	7.2	3.5	5	BFC247076224	116-6039
330	0.33	8	7.2	3.5	5	BFC247076334	116-6040
470	0.47	9.5	7.2	4.5	5	BFC247076474	116-6041
680	0.68	9.5	7.2	4.5	5	BFC247076684	116-6042
1000	1	11	7.2	6	5	BFC247076105	116-6043

63 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.068	116-6035	0.187	--	--	--	--
0.1	116-6036	0.250	0.158	0.127	0.114	0.103
0.15	116-6038	0.260	0.153	0.122	0.109	0.098
0.22	116-6039	0.300	0.200	0.159	0.145	0.128
0.33	116-6040	0.370	0.210	0.168	0.152	0.135
0.47	116-6041	0.550	0.360	0.280	0.260	0.230
0.68	116-6042	0.560	0.310	0.250	0.230	0.200
1	116-6043	0.810	--	--	--	--

100 Volt d.c.		Dimensions			Lead Pitch	Mfrs. List No.	Order Code
nF	µF	H	W	D			
22	0.022	6.5	7.2	2.5	5	BFC247086223	116-6044
33	0.033	6.5	7.2	2.5	5	BFC247086333	116-6045
47	0.047	6.5	7.2	2.5	5	BFC247086473	116-6046
68	0.068	8	7.2	3.5	5	BFC247086683	116-6047
100	0.1	8	7.2	3.5	5	BFC247086104	116-6048
150	0.15	9.5	7.2	4.5	5	BFC247086154	116-6051
220	0.22	9.5	7.2	4.5	5	BFC247086224	116-6052
330	0.33	11	7.2	6	5	BFC247086334	116-6053
470	0.47	11	7.2	6	5	BFC247086474	116-6054

100 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.022	116-6044	0.240	0.132	0.105	0.096	0.085
0.033	116-6045	0.210	0.116	0.094	0.085	0.075
0.047	116-6046	0.260	0.150	0.119	0.107	0.096
0.068	116-6047	0.086	0.066	0.054	0.045	0.041
0.1	116-6048	0.240	0.136	0.109	0.098	0.087
0.15	116-6051	0.350	0.270	0.210	0.189	0.186
0.22	116-6052	0.440	0.250	0.197	0.177	0.158
0.33	116-6053	0.450	0.250	0.200	0.181	0.161
0.47	116-6054	0.630	0.400	0.310	0.280	0.250

250 Volt d.c.		Dimensions			Lead Pitch	Mfrs. List No.	Order Code
nF	µF	H	W	D			
10	0.01	6.5	7.2	2.5	5	BFC247036103	116-6055
15	0.015	6.5	7.2	2.5	5	BFC247036153	116-6056
22	0.022	8	7.2	3.5	5	BFC247036223	116-6057
33	0.033	8	7.2	3.5	5	BFC247036333	116-6058
47	0.047	9.5	7.2	4.5	5	BFC247036473	116-6059
68	0.068	9.5	7.2	4.5	5	BFC247036683	116-6060
100	0.1	11	7.2	6	5	BFC247036104	116-6061

250 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.01	116-6055	0.210	0.134	0.108	0.097	0.086
0.015	116-6056	0.270	0.210	0.165	0.136	0.130
0.022	116-6057	0.220	0.153	0.123	0.109	0.097
0.033	116-6058	0.240	0.181	0.145	0.127	0.115
0.047	116-6059	0.300	0.210	0.165	0.150	0.132
0.068	116-6060	0.152	0.122	0.099	0.095	0.091
0.1	116-6061	0.370	0.210	0.166	0.149	0.133

400 Volt d.c.		Dimensions			Lead Pitch	Mfrs. List No.	Order Code
nF	µF	H	W	D			
1	0.001	6.5	7.2	2.5	5	BFC247066102	116-6063
1.5	0.0015	6.5	7.2	2.5	5	BFC247066152	116-6064
2.2	0.0022	6.5	7.2	2.5	5	BFC247066222	116-6065
3.3	0.0033	6.5	7.2	2.5	5	BFC247066332	116-6066
4.7	0.0047	6.5	7.2	2.5	5	BFC247066472	116-6067
6.8	0.0068	6.5	7.2	2.5	5	BFC247066682	116-6068
10	0.01	8	7.2	3.5	5	BFC247066103	116-6069
15	0.015	8	7.2	3.5	5	BFC247066153	116-6070
22	0.022	9.5	7.2	4.5	5	BFC247066223	116-6071
33	0.033	11	7.2	6	5	BFC247066333	116-6072
47	0.047	11	7.2	6	5	BFC247066473	116-6073

400 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.001	116-6063	0.250	0.162	0.129	0.116	0.105
0.0015	116-6064	0.150	0.118	0.097	0.077	0.072
0.0022	116-6065	0.260	0.155	0.125	0.112	0.100
0.0033	116-6066	0.240	0.140	0.113	0.102	0.090
0.0047	116-6067	0.158	0.104	0.086	0.079	0.072
0.0068	116-6068	0.230	0.127	0.101	0.089	0.081
0.01	116-6069	0.250	--	--	--	--
0.015	116-6070	0.210	0.124	0.097	0.088	0.079
0.022	116-6071	0.290	0.174	0.138	0.125	0.110
0.033	116-6072	0.390	0.240	0.188	0.170	0.151
0.047	116-6073	0.310	0.186	0.149	0.133	0.119

MKT 370 Series



- Metallised polyester decoupling capacitors
- Resistant to modern cleaning solvents
- Flame retardant case

Lead length = 4 min
 Lead dia. = 0.5 min
 Lead pitch = 5

Operating temperature -55°C to +100°C
 Insulation resistance 50/100Vc ≤ 0.33µF 15000MΩ
 63/100Vc > 0.33µF 5000 sec (MΩ µF)
 250/400V 3000 MΩ
 Basic specification IEC60384-2, long life

Tolerance +10%
 Climatic category 55/100/56
 Power factor 0.01

N.B. For ease of selection, capacitance value is listed in both nF and µF.

63 Volt d.c. (40 Volt a.c.)*		Dimensions			Mfrs. List No.	Order Code
nF	µF	H	W	D		
68	0.068	8	7.2	2.5	BFC237011683	121-5514
100	0.1	8	7.2	2.5	BFC237011104	121-5508
150	0.15	9	7.2	3.5	BFC237011154	121-5510
220	0.22	9	7.2	3.5	BFC237011224	121-5511



Film - Polyester (PET) - continued

MKT 370 Series - continued

63 Volt d.c. (40 Volt a.c.)*		Dimensions			
nF	μF	H	W	D	Mfrs. List No.
330	0.33	10	7.2	3.5	BFC237011334
470	0.47	10	7.2	4.5	BFC237011474
680	0.68	10	7.2	5	BFC237011684
1000	1	11	7.2	6	BFC237011105
1500	1.5	11	7.2	6	BFC237011155

*1.5μF rated at 50 volt d.c. (32V.a.c.)

Order Multiple=5

63 Volt d.c.		Price Each			
μF	Order Code	5+	100+	1K+	3K+
0.068	121-5514	0.072	0.044	0.036	0.025
0.1	121-5508	0.127	--	--	--
0.15	121-5510	0.170	0.096	0.076	0.069
0.22	121-5511	0.210	0.117	0.093	0.084
0.33	121-5512	0.260	0.149	0.118	0.107
0.47	121-5513	0.340	0.190	0.151	0.136
0.68	116-6075	0.450	0.260	0.200	0.184
1	121-5509	0.520	0.300	0.240	0.210
1.5	116-6008	0.570	0.330	0.260	0.230

100 Volt d.c. (63 Volt a.c.)		Dimensions			
nF	μF	H	W	D	Mfrs. List No.
15	0.015	8	7.2	2.5	BFC237021153
22	0.022	8	7.2	2.5	BFC237021223
33	0.033	8	7.2	2.5	BFC237021333
47	0.047	9	7.2	2.5	BFC237021473
68	0.068	9	7.2	3.5	BFC237021683
100	0.1	8	7.2	3.5	BFC237021104
150	0.15	8	7.2	3.5	BFC237021154
220	0.22	9	7.2	4.5	BFC237021224
330	0.33	9	7.2	4.5	BFC237021334
470	0.47	11	7.2	6	BFC237021474

Order Multiple=10

100 Volt d.c.		Price Each			
μF	Order Code	10+	100+	1K+	3K+
0.015	121-5517	0.123	0.069	0.055	0.050
0.022	121-5518	0.127	0.072	0.057	0.052
0.033	121-5519	0.131	--	--	--
0.047	121-5520	0.136	--	--	--
0.068	121-5521	0.171	0.100	0.079	0.062
0.1	121-5515	0.200	0.113	0.090	0.081
0.15	116-6009	0.132	0.078	0.054	0.050
0.22	116-6010	0.290	--	--	--
0.33	116-6011	0.180	0.106	0.079	0.067
0.47	116-6012	0.420	0.240	0.189	0.171

250 Volt d.c.		Dimensions			
nF	μF	H	W	D	Mfrs. List No.
4.7	0.0047	6.5	7.2	2.5	BFC237041472
6.8	0.0068	6.5	7.2	2.5	BFC237041682
10	0.01	6.5	7.2	2.5	BFC237041103
15	0.015	6.5	7.2	2.5	BFC237041153
22	0.022	8	7.2	3.5	BFC237041223
33	0.033	8	7.2	3.5	BFC237041333
47	0.047	9	7.2	4.5	BFC237041473
100	0.1	11	7.2	6	BFC237041104

Order Multiple=10

250 Volt d.c.		Price Each			
μF	Order Code	10+	100+	1K+	3K+
0.0047	116-6076	0.148	--	--	--
0.0068	116-6077	0.145	0.093	0.067	0.058
0.01	116-6078	0.128	0.082	0.059	0.051
0.015	116-6079	0.084	0.051	0.043	0.029
0.022	116-6080	0.066	0.042	0.037	0.033
0.033	116-6081	0.240	0.155	0.112	0.098
0.047	116-6082	0.200	0.130	0.095	0.082
0.1	116-6084	0.260	0.165	0.120	0.104

400 Volt d.c.		Dimensions			
nF	μF	H	W	D	Mfrs. List No.
1	0.001	6.5	7.2	2.5	BFC237051102
1.5	0.0015	6.5	7.2	2.5	BFC237051152
2.2	0.0022	8	7.2	3.5	BFC237051222
3.3	0.0033	8	7.2	3.5	BFC237051332
4.7	0.0047	9	7.2	4.5	BFC237065472
6.8	0.0068	10	7.2	5	BFC237065682
10	0.01	8	7.2	3.5	BFC237065103
15	0.015	8	7.2	3.5	BFC237065153
22	0.022	9	7.2	4.5	BFC237065223
33	0.033	11	7.2	6	BFC237065333
47	0.047	11	7.2	6	BFC237065473

208621

Order Multiple=10

400 Volt d.c.		Price Each			
μF	Order Code	10+	100+	1K+	3K+
0.001	116-6085	0.117	0.067	0.053	0.048
0.0015	116-6087	0.117	0.067	0.053	0.048
0.0022	116-6088	0.127	0.081	0.058	0.051
0.0033	116-6089	0.117	0.067	0.053	0.048
0.0047	116-6028	0.150	--	--	--
0.0068	116-6029	0.177	0.115	0.084	0.073
0.01	116-6030	0.164	0.105	0.075	0.066
0.015	116-6031	0.178	0.114	0.083	0.072
0.022	116-6032	0.174	0.111	0.080	0.070
0.033	116-6033	0.210	--	--	--
0.047	116-6034	0.220	0.137	0.100	0.086

B3252* Series



- Stacked film polyester capacitors
- Excellent self-healing properties
- Flame retardant encapsulation

Lead length=6, Lead dia.=0.5

Operating temperature	-55°C to +125°C
Tolerance	±10%
Power factor @ 1kHz	0.007
Insulation resistance	15000MΩ for C ≤ 0.33μF ≤ 100V 5000sec (MΩ x μF) for C > 0.33μF @ ≤ 100V 30000MΩ for C @ ≥ 250V
Climatic category	55/100/56

N.B. For ease of selection, capacitance value is listed in both μF and nF.

nF	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
	H	W	D			
1	6.5	7.2	2.5	5	B32529C102K	975-2897
1.5	6.5	7.2	2.5	5	B32529C152K	975-2900
2.2	6.5	7.2	2.5	5	B32529C222K	975-2919
3.3	6.5	7.2	2.5	5	B32529C332K	975-2927
4.7	6.5	7.2	2.5	5	B32529C472K	975-2935
6.8	6.5	7.2	2.5	5	B32529C682K	975-2943
10	6.5	7.2	2.5	5	B32529C103K	975-2951
15	6.5	7.2	2.5	5	B32529C153K	975-2960
22	6.5	7.2	2.5	5	B32529C223K	975-2978
33	6.5	7.2	2.5	5	B32529C333K	975-2986
47	6.5	7.2	2.5	5	B32529C473K	975-2994
68	6.5	7.2	2.5	5	B32529C683K	975-0860
0.1	6.5	7.2	2.5	5	B32529C104K	975-0878
0.15	6.5	7.2	3	5	B32529C154K	975-0886
0.22	8	7.2	3.5	5	B32529C224K	975-0894
0.33	8	7.2	3.5	5	B32529C334K	975-0908
0.47	9.5	7.2	4.5	5	B32529C474K	975-0916
0.68	10	7.2	5	5	B32529C684K	975-0924
1	10.5	7.2	5	5	B32529C105K	975-0932
1				5	B32529-C 105-J	169-2372
1.5	13	7.2	7.2	5	B32529B155K	975-0940

Order Multiple=5

63 Volt d.c.		Price Each			
μF	Order Code	5+	100+	500+	1K+
1	975-2897	0.250	0.151	0.140	0.117
1.5	975-2900	0.148	0.102	0.092	0.071
2.2	975-2919	0.153	0.105	0.094	0.073
3.3	975-2927	0.153	0.105	0.094	0.073
4.7	975-2935	0.153	0.105	0.094	0.073
6.8	975-2943	0.153	0.105	0.094	0.073
10	975-2951	0.260	0.164	0.150	0.117
15	975-2960	0.157	0.107	0.076	0.065
22	975-2978	0.160	0.109	0.078	0.066
33	975-2986	0.164	0.110	0.079	0.067
47	975-2994	0.158	0.108	0.079	0.066
68	975-0860	0.120	0.084	0.075	0.060
0.1	975-0878	0.280	0.176	0.167	0.134
0.15	975-0886	0.250	0.159	0.149	0.117
0.22	975-0894	0.290	0.164	0.154	0.135
0.33	975-0908	0.360	0.250	0.210	0.170
0.47	975-0916	0.630	0.390	0.380	0.330
0.68	975-0924	0.560	0.340	0.330	0.290
1	975-0932	1.070	0.730	0.630	0.550
1	169-2372	0.210	0.190	0.177	--
1.5	975-0940	1.410	0.910	0.840	0.690

100 Volt d.c. (63 Volt a.c.)

μF	Order Code	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
		H	W	D			
0.022		6.5	7.2	2.5	5	B32529C1223K	975-0959
0.047		6.5	7.2	2.5	5	B32529C1473K	975-0975
0.1		8	7.2	3.5	5	B32529C1104K	975-0983
0.22		8.5	10	4	7.5	B32520C1224K	975-3001
0.47		12	10	6	7.5	B32520C1474K	975-3010

Order Multiple=5

100 Volt d.c.		Price Each			
µF	Order Code	5+	10+	50+	1K+
0.022	975-0959	0.173	0.117	0.094	0.084
0.047	975-0975	0.173	0.120	0.100	0.079
0.1	975-0983	0.250	0.146	0.133	0.110
0.22	975-3001	0.144	0.116	0.104	0.082
0.47	975-3010	0.370	0.320	0.260	0.220

250 Volt d.c. (160 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF		H	W	D		
0.1		8.5	10	4	B32520C3104-K	975-1211
0.01		6.5	7.2	2.5	B32529C3103K	975-0991

250 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.1	975-1211	0.220	0.153	0.118	0.098
0.01	975-0991	0.250	0.151	0.142	0.120

400 Volt d.c. (200 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF		H	W	D		
0.001		6.5	7.2	2.5	B32529C6102K	975-1009
0.0022		6.5	7.2	2.5	B32529C6222K	975-1017
0.01		8	10	3	B32520C6103K	975-3028
0.022		8.5	10	5	B32520C6223K	975-3036
0.047		10.5	10	5	B32520C6473K	975-3044
0.068		11	13	5	B32521C6683K	975-1220
0.1		12	13	6	B32521C6104K	975-1238
0.22		12.5	18	7	B32522C6224K	975-1246

400 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.001	975-1009	0.125	0.079	0.076	0.060
0.0022	975-1017	0.109	0.077	0.074	0.061
0.01	975-3028	0.174	0.108	0.099	0.081
0.022	975-3036	0.250	0.141	0.138	0.109
0.047	975-3044	0.150	0.098	0.089	0.080
0.068	975-1220	0.310	0.260	0.196	0.161
0.1	975-1238	0.410	0.330	0.270	0.200
0.22	975-1246	0.470	--	--	--

B32560/1/2 Series – Open Frame



- Open frame stacked polyester film
- Excellent self-healing properties
- Compact size

Warning: Care must be taken to avoid live parts.



Operating temperature -55°C to +100°C
 Insulation resistance 3750MΩ for C≤ 0.33µF @ 100V 1250 sec
 (MΩ x µF) for C>0.33µF @ 100V
 Climatic category 55/100/56

N.B. For ease of selection, capacitance value is listed in both µF and nF.

63 Volt d.c. (40 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
1	1000	6.8	9	4	B32560J1105K	975-2293
2.2	2200	8.2	9	6.5	B32560J225K	975-2307
4.7	4700	11	9	9.8	B32560J475K	975-2315

63 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
1	975-2293	0.30	--	--	--
2.2	975-2307	0.39	0.34	0.27	0.24
4.7	975-2315	0.88	0.79	0.60	0.51

100 Volt d.c. (63 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
0.1	100	4.7	9	2.5	B32560J1104K	975-2323
0.15	150	4.7	9	2.5	B32560J1154K	975-2331
0.22	220	5.1	9	2.5	B32560J1224K	975-2340
0.33	330	5.7	9	2.7	B32560J1334K	975-2358
0.47	470	6.1	9	3.4	B32560J1474K	975-2366
0.68	680	6.5	9	4.2	B32560J1684K	975-2374
1	1000	7	9	5.5	B32560J1105K	975-2382
2.2	2200	9.2	9	8.5	B32560J1225K	975-2390

100 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.1	975-2323	0.083	0.073	0.050	0.046
0.15	975-2331	0.099	0.086	0.079	0.069
0.22	975-2340	0.163	0.153	0.131	0.122
0.33	975-2358	0.191	0.181	0.114	0.102
0.47	975-2366	0.210	0.200	0.121	0.108
0.68	975-2374	0.300	0.250	0.168	0.140
1	975-2382	0.290	0.250	0.181	0.162
2.2	975-2390	0.310	0.290	0.260	0.230

250 Volt d.c. (160 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
0.033	33	4.8	9	2.5	B32560J3333K	975-2404
0.047	47	5.2	9	2.5	B32560J3473K	975-2412
0.068	68	5.7	9	2.6	B32560J3683K	975-2420
0.1	100	6.1	9	3.2	B32560J3104K	975-2439
0.22	220	7.5	9	4.9	B32560J3224K	975-2447

250 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.033	975-2404	0.040	0.036	0.033	0.029
0.047	975-2412	0.116	0.107	0.094	0.084
0.068	975-2420	0.134	0.122	0.110	0.102
0.1	975-2439	0.137	0.127	0.083	0.073
0.22	975-2447	0.148	0.127	0.079	0.071

400 Volt d.c. (200 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
0.001	1	5.5	9	2.5	B32560J6102K	975-2455
0.0015	1.5	5.5	9	2.5	B32560J6152K	975-2463
0.0022	2.2	5.5	9	2.5	B32560J6222K	975-2471
0.0033	3.3	5.5	9	2.5	B32560J6332K	975-2480
0.0047	4.7	5.5	9	2.5	B32560J6472K	975-2498
0.01	10	5.5	9	2.5	B32560J6103K	975-2501
0.015	15	5.5	9	2.5	B32560J6153K	975-2510
0.022	22	5.5	9	2.5	B32560J6223K	975-2528
0.047	47	6.5	9	3.2	B32560J6473K	975-2536
0.1	100	7.7	9	4.9	B32560J6104K	975-2544

400 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.001	975-2455	0.115	0.106	0.094	0.084
0.0015	975-2463	0.041	0.038	0.034	0.031
0.0022	975-2471	0.118	0.107	0.096	0.085
0.0033	975-2480	0.096	0.087	0.078	0.069
0.0047	975-2498	0.123	0.111	0.100	0.089
0.01	975-2501	0.106	0.096	0.056	0.050
0.015	975-2510	0.058	0.054	0.048	0.043
0.022	975-2528	0.096	0.087	0.071	0.061
0.047	975-2536	0.141	0.130	0.107	0.098
0.1	975-2544	0.091	0.087	0.062	0.059

100 Volt d.c. (63 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
0.33	330	5.2	11.5	2.5	B32561J1334K	975-2552
0.47	470	5.8	11.5	2.9	B32561J1474K	975-2560
0.68	680	6.3	11.5	3.6	B32561J1684K	975-2579
1	1000	6.9	11.5	4.5	B32561J1105K	975-2587
2.2	2200	9	11.5	6.9	B32561J1225K	975-2595

100 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.33	975-2552	0.260	0.220	0.184	0.177
0.47	975-2560	0.210	0.200	0.167	0.146
0.68	975-2579	0.230	0.210	0.178	0.163
1	975-2587	0.370	0.360	0.320	0.280
2.2	975-2595	0.440	0.410	0.350	0.310

250 Volt d.c. (160 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
0.1	100	5.3	11.5	2.8	B32561J3104K	975-2609
0.15	150	6	11.5	3.3	B32561J3154K	120-0765
0.22	220	6.6	11.5	4.2	B32561J3224K	975-2617
0.47	470	8.5	11.5	6.3	B32561J3474K	975-2625

250 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.1	975-2609	0.156	0.147	0.123	0.112
0.15	120-0765	0.194	0.184	0.160	0.140
0.22	975-2617	0.220	--	--	--
0.47	975-2625	0.230	0.220	0.184	0.164

400 Volt d.c. (200 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
0.01	10	5.1	11.5	2.3	B32561J6103K	120-0766
0.047	47	6	11.5	2.6	B32561J6473K	975-2641
0.1	100	6.9	11.5	4	B32561J6104K	975-2650
0.22	220	8.5	11.5	6.6	B32561J6224K	975-2668

400 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
0.01	120-0766	0.131	0.121	0.109	0.100
0.047	975-2641	0.088	0.083	0.070	0.066
0.1	975-2650	0.183	--	--	--
0.22	975-2668	0.197	0.182	0.156	0.131

100 Volt d.c. (63 Volt a.c.)		Dimensions		Lead	Mfrs. List No.	Order Code
µF	nF	H	W	D		
1	1000	6.3	16.5	3.2	B32562J1105K	975-2676
2.2	2200	8	16.5	4.9	B32562J1225K	975-2692
3.3	3300	9.3	16.5	6	B32562J1335K	975-2706
4.7	4700	10.6	16.5	7.3	B32562J1475K	975-2714
6.8	6800	11.8	16.5	9	B32562J1685K	975-2722
10	10000	13	16.5	11.8	B32562J1106K	975-2730

100 Volt d.c.		Price Each			
µF	Order Code	1+	10+	50+	100+
1	975-2676	0.310	0.300	0.270	0.230
2.2	975-2692	0.650	0.63		



Film - Polyester (PET) - continued

B32560/1/2 Series - Open Frame - continued

250 Volt d.c. (160 Volt a.c.)		Dimensions		Lead	Tolerance	Mfrs. List No.	Order Code
µF	nF	H	W	Pitch			
0.33	330	6.2	16.5	4	15	10%	B32562J3334K 975-2749
0.47	470	6.7	16.5	5	15	10%	B32562J3474K 975-2757
0.68	680	7.8	16.5	6	15	10%	B32562J3684K 975-2765
1	1000	9.3	16.5	7	15	10%	B32562J3105K 975-2773
1.5	1500	11	16.5	8.7	15	10%	B32562J3155K 975-2790
2.2	2200	12.8	16.5	10.7	15	10%	B32562J3225K 975-2803
3.3	3300	14.5	16.5	13.9	15	10%	B32562J3335K 975-2811

250 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	500+
0.33	975-2749	0.300	0.290	0.250	0.200	0.173
0.47	975-2757	0.330	0.320	0.290	0.260	0.196
0.68	975-2765	0.250	0.240	0.187	0.171	0.146
1	975-2773	0.550	0.520	0.340	0.280	0.270
1.5	975-2790	0.470	0.400	0.250	0.230	0.220
2.2	975-2803	0.680	0.570	0.400	0.290	0.210
3.3	975-2811	2.050	1.970	1.670	1.500	1.240

400 Volt d.c. (200 Volt a.c.)		Dimensions		Lead	Tolerance	Mfrs. List No.	Order Code
µF	nF	H	W	Pitch			
0.1	100	5.6	16.5	3.3	15	10%	B32562J6104K 975-2820
0.22	220	7.5	16.5	4.7	15	10%	B32562J6224K 975-2846
0.33	330	8.3	16.5	6	15	10%	B32562J6334K 975-2854
0.47	470	9.3	16.5	7.3	15	10%	B32562J6474K 975-2862
1	1000	12.5	16.5	10.9	15	10%	B32562J6105K 975-2889

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	500+
0.1	975-2820	0.200	0.191	0.155	0.147	0.125
0.22	975-2846	0.310	0.270	0.168	0.140	0.130
0.33	975-2854	0.310	0.270	0.168	0.140	0.130
0.47	975-2862	0.270	0.220	0.160	0.142	0.132
0.68	975-2870	0.340	0.260	0.210	0.191	0.178

R60 Series



- Metallised polyester film capacitor
- D.C. multipurpose applications
- Typical applications: blocking, coupling, decoupling and by-passing

Tolerance ± 5%
Lead Length 25mm

ARCOTRONICS GROUP
A KEMET Company

63 Volt		Dimensions		Lead	Mfrs. List No.	Order Code
nF	µF	H	W	Pitch		
1000	1	9	13	4	10	R60DF4100506AJ 167-9333
1500	1.5	11	13	5	10	R60DF4150506AJ 167-9334
2200	2.2	11	13	5	10	R60DF4220506AJ 167-9335
3300	3.3	12	13	6	10	R60DF4330506AJ 167-9336
680	0.68	11	18	5	15	R60DI36805030J 167-9337
1000	1	11	18	5	15	R60DI41005030J 167-9339
3300	3.3	14	18	8	15	R60DI43305030J 167-9341
4700	4.7	16	27	7	22.5	R60DN44705030J 167-9343
6800	6.8	16	27	7	22.5	R60DN46805030J 167-9344
15000	15	20	27	11	22.5	R60DN51505030J 167-9346
22000	22	20	32	11	27.5	R60DR52205040J 167-9347

63 Volt		Price Each				
µF	Order Code	10+	25+	50+	100+	500+
1	167-9333	0.168	0.110	0.083	0.080	0.078
1.5	167-9334	0.230	0.151	0.115	0.112	0.109
2.2	167-9335	0.270	0.175	0.133	0.129	0.126
3.3	167-9336	0.290	0.193	0.148	0.144	0.139
0.68	167-9337	0.173	0.119	0.094	0.092	0.089
1	167-9339	0.210	0.140	0.105	0.103	0.100
3.3	167-9341	0.560	0.370	0.320	0.300	0.290
4.7	167-9343	0.670	0.440	0.360	0.350	0.340
6.8	167-9344	0.900	0.600	0.450	0.430	0.420
15	167-9346	2.120	--	--	--	--
22	167-9347	2.190	1.640	1.630	1.590	1.550

100 Volt		Dimensions		Lead	Mfrs. List No.	Order Code
nF	µF	H	W	Pitch		
470	0.47	9	13	4	10	R60EF3470506AJ 167-9348
680	0.68	9	13	4	10	R60EF3680506AJ 167-9349
1000	1	11	13	5	10	R60EF4100506AJ 167-9350
1000	1	11	18	5	15	R60EI41005030J 167-9352
2200	2.2	15	18	9	15	R60EI42205030J 167-9353
3300	3.3	16	18	10	15	R60EI43305030J 167-9354
4700	4.7	17	27	9	22.5	R60EN44705030J 167-9355
6800	6.8	19	27	10	22.5	R60EN46805030J 167-9356
10000	10	17	32	9	27.5	R60ER51005040J 167-9357

100 Volt		Price Each				
µF	Order Code	10+	25+	50+	100+	500+
0.47	167-9348	0.175	0.116	0.087	0.085	0.082
0.68	167-9349	0.173	0.118	0.088	0.086	0.084
1	167-9350	0.230	0.155	0.116	0.112	0.110
1	167-9352	0.210	0.140	0.108	0.105	0.103
2.2	167-9353	0.350	--	--	--	--
3.3	167-9354	0.520	--	--	--	--
4.7	167-9355	0.780	0.520	0.410	0.390	0.370
6.8	167-9356	1.000	0.670	0.500	0.490	0.480
10	167-9357	0.790	0.650	0.630	0.620	0.600

160 Volt		Dimensions		Lead	Mfrs. List No.	Order Code
nF	µF	H	W	Pitch		
220	0.22	9	13	4	10	R60GF3220506AJ 167-9358

160 Volt		Price Each				
µF	Order Code	10+	25+	50+	100+	500+
0.22	167-9358	0.138	0.093	0.070	0.068	0.066

250 Volt		Dimensions		Lead	Mfrs. List No.	Order Code
nF	µF	H	W	Pitch		
100	0.1	9	13	4	10	R60IF3100506AJ 167-9359
220	0.22	11	13	5	10	R60IF3220506AJ 167-9360
470	0.47	12	13	6	10	R60IF3470506AJ 167-9361
100	0.1	11	18	5	15	R60II31005030J 167-9362
220	0.22	11	18	5	15	R60II32205030J 167-9364
330	0.33	11	18	5	15	R60II33305030J 167-9365
470	0.47	12	18	6	15	R60II34705030J 167-9366
1000	1	15	18	9	15	R60II41005030J 167-9367
1000	1	15	27	6	22.5	R60IN41005030J 167-9368
2200	2.2	19	27	10	22.5	R60IN42205030J 167-9369
3300	3.3	20	27	11	22.5	R60IN43305030J 167-9370
4700	4.7	17	32	9	27.5	R60IR44705040J 167-9371

250 Volt		Price Each				
µF	Order Code	10+	25+	50+	100+	500+
0.1	167-9359	0.104	0.069	0.052	0.051	0.050
0.22	167-9360	0.151	0.101	0.076	0.073	0.072
0.47	167-9361	0.157	--	--	--	--
0.1	167-9362	0.135	0.091	0.074	0.072	0.070
0.22	167-9364	0.130	0.087	0.077	0.075	0.073
0.33	167-9365	0.151	0.099	0.081	0.078	0.077
0.47	167-9366	0.173	--	--	--	--
1	167-9367	0.290	0.187	0.141	0.136	0.133
1	167-9368	0.260	0.178	0.132	0.130	0.126
2.2	167-9369	0.550	--	--	--	--
3.3	167-9370	0.590	0.400	0.300	0.260	0.250
4.7	167-9371	1.000	--	--	--	--

400 Volt		Dimensions		Lead	Mfrs. List No.	Order Code
nF	µF	H	W	Pitch		
22	0.022	9	13	4	10	R60MF2220506AJ 167-9372
33	0.033	9	13	4	10	R60MF2330506AJ 167-9373
47	0.047	9	13	4	10	R60MF2470506AJ 167-9374
100	0.1	11	13	5	10	R60MF3100506AJ 167-9376
100	0.1	11	18	5	15	R60MI31005030J 167-9377
220	0.22	11	18	5	15	R60MI32205040J 167-9378
330	0.33	14	18	8	15	R60MI33305030J 167-9379
470	0.47	15	27	6	22.5	R60MN34705030J 167-9381
1000	1	17	27	9	22.5	R60MN41005040J 167-9382
1500	1.5	19	27	10	22.5	R60MN41505040J 167-9383
2200	2.2	20	32	11	27.5	R60MR42205040J 167-9384

400 Volt		Price Each				
µF	Order Code	10+	25+	50+	100+	500+
0.022	167-9372	0.110	0.073	0.055	0.053	0.052
0.033	167-9373	0.102	0.068	0.055	0.053	0.052
0.047	167-9374	0.128	0.086	0.064	0.061	0.060
0.1	167-9376	0.168	0.110	0.083	0.080	0.078
0.1	167-9377	0.162	0.107	0.080	0.078	0.076
0.22	167-9378	0.175	0.118	0.090	0.088	0.086
0.33	167-9379	0.178	0.120	0.097	0.095	0.093
0.47	167-9381	0.280	0.187	0.139	0.135	0.131
1	167-9382	0.510	0.330	0.290	0.270	0.250
1.5	167-9383	0.480	0.320	0.260	0.240	0.230
2.2	167-9384	0.700	0.470	0.350	0.340	0.330

630 Volt		Dimensions		Lead	Mfrs. List No.	Order Code
nF	µF	H	W	Pitch		
10	0.01	9	13	4	10	R60PF2100506AJ 167-9385
22	0.022	9	13	4	10	R60PF2220506AJ 167-9388
47	0.047	11	13	5	10	R60PF2470506AJ 167-9389
47	0.047	11	18	5	15	R60PI24705030J 167-9390
100	0.1	12	18	6	15	R60PI31005040J 167-9391
220	0.22	15	27	6	22.5	R60PN32205040J 167-9392
330	0.33	16	27	7	22.5	R60PN33305050J 167-9393
470	0.47	19	27	10	27.5	R60PR34705040J 167-9394

630 Volt		Price Each				
μ F	Order Code	10+	25+	50+	100+	500+
0.01	167-9385	0.096	0.064	0.048	0.044	0.043
0.022	167-9388	0.112	0.075	0.056	0.055	0.053
0.047	167-9389	0.130	0.087	0.066	0.063	0.062
0.047	167-9390	0.156	0.104	0.078	0.076	0.074
0.1	167-9391	0.210	--	--	--	--
0.22	167-9392	0.260	0.178	0.135	0.129	0.125
0.33	167-9393	0.440	0.290	0.250	0.230	0.210
0.47	167-9394	0.570	--	--	--	--

1000 Volt	nF	μ F	Dimensions			Lead	Mftrs. List No.	Order Code
			H	W	D	Pitch		
1000000	1000	9	13	4	10		R60QF11005001J	167-9396
2200000	2200	9	13	4	10		R60QF12205001J	167-9397

1000 Volt		Price Each				
μ F	Order Code	10+	25+	50+	100+	500+
1000	167-9396	0.118	0.078	0.058	0.057	0.055
2200	167-9397	0.118	0.078	0.058	0.057	0.055

MKT 368 Series



- Metallised PETP film capacitors
- Hard epoxy coated
- Crimped and cropped leads for direct PCB mounting

Lead length=5

Operating temperature	-55°C to +100°C	Climatic category (IEC68)	40/100/56
Insulation resistance	30000M Ω	Tolerance	\pm 10%
Basic specification	IEC384/2, long life grade	Power factor	0.01

N.B. For ease of selection, capacitance value is listed in both μ F and nF.

100 Volt d.c. (63 Volt a.c.)		Dimensions		Lead	Lead	Mftrs. List No.	Order Code
μ F	nF	H	W	D	Di.	Pitch	
0.1	100	13	12.5	4	0.6	10	2222 368 25104 121-5469
0.15	150	12.9	12.5	3.9	0.6	10	2222 368 25154 121-5471
0.22	220	13.6	12.5	4.5	0.6	10	2222 368 25224 121-5473
0.33	330	14	17.5	5	0.8	15	2222 368 25334 121-5476
0.47	470	14.5	17.5	5.5	0.8	15	2222 368 25474 121-5478
0.68	680	15	17.5	6	0.8	15	2222 368 25684 121-5480
1	1000	16.5	17.5	7.5	0.8	15	2222 368 25105 121-5470
1.5	1500	18	26	6	0.8	22.5	2222 368 25155 121-5472
2.2	2200	19.5	26	7.5	0.8	22.5	2222 368 25225 121-5475
3.3	3300	22	26	9	0.8	22.5	2222 368 25335 121-5477
4.7	4700	23	30	10	0.8	27.5	2222 368 25475 121-5479

Order Multiple=5

100 Volt d.c.		Price Each				
μ F	Order Code	5+	100+	1K+	3K+	
0.1	121-5469	0.142	0.122	0.114	0.112	
0.15	121-5471	0.129	0.076	0.056	0.050	
0.22	121-5473	0.320	0.173	0.151	0.130	
0.33	121-5476	0.430	0.260	0.200	0.171	
0.47	121-5478	0.230	0.200	0.186	0.171	
0.68	121-5480	0.510	0.330	0.240	0.210	
1	121-5470	0.400	0.360	0.330	0.310	
1.5	121-5472	0.460	0.270	0.240	0.189	
2.2	121-5475	0.730	0.640	0.620	0.590	
3.3	121-5477	1.750	1.110	0.810	0.710	
4.7	121-5479	1.170	--	--	--	

250 Volt d.c. (160 Volt a.c.)		Dimensions		Lead	Lead	Mftrs. List No.	Order Code
μ F	nF	H	W	D	Di.	Pitch	
0.033	33	13	12.5	4.6	0.6	10	2222 368 45333 121-5488
0.047	47	13.5	12.5	4.5	0.6	10	2222 368 45473 121-5490
0.068	68	13.5	12.5	4.6	0.6	10	2222 368 45683 121-5492
0.1	100	13.7	12.5	4.7	0.6	10	2222 368 45104 121-5481
0.22	220	15	17.5	6	0.8	15	2222 368 45224 121-5485
0.33	330	16	17.5	6.8	0.8	15	2222 368 45334 121-5489
0.47	470	17.5	26	5.5	0.8	22.5	2222 368 45474 121-5491
0.68	680	18.5	26	6.6	0.8	22.5	2222 368 45684 121-5493
1	1000	20	26	8	0.8	22.5	2222 368 45105 121-5482
1.5	1500	22	30	9	0.8	27.5	2222 368 45155 121-5484
2.2	2200	24	30	11	0.8	27.5	2222 368 45225 121-5487

Order Multiple=5

250 Volt d.c.		Price Each				
μ F	Order Code	5+	100+	1K+	3K+	
0.033	121-5488	0.200	0.128	0.093	0.081	
0.047	121-5490	0.122	--	--	--	
0.068	121-5492	0.230	0.150	0.105	0.104	
0.1	121-5481	0.142	0.122	0.118	0.116	
0.22	121-5485	0.200	0.184	0.173	0.171	
0.33	121-5489	0.230	0.210	0.198	0.194	
0.47	121-5491	0.340	0.300	0.270	0.260	
0.68	121-5493	0.390	0.340	0.310	0.270	
1	121-5482	0.500	0.450	0.380	0.330	
1.5	121-5484	0.600	0.440	0.410	0.400	
2.2	121-5487	0.940	0.840	0.800	0.760	

400 Volt d.c. (220 Volt a.c.)		Dimensions			Lead	Lead	Mftrs. List No.	Order Code
μ F	nF	H	W	D	Di.	Pitch		
0.015	15	13	12.5	4.1	0.6	10	2222 368 55153	121-5496
0.022	22	12.9	12.5	4.2	0.6	10	2222 368 55223	121-5499
0.033	33	13.7	12.5	4.6	0.6	10	2222 368 55333	121-5501
0.047	47	14.5	17.5	5.4	0.8	15	2222 368 55473	121-5503
0.068	68	13.5	17.5	5	0.8	15	2222 368 55683	121-5506
0.1	100	14.5	17.5	5.3	0.8	15	2222 368 55104	121-5494
0.15	150	15.5	17.5	6.4	0.8	15	2222 368 55154	121-5497
0.22	220	18.5	26	6.3	0.8	22.5	2222 368 55224	121-5500
0.33	330	18	26	6.4	0.8	22.5	2222 368 55334	121-5502
0.47	470	20	26	8	0.8	22.5	2222 368 55474	121-5505
0.68	680	21.5	30	8.5	0.8	27.5	2222 368 55684	121-5507
1	1000	23.5	30	10.5	0.8	27.5	2222 368 55105	121-5495

Order Multiple=5

400 Volt d.c.		Price Each				
μ F	Order Code	5+	100+	1K+	3K+	
0.015	121-5496	0.140	0.092	0.065	0.055	
0.022	121-5499	0.112	0.102	0.095	0.089	
0.033	121-5501	0.122	0.112	0.100	0.094	
0.047	121-5503	0.162	0.132	0.128	0.122	
0.068	121-5506	0.320	0.210	0.149	0.129	
0.1	121-5494	0.200	0.184	0.173	0.171	
0.15	121-5497	0.500	0.310	0.230	0.193	
0.22	121-5500	0.320	0.290	0.210	0.152	
0.33	121-5502	0.430	0.410	0.370	0.320	
0.47	121-5505	0.490	0.390	0.380	0.360	
0.68	121-5507	0.580	0.490	0.470	0.450	
1	121-5495	1.730	1.100	0.800	0.700	

Capacitance Conversion Table

0.000001 μ F	=	0.001nF	=	1pF
0.00001 μ F	=	0.01nF	=	10pF
0.0001 μ F	=	0.1nF	=	100pF
0.001 μ F	=	1nF	=	1000pF
0.01 μ F	=	10nF	=	10000pF
0.1 μ F	=	100nF	=	100000pF
1 μ F	=	1000nF	=	1000000pF
10 μ F	=	10000nF	=	10000000pF
100 μ F	=	100000nF	=	100000000pF

MKT 468 Series



- Metallised PETP film capacitors
- Hard epoxy coated
- Crimped and cropped leads for direct PCB mounting

Lead length=3.5

Operating temperature	-40°C to +85°C	Climatic category (IEC68)	55/100/56
Basic specification	IEC384-2, long life grade	Tolerance	\pm 10%

N.B. For ease of selection, capacitance value is listed in both μ F and nF.

100 Volt d.c. (63 Volt a.c.)		Dimensions		Lead	Lead	Mftrs. List No.	Order Code
μ F	nF	H	W	D	Di.	Pitch	
1.5	1500	15	17.5	5.5	0.8	15	BFC246804155 116-6115
2.2	2200	16	17.5	6.5	0.8	15	BFC246804225 116-6117
3.3	3300	17.5	17.5	8	0.8	15	BFC246804335 116-6118
4.7	4700	19.5	26	6.5	0.8	22.5	BFC246804475 116-6119
6.8	6800	21	26	8	0.8	22.5	BFC246804685 116-6120
10	10000	22.5	26	10	0.8	22.5	BFC246804106 116-6121

100 Volt d.c.		Price Each					
μ F	Order Code	1+	50+	100+	500+	1K+	3K+
1.5	116-6115	0.68	0.51	0.34	0.29	0.25	0.22
2.2	116-6117	1.05	0.80	0.54	0.45	0.38	0.34
3.3	116-6118	1.15	0.88	0.59	0.49	0.42	0.38
4.7	116-6119	2.01	1.53	1.03	0.85	0.73	0.66
6.8	116-6120	1.82	1.38	0.93	0.77	0.67	0.59
10	116-6121	2.81	2.14	1.44	1.19	1.03	0.91

250 Volt d.c. (160 Volt a.c.)		Dimensions		Lead	Lead	Mftrs. List No.	Order Code
μ F	nF	H	W	D	Di.	Pitch	
0.47	470	15	17.5	6	0.8	15	BFC246816474 116-6122
0.68	680	16.5	17.5	7	0.8	15	BFC246816684 116-6123
1	1000	19.5	17.5	7.5	0.8	15	BFC246816105 116-6124
1.5	1500	19.5	26.5	7.5	0.8	22.5	BFC246816155 116-6125
2.2	2200	21	26	9.5	0.8	22.	



Film - Polyester (PET) - continued

MKT 468 Series - continued

250 Volt d.c.		Price Each					
µF	Order Code	1+	50+	100+	500+	1K+	3K+
0.47	116-6122	0.410	0.310	0.210	0.175	0.151	0.135
0.68	116-6123	0.320	0.240	0.179	0.145	0.123	0.106
1	116-6124	0.600	0.460	0.310	0.260	0.220	0.196
1.5	116-6125	0.800	0.600	0.410	0.340	0.290	0.260
2.2	116-6126	1.420	1.080	0.720	0.600	0.520	0.460
3.3	116-6127	2.140	1.950	1.540	1.280	1.100	0.990
4.7	116-6129	2.240	1.700	1.140	0.950	0.820	0.730

400 Volt d.c. (200 Volt a.c.)

µF	nF	H	W	D	Lead Dia	Lead Pitch	Mftrs. List No.	Order Code
0.15	150	14	17.5	5	0.8	15	BFC246828154	116-6131
0.22	220	15	17.5	6	0.8	15	BFC246828224	116-6132
0.33	330	16.5	17.5	7.5	0.8	15	BFC246828334	116-6133
0.47	470	20	17.5	7.5	0.8	15	BFC246828474	116-6134
0.68	680	19.5	26	7.5	0.8	22.5	BFC246828684	116-6135
1	1000	21	26	9.5	0.8	22.5	BFC246828105	116-6136
1.5	1500	22.5	30	10.5	0.8	27.5	BFC246828155	116-6137
2.2	2200	24.5	30	13.5	0.8	27.5	BFC246828225	116-6138

400 Volt d.c.		Price Each					
µF	Order Code	1+	50+	100+	500+	1K+	3K+
0.15	116-6131	0.350	0.260	0.177	0.147	0.127	0.113
0.22	116-6132	0.490	0.370	0.250	0.210	0.178	0.159
0.33	116-6133	0.530	0.470	0.340	0.280	0.240	0.220
0.47	116-6134	0.670	0.510	0.340	0.280	0.240	0.220
0.68	116-6135	0.860	0.650	0.440	0.370	0.320	0.280
1	116-6136	1.020	0.770	0.520	0.430	0.370	0.330
1.5	116-6137	1.720	--	--	--	--	--
2.2	116-6138	2.150	--	--	--	--	--

630 Volt d.c. (250 Volt a.c.)

µF	nF	H	W	D	Lead Dia	Lead Pitch	Mftrs. List No.	Order Code
0.068	68	14.5	17.5	6	0.8	15	BFC246840683	116-6139
0.1	100	15.5	17.5	7.5	0.8	15	BFC246840104	116-6140
0.22	220	19	26	7.5	0.8	22.5	BFC246840224	116-6143
0.33	330	20.5	26	9.5	0.8	22.5	BFC246840334	116-6144
0.47	470	22	26	11.5	0.8	22.5	BFC246840474	116-6145
0.68	680	23.5	26	14.5	0.8	22.5	BFC246840684	116-6146

630 Volt d.c.		Price Each					
µF	Order Code	1+	50+	100+	500+	1K+	3K+
0.068	116-6139	0.370	0.280	0.188	0.156	0.134	0.119
0.1	116-6140	0.470	0.350	0.240	0.197	0.170	0.151
0.22	116-6143	0.760	0.580	0.390	0.330	0.270	0.250
0.33	116-6144	0.730	0.560	0.370	0.310	0.270	0.240
0.47	116-6145	1.020	0.780	0.530	0.430	0.380	0.340
0.68	116-6146	1.420	1.080	0.730	0.600	0.520	0.460

ECQE Series
250V, 400V & 630V



Panasonic



- Self-healing property
- Excellent electrical characteristics
- Flame retardant epoxy resin coating
- General purpose usage

Operating temperature -40°C to +105°C
Capacitance tolerance ± 5%

250 Volt d.c.		Body Dimensions (mm)			Lead Dimensions (mm)			Mftrs. List No.	Order Code
Capacitance	H	W	D	Spacing	Dia				
10nF	7.4	10.3	4.3	7.5	0.6		ECQE2103JF	174-4784	
22nF	7.5	10.3	4.4	7.5	0.6		ECQE2223JF	174-4785	
33nF	7.5	10.3	4.5	7.5	0.6		ECQE2333JF	174-4786	
47nF	7.5	10.3	4.5	7.5	0.6		ECQE2473JF	174-4787	
68nF	7.5	10.3	4.5	7.5	0.6		ECQE2683JF	174-4788	
0.1µF	8.4	10.3	5.8	7.5	0.6		ECQE2104JF	174-4789	
0.22µF	10.5	12	5.5	10	0.6		ECQE2224JF	174-4790	
0.33µF	12	12	6.5	10	0.6		ECQE2334JF	174-4791	
0.47µF	12.5	18.5	5.3	15	0.6		ECQE2474JF	174-4792	
0.68µF	13.5	18.5	6	15	0.8		ECQE2684JF	174-4794	
1µF	15	18.5	7.4	15	0.8		ECQE2105JF	174-4795	
2.2µF	16.3	26	8.5	22.5	0.8		ECQE2225JF	174-4796	
3.3µF	18	26	10.3	22.5	0.8		ECQE2335JF	174-4797	
4.7µF	21.5	26	12	22.5	0.8		ECQE2475JF	174-4798	

250 Volt d.c.		Price Each				
Order Code	5+	50+	100+	500+	1K+	
10nF	174-4784	0.122	0.106	0.088	0.071	0.059
22nF	174-4785	0.122	0.106	0.088	0.071	0.059
33nF	174-4786	0.122	0.106	0.088	0.071	0.059
47nF	174-4787	0.122	0.106	0.088	0.071	0.059
68nF	174-4788	0.122	0.106	0.088	0.071	0.059
0.1µF	174-4789	0.122	0.106	0.088	0.071	0.059
0.22µF	174-4790	0.187	0.159	0.133	0.106	0.088
0.33µF	174-4791	0.220	0.185	0.155	0.124	0.103
0.47µF	174-4792	0.280	0.240	0.198	0.158	0.132

250 Volt d.c.		Price Each				
Order Code	5+	50+	100+	500+	1K+	
0.68µF	174-4794	0.370	0.320	0.260	0.210	0.177
1µF	174-4795	0.370	0.320	0.260	0.210	0.177
2.2µF	174-4796	0.820	0.710	0.590	0.470	0.400
3.3µF	174-4797	1.200	1.030	0.850	0.690	0.570
4.7µF	174-4798	1.550	1.330	1.110	0.890	0.740

400 Volt d.c.		Body Dimensions (mm)			Lead Dimensions (mm)		Mftrs. List No.	Order Code
Capacitance	H	W	D	Spacing	Dia			
10nF	7.4	10.3	4.3	7.5	0.6		ECQE4103JF	174-4799
22nF	7.9	10.3	4.8	7.5	0.6		ECQE4223JF	174-4801
33nF	9	10.3	6	7.5	0.6		ECQE4333JF	174-4802
47nF	8.3	12	5	10	0.6		ECQE4473JF	174-4803
68nF	10.5	12	5.4	10	0.6		ECQE4683JF	174-4804
0.1µF	12	12	6.3	10	0.6		ECQE4104JF	174-4805
0.22µF	13	18.5	5.9	15	0.6		ECQE4224JF	174-4806
0.33µF	14.9	18.5	7	15	0.8		ECQE4334JF	174-4807
0.47µF	17	18.5	7.8	15	0.8		ECQE4474JF	174-4808
0.68µF	16.5	26	7	22.5	0.8		ECQE4684JF	174-4809
1µF	18	26	8.5	22.5	0.8		ECQE4105JF	174-4810
2.2µF	22	31	11	27.5	0.8		ECQE4225JF	174-4812

400 Volt d.c.		Price Each				
Order Code	5+	50+	100+	500+	1K+	
10nF	174-4799	0.168	0.146	0.121	0.097	0.080
22nF	174-4801	0.168	0.146	0.121	0.097	0.080
33nF	174-4802	0.168	0.146	0.121	0.097	0.080
47nF	174-4803	0.168	0.146	0.121	0.097	0.080
68nF	174-4804	0.168	0.146	0.121	0.097	0.080
0.1µF	174-4805	0.168	0.146	0.121	0.097	0.080
0.22µF	174-4806	0.230	0.194	0.162	0.129	0.108
0.33µF	174-4807	0.280	0.240	0.200	0.163	0.135
0.47µF	174-4808	0.330	0.290	0.240	0.191	0.159
0.68µF	174-4809	0.670	0.560	0.470	0.370	0.320
1µF	174-4810	0.670	0.560	0.470	0.370	0.320
2.2µF	174-4812	0.600	0.520	0.430	0.340	0.290

630 Volt d.c.		Body Dimensions (mm)			Lead Dimensions (mm)		Mftrs. List No.	Order Code
Capacitance	H	W	D	Spacing	Dia			
10nF	7.5	12	12	10	0.6		ECQE6103JF	174-4813
22nF	10.5	12	12	10	0.6		ECQE6223JF	174-4814
33nF	11.9	12	12	10	0.6		ECQE6333JF	174-4815
47nF	13.5	12	12	10	0.6		ECQE6473JF	174-4816
68nF	11	18.5	18.5	15	0.6		ECQE6683JF	174-4817
0.1µF	14	18.5	18.5	15	0.6		ECQE6104JF	174-4818
0.22µF	16.5	18.5	18.5	15	0.8		ECQE6224JF	174-4819
0.33µF	17	26	26	22.5	0.8		ECQE6334JF	174-4820
0.47µF	18.5	26	26	22.5	0.8		ECQE6474JF	174-4821
0.68µF	21	26	26	22.5	0.8		ECQE6684JF	174-4822
1µF	21.9	31	31	27.5	0.8		ECQE6105JF	174-4824
2.2µF	29	31	31	27.5	0.8		ECQE6225JF	174-4825

630 Volt d.c.		Price Each				
Order Code	5+	50+	100+	500+	1K+	
10nF	174-4813	0.240	0.210	0.173	0.137	0.115
22nF	174-4814	0.240	0.210	0.173	0.137	0.115
33nF	174-4815	0.240	0.210	0.173	0.137	0.115
47nF	174-4816	0.240	0.210	0.173	0.137	0.115
68nF	174-4817	0.240	0.210	0.173	0.137	0.115
0.1µF	174-4818	0.240	0.210	0.173	0.137	

100 Volt d.c. (63 Volt a.c.)

Dimensions		Lead		Mftrs.	
µF	nF	H	W	D	Pitch
1.5	1500	16.5	26	7	22.5
2.2	2200	16.5	26	7	22.5
3.3	3300	18	26	8.5	22.5
4.7	4700	19	31	9	27.5
6.8	6800	21	31	11	27.5

Order Multiple=5

100 Volt d.c.

µF	Order Code	5+	100+	1K+	3K+	5K+
0.1	121-5522	0.270	0.152	0.122	0.109	0.097
0.15	121-5523	0.240	0.137	0.110	0.100	0.088
0.22	121-5524	0.340	0.210	0.165	0.149	0.132
0.33	121-5532	0.147	0.106	0.086	0.081	0.079
0.47	121-5534	0.410	0.230	0.183	0.165	0.148
0.68	121-5535	0.240	--	--	--	--
1	121-5531	0.590	0.340	0.270	0.240	0.210
1.5	121-5546	0.830	0.470	0.370	0.340	0.300
2.2	121-5545	1.310	0.750	0.590	0.540	0.470
3.3	121-5533	1.370	0.780	0.620	0.560	0.500
4.7	121-5547	2.130	1.210	0.960	0.860	0.770
6.8	121-5536	2.890	1.640	1.300	1.170	1.050

250 Volt d.c. (160 Volt a.c.)

Dimensions		Lead		Mftrs.	
µF	nF	H	W	D	Pitch
0.1	100	10	12.5	4	10
0.22	220	11	17.5	5	15
0.47	470	15.5	26	6	22.5
0.82	820	15	17.5	8.5	15
1	1000	14.5	26	7	22.5
1.5	1500	19	31	9	27.5
2.2	2200	21	31	11	27.5

Order Multiple=5

250 Volt d.c.

µF	Order Code	5+	100+	1K+	3K+	5K+
0.1	121-5525	0.270	0.153	0.122	0.109	0.097
0.22	121-5538	0.350	0.196	0.156	0.141	0.126
0.47	121-5548	0.750	--	--	--	--
0.82	141-3809	0.290	0.250	0.230	0.185	0.139
1	121-5549	0.680	--	--	--	--
1.5	121-5550	1.260	0.710	0.570	0.510	0.460
2.2	121-5551	1.900	1.070	0.850	0.770	0.690

400 Volt d.c. (220 Volt a.c.)

Dimensions		Lead		Mftrs.	
µF	nF	H	W	D	Pitch
0.01	10	9	12.5	4	10
0.022	22	9	12.5	4	10
0.033	33	10	12.5	4	10
0.047	47	11	17.5	5	15
0.1	100	11	17.5	5	15
0.15	150	11	17.5	5	15
0.22	220	12	17.5	6	15
0.33	330	13.5	17.5	7	15
0.47	470	18	26	8.5	22.5
1	1000	21	31	11	27.5

Order Multiple=5

400 Volt d.c.

µF	Order Code	5+	100+	1K+	3K+	5K+
0.01	121-5526	0.260	--	--	--	--
0.022	121-5527	0.270	0.154	0.124	0.111	0.100
0.033	121-5529	0.280	--	--	--	--
0.15	141-3812	0.420	0.340	0.260	0.200	0.158
0.22	141-3813	0.650	0.460	0.350	0.270	0.220
0.33	141-3814	0.680	0.480	0.370	0.280	0.230
0.047	121-5542	0.250	--	--	--	--
0.1	121-5539	0.350	0.198	0.157	0.142	0.127
0.47	121-5543	0.830	--	--	--	--
1	121-5540	1.290	--	--	--	--

630 Volt d.c. (250 Volt a.c.)

Dimensions mm		Lead		Mftrs.	
µF	nF	H	W	D	Pitch
0.01	10	10	12.5	4	10
0.015	15	10	12.5	4	10
0.022	22	10	12.5	4	10
0.033	33	11	12.5	5	10
0.047	47	12	12.5	6	10
0.068	68	12	12.5	6	15
0.1	100	13.5	17.5	7	15
0.15	150	15	17.5	8.5	15
0.22	220	16.5	17.5	10	15
0.33	330	18	26	8.5	22.5
0.47	470	19.5	26	10	22.5
0.68	680	23	31	13	27.5
1	1000	25	31	15	27.5

208404

Order Multiple=5

630 Volt d.c.

µF	Order Code	5+	100+	1K+	3K+	5K+
0.01	116-6014	0.350	0.197	0.156	0.140	0.127
0.015	116-6015	0.290	--	--	--	--
0.022	116-6016	0.350	0.200	0.161	0.146	0.130
0.033	116-6017	0.360	0.230	0.179	0.161	0.144
0.047	116-6018	0.370	0.210	0.166	0.150	0.134
0.068	116-6019	0.360	0.200	0.162	0.146	0.130
0.1	116-6020	0.560	0.320	0.250	0.230	0.200
0.15	116-6021	0.500	--	--	--	--
0.22	116-6022	0.710	0.400	0.320	0.290	0.260
0.33	116-6023	0.990	0.560	0.440	0.400	0.350
0.47	116-6024	1.260	0.710	0.570	0.510	0.460
0.68	116-6026	1.400	--	--	--	--
1	116-6027	1.820	1.030	0.820	0.740	0.660

MKT 1822 Series



- Metallised polyester film capacitors
- Stacked film technology
- Flame retardant case to UL94V-0
- Potted with epoxy resin
- Conform to DIN44122

Lead dia. = 0.8

Operating temperature -55°C to +100°C Climatic category 55/100/56 Tolerance ±20%

100 Volt d.c. (63 Volt a.c.)

µF	nF	H	W	D	Lead Pitch	Order Code
0.1	100	9	4	13	10	116-6897
1	1000	13.5	7.5	18	15	116-6898
2.2	2200	16.5	8.5	26.5	22.5	116-6899
10	10000	24.5	15	31.5	27.5	116-6900

100 Volt d.c.

µF	Order Code	5+	10+	50+	100+
0.1	116-6897	0.124	0.104	0.102	0.099
1	116-6898	0.470	0.350	0.320	0.270
2.2	116-6899	0.760	0.620	0.510	0.460
10	116-6900	2.710	2.170	1.890	1.640

400 Volt d.c. (200 Volt a.c.)

µF	nF	H	W	D	Lead Pitch	Order Code
0.1	100	10.5	5.5	18	15	116-6901
0.47	470	18	10.5	26.5	22.5	116-6902

208576

400 Volt d.c.

µF	Order Code	5+	10+	50+	100+
0.1	116-6901	0.230	0.175	0.164	0.128
0.47	116-6902	0.340	0.270	0.240	0.220

MKT1813 - Series



- Axial polyester film
- Wide voltage and temperature range

Operating temperature -55°C to + 100°C Tolerance ±10%

63 Volt d. c. (40 Volt a. c.)

Dimensions		Lead		List No.		Order Code	
µF	nF	L	Dia.	Lead Length	Lead Dia.	Mftrs.	
0.33	330	14	6	40	0.7	MKT1813-433/06-5-G	116-6825
0.47	470	14	7	40	0.8	MKT1813-447/06-5-G	116-6826
1	1000	19	7	40	0.8	MKT1813-510/06-5-G	116-6828
1.5	1500	19	8.5	40	0.8	MKT1813-515/06-5-G	116-6829
2.2	2200	26.5	8.5	40	0.8	MKT1813-522/06-5-G	116-6830
3.3	3300	26.5	10	40	0.8	MKT1813-533/06-5-G	116-6831
4.7	4700	26.5	11.5	40	0.8	MKT1813-547/06-5-G	116-6832
10	10000	31.5	14.5	40	0.8	MKT1813-610/06-5-G	116-6833

63 Volt d.c. (40 Volt a.c.)

µF	Order Code	5+	50+	100+	500+	1K+
0.33	116-6825	0.50	0.42	0.28	0.22	0.21
0.47	116-6826	0.43	0.39	0.37	0.34	0.33
1	116-6828	0.66	0.63	0.61	0.55	0.50
1.5	116-6829	0.35	0.31	0.28	0.25	0.23
2.2	116-6830	1.02	0.87	0.57	0.45	0.44
3.3	116-6831	1.34	1.22	0.72	0.56	0.55
4.7	116-6832	1.80	1.70	1.65	1.48	1.40
10	116-6833	2.81	2.24	2.02	1.81	1.63

100 Volt d. c. (63 Volt a. c.)

µF	nF	Dimensions L	Dia.	Lead Length	Lead Dia.	Mftrs. List No.	Order Code
1	1000	19	8.5	40	0.8	MKT1813510015	141-3824
10	10000	31.5	16.5	40	1	MKT1813610015	141-3825

100 Volt d.c. (63 Volt a.c.)

µF	Order Code	1+	50+	100+	500+	1K+
1	141-3824	0.79	0.56	0.43	0.33	0.26
10	141-3825	3.70	2.73	2.09	1.61	1.28



Film - Polyester (PET) - continued

MKT1813 - Series - continued

250 Volt d. c. (160 Volt a. c.)						Mfrs. List No.	Order Code
μ F	nF	Dimensions		Lead Length	Lead Dia.		
0.022	22	11	5	40	0.6	MKT1813-322/25-5-G	116-6835
0.047	47	14	6	40	0.7	MKT1813-347/25-5-G	116-6836
0.1	100	14	6	40	0.7	MKT1813-410/25-5-G	116-6837
0.22	220	19	7	40	0.8	MKT1813-422/25-5-G	116-6838
0.33	330	19	8	40	0.8	MKT1813-433/25-5-G	116-6841
0.47	470	19	9	40	0.8	MKT1813-447/25-5-G	116-6842
0.68	680	26.5	8.5	40	0.8	MKT1813-468/25-5-G	116-6843
1	1000	26.5	10	40	0.8	MKT1813-510/25-5-G	116-6844
1.5	1500	31.5	11	40	0.8	MKT1813-515/25-5-G	116-6845
2.2	2200	31.5	13	40	0.8	MKT1813-522/25-5-G	116-6846
3.3	3300	31.5	15.5	40	0.8	MKT1813-533/25-5-G	116-6847
4.7	4700	41.5	15.5	40	0.8	MKT1813-547/25-5-G	116-6848
6.8	6800	41.5	17.5	40	1	MKT1813-568/25-5-G	116-6849
10	10000	41.5	21	40	1	MKT1813-610/25-5-G	116-6850

250 Volt d. c. (160 Volt a. c.)						Price Each						
μ F	Order Code	5+	50+	100+	500+	1K+						
0.022	116-6835	0.260	0.240	0.230	0.220	0.200						
0.047	116-6836	0.320	0.290	0.220	0.171	0.166						
0.1	116-6837	0.320	0.290	0.260	0.230	0.210						
0.22	116-6838	0.470	0.410	0.270	0.220	0.200						
0.33	116-6841	0.520	0.490	0.480	0.440	0.430						
0.47	116-6842	0.520	0.480	0.340	0.280	0.260						
0.68	116-6843	0.460	0.440	0.430	0.360	0.350						
1	116-6844	0.620	0.560	0.490	0.440	0.400						
1.5	116-6845	0.840	0.810	0.780	0.720	0.660						
2.2	116-6846	1.140	0.960	0.650	0.500	0.490						
3.3	116-6847	1.060	1.010	0.990	0.890	0.830						
4.7	116-6848	1.830	1.670	1.290	1.000	0.980						
6.8	116-6849	2.360	2.140	1.620	1.260	1.240						
10	116-6850	2.480	2.260	2.020	1.780	1.580						

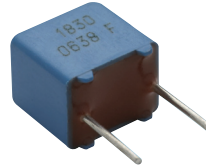
400 Volt d. c. (200 Volt a. c.)						Mfrs. List No.	Order Code
μ F	nF	Dimensions		Lead Length	Lead Dia.		
0.01	10	11	5	40	0.6	MKT1813-310/40-5-G	116-6851
0.022	22	14	6	40	0.7	MKT1813-322/40-5-G	116-6853
0.033	33	14	6	40	0.7	MKT1813-333/40-5-G	116-6854
0.047	47	14	7	40	0.8	MKT1813-347/40-5-G	116-6855
0.22	220	26.5	8	40	0.8	MKT1813-422/40-5-G	116-6857
1	1000	31.5	13.5	40	0.8	MKT1813-510/40-5-G	116-6859
1.5	1500	41.5	14	40	0.8	MKT1813-515/40-5-G	116-6861
2.2	2200	41.5	16.5	40	1	MKT1813-522/40-5-G	116-6862

400 Volt d. c. (200 Volt a. c.)						Price Each						
μ F	Order Code	5+	50+	100+	500+	1K+						
0.01	116-6851	0.300	0.270	0.250	0.210	0.188						
0.022	116-6853	0.320	0.290	0.220	0.171	0.166						
0.033	116-6854	0.340	0.310	0.220	0.171	0.166						
0.047	116-6855	0.340	0.310	0.240	0.179	0.175						
0.22	116-6857	0.400	0.360	0.350	0.320	0.310						
1	116-6859	0.980	0.880	0.770	0.690	0.610						
1.5	116-6861	0.920	0.880	0.850	0.770	0.730						
2.2	116-6862	0.880	0.840	0.830	0.750	0.710						

630 Volt d. c. (220 Volt a. c.)			Price Each			
μ F	Order Code	5+	50+	100+	500+	1K+
0.01	116-6871	0.350	0.320	0.300	0.280	0.260
0.015	116-6872	0.350	0.320	0.300	0.290	0.260
0.022	116-6873	0.360	0.330	0.320	0.300	0.270
0.047	116-6874	0.430	0.410	0.400	0.360	0.340
0.068	116-6875	0.171	0.167	0.162	0.152	0.140
0.1	116-6877	0.590	0.520	0.510	0.470	0.430
0.15	116-6878	0.550	0.530	0.500	0.450	0.410
0.22	116-6879	0.740	0.690	0.660	0.600	0.550
0.47	116-6880	0.910	0.860	0.850	0.760	0.690

Film - Polypropylene

KP 1830 Series



- Polypropylene film capacitors
- Applications:
 - Oscillator, timing and LC/RC filter circuits
 - High frequency coupling of fast digital and analog IC's

Tolerance ±1% Operating temperature -55°C to +100°C

63 Volt d. c.		Dimensions			Lead Pitch	Lead Length	Mfrs. List No.	Order Code
nF	μ F	H	W	D				
22	0.022	9	7.2	7.5	5	6	KP1830322061	141-3952

63 Volt d. c.		Price Each					
nF	Order Code	1+	50+	100+	500+	1K+	
22	141-3952	0.46	0.39	0.35	0.29	0.26	

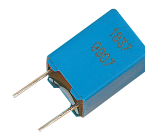
630 Volt d. c.		Dimensions			Lead Pitch	Lead Length	Mfrs. List No.	Order Code
pF	nF	H	W	D				
100	0.1	6	7.2	4.5	5	6	KP1830110631	141-3944
220	0.22	6	7.2	4.5	5	6	KP1830122631	141-3945
470	0.47	6	7.2	4.5	5	6	KP1830147631	141-3947
1000	1	6	7.2	4.5	5	6	KP1830210631	141-3948

630 Volt d. c.		Price Each					
pF	Order Code	1+	50+	100+	500+	1K+	
100	141-3944	0.810	0.570	0.440	0.340	0.270	
220	141-3945	0.450	0.390	0.350	0.280	0.220	
470	141-3947	0.330	0.280	0.260	0.210	0.168	
1000	141-3948	0.760	0.530	0.410	0.310	0.250	

250 Volt d. c.		Dimensions			Lead Pitch	Lead Length	Mfrs. List No.	Order Code
nF	μ F	H	W	D				
2.2	0.0022	6	7.2	4.5	5	6	KP1830222251	141-3949
4.7	0.0047	7	7.2	5.5	5	6	KP1830247251	141-3950
10	0.01	9	7.2	7.5	5	6	KP1830310251	141-3951

250 Volt d. c.		Price Each					
nF	Order Code	1+	50+	100+	500+	1K+	
2.2	141-3949	0.77	0.54	0.42	0.32	0.26	
4.7	141-3950	0.42	0.36	0.32	0.26	0.20	
10	141-3951	1.40	0.99	0.76	0.58	0.47	

MKP 1837 Series— Precision Film



- Precision metallised polypropylene film
- 5mm box
- Flame retardant case to UL94V-0

Operating temperature -55°C to +100°C Voltage Rating 160V dc
 IEC test classification 55/100/56 Permissible AC voltage 100V ac
 Capacitance tolerance ±1% Lead Pitch 55/100/56

630 Volt d. c. (220 Volt a. c.)		Dimensions			Mfrs. List No.	Order Code
μ F	nF	H	W	L		
0.01	15	5.5	7	7.5	MKP1837310161G	116-6881
0.015	15	5.5	7	7.5	MKP1837315161G	116-6882
0.022	22	5.5	7	7.5	MKP1837322161G	116-6883
0.033	33	7.5	9	7.5	MKP1837333161G	116-6884
0.047	47	7.5	9	7.5	MKP1837347161G	116-6885
0.068	68	7.5	9	7.5	MKP1837368161G	116-6886
0.1	100	9	11	7.5	MKP1837410161G	116-6887

630 Volt d. c. (220 Volt a. c.)		Price Each					
μ F	Order Code	5+	50+	100+	500+	1K+	
0.01	116-6881	0.98	0.91	0.84	0.74	0.67	
0.015	116-6882	0.97	0.92	0.85	0.74	0.67	
0.022	116-6883	1.03	0.95	0.92	0.76	0.69	
0.033	116-6884	1.20	1.12	1.06	0.92	0.78	
0.047	116-6885	1.09	1.01	0.96	0.80	0.72	
0.068	116-6886	0.49	0.46	0.44	0.36	0.33	
0.1	116-6887	1.22	1.13	1.07	0.92	0.79	

1000 Volt d.c.		Dimensions					Order Code
pF	nF	H	W	D			
33	0.033	6	7.2	4.5		151-9287	
47	0.047	6	7.2	4.5		151-9289	
68	0.068	6	7.2	4.5		151-9291	
100	0.1	6	7.2	4.5		151-9280	
150	0.15	6	7.2	4.5		151-9283	
220	0.22	6	7.2	4.5		151-9285	
330	0.33	6	7.2	4.5		151-9286	
470	0.47	7	7.2	5.5		151-9288	
680	0.68	7	7.2	5.5		151-9290	
1000	1	8	7.2	6.5		151-9279	
1500	1.5	8.5	7.2	7.2		151-9282	
2200	2.2	10	7.2	8.5		151-9284	

494486

Order Multiple=5

1000 Volt d.c.		Price Each				
pF	Order Code	5+	25+	50+	100+	500+
33	151-9287	0.127	0.106	0.092	0.080	0.071
47	151-9289	0.127	0.106	0.092	0.080	0.071
68	151-9291	0.127	0.106	0.092	0.080	0.071
100	151-9280	0.127	0.106	0.092	0.080	0.071
150	151-9283	0.127	0.106	0.092	0.080	0.071
220	151-9285	0.127	0.106	0.092	0.080	0.071
330	151-9286	0.127	0.106	0.092	0.080	0.071
470	151-9288	0.136	0.113	0.097	0.085	0.075
680	151-9290	0.136	0.113	0.097	0.085	0.075
1000	151-9279	0.149	0.124	0.106	0.094	0.083
1500	151-9282	0.178	0.149	0.127	0.111	0.099
2200	151-9284	0.210	0.177	0.152	0.133	0.118

PHE426 Series



- Single metallized film pulse capacitors
- Polypropylene dielectric
- Applications include pulse operation in SMPS, TV monitor, electrical ballast and other high frequency applications demanding stable operation

Operating temperature -55°C to +85°C
Temperature coefficient +50ppm/°C, -100ppm/°C

250V

Capacitance	μF	Tolerance	Dimensions			Lead Pitch	Mftrs. List No.	Order Code
nF			H	W	D			
100	0.1	± 5%	11	7.2	6	5	PHE426HJ6100JR05	157-2146
220	0.22	± 5%	10.5	18	5.5	15	PHE426HB6220JR06	157-2142
470	0.47	± 5%	14.5	18	7.5	15	PHE426HB6470JR06	157-2144
1000	1	± 5%	16.5	26	7	22.5	PHE426HD7100JR06L2	157-2145
2200	2.2	± 5%	20.5	31.5	10.5	27.5	PHE426HF7220JR06L2	157-2147
4700	4.7	± 5%	23	31.5	13.5	27.5	PHE426HF7470JR06L2	157-2148

Price Each

μF	Order Code	5+	75+	250+	500+	1K+	2K+
0.1	157-2146	0.22	--	--	--	--	--
0.22	157-2142	0.35	--	--	--	--	--
0.47	157-2144	0.46	0.41	0.36	0.34	0.33	0.28
1	157-2145	0.72	0.66	0.59	0.53	0.51	0.43
2.2	157-2147	1.40	--	--	--	--	--
4.7	157-2148	2.14	1.93	1.77	1.64	1.53	1.30

400V

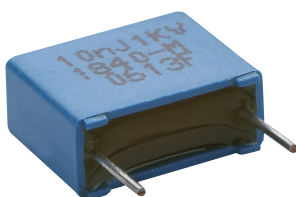
Capacitance	nF	μF	Tolerance	Dimensions			Lead Pitch	Mftrs. List No.	Order Code
				H	W	D			
0.022	22		± 5%	9	13	4	10	PHE426KA5220JR05	157-2149
2.2	2200		± 5%	24.5	31.5	14.5	27.5	PHE426KF7220JR06L2	157-2150

506974

Price Each

μF	Order Code	5+	75+	250+	500+	1K+	2K+
0.022	157-2149	0.124	0.104	0.094	0.083	0.075	0.066
2.2	157-2150	1.720	1.560	1.440	1.320	1.240	1.060

MKP 1840 Series



- Metallised polypropylene film capacitors
- Miniature case size
- Applications:**
 - High frequency and pulse operations
 - Deflection circuits
 - Loudspeaker crossover networks
 - Timing and sample and hold circuits

Tolerance ±5% Operating temperature -55°C to +100°C

400 Volt d.c.		Dimensions					Lead Pitch	Lead Length	Mftrs. List No.	Order Code
nF	μF	H	W	D						
10	0.01	8.5	7.5	3.5	5	6		MKP1840310404M	141-3869	
220	0.22	13.5	18	7.5	15	6		MKP1840422404M	141-3873	
470	0.47	15.5	26.5	7.5	22.5	6		MKP1840447404M	141-3874	
1000	1	21	26.5	11	22.5	6		MKP1840510404M	141-3875	
2200	2.2	28.5	41.5	16	37.5	6		MKP1840522404M	141-3876	
4700	4.7	32.2	41.5	18	37.5	6		MKP1840547404M	141-3877	

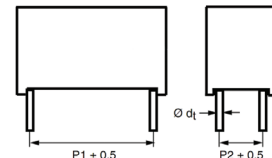
400 Volt d.c.		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
10	141-3869	0.290	0.220	0.164	0.128	0.101
220	141-3873	0.320	0.280	0.250	0.200	0.158
470	141-3874	0.720	0.510	0.400	0.300	0.240
1000	141-3875	1.250	0.880	0.680	0.520	0.420
2200	141-3876	1.350	1.040	0.840	0.680	0.550
4700	141-3877	4.450	3.140	2.400	1.860	1.480

1000 Volt d.c.		Dimensions			Lead Pitch	Lead Length	Mftrs. List No.	Order Code
nF	μF	H	W	D				
10	0.01	10.5	13	5.5	10	6	MKP1840310104M	141-3881
100	0.1	15.5	26.5	7.5	22.5	6	MKP1840410104M	141-3884
220	0.22	18.5	26.5	10.5	22.5	6	MKP1840422104M	141-3885
470	0.47	23.5	31.5	13.5	27.5	6	MKP1840447104M	141-3886
1000	1	33	31.5	18	27.5	6	MKP1840510104M	141-3887

493620

1000 Volt d.c.		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
10	141-3881	0.420	0.290	0.230	0.175	0.139
100	141-3884	0.950	0.670	0.510	0.400	0.310
220	141-3885	1.440	1.020	0.780	0.600	0.480
470	141-3886	2.530	1.790	1.370	1.060	0.840
1000	141-3887	5.520	4.650	3.560	2.760	2.180

MKP 1848 DC-Link Series



- High performance DC filtering applications
 - Polypropylene film
- Tolerance ± 5%
Life Time @ Temperature 100000h @ 40°C

500 Volt d.c.		Dimensions(mm)			No. of Pins	Lead Pitch(mm)	Mftrs. List No.	Order Code	
μF	nF	H	W	D	P1	P2			
15	15000	35.5	37.5	18.5	4	37.5	10.2	MKP1848 615 454P4	179-1613
22	22000	38.5	43	21.5	4	37.5	10.2	MKP1848 622 454P4	179-1614
25	25000	38.5	43	21.5	4	37.5	10.2	MKP1848 625 454P4	179-1615
50	50000	45	57.5	30	4	52.5	20.3	MKP1848 650 454Y5	179-1616
100	100000	45	57.5	45	4	52.5	20.3	MKP1848 710 454Y5	179-1617
200	200000	70	57.5	60	4	52.5	20.3	MKP1848 720 454Y5	179-1619
400	400000	60	57.5	130	4	52.5	20.3	MKP1848 740 454Y5	179-1621

500 Volt d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
15	179-1613	5.19	4.33	3.46	2.89	2.60
22	179-1614	6.56	5.47	4.38	3.65	3.28
25	179-1615	7.38	6.15	4.92	4.10	3.69
50	179-1616	13.67	11.39	9.11	7.59	6.83
100	179-1617	24.61	20.50	16.40	13.68	12.30
200	179-1619	60.14	50.12	40.09	33.42	30.07
400	179-1621	131.22	109.35	87.49	72.91	65.61

800 Volt d.c.		Dimensions(mm)			No. of Pins	Lead Pitch(mm)	Mftrs. List No.	Order Code	
μF	nF	H	W	D	P1	P2			
3	3000	21	32	11	2	27.5	—	MKP1848 530 704K2	179-1622
5	5000	25	32	15	2	27.5	—	MKP1848 550 704K2	179-1623
8	8000	28	32	18	2	27.5	—	MKP1848 580 704K2	179-1624
20	20000	38.5	43	21.5	4	37.5	10.2	MKP1848 620 704P4	179-1625
40	40000	45	57.5	25	4	52.5	20.3	MKP1848 640 704Y5	179-1626
80	80000	45	57.5	45	4	52.5	20.3	MKP1848 680 704Y5	179-1627
160	160000	60	57.5	70	4	52.5	20.3	MKP1848 716 704Y5	179-1628

800 Volt d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
5	179-1623	1.58	1.32	1.06	0.88	0.79
8	179-1624	2.47	2.05	1.64	1.36	1.23
20	179-1625	5.47	4.56	3.64	3.04	2.74
40	179-1626	9.30	7.75	6.20	5.17	4.65
80	179-1627	16.95	14.12	11.29	9.42	8.48
160	179-1628	41.01	34.17	27.34	22.79	20.50

1100 Volt d.c.		Dimensions(mm)			No. of Pins	Lead Pitch(mm)	Mftrs. List No.	Order Code	
μF	nF	H	W	D	P1	P2			
1	1000	19	32	9	2	27.5	—	MKP1848 510 094K2	179-1629
3	3000	25	32	15	2	27.5	—	MKP1848 530 094K2	179-1630
5	5000	31	32	21	2	27.5	—	MKP1848 550 094K2	179-1632
10	10000	38.5	43	21.5	4	37.5	10.2	MKP1848 610 094P4	179-1633
12	12000	38.5	43	21.5	4	37.5	10.2	MKP1848 612 094P4	179-1634
20	20000	45	42	30	4	37.5	20.3	MKP1848 620 094P4	179-1635
30	30000	45	57.5	30	4	52.5	20.3	MKP1848 630 094Y5	179-1636
40	40000	50	57.5	35	4	52.5	20.3	MKP1848 640 094Y5	179-1637
50	50000	45	57.5	45	4	52.5	20.3	MKP1848 650 094Y5	179-1638



Film - Polypropylene - continued

MKP 1848 DC-Link Series - continued

1100 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
1	179-1629	0.84	0.71	0.56	0.47	0.43
3	179-1630	1.43	1.19	0.95	0.79	0.71
5	179-1632	1.91	1.59	1.28	1.06	0.96
10	179-1633	3.83	3.19	2.55	2.12	1.91
12	179-1634	4.65	3.87	3.10	2.58	2.32
20	179-1635	6.83	5.70	4.56	3.80	3.42
30	179-1636	9.02	7.52	6.01	5.01	4.51
40	179-1637	11.21	9.34	7.47	6.23	5.61
50	179-1638	13.67	11.39	9.11	7.59	6.83

Metallised Polypropylene DC link

800 V, B3277* Series



- DC link - high density series
- High CV product, compact
- Plastic case (UL 94 V-0)
- High reliability



Pitch 27.5mm		Pitch 37.5mm		Pitch 52.5mm				
µF	No. of Pins	µF	H	W	D	∅ Lead mm	Mfrs. List No.	Order Code
5	2	5	24.5	31.5	14	0.8	B32774D8505K	178-1918
15	4	15	39.5	41.5	20	1.2	B32776G8156K	178-1919
20	2	20	37	42	28	1	B32776E8206K	178-1920
30	2	30	45	42	30	1	B32776E8306K	178-1921
45	4	45	45	57.5	30	1.2	B32778G8456K	178-1922
60	4	60	50	57.5	35	1.2	B32778G8606K	178-1924

Order Multiple=		Price Each				
µF	nF	Order Code	1+	10+	50+	100+
Pitch 27.5 mm						
5	5000	178-1918	2.09	1.58	1.39	1.27
Pitch 37.5 mm						
15	15000	178-1919	6.74	5.11	4.49	4.09
20	20000	178-1920	7.21	5.46	4.81	4.37
30	30000	178-1921	9.53	7.22	6.35	5.77
Pitch 52.5 mm						
45	45000	178-1922	12.32	11.10	9.86	9.12
60	60000	178-1924	14.45	13.00	11.55	10.69

MKP 385 Series

2000 Volts d.c.



- Polypropylene film capacitors
- Low contact resistance
- Low loss dielectric
- Small dimensions for high density packaging

Applications:

- Where steep pulses occur
- Electronic lighting
- Motor control circuits

Capacitance		Dimensions		Lead Pitch	Mfrs. List No.		Order Code
nF	pF	H	W	D			
1	1000	10	12.5	4	10	BFC238560102	141-3888
1	1000	11	18	5	15	BFC238580102	141-3889
1.5	1500	10	12.5	4	10	BFC238560152	141-3890
1.5	1500	11	18	5	15	BFC238580152	141-3891
2.2	2200	11	18	5	15	BFC238580222	141-3894
3.3	3300	11	18	5	15	BFC238580332	141-3896
4.7	4700	11	17.5	5	15	BFC238560472	141-3897
10	10000	13.5	17.5	7	15	BFC238560103	141-3899
15	15000	16.5	17.5	10	15	BFC238560153	141-3900

pF	Order Code	1+	50+	100+	500+	1K+
1	141-3888	0.330	--	--	--	--
1	141-3889	0.390	0.270	0.210	0.164	0.130
1.5	141-3890	0.370	0.260	0.200	0.155	0.124
1.5	141-3891	0.370	--	--	--	--
2.2	141-3894	1.460	1.410	1.380	1.340	1.270
3.3	141-3896	0.420	0.300	0.230	0.177	0.141
4.7	141-3897	0.480	0.340	0.260	0.200	0.158
10	141-3899	0.580	--	--	--	--
15	141-3900	0.580	0.410	0.320	0.240	0.192

PHE448 Series



- High frequency and high voltage applications, requiring capacitors with extremely high current handling capability, i.e. high dU/dt values
- Polypropylene film dielectric with aluminum foil and metallized film as electrodes, encapsulated in self-extinguishing material meeting the requirements of UL94V-0

nF	Voltage	Dimensions			Lead Pitch		Mfrs. List No.		Order Code
		H	W	D	Pitch	Dia			
0.1	2000V dc	10.5	18	5.5	15	0.8	PHE448SB3100JR06		167-8916
0.22	2000V dc	10.5	18	5.5	15	0.8	PHE448SB3220JR06		167-8919
0.33	2000V dc	10.5	18	5.5	15	0.8	PHE448SB3330JR06		167-8920
0.47	2000V dc	10.5	18	5.5	15	0.8	PHE448SB3470JR06		167-8921
1	2000V dc	10.5	18	5.5	15	0.8	PHE448SB4100JR06		167-8922
1.5	2000V dc	12.5	18	6.5	15	0.8	PHE448SB4150JR06		167-8923
2.2	2000V dc	16	18	8.5	15	0.8	PHE448SB4220JR06		167-8924
3.3	1600V dc	12.5	18	6.5	15	0.8	PHE448RB4330JR06		167-8912
4.7	1600V dc	12.5	18	6.5	15	0.8	PHE448RB4470JR06		167-8913
10	1600V dc	16	18	8.5	15	0.8	PHE448RB5100JR06		167-8914

Order Multiple=1		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
0.1	167-8916	0.250	--	--	--	--
0.22	167-8919	0.250	0.220	0.194	0.170	0.157
0.33	167-8920	0.250	0.220	0.194	0.170	0.158
0.47	167-8921	0.250	0.220	0.194	0.170	0.157
1	167-8922	0.270	--	--	--	--
1.5	167-8923	0.280	0.260	0.220	0.191	0.179
2.2	167-8924	0.310	0.280	0.250	0.230	0.200
3.3	167-8912	0.400	0.350	0.300	0.280	0.240
4.7	167-8913	0.410	0.360	0.310	0.290	0.250
10	167-8914	0.410	0.370	0.320	0.290	0.260

PHE450 Series



- Double metallized film pulse capacitors
- Polypropylene dielectric
- Suitable for high frequency applications with high current stress
- Applications include deflection circuits in TV sets, protection circuits in SMPS and electronic ballasts

Capacitance		Dimensions		Lead Pitch	Mfrs. List No.		Order Code
nF	µF	H	W	D			
100	0.1	12.5	18	6.5	15	PHE450KB6100JR06	157-2151

Price Each		Price Each				
µF	Order Code	5+	+	+	+	+
0.1	157-2151	0.49	--	--	--	--
Price Each		Price Each				
µF	Order Code	5+	+	+	+	+
0.01	157-2152	0.25	--	--	--	--

Over half a million products available online



MKP-B32652/3 Series



- High performance wound metallised polypropylene film capacitors
- Flame retardant case to **UL94V-0**
- TV S-correction, flyback and electronic ballast circuit applications

Operating temperature -55°C to +100°C
 Climatic category 55/100/56
 Tolerance ±10%
 Service life 200000 hours

Lead dia. = 0.8

Capacitance µF	Voltage V (d.c.)	V (a.c.)	Dimensions H W D	Lead Pitch	Mfrs. List No.	Order Code
0.001	2000	700	10.5 18 5	15	B32652A2102K	975-1254
0.0022	2000	700	12.5 18 7	15	B32652A2222K	975-1262
0.0047	2000	700	17.5 18 9	15	B32652A2472K	975-1270
0.01	1600	500	15 26.5 6	22.5	B32653A1103K	975-1289
0.022	1250	500	15 26.5 6	22.5	B32653A7223K	975-1297
0.047	1000	250	15 26.5 6	22.5	B32653A0473K	975-1300
0.068	1000	250	15 26.5 6	22.5	B32653A0683K	975-1319
0.1	630	250	15 26.5 6	22.5	B32653A6104K	975-1327
0.22	630	250	16.5 26.5 8.5	22.5	B32653A6224K	975-1335
0.47	630	250	20.5 26.5 11	22.5	B32653A6474K	975-1343
0.68	400	200	16.5 26.5 10.5	22.5	B32653A4684K	975-1351

Price Each

µF	Order Code	1+	50+	100+	500+
2000 Volt d.c.					
0.001	975-1254	0.330	0.290	0.260	0.195
0.0022	975-1262	0.310	0.270	0.250	0.189
0.0047	975-1270	0.430	0.360	0.340	0.280
1600 Volt d.c.					
0.01	975-1289	0.590	--	--	--
1250 Volt d.c.					
0.022	975-1297	0.550	--	--	--
1000 Volt d.c.					
0.047	975-1300	0.510	0.440	0.390	0.340
0.068	975-1319	0.570	0.470	0.440	0.360
630 Volt d.c.					
0.1	975-1327	0.590	--	--	--
0.22	975-1335	0.730	0.570	0.530	0.470
0.47	975-1343	0.870	--	--	--
400 Volt d.c.					
0.68	975-1351	0.580	--	--	--

MKP 375 Series



- Metallised polypropylene film
- High current pulse applications include deflection circuits in monitors

Operating temperature -55°C to +105°C
 Tolerance ±5%
 Climatic category 55/105/56

Lead dia. = 0.8

1000 Volt d.c. (400 Volt a.c.)

µF	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
	H	W	D			
0.022	19.5	26	6.5	22.5	BFC237520223	116-6090
0.033	21	26	8	22.5	BFC237520333	116-6091
0.047	19	30	6	27.5	BFC237520473	116-6092
0.056	20.5	30	7.5	27.5	BFC237520563	116-6093
0.068	21.5	30	8.5	27.5	BFC237520683	116-6094
0.082	22.5	30	9.5	27.5	BFC237520823	116-6095
0.1	23.5	30	10.5	27.5	BFC237520104	116-6096

1000 Volt d.c.

µF	Order Code	1+	50+	100+	500+	1K+	3K+
0.022	116-6090	0.86	0.66	0.44	0.37	0.32	0.28
0.033	116-6091	0.81	0.62	0.41	0.34	0.30	0.26
0.047	116-6092	0.98	--	--	--	--	--
0.056	116-6093	1.00	--	--	--	--	--
0.068	116-6094	0.65	--	--	--	--	--
0.082	116-6095	1.09	0.83	0.56	0.46	0.41	0.36
0.1	116-6096	1.38	1.05	0.71	0.58	0.51	0.45

1600 Volt d.c. (500 Volt a.c.)

µF	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
	H	W	D			
0.0047	19	26	6	22.5	BFC237530472	116-6097
0.0082	20	26	7	22.5	BFC237530822	116-6100
0.01	21	26	8	22.5	BFC237530103	116-6101
0.015	22.5	26	9.5	22.5	BFC237530153	116-6102
0.018	23.5	26	11.5	22.5	BFC237530183	116-6103
0.022	22.5	30	9.5	27.5	BFC237530223	116-6105
0.033	24.5	30	11.5	27.5	BFC237534333	116-6106



1600 Volt d.c.

µF	Order Code	1+	50+	100+	500+	1K+	3K+
0.0047	116-6097	0.59	0.44	0.30	0.25	0.21	0.19
0.0082	116-6100	0.66	0.50	0.34	0.28	0.24	0.22
0.01	116-6101	0.62	0.47	0.32	0.26	0.23	0.20
0.015	116-6102	0.80	0.63	0.43	0.36	0.31	0.27
0.018	116-6103	0.92	0.70	0.47	0.39	0.34	0.30
0.022	116-6105	1.10	0.83	0.56	0.47	0.40	0.36
0.033	116-6106	0.99	--	--	--	--	--

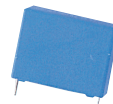
2000 Volt d.c. (600 Volt a.c.)

µF	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
	H	W	D			
0.0033	19	26	6	22.5	BFC237540332	116-6107
0.0047	19.5	26	6.5	22.5	BFC237540472	116-6108
0.0056	20	26	7	22.5	BFC237540562	116-6109
0.0068	21	26	8	22.5	BFC237540682	116-6110
0.01	22.5	26	9.5	22.5	BFC237540103	116-6112
0.022	26	30	13	27.5	BFC237540223	116-6114

2000 Volt d.c.

µF	Order Code	1+	50+	100+	500+	1K+	3K+
0.0033	116-6107	0.510	0.390	0.260	0.220	0.186	0.166
0.0047	116-6108	0.340	0.310	0.250	0.198	0.180	0.130
0.0056	116-6109	0.660	0.520	0.350	0.290	0.250	0.220
0.0068	116-6110	0.390	0.330	0.280	0.230	0.189	0.147
0.01	116-6112	0.750	0.570	0.390	0.320	0.280	0.250
0.022	116-6114	1.300	0.990	0.670	0.550	0.480	0.430

MKP 378 Series



- High performance AC and pulse metallised polypropylene film capacitors
- Flame retardant polypropylene case
- SMPS and motor control applications

Operating temperature -55°C to +85°C Tolerance ±5%
 Insulation resistance 100000MΩ Power factor @10kHz, 20°C 0.02
 Climatic category 55/085/56

Lead dia. = 0.8

Capacitance µF	Voltage V (d.c.)	V (a.c.)	Pulse Rating V/µs	Dimensions H W D	Lead Pitch	Mfrs. List No.	Order Code
0.0047	2000	600	2000	16.5 26 7	22.5	BFC237892472	121-5561
0.01	2000	600	2000	19.5 26 10	22.5	BFC237892103	121-5560
0.022	1600	500	1600	19.5 26 10	22.5	BFC237882223	121-5558
0.047	1600	500	900	23 31 13	27.5	BFC237882473	121-5559
0.1	1000	600	600	19.5 31 10	27.5	BFC237872104	121-5556
0.22	1000	400	300	31 31 21	27.5	BFC237872224	121-5557
0.47	630	300	120	25 31 15	27.5	BFC237862474	121-5555
1	250	160	60	21 31 11	27.5	BFC237842105	121-5552
2.2	250	160	30	25 31 15	27.5	BFC237842225	121-5554

Price Each

µF	Order Code	1+	100+	1K+	3K+
2000 Volt d.c.					
0.0047	121-5561	0.72	0.46	0.34	0.29
0.01	121-5560	1.22	0.78	0.57	0.49
1600 Volt d.c.					
0.022	121-5558	1.24	--	--	--
0.047	121-5559	1.78	1.13	0.82	0.72
1000 Volt d.c.					
0.1	121-5556	2.01	1.28	0.92	0.81
0.22	121-5557	2.88	--	--	--
630 Volt d.c.					
0.47	121-5555	2.91	1.86	1.34	1.18
250 Volt d.c.					
1	121-5552	1.75	1.11	0.81	0.70
2.2	121-5554	2.97	--	--	--

MKP 1839 Series



- Metallised polypropylene film capacitors
- Miniature case size

Applications:

- Pulse operations
- Storage
- Deflection circuits
- Timing and sample and hold circuits

Tolerance ±5% Operating temperature -55°C to +100°C

160 Volt d.c.	nF	µF	Dimensions		Lead Length	Mfrs. List No.	Order Code
			L	Ø			
47	0.047	11	5.5	40	40	MKP1839347164	141-3914
100	0.1	14	6.5	40	40	MKP1839410164	141-3915
220	0.22	19	7	40	40	MKP1839422164	141-3916
1000	1	26.5	10.5	40	40	MKP1839510164	141-3918
4700	4.7	41.5	15.5	40	40	MKP1839547164	141-3920
10000	10	41.5	22	40	40	MKP1839610164	141-3921



Film - Polypropylene - continued

MKP 1839 Series - continued

160 Volt d.c.		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
47	141-3914	0.500	0.390	0.310	0.250	0.210
100	141-3915	0.680	0.480	0.360	0.280	0.230
220	141-3916	0.300	0.270	0.240	0.200	0.163
1000	141-3918	0.670	0.570	0.520	0.430	0.330
4700	141-3920	1.650	1.410	1.270	1.040	0.880
10000	141-3921	3.470	3.010	2.770	2.300	1.820

400 Volt d.c.		Dimensions		Lead	Mfrs. List No.	Order Code
nF	μF	L	∅	Length		
10	0.01	11	5	40	MKP1839310404	141-3923
47	0.047	14	6	40	MKP1839347404	141-3925
2200	2.2	41.5	21	40	MKP1839522404	141-3930

400 Volt d.c.		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
10	141-3923	0.60	0.43	0.33	0.25	0.20
47	141-3925	0.58	0.44	0.36	0.28	0.24
2200	141-3930	1.31	1.13	1.04	0.86	0.73

MKP 1839 HQ Series



- High current and high pulse operations
- Polypropylene film

Tolerance ± 5%
Life @ Temperature 300000h @ 40°C

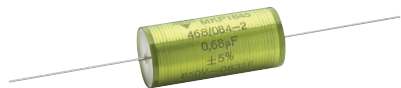
630 V		Dimensions(mm)			Mfrs. List No.	Order Code
μF	nF	L	Body ∅	Lead ∅		
2.2	2200	31.5	23	1	MKP1839 522 634HQ	179-1602
3.3	3300	31.5	28	1	MKP1839 533 634HQ	179-1603

630 V		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
2.2	179-1602	2.32	1.93	1.55	1.29	1.17
3.3	179-1603	3.01	2.51	2.01	1.67	1.51

850 V		Body Dimensions(mm)			Mfrs. List No.	Order Code
μF	nF	L	Body ∅	Lead ∅		
0.1	100	31.5	8.5	0.8	MKP1839 410 084HQ	179-1604
0.15	150	31.5	10	0.8	MKP1839 415 084HQ	179-1605
0.22	220	31.5	11.5	0.8	MKP1839 422 084HQ	179-1607
0.33	330	31.5	14	0.8	MKP1839 433 084HQ	179-1608
0.47	470	31.5	16.5	0.8	MKP1839 447 084HQ	179-1609
0.68	680	31.5	16.5	0.8	MKP1839 468 084HQ	179-1610
1	1000	31.5	19.5	1	MKP1839 510 084HQ	179-1611
1.5	1500	31.5	24	1	MKP1839 515 084HQ	179-1612

850 V		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
0.1	179-1604	0.71	0.59	0.48	0.40	0.35
0.15	179-1605	0.79	0.67	0.53	0.44	0.40
0.22	179-1607	0.91	0.75	0.60	0.50	0.45
0.33	179-1608	1.01	0.84	0.68	0.56	0.51
0.47	179-1609	1.14	0.96	0.77	0.63	0.57
0.68	179-1610	1.26	1.05	0.84	0.70	0.62
1	179-1611	1.97	1.64	1.31	1.09	0.99
1.5	179-1612	2.16	1.80	1.44	1.20	1.08

MKP 1845 Series



- Metallised polypropylene film capacitors
- Deflection circuits
- Snubber and electronic ballast circuits
- High current and high pulse operations
- Timing and sample and hold circuits

1000 Volt d.c.		Dimensions		Lead	Mfrs. List No.	Order Code
nF	μF	L	∅	Length		
100	0.1	34	15.5	40	MKP1845410104	141-3935
220	0.22	44	18	40	MKP1845422104	141-3936

1000 Volt d.c.		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
100	141-3935	1.49	1.26	1.15	0.94	0.72
220	141-3936	1.21	1.03	0.93	0.76	0.65

2000 Volt d.c.		Dimensions		Lead	Mfrs. List No.	Order Code
nF	μF	L	∅	Length		
2.2	0.0022	29	6.5	40	MKP1845222204	141-3938
4.7	0.0047	29	8	40	MKP1845247204	141-3939
100	0.1	44	21	40	MKP1845410204	141-3943

2000 Volt d.c.		Price Each				
nF	Order Code	1+	50+	100+	500+	1K+
2.2	141-3938	0.61	0.53	0.49	0.41	0.33
4.7	141-3939	1.18	0.90	0.72	0.58	0.47
100	141-3943	1.33	1.13	1.02	0.83	0.77

Film - Polystyrene

FSC Series - 160 Volt d.c. (40 Volt a.c.)

LCR Components



Lead dia 0.4 for C ≤330pF 0.6 for C >330pF

- Low cost polystyrene axial capacitors
 - Small size high performance
- Operating temperature -40°C to +85°C
Insulation resistance 500000MΩ
Temperature coefficient N 150±50ppm/°C
Climate category 40/85/56
- Tolerance
Power factor @ 1kHz
- 1pF for C ≤33p
2.5% for C >33pF
0.0005

Dimensions			Order Code	Dimensions			Order Code
pF	L	Dia.		pF	L	Dia.	
10	8	4	951-9955	470	12	5	952-0058
15	8	4	951-9963	680	12	5	952-0066
22	8	4	951-9971	1000	12	5	952-0074
33	8	4	951-9980	1200	10	8	952-0090
47	8	4	951-9998	1500	10	8	952-0104
56	8	4	952-0082	2200	10	8	952-0112
68	8	4	952-0007	2700	10	8	952-0120
100	8	4	952-0015	3300	10	8	952-0139
120	8	4	952-0171	4700	15	9.5	952-0147
150	8	4	952-0023	6800	15	9.5	952-0155
220	8	4	952-0031	10000	20	15	952-0163
330	8	4	952-0040				

Price Each		Price Each				
pF	Order Code	1+	50+	100+	500+	1K+
10	951-9955	1.26	1.11	0.89	0.69	0.69
15	951-9963	1.26	1.11	0.89	0.69	0.69
22	951-9971	1.26	1.11	0.89	0.69	0.69
33	951-9980	1.26	1.11	0.89	0.69	0.69
47	951-9998	1.26	1.11	0.89	0.69	0.69
56	952-0082	1.26	1.11	0.89	0.69	0.69
68	952-0007	1.26	1.11	0.89	0.69	0.69
100	952-0015	1.26	1.11	0.89	0.69	0.69
120	952-0171	1.24	1.12	0.98	0.72	0.72
150	952-0023	1.26	1.11	0.89	0.69	0.69
220	952-0031	1.26	1.11	0.89	0.69	0.69
330	952-0040	1.26	1.11	0.89	0.69	0.69
470	952-0058	1.26	1.11	0.89	0.69	0.69
680	952-0066	1.26	1.11	0.89	0.69	0.69
1000	952-0074	1.26	1.11	0.89	0.69	0.69
1200	952-0090	1.24	1.12	0.98	0.72	0.72
1500	952-0104	1.26	1.11	0.89	0.69	0.69
2200	952-0112	1.26	1.11	0.89	0.69	0.69
2700	952-0120	1.44	1.23	1.01	0.77	0.77
3300	952-0139	1.45	1.22	0.96	0.73	0.73
4700	952-0147	1.97	1.70	1.37	1.03	1.03
6800	952-0155	2.43	2.03	1.65	1.27	1.27
10000	952-0163	2.43	2.03	1.65	1.27	1.27

FSC/EX Series

LCR Components



Lead dia. = 0.8

- High performance low cost axial polystyrene
 - Close tolerance, ±1%
- Operating temperature -40°C to +70°C
Insulation resistance 100000MΩ
Temperature coefficient -110 ±60ppm/°C
- Tolerance ±1%
Power factor @ 1kHz 0.0005

63 Volt d.c. (25 Volt a.c.)		Dimensions		Order Code	63 Volt d.c. (40 Volt a.c.)		Dimensions		Order Code
nF	pF	L	Dia.		nF	pF	L	Dia.	
10	0.01	17	6.5	952-0414	22	0.022	17	7	952-0430
15	0.015	17	7	952-0422	33	0.033	17	8	952-0449
1.2	0.0012	12.5	5.5	952-0457	3.9	0.0039	17	6	952-0554
1.5	0.0015	12.5	5.5	952-0465	4.7	0.0047	17	6	952-0562
1.8	0.0018	12.5	5.5	952-0473	5.1	0.0051	17	6	952-0570
2	0.002	12.5	5.5	952-0481	5.6	0.0056	17	6	952-0589
2.2	0.0022	12.5	5.5	952-0490	6.2	0.0062	17	6	952-0597
2.7	0.0027	12.5	5.5	952-0511	6.8	0.0068	17	6	952-0600
3	0.003	12.9	6	952-0520	7.5	0.0075	17	7	952-0619
3.3	0.0033	12.9	6	952-0538	8.2	0.0082	17	6	952-0627
250 Volt d.c. (125 Volt a.c.)		Dimensions		Order Code	Dimensions		Order Code		
nF	pF	L	Dia.		nF	pF		L	Dia.
0.82	0.00082	12.9	5.5	952-0635	1	0.001	12.9	5.5	952-0651

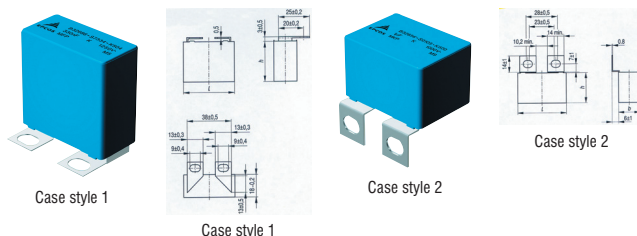
Capacitance	Pulse Rating	Dimensions	Case	Mfrs.		
630 Volt d.c. (250 Volt a.c.)						
0.1 0.0001	12.5 6	952-0660	0.33	0.0003	12.9 6	952-0740
0.12 0.00012	12.5 6	952-0678	0.39	0.00039	12.9 5.5	952-0775
0.15 0.00015	12.5 6	952-0686	0.43	0.00043	12.9 5.5	952-0783
0.18 0.00018	12.5 6	952-0694	0.47	0.00047	12.9 5.5	952-0791
0.2 0.0002	12.5 6	952-0708	0.51	0.00051	12.9 5.5	952-0805
0.22 0.00022	12.9 6	952-0716	0.56	0.00056	12.9 5.5	952-0813
0.27 0.00027	12.9 6	952-0732	0.68	0.00068	12.9 6	952-0821

208557

nF	Order Code	Price Each			
		1+	100+	1K+	3K+
63 Volt d.c.					
10	952-0414	1.06	1.03	0.85	0.72
15	952-0422	1.21	1.12	0.99	0.82
22	952-0430	1.33	1.30	1.05	0.88
33	952-0449	1.76	1.70	1.40	1.19
160 Volt d.c.					
1.2	952-0457	0.85	0.82	0.69	0.57
1.5	952-0465	0.85	0.82	0.69	0.57
1.8	952-0473	0.85	0.82	0.69	0.57
2	952-0481	0.85	0.82	0.69	0.57
2.2	952-0490	0.85	0.82	0.69	0.57
2.7	952-0511	0.87	0.85	0.69	0.59
3	952-0520	0.87	0.85	0.69	0.59
3.3	952-0538	0.87	0.85	0.69	0.59
3.9	952-0554	0.95	0.89	0.75	0.61
4.7	952-0562	1.02	1.00	0.83	0.72
5.1	952-0570	1.02	1.00	0.83	0.72
5.6	952-0589	1.08	1.05	0.87	0.75
6.2	952-0597	1.08	1.05	0.87	0.75
6.8	952-0600	1.08	1.05	0.87	0.75
7.5	952-0619	1.08	1.05	0.87	0.75
8.2	952-0627	1.21	1.12	0.99	0.82
250 Volt d.c.					
0.82	952-0635	0.85	0.82	0.69	0.57
1	952-0651	0.85	0.82	0.69	0.57
630 Volt d.c.					
0.1	952-0660	0.85	0.82	0.69	0.57
0.12	952-0678	0.85	0.82	0.69	0.57
0.15	952-0686	0.85	0.82	0.69	0.57
0.18	952-0694	0.85	0.82	0.69	0.57
0.2	952-0708	0.85	0.82	0.69	0.57
0.22	952-0716	0.85	0.82	0.69	0.57
0.27	952-0732	0.85	0.82	0.69	0.57
0.3	952-0740	0.85	0.82	0.69	0.57
0.33	952-0759	0.85	0.82	0.69	0.57
0.39	952-0775	0.87	0.85	0.69	0.59
0.43	952-0783	0.87	0.85	0.69	0.59
0.47	952-0791	0.87	0.85	0.69	0.59
0.51	952-0805	0.87	0.85	0.69	0.59
0.56	952-0813	0.87	0.85	0.69	0.59
0.68	952-0821	0.87	0.85	0.69	0.59

Film - Snubbers

B32656/32686 Series



- High performance metallised polypropylene film pulse capacitors
- High pulse strength
- Designed for snubbing power semiconductors
- For direct mounting to IGBT modules

Operating temperature -55°C to +100°C Tolerance ±10%
 Climatic category 55/100/56

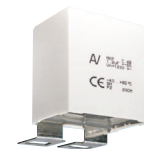
Capacitance	Pulse Rating	Dimensions	Case	Mfrs.	Order Code			
µF	nF	nF	V/µs	H W D	Style	List No.		
1000 Volt d.c. (500 Volt a.c.)								
0.68	680	90	28.5	42	16	1	B32656S0684K503	120-0820
1	1000	90	26.5	42	31	2	B32656S105K5610	120-0818
1.5	1500	90	26.5	42	31	2	B32656S0155K501	120-0819
1250 Volt d.c. (500 Volt a.c.)								
0.22	220	140	25	42	14	1	B32656S7224K504	120-0822
1	1000	140	37	42	28	2	B32656S7105K561	120-0821

Capacitance	Pulse Rating	Dimensions	Case	Mfrs.		
1250 Volt d.c. (450 Volt a.c.)						
0.22	220	2800	32.5 41.5 18	1	B32686S7224K501	120-0826
1600 Volt d.c. (450 Volt a.c.)						
0.1	100	3500	32.5 41.5 18	1	B32686S1104K503	120-0824
2000 Volt d.c. (500 Volt a.c.)						
0.1	100	4500	39.5 41.5 20	1	B32686S2104K501	120-0825

333319

µF	Order Code	Price Each			
		1+	10+	50+	100+
1000 Volt d.c. (500 Volt a.c.)					
0.68	120-0820	7.28	--	--	--
1	120-0818	9.70	9.14	8.62	8.00
1.5	120-0819	12.05	--	--	--
1250 Volt d.c. (500 Volt a.c.)					
0.22	120-0822	7.12	6.55	6.06	5.55
1	120-0821	8.21	--	--	--
1250 Volt d.c. (450 Volt a.c.)					
0.22	120-0826	3.80	--	--	--
1600 Volt d.c. (450 Volt a.c.)					
0.1	120-0824	5.74	5.37	5.09	4.74
2000 Volt d.c. (500 Volt a.c.)					
0.1	120-0825	8.72	8.03	7.47	7.31

Snubber MKP C4B Series



Operating temperature -40°C to +85°C
 Tolerance ± 5%

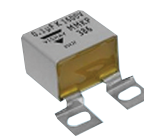


µF	H	W	D	Mfrs. List No.	Order Code
1000V					
1.2	28	42.5	37	C4BSNBX4120ZAJJ	171-6035
1	20	41.5	40	C4BSNBX4100ZBFJ	171-6036
1200V					
1	28	42.5	37	C4BSPBX4100ZAJJ	171-6038
1600V					
0.47	20	41.5	40	C4BSTBX3470ZAFJ	171-6039

539491

µF	Order Code	Price Each			
		1+	10+	50+	100+
1000V					
1.2	171-6035	10.79	9.53	8.74	7.61
1	171-6036	11.73	10.36	9.49	8.28
1200V					
1	171-6038	11.48	10.13	9.29	8.11
1600V					
0.47	171-6039	10.60	9.35	8.58	7.48

Snubber MMKP 386 Series



- AC and pulse double metallized polypropylene film capacitors
- Low inductive construction
- Low loss dielectric

Operating temperature -55°C to +85°C
 Tolerance ±10%
 Screw hole pitch 27.5mm



µF	Dimensions	Mfrs. List No.	Order Code
630 Volt d.c. (220 Volt a.c.)			
3.3	46 44 30	222238620335	128-9272
850 Volt d.c. (300 Volt a.c.)			
1.5	38 44 22	BFC238600155	141-3901
1.8	46 44 30	222238600185	128-9273
2.7	46 44 30	222238600275	128-9274
1000 Volt d.c. (350 Volt a.c.)			
1.5	46 44 30	222238630155	128-9280
1250 Volt d.c. (425 Volt a.c.)			
0.47	38 44 22	222238680474	128-9281
1600 Volt d.c. (550 Volt a.c.)			
0.47	46 44 30	222238650474	128-9292
2000 Volt d.c. (700 Volt a.c.)			
0.22	38 44 22	BFC238660224	141-3912
0.47	46 44 30	222238660474	128-9295
2500 Volt d.c. (900 Volt a.c.)			
0.1	38 44 22	222238670104	128-9296
0.27	46 44 30	222238670274	128-9297



Film - Snubbers - continued

Snubber MMKP 386 Series - continued

451790

µF	Order Code	Price Each					
		1+	15+	30+	60+	+	+
630 Volt d.c. (220 Volt a.c.)							
3.3	128-9272	15.13	10.53	7.64	6.64	--	--
850 Volt d.c. (300 Volt a.c.)							
1.5	141-3901	10.18	--	--	--	--	--
1.8	128-9273	16.60	12.09	8.78	7.62	--	--
2.7	128-9274	19.58	12.67	9.19	7.99	--	--
1000 Volt d.c. (350 Volt a.c.)							
1.5	128-9280	20.77	13.73	9.97	8.66	--	--
1250 Volt d.c. (425 Volt a.c.)							
0.47	128-9281	5.22	4.97	4.72	4.34	--	--
1600 Volt d.c. (550 Volt a.c.)							
0.47	128-9292	18.33	12.21	8.87	7.70	--	--
2000 Volt d.c. (700 Volt a.c.)							
0.22	141-3912	11.65	--	--	--	--	--
0.47	128-9295	18.95	13.69	9.94	8.63	--	--
2500 Volt d.c. (900 Volt a.c.)							
0.1	128-9296	13.29	--	--	--	--	--
0.27	128-9297	19.34	12.88	9.35	8.11	--	--

Film - Motor Run

C27.4 Faston Series

ARCOTRONICS GROUP
A KEMET Company



Voltage rating 470V
Operating temperature -25°C to +100°C



The capacitor is used in series to the start-winding of the single-phase electric motor, allowing its starting and increasing the torque during work. Main application fields: air-fans, pumps, circulators, and low power electric motors.

603801

µF	Order Code	Price Each			
		1+	10+	50+	100+
1	178-9692	1.96	1.63	1.31	1.09
2	178-9693	1.96	1.63	1.30	1.09
3	178-9694	2.01	1.67	1.34	1.11
4	178-9695	2.55	2.12	1.71	1.41
5	178-9696	2.41	2.01	1.60	1.34
8	178-9698	2.75	2.29	1.83	1.53
10	178-9699	3.00	2.50	2.00	1.66
12	178-9700	3.16	2.63	2.11	1.76
15	178-9701	3.82	3.18	2.55	2.12
18	178-9702	4.46	3.72	2.97	2.49
20	178-9704	4.63	3.86	3.09	2.57
25	178-9705	5.61	4.67	3.73	3.11
30	178-9706	6.05	5.04	4.04	3.37
40	178-9707	8.19	6.82	5.45	4.55

C27.4 Leaded Series



ARCOTRONICS GROUP
A KEMET Company



The capacitor is used in series to the start-winding of the single-phase electric motor, allowing its starting and increasing the torque during work. Main application fields: air-fans, pumps, circulators, and low power electric motors.

Voltage rating 470V
Operating temperature -25°C to +100°C

603746

µF	Order Code	Price Each			
		1+	10+	50+	100+
2	178-9686	2.39	2.00	1.60	1.33
3	178-9687	2.39	2.00	1.60	1.33
4	178-9688	2.74	2.28	1.82	1.52
5	178-9689	2.79	2.33	1.86	1.55
10	178-9690	3.71	3.09	2.48	2.06
12	178-9691	3.86	3.21	2.57	2.14

Over half a million products available online



C87.8 Faston Series

ARCOTRONICS GROUP
A KEMET Company



Voltage rating 470V
Operating temperature -25°C to +85°C

The capacitor is used in series to the start-winding of the single-phase electric motor, allowing its starting and increasing the torque during work. Main application fields: low power electric motors, compressors. The choice of the capacitor depends on expected life length and the mechanical connection of the user.

603803

µF	Order Code	Price Each			
		1+	10+	50+	100+
4	178-9708	2.91	2.43	1.95	1.62
10	178-9709	3.85	3.21	2.57	2.14
15	178-9710	5.17	4.31	3.44	2.87
20	178-9711	6.46	5.38	4.31	3.59

MRP440 Series - Plastic Case

LCR Components



- Stud mounting motor run capacitors
- Self-healing metallised polypropylene
- Flame retardant to UL94V-0

Voltage rating 440V ac 50/60Hz Tolerance ±10%
Operating temperature -25°C to +85°C Power factor ≤0.001

Stud thread = M8 x 12,
Tabs = double 6.35

Dimensions			Dimensions			Dimensions		
µF	H	Dia.	µF	H	Dia.	µF	H	Dia.
1	55	30	5	75	30	20	98	45
2	55	30	8	75	35	25	98	50
3	55	30	10	98	35	30	98	50

208583

µF	Order Code	Price Each			
		1+	10+	50+	250+
1	119-0550	2.09	2.05	1.98	1.62
2	119-0551	1.61	1.58	1.54	1.26
3	119-0552	1.51	1.48	1.46	1.21
5	119-0554	2.91	2.86	2.81	2.31
8	119-0555	3.45	3.39	3.32	2.73
10	119-0557	4.04	3.94	3.80	3.14
20	119-0558	6.14	6.02	5.81	4.78
25	119-0559	7.34	7.19	6.97	5.73
30	119-0560	7.90	7.76	7.54	6.20

MRP440 Series - Leaded Plastic Case

LCR Components



- Stud mounting motor run capacitors
- Self-healing metallised polypropylene
- Flame retardant to UL94V-0

Voltage rating 440V ac 50/60Hz Tolerance ±10%
Operating temperature -25°C to +85°C Power factor ≤0.001

Stud thread = M8 x 12

Dimensions			Dimensions			Dimensions		
µF	H	Dia.	µF	H	Dia.	µF	H	Dia.
1.5	55	30	6	75	35	119-0561	6	75
2	55	30	8	75	35	119-0562	8	75
3	55	40	10	98	35	119-0563	10	98
5	75	30	20	98	45	119-0564	20	98

208584

µF	Order Code	Price Each			
		1+	10+	50+	100+
1.5	119-0561	2.52	2.45	2.38	1.97
2	119-0562	2.66	2.61	2.56	2.12
3	119-0563	2.85	2.78	2.73	2.26
5	119-0564	3.35	3.28	3.16	2.60
6	119-0565	3.55	3.46	3.35	2.78
8	119-0566	2.25	2.21	2.14	1.81
10	119-0567	4.45	4.37	4.23	3.48
20	119-0569	6.56	6.42	6.26	5.15

MR Series - 440 Volt a.c. (Polypropylene)

LCR Components



- Stud mounting motor run capacitors
- Self-healing metallised polypropylene film
- Hermetically sealed aluminium can
- Manufactured to BS EN 60252

Stud thread=M8, Tabs=double 6.35

Operating temperature -25°C to +85°C Tolerance ±10%
Insulation resistance 1000secs (MΩ x µF) Power factor 0.001
Climatic category 40/85/21 Proof voltage 660VR for 1 min

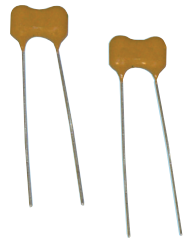
Dimensions				Dimensions			
μF	H	Dia.	Order code	μF	H	Dia.	Order code
1	60	35	119-0537	5	60	35	119-0541
2	60	35	119-0538	10	75	45	119-0542
3	60	30	119-0539	20	98	45	119-0545
4	60	35	119-0540				

208634

Price Each					
μF	Order Code	1+	50+	100+	500+
1	119-0537	3.29	2.60	1.93	1.38
2	119-0538	4.04	3.08	2.23	1.64
3	119-0539	4.70	3.69	2.73	1.96
4	119-0540	5.40	4.15	2.96	2.21
5	119-0541	6.12	4.70	3.32	2.49
10	119-0542	7.54	5.91	4.36	3.27
20	119-0545	11.08	8.65	6.39	4.78

Silver Mica

Standard Dipped Mica Capacitors



Stability and mica go hand-in-hand when you need to count on stable capacitance over a wide temperature range. CDE's standard dipped silvered mica capacitors are the first choice for timing and close tolerance applications.

- High temperature - up to +150°C
- 100,000 V/μs dV/dt pulse capability minimum

Tolerance	±0.5pF	≤ 47pF (except 10 pF = 5%)
Temp. coefficient (ppm/°C)	±1% ±200ppm/°C -20 to +100ppm/°C -70 to +70ppm/°C	≥56pF 2.2 - 18pF 22 - 82pF ≥100pF
Capacitance drift	±0.5% + 0.1pF ±0.1% + 0.1pF ±0.05% + 0.1pF	2.2 - 18pF 22 - 82pF ≥100pF
Operating temp.	-55°C to +125°C	
Rated voltage	500Vdc	

Capacitance	Dimensions			Lead Dia	Lead Pitch	Mfrs. List No.	Order Code
	H	W	D				
2.2pF	9.1	11.4	4.3	0.6	5.9	CD15CD(2.2)D03F	126-4864
3.3pF	9.1	11.4	4.3	0.6	5.9	CD15CD(3.3)D03F	126-4865
4.7pF	9.1	11.4	4.3	0.6	5.9	CD15CD(4.7)D03F	126-4866
6.8pF	9.1	11.4	4.3	0.6	5.9	CD15CD(6.8)D03F	126-4867
10pF	9.1	11.4	4.3	0.6	5.9	CD15CD100J03F	126-4868
15pF	9.1	11.4	4.3	0.6	5.9	CD15CD150D03F	126-4869
18pF	9.1	11.4	4.3	0.6	5.9	CD15CD180D03F	126-4870
22pF	9.1	11.4	4.3	0.6	5.9	CD15ED220D03F	126-4871
27pF	9.1	11.4	4.3	0.6	5.9	CD15ED270D03F	126-4872
33pF	9.1	11.4	4.3	0.6	5.9	CD15ED330D03F	126-4873
39pF	9.1	11.4	4.3	0.6	5.9	CD15ED390D03F	126-4875
47pF	9.1	11.4	4.3	0.6	5.9	CD15ED470D03F	126-4876
56pF	9.1	11.4	4.3	0.6	5.9	CD15ED560F03F	126-4877
68pF	9.1	11.4	4.6	0.6	5.9	CD15ED680F03F	126-4878
82pF	9.1	11.4	4.6	0.6	5.9	CD15ED820F03F	126-4879
100pF	9.1	11.7	4.6	0.6	5.9	CD15FD101F03F	126-4880
120pF	9.4	11.7	4.6	0.6	5.9	CD15FD121F03F	126-4881
150pF	9.4	11.7	4.8	0.6	5.9	CD15FD151F03F	126-4882
180pF	9.4	11.7	4.8	0.6	5.9	CD15FD181F03F	126-4883
220pF	9.7	11.7	5.1	0.6	5.9	CD15FD221F03F	126-4884
270pF	9.9	11.9	5.3	0.6	5.9	CD15FD271F03F	126-4885
330pF	9.9	11.9	5.3	0.6	5.9	CD15FD331F03F	126-4887
390pF	9.9	11.9	5.3	0.6	5.9	CD15FD391F03F	126-4888
470pF	10.2	11.9	5.6	0.6	5.9	CD15FD471F03F	126-4889
560pF	13	16.5	5.3	0.8	8.7	CD19FD561F03F	126-4892
680pF	13	16.5	5.3	0.8	8.7	CD19FD681F03F	126-4893
820pF	13	16.5	5.3	0.8	8.7	CD19FD821F03F	126-4894
1nF	13.2	16.5	5.6	0.8	8.7	CD19FD102F03F	126-4890
1.5nF	13.2	16.8	5.8	0.8	8.7	CD19FD152F03F	126-4895
1.8nF	13.5	17	6.1	0.8	8.7	CD19FD182F03F	126-4896
2.2nF	13.5	17	6.4	0.8	8.7	CD19FD222F03F	126-4897
2.7nF	13.7	17.3	6.9	0.8	8.7	CD19FD272F03F	126-4899
3.6nF	14.2	17.3	7.6	0.8	8.7	CD19FD362F03F	126-4900
4.7nF	14.7	17.8	8.9	0.8	8.7	CD19FD472F03F	126-4901
6.8nF	22.4	19.8	7.6	1	11.1	CD30FD682F03F	126-4902
8.2nF	22.4	20.1	8.1	1	11.1	CD30FD822F03F	126-4903
10nF	22.6	20.3	8.6	1	11.1	CD30FD103F03F	126-4905
22nF	23.6	21.1	11.7	1	11.1	CD30FD223F03F	126-4906
33nF	22.6	36.6	9.1	1	27	CD42FD333F03F	126-4907
47nF	23.1	37.3	11.4	1	27	CD42FD473F03F	126-4908

446981

Capacitance	Order Code	Price Each			
		1+	50+	100+	250+
2.2pF	126-4864	0.69	0.59	0.55	0.50
3.3pF	126-4865	0.69	0.59	0.55	0.50
4.7pF	126-4866	0.69	0.59	0.55	0.50
6.8pF	126-4867	0.69	0.59	0.55	0.50
10pF	126-4868	0.69	0.59	0.55	0.50
15pF	126-4869	0.69	0.59	0.55	0.50
18pF	126-4870	0.69	0.59	0.55	0.50
22pF	126-4871	0.77	0.66	0.60	0.57
27pF	126-4872	1.31	1.13	1.05	1.01
33pF	126-4873	1.31	1.13	1.05	1.01

Capacitance	Order Code	Price Each			
		1+	50+	100+	250+
39pF	126-4875	1.31	1.13	1.05	1.01
47pF	126-4876	1.31	1.13	1.05	1.01
56pF	126-4877	1.31	1.13	1.05	1.01
68pF	126-4878	1.31	1.13	1.05	1.01
82pF	126-4879	1.31	1.13	1.05	1.01
100pF	126-4880	1.31	1.13	1.05	1.01
120pF	126-4881	1.31	1.13	1.05	1.01
150pF	126-4882	1.31	1.13	1.05	1.01
180pF	126-4883	1.31	1.13	1.05	1.01
220pF	126-4884	1.31	1.13	1.05	1.01
270pF	126-4885	1.31	1.13	1.05	1.01
330pF	126-4887	1.60	1.41	1.31	1.28
390pF	126-4888	1.60	1.41	1.31	1.28
470pF	126-4889	1.60	1.41	1.31	1.28
560pF	126-4892	1.60	1.41	1.31	1.28
680pF	126-4893	1.60	1.41	1.31	1.28
820pF	126-4894	1.60	1.41	1.31	1.28
1nF	126-4890	1.60	1.41	1.31	1.28
1.5nF	126-4895	1.78	1.51	1.40	1.35
1.8nF	126-4896	1.98	1.73	1.59	1.54
2.2nF	126-4897	2.09	1.84	1.72	1.66
2.7nF	126-4899	2.30	2.00	1.85	1.82
3.6nF	126-4900	2.66	2.29	2.14	2.10
4.7nF	126-4901	2.66	2.29	2.14	2.10
6.8nF	126-4902	4.13	3.66	3.56	3.47
8.2nF	126-4903	4.61	4.07	3.79	3.72
10nF	126-4905	5.62	4.87	4.55	4.47
22nF	126-4906	9.16	7.85	7.55	7.36
33nF	126-4907	15.07	14.00	13.74	13.07
47nF	126-4908	19.49	18.49	17.90	17.62

Capacitance Conversion Table

0.000001μF	=	0.001nF	=	1pF
0.00001μF	=	0.01nF	=	10pF
0.0001μF	=	0.1nF	=	100pF
0.001μF	=	1nF	=	1000pF
0.01μF	=	10nF	=	10000pF
0.1μF	=	100nF	=	100000pF
1μF	=	1000nF	=	1000000pF
10μF	=	10000nF	=	10000000pF
100μF	=	100000nF	=	100000000pF

Suppression - X & Y Capacitors

Suppression Capacitors



- **Class X:** Suitable for use in situations where failure of the capacitor would not lead to danger of electric shock. X capacitors are designed for connection directly across the mains supply between current carrying conductors. Two sub classes exist, X2 is for general applications and meet a 2.5kV peak pulse voltage test. Class X1 have enhanced characteristics for heavier duty applications and meet a 4kV peak pulse voltage test. These kinds of peak voltage can be caused by lightning in overhead cables, switching surges in neighbouring equipment or in the device in which the capacitor is being used to suppress interferences.
- **Class Y:** Suitable for use in situations where failure of the capacitor could result in a dangerous electric shock. Y capacitors are designed for connection directly between a current carrying conductor and earth. Two sub classes also exist for Y capacitors, subjected to the same voltage tests as the X class.

213819

Class X1 Metallised Paper

300V ac - PME 271E Series 110°C



- Metallised paper construction gives excellent stability and reliability in continuous operation applications
- Highest possible safety due to excellent flammability characteristics
- Encapsulation material self-extinguishing to **UL94V-0**
- Good self-healing properties ensures long working life even if subjected to over-voltages
- Approvals include **EN132400, SEMKO, DEMKO, NEMKO, VDE & SEV**
- **UL** recognised

Tolerance	≤0.1μF±20%	Operating temperature	-40°to +110°C
Insulation resistance (at 500Vdc after 60s@+23°C)	>0.1μF±10% 12000MΩ	Voltage rating	300Vac, 630V dc
		Climatic category	40/110/56
		Nominal lead length	30

Value μF	Dimensions			Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
	H	W	D				
0.01	10.5	18.5	5.2	15.2	0.8	PME271E510M	971-7323
0.047	14.3	18.5	8.5	15.2	0.8	PME271E547M	971-7331
0.1	16.5	24	11.3	20.3	0.8	PME271E610M	971-7340
0.22	19	30.5	12.1	25.4	1	PME271E622K	971-7358



Suppression - X & Y Capacitors - continued

Class X1 Metallised Paper - continued

300V ac - PME 271E Series 110°C - continued

µF	Order Code	Price Each				
		1+	+	+	+	+
0.01	971-7323	0.62	--	--	--	--
0.047	971-7331	0.44	--	--	--	--
0.1	971-7340	1.34	--	--	--	--
0.22	971-7358	1.90	--	--	--	--

X1, Polypropylene

305 V ac, B3291* Series



- X1 class for interference suppression
- Dielectric: polypropylene (MKP)
- Very small dimensions
- Plastic case (UL 94 V-0)



Tolerance ± 20%
Max. operating temperature: 110 °C
Voltage rating 330V ac

nF	µF	H	W	D	∅ Lead mm	Mfrs. List No.	Order Code
Pitch 10mm							
33	0.033	12	13	6	0.6	B32911A3333M	178-1907
Pitch 15mm							
22	0.022	10.5	18	5	0.8	B32912A3223M	178-1908
150	0.15	12.5	18	7	0.8	B32912B3154M	178-1909
330	0.33	17.5	18	9	0.8	B32912B3334M	178-1910
Pitch 22.5mm							
330	0.33	16.5	26.5	8.5	0.8	B32913A3334M	178-1912
470	0.47	18.5	26.5	10.5	0.8	B32913A3474M	178-1913
Pitch 27.5mm							
1000	1	23	31.5	13.5	0.8	B32914A3105M	178-1914
2200	2.2	30	31.5	19	0.8	B32914A3225M	178-1915
Pitch 37.5mm							
3300	3.3	32.5	41.5	18	1	B32916A3335M	178-1916
6800	6.8	42.5	41.5	28	1	B32916A3685M	178-1917

Order Multiple=5		Price Each				
nF	µF	Order Code	5+	50+	100+	500+
Pitch 10 mm						
33	0.033	178-1907	0.290	0.250	0.220	0.175
Pitch 15 mm						
22	0.022	178-1908	0.320	0.290	0.250	0.198
150	0.15	178-1909	0.440	0.390	0.330	0.260
330	0.33	178-1910	0.560	0.490	0.430	0.280
Pitch 22.5 mm						
330	0.33	178-1912	0.870	0.770	0.670	0.440
470	0.47	178-1913	1.050	0.930	0.800	0.530
Pitch 27.5 mm						
1000	1	178-1914	1.310	1.140	0.990	0.660
			1+	50+	100+	180+
2200	2.2	178-1915	2.270	1.990	1.720	1.130
Pitch 37.5 mm						
3300	3.3	178-1916	3.700	3.330	2.440	--
6800	6.8	178-1917	6.860	6.180	4.530	--

Class X2 Metallised Paper

275V ac PME271M Series + 110°C



- Self-healing metallised paper Class X2 suppression capacitors
- Self-extinguishing encapsulated material flame retardant to UL94V-0
- Safety approvals for world wide use
- Approvals include SEMKO, DEMKO, NEMKO, EI, VDE, SEV, CSA, IMQ, OVE and EN132400
- UL recognised

Tolerance ≤0.1µF±20%
Operating temperature -40° to +110°C
Dissipation factor >0.1µF±10%
Voltage rating 275V ac
Insulation resistance @ 500Vdc after 60s >1.3% @ 1kHz Climatic category 40/110/56
≤0.33µF ≥12,000 MΩ<0.33µF 4000MΩ
Nominal lead length 30

Value µF	Dimensions			Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
	H	W	D				
0.033	12.5	18.5	6	15.2	0.8	PME271M533M	971-7439
0.047	13.5	18.5	6	15.2	0.8	PME271M547M	971-7447
0.068	13.5	18.5	7.8	15.2	0.8	PME271M568M	971-7455
0.1	14	24	7.6	20.3	0.8	PME271M610M	971-7463
0.15	15	24	9	20.3	0.8	PME271M615K	971-7471
0.22	16.5	24	11.3	20.3	0.8	PME271M622K	971-7480
0.33	19	30.5	12.1	25.4	1	PME271M633K	971-7498
0.47	22	30.5	15.3	25.4	1	PME271M647K	971-7501

µF	Order Code	Price Each			
		1+	50+	100+	250+
0.033	971-7439	0.420	0.360	0.310	0.270
0.047	971-7447	0.440	--	--	--
0.068	971-7455	0.300	0.250	0.230	0.185
0.1	971-7463	0.510	--	--	--
0.15	971-7471	0.680	0.550	0.470	0.420
0.22	971-7480	0.790	--	--	--
0.33	971-7498	1.170	0.980	0.840	0.740
0.47	971-7501	1.260	--	--	--

Class X1 and Y1 Ceramic - KX Series

250V ac



- Leaded ceramic safety capacitors
- Meet requirements of IEC384-14 2nd Edition 1993 class X1, Y1
- Approved to CSA, BSI, SEMKO, SEV, VDE, FIMKO, NEMKO, DEMKO and IMQ
- UL recognised

Voltage rating Test voltage	250V ac 4000V rms	Operating temperature	Dimensions		Lead Pitch	Lead Length	Mfrs. List No.	Order Code
			Body Dia.	Thickness				
Capacitance	pF	nF	Tolerance					
100	0.1	±10%	9	10	10	25	DE1B3KX101KA5B	353-1910
150	0.15	±10%	9	10	10	25	DE1B3KX151KA5B	353-1922
220	0.22	±10%	9	10	10	25	DE1B3KX221KA5B	353-1934
330	0.33	±10%	9	10	10	25	DE1B3KX331KA5B	353-1946
470	0.47	±10%	9	10	10	25	DE1B3KX471KA5B	353-1958
680	0.68	±10%	10	10	10	25	DE1B3KX681KA5B	353-1960
1000	1	±20%	9	10	10	25	DE1E3KX102MA5B	353-1971
1500	1.5	±20%	11	10	10	25	DE1E3KX152MA5B	353-1983
2200	2.2	±20%	12	10	10	25	DE1E3KX222MA5B	353-1995
3300	3.3	±20%	14	10	10	25	DE1E3KX332MA5B	353-2008
4700	4.7	±20%	16	10	10	25	DE1E3KX472MA5B	353-2021

Order Multiple=5		Price Each				
nF	Order Code	10+	50+	100+	500+	1K+
0.1	353-1910	0.260	0.191	0.132	0.098	0.077
0.15	353-1922	0.260	0.191	0.132	0.098	0.077
0.22	353-1934	0.260	0.191	0.132	0.098	0.077
0.33	353-1946	0.260	0.191	0.132	0.098	0.077
0.47	353-1958	0.260	0.191	0.132	0.098	0.077
0.68	353-1960	0.139	0.105	0.094	0.087	0.085
1	353-1971	0.260	0.185	0.128	0.095	0.075
1.5	353-1983	0.290	0.210	0.144	0.105	0.083
2.2	353-1995	0.320	0.240	0.164	0.121	0.096
3.3	353-2008	0.370	0.270	0.188	0.138	0.109
4.7	353-2021	0.500	0.360	0.250	0.182	0.145

Class X1 and Y2 Ceramic - KH Series

250V ac



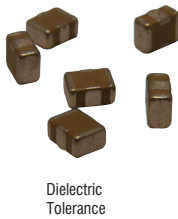
- Leaded ceramic safety capacitors
- Meet requirements of IEC384-14 2nd Edition 1993 class X1, Y2
- Approved to CSA, BSI, SEMKO, SEV, VDE, FIMKO, NEMKO, DEMKO and NSW (SAA)
- UL recognised

Voltage rating Test voltage	250V ac 2600V rms	Operating temperature	Dimensions		Lead Pitch	Lead Length	Mfrs. List No.	Order Code
			Body Dia.	Thickness				
Capacitance	pF	nF	Tolerance					
100	0.1	±10%	8	8	7.5	25	DE2B3KH101KA3B	952-6978
150	0.15	±10%	8	8	7.5	25	DE2B3KH151KA3B	952-6986
220	0.22	±10%	8	8	7.5	25	DE2B3KH221KA3B	952-6994
470	0.47	±10%	8	8	7.5	25	DE2B3KH471KA3B	952-7001
1000	1	±20%	8	8	7.5	25	DE2E3KH102MA3B	952-7010
1500	1.5	±20%	8	8	7.5	25	DE2E3KH152MA3B	952-7028
2200	2.2	±20%	8	8	7.5	25	DE2E3KH222MA3B	952-7036
3300	3.3	±20%	10	8	7.5	25	DE2E3KH332MA3B	952-7044
4700	4.7	±20%	13	8	7.5	25	DE2E3KH472MA3B	952-7052
10000	10	±20%	16	8	7.5	25	DE2F3KH103MA3B	952-7060

Order Multiple=5		Price Each				
nF	Order Code	10+	50+	100+	500+	1K+
0.1	952-6978	0.175	0.127	0.088	0.064	0.051
0.15	952-6986	0.175	0.127	0.088	0.064	0.051
0.22	952-6994	0.200	0.126	0.086	0.062	0.046
0.47	952-7001	0.200	0.124	0.085	0.061	0.045
1	952-7010	0.125	0.104	0.079	0.057	0.047
1.5	952-7028	0.220	0.139	0.095	0.069	0.058
2.2	952-7036	0.156	0.135	0.097	0.070	0.054
3.3	952-7044	0.310	0.197	0.134	0.096	0.072
4.7	952-7052	0.250	0.210	0.159	0.114	0.088
10	952-7060	0.430	0.320	0.190	0.156	0.141

X2Y® Series

SMD Ceramic EMI Filters



X2Y® products are comprised of two identical Y-capacitors and one X-capacitor, integrated into a 4-terminal device, which is available in standard MLCC sizes. Thanks to the unique multi-layer construction the device provides noise cancellation within the device, reducing ESL from nanohenry to picohenry levels. Using the unique balance between the Y-caps and the shielded multilayer structure the X2Y® products offer superior filtering and decoupling.

Dielectric Tolerance

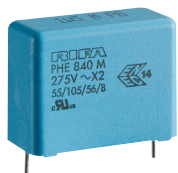
X7R ± 20%

Operating Temperature -55°C to +125°C

528765

nF	Order Code	Price Each			
		1+	25+	100+	500+
25 Volt d.c.					
22	SMD168-8521	0.37	0.31	0.27	0.24
50 Volt d.c.					
10	SMD168-8520	0.37	0.31	0.27	0.24
100 Volt d.c.					
1	NEW 177-9286	0.35	0.32	0.29	0.26
2.2	SMD168-8519	0.37	0.31	0.27	0.24
0805 Case Size					
16 Volt d.c.					
100	SMD168-8525	0.46	0.39	0.34	0.30
25 Volt d.c.					
22	SMD168-8524	0.46	0.39	0.34	0.30
100 Volt d.c.					
10	NEW 177-9287	0.45	0.41	0.36	0.32
1206 Case Size					
10 Volt d.c.					
470	NEW 177-9288	0.77	0.71	0.62	0.55
50 Volt d.c.					
100	SMD168-8526	0.60	0.50	0.45	0.40
1210 Case Size					
16 Volt d.c.					
1µF	NEW 177-9289	1.17	1.06	0.95	0.83
50 Volt d.c.					
220	SMD168-8527	0.80	0.67	0.58	0.52

PHE840M Series



- Metallized polypropylene
- Suitable for use as electromagnetic interference suppressor in all X2 and across-the-line applications

Operating temperature -55°C to +105°C
 Tolerance ± 20%
 Voltage rating 275V

Capacitance nF	µF	Dimensions H	W	D	Lead Pitch	Mfrs. List No.	Order Code
47	0.047	10.5	18	5.5	15	PHE840MB5470MB04R17	157-2154
100	0.1	12.5	18	5.5	15	PHE840MB6100MB05R17	157-2159
220	0.22	14.5	26	6.5	22.5	PHE840MD6220MD13R06L2	157-2153
470	0.47	16	26	8	22.5	PHE840MY6470MD14R06L2	157-2160
1000	1	23	26	13.5	22.5	PHE840MD7100MD20R06L2	157-2156
2200	2.2	24	41	13	37.5	PHE840MR7220MR05R06L2	157-2157
4700	4.7	36	41	19	37.5	PHE840MR7470MR03R06L2	157-2158

506976

µF	Order Code	Price Each					
		5+	75+	250+	500+	1K+	2K+
0.047	157-2154	0.350	0.280	0.260	0.250	0.200	0.179
0.1	157-2159	0.310	0.260	0.230	0.210	0.187	0.175
0.22	157-2153	0.670	--	--	--	--	--
0.47	157-2160	0.860	0.700	0.660	0.610	0.510	0.460
1	157-2156	1.430	1.180	1.090	1.020	0.850	0.780
2.2	157-2157	3.900	3.170	2.960	2.750	2.320	2.080
4.7	157-2158	5.250	--	--	--	--	--

Class X2 – Metallised Polyester ECQU Series

250V ac



- Class X2 metallised polyester suppression capacitors
- Meets requirements of IEC384-14 2nd Edition 1993 class X2
- Approved to UL1414 and EN132400
- UL recognised

Lead length = 20

Panasonic

Operating temperature	-40°C to +100°C	Insulation resistance	C<0.33µF	15000MΩ
	-40°C to +85°C (UL, CSA)		C>0.33µF	5000MΩ
Capacitance tolerance	±10% / ±20%	Climatic Category		40/100/21

N.B. For ease of selection, capacitance value is listed in both nF and µF

Capacitance nF	µF	Dimensions			Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
		H	W	D				
+10% Tolerance								
10	0.01	11.5	15	5	12.5	0.6	ECQU2A103KLA	167-3302
15	0.015	11.5	15	5	12.5	0.6	ECQU2A153KLA	167-3303
22	0.022	11.5	15	5	12.5	0.6	ECQU2A223KLA	167-3304
33	0.033	13	15	6	12.5	0.6	ECQU2A333KLA	167-3305
47	0.047	13	15	6	12.5	0.6	ECQU2A473KLA	167-3306
68	0.068	11.5	17.5	4.5	15	0.6	ECQU2A683KLA	167-3307
100	0.1	12	17.5	5.5	15	0.6	ECQU2A104KLA	167-3308
220	0.22	16	17.5	8	15	0.6	ECQU2A224KLA	167-3311
330	0.33	17.5	17.5	9.5	15	0.8	ECQU2A334KLA	167-3313
470	0.47	17.5	25.5	8.5	22.5	0.8	ECQU2A474KLA	167-3314
560	0.56	19.5	25.5	10.5	22.5	0.8	ECQU2A564KLA	167-3315
680	0.68	19.5	25.5	10.5	22.5	0.8	ECQU2A684KLA	167-3316
1000	1	22	25.5	12	22.5	0.8	ECQU2A105KLA	167-3317
1500	1.5	26	30.5	16.5	27.5	0.8	ECQU2A155KLA	167-3318

Capacitance nF	µF	Dimensions			Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
		H	W	D				
+20% Tolerance								
10	0.01	11.5	15	5	12.5	0.6	ECQU2A103ML	119-8290
22	0.022	11.5	15	5	12.5	0.6	ECQU2A223ML	119-8291
100	0.1	12.1	17.5	5	15	0.6	ECQU2A104ML	119-8295
150	0.15	14.5	17.5	6.5	15	0.6	ECQU2A154ML	119-8296
220	0.22	17.5	17.5	8	15	0.6	ECQU2A224ML	119-8297
470	0.47	17.5	25.5	8.5	22.5	0.8	ECQU2A474ML	119-8299
680	0.68	19.5	25.5	10.5	22.5	0.8	ECQU2A684ML	119-8301
1000	1	22	25.5	12	22.5	0.8	ECQU2A105ML	119-8302

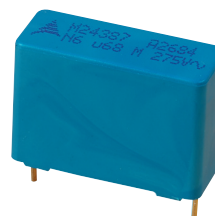
227204

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
10% Tolerance						
10	167-3302	0.139	0.121	0.106	0.095	0.076
15	167-3303	0.139	0.121	0.106	0.095	0.076
22	167-3304	0.139	0.121	0.106	0.095	0.076
33	167-3305	0.139	0.121	0.106	0.095	0.076
47	167-3306	0.133	0.114	0.100	0.089	0.071
68	167-3307	0.135	0.116	0.103	0.092	0.074
100	167-3308	0.139	0.121	0.106	0.095	0.076
220	167-3311	0.197	0.173	0.153	0.134	0.114
330	167-3313	0.280	0.240	0.210	0.182	0.153
470	167-3314	0.340	0.300	0.260	0.240	0.182
560	167-3315	0.370	0.330	0.310	0.260	0.230
680	167-3316	0.430	0.400	0.350	0.310	0.250
1000	167-3317	0.540	0.490	0.450	0.390	0.320
1500	167-3318	1.400	1.320	1.210	1.050	0.880

µF	Order Code	Price Each				
		1+	3+	100+	500+	
20% Tolerance						
10	119-8290	0.171	0.139	0.119	0.092	0.082
22	119-8291	0.183	0.135	0.102	0.092	0.088
100	119-8295	0.210	0.152	0.121	0.084	0.074
150	119-8296	0.210	0.157	0.118	0.076	0.074
220	119-8297	0.250	0.189	0.149	0.108	0.106
470	119-8299	0.440	0.310	0.240	0.230	0.220
680	119-8301	0.740	0.550	0.430	0.370	0.320
1000	119-8302	0.540	0.400	0.360	0.310	0.300

Design Kit	Order Code	Price Each	
		1+	3+
167-3319		48.550	46.430

Compact X2, Polypropylene 305 V ac, B3292* Series



- EMI suppression capacitors
- Very small case sizes
- Self-healing properties
- Plastic cases, flame retardant to UL94V-0
- CSA approved, UL recognised

Tolerance ±20%
 Operating temperature -40°C to +110°C
 Voltage rating 305V ac

nF	µF	H	W	D	Lead mm	Mfrs. List No.	Order Code
Pitch 10mm							
10	0.01	9	13	4	0.6	B32921C3103M	120-0827
22	0.022	9	13	4	0.6	B32921C3223M	160-9503
33	0.033	9	13	4	0.6	B32921C3333M	160-9504
47	0.047	11	13	5	0.6	B32921C3473M	111-2839
68	0.068	12	13	6	0.6	B32921C3683M	178-1890
Pitch 15mm							
33	0.033	10.5	18	5	0.8	B32922C3333M	160-9507
100	0.1	10.5	18	5	0.8	B32922C3104M	111-2840
150	0.15	12	18	6	0.8	B32922C3154M	111-2841
220	0.22	12.5	18	7	0.8	B32922C3224M	111-2842
330	0.33	14	18	8	0.8	B32922C3334M	111-2844
470	0.47	17.5	18	9	0.8	B32922C3474M	178-1891
680	0.68	18.5	18	11	0.8	B32922C3684M	178-1892



Suppression - X & Y Capacitors - continued

Compact X2, Polypropylene - continued

305 V ac, B3292* Series - continued

nF	μF	H	W	D	Lead mm	Mfrs. List No.	Order Code
Pitch 22.5mm							
150	0.15	15	26.5	6	0.8	B32923C3154M	160-9510
220	0.22	15	26.5	6	0.8	B32923C3224M	160-9511
330	0.33	28.5	41.5	16	0.8	B32923C3334M	120-0831
470	0.47	16.5	26.5	8.5	0.8	B32923C3474M	111-2845
680	0.68	16.5	26.5	10.5	0.8	B32923C3684M	111-2846
1000	1	20.5	26.5	11	0.8	B32923C3105M	178-1894
1500	1.5	22	26.5	12	0.8	B32923C3155M	178-1895
2200	2.2	22	26.5	12	0.8	B32923E3225M	178-1896

nF	μF	H	W	D	Lead mm	Mfrs. List No.	Order Code
Pitch 27.5mm							
1000	1	19	31.5	11	0.8	B32924C3105M	111-2847
1500	1.5	21.5	31.5	12.5	0.8	B32924C3155M	111-2848
2200	2.2	21	31.5	11	0.8	B32924E3225M	178-1897
2200	2.2	24.5	31.5	14	0.8	B32924C3225M	111-2849
3300	3.3	24.5	31.5	14	0.8	B32924E3335M	178-1898
4700	4.7	27.5	31.5	18	0.8	B32924E3475M	178-1899

nF	μF	H	W	D	Lead mm	Mfrs. List No.	Order Code
Pitch 37.5mm							
6800	6.8	32.5	42	18	1	B32926E3685M	178-1901
10000	10	39.5	42	20	1	B32926E3106M	178-1902
15000	15	42	37	28	1	B32926E3156M	178-1903
20000	20	42	42.5	28	1	B32926E3206M	178-1904

nF	μF	H	W	D	Lead mm	Mfrs. List No.	Order Code
Pitch 52.5mm							
30000	30	45	57.5	30	1.2	B32928E3306M	178-1905
45000	45	50	57.5	35	1.2	B32928E3456M	178-1906

423678

nF	μF	Order Code	5+	50+	100+	500+
----	----	------------	----	-----	------	------

Pitch 10 mm						
10	0.01	120-0827	0.280	0.250	0.185	0.163
22	0.022	160-9503	0.260	0.196	0.164	0.153
33	0.033	160-9504	0.260	0.196	0.164	0.153
47	0.047	111-2839	0.200	0.164	0.141	0.106
68	0.068	NEW 178-1890	0.156	0.136	0.118	0.094

Pitch 15 mm						
33	0.033	160-9507	0.300	0.240	0.196	0.164
100	0.1	111-2840	0.230	--	--	--
150	0.15	111-2841	0.310	0.260	0.192	0.145
220	0.22	111-2842	0.320	--	--	--
330	0.33	111-2844	0.460	--	--	--
470	0.47	NEW 178-1891	0.360	0.320	0.280	0.184
680	0.68	NEW 178-1892	0.500	0.440	0.370	0.250

Pitch 22.5 mm						
150	0.15	160-9510	0.630	0.460	0.380	0.310
220	0.22	160-9511	0.680	0.480	0.410	0.320
330	0.33	120-0831	0.470	0.430	0.360	0.330
470	0.47	111-2845	0.560	0.440	0.370	0.290
680	0.68	111-2846	0.730	0.580	0.470	0.360
1000	1	NEW 178-1894	0.610	0.540	0.470	0.310
1500	1.5	NEW 178-1895	0.840	0.740	0.630	0.420
2200	2.2	NEW 178-1896	1.240	1.090	0.940	0.610

Pitch 27.5 mm						
1000	1	111-2847	0.930	0.750	0.610	0.450
1500	1.5	111-2848	1.050	0.890	0.810	0.560
2200	2.2	NEW 178-1897	1.140	1.010	0.870	0.570
2200	2.2	111-2849	2.190	1.810	0.920	0.730
3300	3.3	NEW 178-1898	1.590	1.390	1.210	0.790
4700	4.7	NEW 178-1899	2.210	1.950	1.670	1.100

Pitch 37.5 mm						
6800	6.8	NEW 178-1901	4.200	3.690	3.180	2.100
10000	10	NEW 178-1902	5.740	5.040	4.350	2.870
15000	15	NEW 178-1903	7.520	7.130	6.200	--
20000	20	NEW 178-1904	7.890	7.500	6.510	--

Pitch 52.5 mm						
30000	30	NEW 178-1905	12.260	11.650	10.110	--
45000	45	NEW 178-1906	16.480	15.660	13.600	--

R46 Series

ARCOTRONICS GROUP
A KEMET Company



- X2 CLASS (IEC 60384-14) - MKP Series
- Metallized polypropylene film capacitor
- Self-healing properties
- Typical applications: interference suppression and across-the-line applications
- Suitable for use in situations where failure of the capacitor would not lead to danger of electric shock

Voltage Rating 275V ac
Tolerance ± 10%
Lead Length 25mm

Lead Pitch: 10mm		Dimensions			Mfrs. List No.		Order Code
nF	μF	H	W	D			
10	0.01	9	13	4	R46KF210050NOK		167-9293
15	0.015	9	13	4	R46KF215050NOK		167-9294
22	0.022	9	13	4	R46KF222050NOK		167-9295
33	0.033	11	13	5	R46KF233050M1K		167-9297
47	0.047	11	13	5	R46KF247050NOK		167-9298
68	0.068	12	13	6	R46KF268050M1K		167-9299
100	0.1	12	13	6	R46KF310050POK		167-9300

Price Each					
μF	Order Code	10+	25+	50+	100+
0.01	167-9293	0.120	0.080	0.060	0.056
0.015	167-9294	0.104	0.069	0.052	0.049
0.022	167-9295	0.120	--	--	--
0.033	167-9297	0.120	0.080	0.060	0.056
0.047	167-9298	0.120	--	--	--
0.068	167-9299	0.117	0.077	0.062	0.060
0.1	167-9300	0.152	--	--	--

Lead Pitch: 15mm		Dimensions			Mfrs. List No.		Order Code
nF	μF	H	W	D			
15	0.015	11	18	5	R46KI21505001K		167-9303
22	0.022	11	18	5	R46KI22205001K		167-9304
33	0.033	11	18	5	R46KI23305001K		167-9305
47	0.047	11	18	5	R46KI24705001K		167-9306
68	0.068	11	18	5	R46KI26805001K		167-9307
100	0.1	11	18	5	R46KI310050M1K		167-9308
150	0.15	12	18	6	R46KI315050M2K		167-9309
220	0.22	14	18	8	R46KI322050M2K		167-9310
470	0.47	19	18	11	R46KI347050M1K		167-9312

Price Each					
μF	Order Code	10+	25+	50+	100+
0.015	167-9303	0.107	0.071	0.054	0.051
0.022	167-9304	0.107	0.071	0.054	0.051
0.033	167-9305	0.086	0.057	0.045	0.044
0.047	167-9306	0.093	--	--	--
0.068	167-9307	0.114	--	--	--
0.1	167-9308	0.104	0.070	0.052	0.050
0.15	167-9309	0.104	--	--	--
0.22	167-9310	0.187	0.124	0.093	0.087
0.47	167-9312	0.280	--	--	--

Lead Pitch: 22.5mm		Dimensions			Mfrs. List No.		Order Code
nF	μF	H	W	D			
220	0.22	15	27	6	R46KN322050M1K		167-9315
330	0.33	15	27	6	R46KN333050NOK		167-9316
470	0.47	16	27	7	R46KN347050NOK		167-9317
680	0.68	19	27	10	R46KN368050M2K		167-9318
1000	1	20	27	11	R46KN410050M1K		167-9319

Price Each					
μF	Order Code	5+	10+	25+	50+
0.22	167-9315	0.270	--	--	--
0.33	167-9316	0.260	0.175	0.132	0.124
0.47	167-9317	0.290	--	--	--
0.68	167-9318	0.290	0.189	0.146	0.135
1	167-9319	0.420	--	--	--

Lead Pitch: 27.5mm		Dimensions			Mfrs. List No.		Order Code
nF	μF	H	W	D			
680	0.68	17	32	9	R46KR368050M1K		167-9320
1000	1	20	32	11	R46KR410050M1K		167-9321
1500	1.5	22	32	13	R46KR415050M1K		167-9322
2200	2.2	25	32	13	R46KR422050M2K		167-9323
3300	3.3	33	32	18	R46KR433050M2K		167-9324
4700	4.7	33	32	18	R46KR447050M2K		167-9325

Price Each					
μF	Order Code	5+	+	+	+
0.68	167-9320	0.40	--	--	--
1	167-9321	0.45	--	--	--
1.5	167-9322	0.57	--	--	--
2.2	167-9323	0.72	--	--	--
3.3	167-9324	1.17	--	--	--
4.7	167-9325	1.80	--	--	--

Lead Pitch: 37.5mm		Dimensions			Mfrs. List No.		Order Code
nF	μF	H	W	D			
5600	5.6	40	42	20	R46KW456050M1K		167-9328
6800	6.8	40	42	20	R46KW468050M2K		167-9329
10000	10	45	42	30	R46KW510050M1K		167-9330

527587

Price Each					
μF	Order Code	5+	10+	25+	50+
5.6	167-9328	2.24	1.49	1.11	1.06
6.8	167-9329	2.84	--	--	--
10	167-9330	3.64	2.42	1.82	1.78

Over half a million products available online



Class X2 Metallised Polypropylene MKP 338 2 X2 Series

275V ac



- Approved to SEV, VDE, FI, N, D, S, IMQ, OVE and CSA
- UL recognised
- Meets the requirements of IEC 60384-14 2nd Edition and EN 132400

Operating temperature	-55°C to 105°C	
Tolerance	±20%	
Insulation resistance	C < 0.33µF	>15000MΩ
RC for C	>0.33µF	>5000s
Pulse rise time	X2	100V/µs

N.B. For ease of selection, capacitance value is listed in both nF and µF

nF	µF	Dimensions			Lead Dia.	Lead Pitch	Mftrs. List No.	Order Code
		H	W	D				
1	0.001	9	10	4	0.5	7.5	BFC233820102	121-5444
1.5	0.0015	9	10	4	0.5	7.5	BFC233820152	121-5448
2.2	0.0022	9	10	4	0.5	7.5	BFC233820222	121-5454
3.3	0.0033	9	10	4	0.5	7.5	BFC233820332	121-5458
4.7	0.0047	9	10	4	0.5	7.5	BFC233820472	121-5463
6.8	0.0068	9	10	4	0.5	7.5	BFC233820682	121-5466
10	0.01	9	10	4	0.5	7.5	BFC233820103	121-5445
15	0.015	9	10	4	0.5	7.5	BFC233820153	121-5451
22	0.022	9	10	4	0.5	7.5	BFC233820223	121-5455
33	0.033	10.5	10	5	0.5	7.5	BFC233820333	121-5459
47	0.047	11.5	10	6	0.5	7.5	BFC233820473	121-5464
68	0.068	12	12.5	6	0.6	10	BFC233820683	121-5467
100	0.1	12	12.5	6	0.6	10	BFC233820104	121-5446
150	0.15	13.5	17.5	7	0.8	15	BFC233820154	121-5452
220	0.22	15	17.5	8.5	0.8	15	BFC233820224	121-5456
330	0.33	16.5	17.5	10	0.8	15	BFC233820334	121-5460
470	0.47	18	26	8.5	0.8	22.5	BFC233820474	121-5465
680	0.68	19.5	26	10	0.8	22.5	BFC233820684	121-5468
1000	1	22	26	12	0.8	22.5	BFC233820105	121-5447
1500	1.5	25	31	15	0.8	27.5	BFC233820155	121-5453
2200	2.2	28	31	18	0.8	27.5	BFC233820225	121-5457
3300	3.3	31	31	21	0.8	27.5	BFC233820335	121-5461

Price Each

µF	Order Code	5+	100+	1K+	3K+
1	121-5444	0.350	0.260	0.166	0.138
1.5	121-5448	0.280	0.181	0.131	0.113
2.2	121-5454	0.199	0.145	0.108	0.093
3.3	121-5458	0.210	0.156	0.107	0.093
4.7	121-5463	0.420	0.310	0.200	0.166
6.8	121-5466	0.195	--	--	--
10	121-5445	0.470	0.350	0.220	0.185
15	121-5451	0.490	0.360	0.230	0.188
22	121-5455	0.500	--	--	--
33	121-5459	0.420	--	--	--
47	121-5464	0.420	--	--	--
68	121-5467	0.180	0.132	0.088	0.069
100	121-5446	0.470	0.350	0.220	0.184
150	121-5452	0.500	0.370	0.230	0.194
220	121-5456	0.630	--	--	--
330	121-5460	0.730	--	--	--
470	121-5465	1.150	--	--	--
680	121-5468	0.680	0.500	0.370	0.320
1000	121-5447	1.670	--	--	--
1500	121-5453	2.540	--	--	--
2200	121-5457	3.080	2.250	1.430	1.190
3300	121-5461	4.430	--	--	--

MKP 339 X2 Series

275V ac



- Polypropylene film capacitors
- For X2 electromagnetic interference suppression in across the line applications (50/60 Hz) with a maximum mains voltage of 275 Vac
- Epoxy resin sealed, flame retardant plastic case
- UL recognised

Voltage rating 310V ac Operating temperature -55°C to +105°C

Capacitance	Dimensions	Lead Length	Mftrs. List No.	Order Code
µF nF	H W D	Pitch		
0.1 100	12 12.5 6	10 5	BFC233922104	141-3837
0.1 100	11 17.5 5	15 5	BFC233923104	141-3838
0.22 220	13.5 17.5 7	15 5	BFC233922224	141-3839
0.33 330	15 17.5 8.5	15 5	BFC233922334	141-3840
0.47 470	16.5 17.5 10	15 5	BFC233922474	141-3841
1 1000	19.5 26 10	22.5 5	BFC233922105	141-3842
2.2 2200	25 31 15	27.5 5	BFC233922225	141-3844

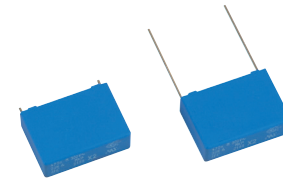


499345

nF	Order Code	1+	50+	100+	500+	1K+
0.0001	141-3837	0.310	0.220	0.168	0.130	0.104
0.0001	141-3838	0.230	0.165	0.126	0.098	0.078
0.00022	141-3839	0.430	0.290	0.230	0.176	0.139
0.00033	141-3840	0.510	--	--	--	--
0.00047	141-3841	0.540	--	--	--	--
0.001	141-3842	1.050	--	--	--	--
0.0022	141-3844	2.090	--	--	--	--

Class X2 - Metallised Polypropylene MKP 338-4 X2 Series

300V ac



- Class X2 metallised polypropylene suppression capacitors
- Approved to ENEC and CSA-C22.2 No 8
- UL recognised
- Meets the requirements of IEC 60384-14 2nd edition and EN 132400

Voltage rating (ac) 300 V Voltage rating (dc) 630 V Tolerance ±20% Climatic category Operating temperature 55/105/56/B -55°C to +105°C

nF	Dimensions mm	Lead Dimensions	Mftrs. List No.	Order Code
	H W D Pitch Dia. Length			
10	11 17.5 5	15 0.6 5	BFC233840103	116-6441
15	11 17.5 5	15 0.6 5	BFC233840153	116-6442
22	11 17.5 5	15 0.6 5	BFC233840223	116-6443
33	11 17.5 5	15 0.6 5	BFC233840333	116-6444
47	11 17.5 5	15 0.6 5	BFC233840473	116-6445
68	11 17.5 5	15 0.6 5	BFC233840683	116-6446
220	15 17.5 8.5	15 0.8 5	BFC233840224	116-6448
330	16.5 17.5 10	15 0.8 5	BFC233840334	116-6449
470	18 26 8.5	22.5 0.8 5	BFC233840474	116-6450
1	22 26 12	22.5 0.8 5	BFC233840105	116-6453
1.5	25 31 15	27.5 0.8 5	BFC233840155	116-6454
2.2	28 31 18	27.5 0.8 5	BFC233840225	116-6455
3.3	31 31 21	27.5 0.8 5	BFC233840335	116-6456
4.7	35 42 18	37.5 1.0 5	BFC233840475	116-6457
6.8	21.5 38.5 43	37.5 1.0 5	BFC233840685	141-3854
10	38 59.5 21	55 1.0 5	BFC233840106	116-6458
10	11 17.5 5	15 0.6 25	BFC233841103	116-6459
47	11 17.5 5	15 0.6 25	BFC233841473	116-6461
68	11 17.5 5	15 0.6 25	BFC233841683	116-6462
100	12 17.5 6	15 0.6 25	BFC233841104	116-6464
150	13.5 17.5 7	15 0.8 25	BFC233841154	116-6465
220	15 17.5 8.5	15 0.8 25	BFC233841224	116-6466
330	16.5 17.5 10	15 0.8 25	BFC233841334	116-6467
470	18 26 8.5	22.5 0.8 25	BFC233841474	116-6468
680	19.5 26 10	22.5 0.8 25	BFC233841684	116-6469
1	22 26 12	22.5 0.8 25	BFC233841105	116-6470
1.5	25 31 15	27.5 0.8 25	BFC233841155	116-6471
2.2	28 31 18	27.5 0.8 25	BFC233841225	116-6472
3.3	31 31 21	27.5 0.8 25	BFC233841335	116-6473
4.7	35 42 18	37.5 1.0 25	BFC233841475	116-6474
6.8	38 42 21	37.5 0.6 25	BFC233841685	116-6476
10	38 59.5 21	55 1.0 25	BFC233841106	116-6477
10	30 46 44	37.5	BFC233848159	141-3856

Order Multiple=5

Price Each

nF	Order Code	5+	50+	100+	250+	500+	1K+
10	116-6441	0.550	--	--	--	--	--
15	116-6442	0.580	--	--	--	--	--
22	116-6443	0.230	0.220	0.210	0.200	0.194	0.189
33	116-6444	0.430	--	--	--	--	--
47	116-6445	0.550	0.460	0.300	0.260	0.220	0.198
68	116-6446	0.530	0.440	0.290	0.240	0.210	0.188
220	116-6448	0.690	--	--	--	--	--
330	116-6449	0.740	0.560	0.370	0.310	0.270	0.240
470	116-6450	1.250	--	--	--	--	--
1	116-6453	2.070	1.770	1.190	0.990	0.850	0.760
1.5	116-6454	2.300	1.750	1.180	0.980	0.840	0.750
2.2	116-6455	3.050	2.310	1.550	1.290	1.110	0.990
3.3	116-6456	4.700	--	--	--	--	--
4.7	116-6457	7.430	--	--	--	--	--
6.8	141-3854	3.120	2.720	2.500	2.080	1.640	--
10	116-6458	12.750	9.810	6.580	5.470	4.720	4.190
10	116-6459	0.560	--	--	--	--	--
47	116-6461	0.550	0.420	0.280	0.230	0.200	0.178
68	116-6462	0.520	0.410	0.270	0.230	0.193	0.172
100	116-6464	0.550	0.430	0.280	0.240	0.200	0.180
150	116-6465	0.550	0.470	0.310	0.260	0.230	0.200
220	116-6466	0.720	0.670	0.450	0.370	0.330	0.280
330	116-6467	0.750	0.570	0.390	0.320	0.270	0.240
470	116-6468	1.150	0.870	0.580	0.490	0.420	0.370

Suppression - X & Y Capacitors - continued

**Class X2 - Metallised Polypropylene
MKP 338-4 X2 Series - continued**

300V ac - continued

nF	Order Code	Price Each					
		5+	50+	100+	250+	500+	1K+
680	116-6469	1.570	1.230	0.820	0.690	0.590	0.520
1	116-6470	2.050	1.550	1.040	0.870	0.750	0.660
µF							
1.5	116-6471	2.760	--	--	--	--	--
2.2	116-6472	3.190	--	--	--	--	--
3.3	116-6473	4.940	3.840	2.580	2.140	1.850	1.650
4.7	116-6474	7.430	--	--	--	--	--
6.8	116-6476	9.470	7.410	4.980	4.130	3.560	3.180
10	116-6477	12.750	12.040	8.100	6.720	5.800	5.160
10	141-3856	10.420	8.020	6.460	5.190	4.250	--

**F1772-2000 Class X2 — Polyester film
310V ac**



- Provided with 30mm leads to give extra flexibility in design and insertion
 - Approved to **IEC384-14**
- Tolerance ±10%
Operating temperature -40°C to +110°C ≤0.1µF
-40°C to +110°C >0.1µF

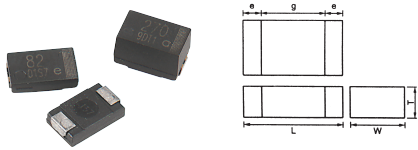


N.B For ease of selection, capacitance value is listed in both nF & µF

nF	µF	Dimensions			Lead Pitch	Mfrs. List No.	Order Code
		H	W	D			
10	0.01	10.5	18	5.5	15	F17723102030	116-6889
22	0.022	10.5	18	5.5	15	F17723222030	116-6891
47	0.047	12.5	18	6.5	15	F17723472030	116-6892
100	0.1	14.5	18	8.5	15	F17724102030	116-6893
220	0.22	16.5	26.5	8.5	22.5	F17724222030	116-6894
470	0.47	20.5	31.5	11.5	27.5	F1772-447-2030	116-6895
1000	1	24.5	31.5	11.5	27.5	F1772-510-2030	116-6896

µF	Order Code	Price Each				
		5+	50+	100+	1K+	3K+
10	116-6889	0.360	--	--	--	--
22	116-6891	0.390	0.290	0.260	0.199	0.196
47	116-6892	0.410	0.320	0.270	0.230	0.210
100	116-6893	0.480	0.360	0.330	0.260	0.250
220	116-6894	0.670	0.510	0.440	0.360	0.340
470	116-6895	1.100	0.840	0.740	0.600	0.560
1000	116-6896	1.180	0.920	0.800	0.630	0.600

**Class X1, Y2 and X2 Ceramic
GC and GB Series — Surface Mount
250V ac**



Supplied on 12mm blister tape
Reel = 1k pcs, 500pcs, GB

- Surface mount ceramic safety capacitors for AC line use
- GC – recognised as X1, Y2 by **IEC384-14 2nd edition** and as line bypass by **UL1414**
- Approved to **VDE, BS1, SEV** and **SEMKO**
- GB – recognised as X2 by **IEC384-14 2nd edition**
- Approved to **VDE, SEV** and **SEMKO**

Capacitance	Dimensions		Mfrs. List No.		Order Code	
pF	nF	L	W	T	e min.	g min.
GC Series (Class X1, Y2)						
100	0.1	5.7	5	2	0.3	4.0
220	0.22	5.7	5	2	0.3	4.0
470	0.47	5.7	5	2	0.3	4.0
1000	1	5.7	5	2	0.3	4.0
1500	1.5	5.7	5	2	0.3	4.0
2200	2.2	5.7	5	2	0.3	4.0
3300	3.3	5.7	5	2	0.3	4.0
4700	4.7	5.7	5	2	0.3	4.0
GB Series (Class X2)						
10000	10	5.7	5	2	0.3	4.0
22000	22	5.7	5	2	0.3	4.0
33000	33	5.7	5	2.7	0.3	4.0



nF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
GC Series (Class X1, Y2)						
0.1	SMD952-7583	2.41	1.77	1.21	0.89	0.80
0.22	SMD952-7621	2.69	1.96	1.44	1.07	0.96
0.47	SMD952-7656	2.28	1.74	1.23	0.96	0.87
1	SMD952-7591	3.32	2.33	1.51	1.12	1.00
1.5	SMD952-7613	3.37	2.33	1.51	1.12	1.00
2.2	SMD952-7630	3.32	2.39	1.89	1.41	1.26
3.3	SMD952-7648	3.37	2.33	1.51	1.12	1.00
4.7	SMD952-7664	3.61	2.58	1.83	1.37	1.22
GB Series (Class X2)						
10	SMD952-7559	1.93	1.43	1.26	1.05	0.91
22	SMD952-7575	2.50	1.84	1.63	1.36	1.17
33	SMD952-7680	3.01	2.22	1.96	1.63	1.41

**Class X1,X2 and Y2 Metallised Polypropylene
MKP 336 2 X2 Series
275V ac (X1, X2), 250V ac (Y2)**



- Approved to **VDE, SEV, SEMKO, DEMKO, SETI, IMQ, OVE** and **CSA**
 - **UL** recognised
 - Meets the latest requirements of **IEC384-14**
- Operating temperature -55°C to +100°C
Tolerance ±20%
Insulation resistance C < .33µF 15000MΩ
C5 > .33µF 5000 sec (MΩ x µF)
X1, Y1 200Vµs
X2 100Vµs

N.B. For ease of selection, capacitance value is listed in both nF and µF

nF	µF	Dimensions			Lead Pitch	Lead Diameter	Mfrs. List No.	Order Code
		H	W	D				
Class X1								
22	0.022	11	17.5	5	15	0.6	BFC233610223	116-6513
47	0.047	13.5	17.5	7	15	0.8	BFC233610473	116-6514
68	0.068	15	17.5	8.5	15	0.8	BFC233610683	116-6536
100	0.1	16.5	17.5	10	15	0.8	BFC233610104	116-6515
150	0.15	18	26	8.5	22.5	0.8	BFC233610154	116-6537
220	0.22	19.5	26	10	22.5	0.8	BFC233610224	116-6516
330	0.33	23	31	13	27.5	0.8	BFC233610334	116-6538
470	0.47	25	31	15	27.5	0.8	BFC233610474	116-6518
1000	1	31	31	21	27.5	0.8	BFC233610105	116-6519
Class X2								
10	0.01	11	12.5	5	10	0.6	BFC233620103	116-6520
15	0.015	11	12.5	5	10	0.6	BFC233620153	116-6539
22	0.022	11	12.5	5	10	0.6	BFC233620223	116-6521
33	0.033	12	12.5	6	10	0.6	BFC233620333	116-6540
47	0.047	11	17.5	5	15	0.6	BFC233620473	116-6522
68	0.068	11	17.5	5	15	0.6	BFC233620683	116-6541
100	0.1	12	17.5	6	15	0.6	BFC233620104	116-6523
150	0.15	15	17.5	8.5	15	0.8	BFC233620154	116-6543
220	0.22	16.5	17.5	10	15	0.8	BFC233620224	116-6524
330	0.33	18	26	8.5	22.5	0.8	BFC233620334	116-6544
470	0.47	19.5	26	10	22.5	0.8	BFC233620474	116-6525
680	0.68	21	31	11	27.5	0.8	BFC233620684	116-6545
1000	1	23	31	13	27.5	0.8	BFC233620105	116-6526
Class Y2								
1	0.001	10	12.5	4	10	0.6	BFC233660102	116-6527
1.5	0.0015	10	12.5	4	10	0.6	BFC233660152	116-6546
2.2	0.0022	10	12.5	4	10	0.6	BFC233660222	116-6528
3.3	0.0033	11	12.5	5	10	0.6	BFC233660332	116-6547
4.7	0.0047	12	12.5	6	10	0.6	BFC233660472	116-6531
6.8	0.0068	12	12.5	6	10	0.6	BFC233660682	116-6548
10	0.01	11	17.5	5	15	0.6	BFC233660103	116-6532
22	0.022	13.5	17.5	7	15	0.8	BFC233660223	116-6533
47	0.047	16.5	17.5	10	15	0.8	BFC233660473	116-6534

µF	Order Code	Price Each			
		5+	100+	1K+	3K+
Class X1					
22	116-6513	0.570	0.350	0.260	0.220
47	116-6514	0.560	0.360	0.260	0.230
68	116-6536	0.580	0.370	0.270	0.230
100	116-6515	0.560	0.360	0.260	0.220
150	116-6537	0.620	0.410	0.290	0.250
220	116-6516	0.430	0.250	0.210	0.183
330	116-6538	1.190	0.770	0.560	0.480
470	116-6518	1.490	0.950	0.690	0.600
1000	116-6519	1.580	--	--	--
Class X2					
10	116-6520	0.480	0.300	0.220	0.189
15	116-6539	0.480	0.310	0.220	0.193
22	116-6521	0.510	0.300	0.240	0.193
33	116-6540	0.370	0.240	0.172	0.150
47	116-6522	0.370	0.240	0.174	0.151
68	116-6541	0.410	0.260	0.186	0.162
100	116-6523	0.470	0.300	0.220	0.190
150	116-6543	0.460	0.290	0.210	0.182
220	116-6524	0.630	0.400	0.290	0.250
330	116-6544	0.720	--	--	--

Order Multiple=5		Price Each			
µF	Order Code	5+	100+	1K+	3K+
Class X2					
470	116-6525	1.270	--	--	--
680	116-6545	1.340	0.860	0.620	0.550
1000	116-6526	2.330	--	--	--
Class Y2					
1	116-6527	0.188	0.181	0.163	0.139
1.5	116-6546	0.220	0.139	0.135	0.131
2.2	116-6528	0.430	--	--	--
3.3	116-6547	0.420	--	--	--
4.7	116-6531	0.510	--	--	--
6.8	116-6548	0.540	--	--	--
10	116-6532	0.500	0.320	0.230	0.199
22	116-6533	0.570	0.360	0.260	0.230
47	116-6534	0.370	0.270	0.197	0.171

Class Y Ceramic — WYO & WKO Series
250V ac & 300V ac



- Approved to **CSA** and **EN132400**
 - **UL** recognised
- N.B.** For ease of selection capacitance value is listed in both pF and µF

	Tolerance	±20%
	Insulation resistance	6000MΩ
	Operating temperature	-40°C to +85°C
	Test voltage	WYO 1800V ac for 2s
		WKO 2500V ac for 2s
	Power factor	0.025

Lead dia. (WY)=0.6
Lead dia. (WKO)=0.8

250Vac	µF	Body Dia.	Thickness	Lead Pitch	Lead Length	Mfrs. List No.	Order Code
2200	2.2	9	4.5	5	30	WYO222MCMBF0KR	116-6661
4700	4.7	12	4.5	7.5	30	WYO472MCMCF0KR	116-6662
300Vac							
1000	1	10	5	7.5	30	WKO102MCPJ0KR	116-6663
4700	4.7	14.5	5	12.5	30	WKO472MCPEJ0KR	116-6664

204230

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	500+	1K+
250Vac						
2.2	116-6661	0.198	0.175	0.157	0.113	0.096
4.7	116-6662	0.290	0.260	0.230	0.166	0.163
300Vac						
1	116-6663	0.290	0.230	0.175	0.139	0.127
4.7	116-6664	0.530	0.390	0.310	0.240	0.220

Class Y1 and Y2 — Polypropylene
250V ac



- Polypropylene range of Class Y capacitors
- Epoxy case flame retardant to **UL94V-0**
- Tolerance ±20%
- Climatic category 40/085/21 (B81123 Series) 40/100/21 (B81122 and B81121 Series)
- Approved to **CSA** and **VDE**
- **UL** recognised

nF	H	W	D	Mfrs. List No.	Order Code
Class Y1 250V ac Test voltage 4800dc, 2s					
Pitch 15mm					
1	10.5	18	5	B81123C1102M	975-1475
1.5	11	18	6	B81123C1152M	975-1483
2.2	12.5	18	7	B81123C1222M	975-1491
3.3	14.5	18	8	B81123C1332M	975-1505
4.7	17.5	18	9	B81123C1472M	975-1513
Pitch 22.5mm					
5.6	16	26.5	7	B81123C1562M	975-1521
10	18.5	26.5	10.5	B81123C1103M	975-1548

204162

		Price Each				
nF	Mfrs List No	Order Code	1+	50+	100+	500+
Class Y1 250V ac Tested to 4800Vdc						
Pitch 15mm						
1	B81123C1102M	975-1475	0.36	--	--	--
1.5	B81123C1152M	975-1483	0.40	--	--	--
2.2	B81123C1222M	975-1491	0.37	--	--	--
3.3	B81123C1332M	975-1505	0.46	0.40	0.33	0.29
4.7	B81123C1472M	975-1513	0.62	0.43	0.29	0.24
Pitch 22.5mm						
5.6	B81123C1562M	975-1521	0.61	0.43	0.29	0.28
10	B81123C1103M	975-1548	0.92	--	--	--

SMP253 Series
EMI Suppressor, Y2



The capacitors are intended for use as interference suppressors in Y2 applications, line-to-earth. Multi-layer metallized paper. Encapsulated and impregnated in self-extinguishing material meeting the requirements of UL 94V-0.

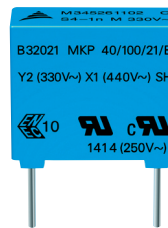


Voltage Rating	250V	Operating Temperature	-40°C to +100°C
Tolerance	± 20%	HxWxD (mm)	12.7 x 11.5 x 6.5

603745

		Price Each			
nF	Order Code	1+	50+	100+	600+
1	178-9678	1.31	1.13	0.91	0.66
1.5	178-9679	1.33	1.15	0.92	0.67
2.2	178-9680	1.35	1.18	0.94	0.68
2.5	178-9681	1.37	1.20	0.95	0.69
3.3	178-9682	1.39	1.22	0.96	0.70
3.9	178-9683	1.41	1.23	0.98	0.71
4.7	178-9684	1.44	1.25	0.99	0.72

Class Y2 — Polypropylene
300V ac



- Polypropylene range of Class Y2 capacitors for interference suppression
- Epoxy case flame retardant to **UL94V-0**
- Very small dimensions
- Good self-healing properties
- High voltage capability

nF	H	W	D	Mfrs. List No.	Order Code
Pitch 10mm					
1	9	13	4	B32021A3102M	160-9513
1.5	9	13	4	B32021A3152M	160-9514
2.2	9	13	4	B32021A3222M	160-9515
3.3	9	13	4	B32021A3332M	160-9516
4.7	11	13	5	B32021A3472M	160-9517
6.8	11	13	5	B32021A3682K	160-9521
Pitch 15mm					
10	10.5	18	5	B32022A3103M	160-9522
15	11	18	6	B32022A3153M	160-9523
22	12	18	6	B32022A3223M	160-9524
33	14	18	8	B32022A3333M	160-9525
Pitch 22.5mm					
47	15	26.5	6	B32023A3473M	160-9526
56	15	26.5	6	B32023A3563M	160-9527
68	16	26.5	7	B32023A3683M	160-9528
100	16.5	26.5	8.5	B32023A3104M	160-9529
Pitch 27.5mm					
150	19	31.5	11	B32024A3154M	160-9530
220	19	31.5	11	B32024A3224M	160-9532
330	23	31.5	13.5	B32024A3334M	160-9533

527288

		Price Each					
nF	Mfrs List No	Order Code	1+	50+	100+	500+	1K+
Pitch 10mm							
1	B32021A3102M	160-9513	0.260	--	--	--	--
1.5	B32021A3152M	160-9514	0.200	0.160	0.139	0.122	0.121
2.2	B32021A3222M	160-9515	0.260	--	--	--	--
3.3	B32021A3332M	160-9516	0.350	--	--	--	--
4.7	B32021A3472M	160-9517	0.430	--	--	--	--
6.8	B32021A3682K	160-9521	0.340	0.280	0.250	0.200	0.164
Pitch 15mm							
10	B32022A3103M	160-9522	0.430	--	--	--	--
15	B32022A3153M	160-9523	0.390	--	--	--	--
22	B32022A3223M	160-9524	0.370	--	--	--	--
33	B32022A3333M	160-9525	0.560	--	--	--	--
Pitch 22.5mm							
47	B32023A3473M	160-9526	0.660	--	--	--	--
56	B32023A3563M	160-9527	0.660	0.570	0.530	0.440	0.350
68	B32023A3683M	160-9528	0.850	0.740	0.670	0.570	0.450
100	B32023A3104M	160-9529	0.850	--	--	--	--
Pitch 27.5mm							
150	B32024A3154M	160-9530	0.910	0.790	0.710	0.600	0.530
220	B32024A3224M	160-9532	1.140	--	--	--	--
330	B32024A3334M	160-9533	1.320	1.150	1.040	0.870	0.770



Suppression - X & Y Capacitors - continued

Class Y2 Metallised Paper 250V ac PME271Y Series + 110°C



- Excellent self-healing properties gives long life even when subjected to over-voltages
- Encapsulation material self-extinguishing and flame retardant to UL94V-0
- Safety approvals for worldwide use including SEMKO, NEMKO, DEMKO, FI, VDE, SEV, OVE, IMQ, CSA and EN132400

Tolerance	>0.1µF ±10% ≤0.1µF ±20%	Operating temperature	-40°C to +110°C
Dissipation factor	≤1.3% @ 1kHz	Voltage rating	250V ac 1000V dc
Insulation resistance	C ≤0.33µF ≥12,000 MΩ C >0.33µF ≥4,000 MΩ	Climatic category	40/110/56
		Nominal lead length	30

Value nF	Dimensions			Lead Pitch	Lead Dia.	Mftrs. List No.	Order Code
	H	W	D				
1	7.5	13.5	3.9	10.2	0.6	PME271Y410M	971-7510
2.2	7.5	13.5	3.9	10.2	0.6	PME271Y422M	971-7536
3.3	8.2	13.5	4.1	10.2	0.6	PME271Y433M	971-7544
4.7	10.5	13.5	5.1	10.2	0.6	PME271Y447M	971-7552
10	10.5	18.5	5.2	15.2	0.8	PME271Y510M	971-7560
22	13	19	7.3	15.2	0.8	PME271Y522M	971-7579
33	14	24	7.6	20.3	0.8	PME271Y533M	971-7587
47	15	24	9	20.3	0.8	PME271Y547M	971-7595

204103

Value µF	Order Code	Price Each					
		5+	50+	100+	250+	500+	1K+
1	971-7510	0.380	0.310	0.280	0.240	0.210	0.182
2.2	971-7536	0.390	--	--	--	--	--
3.3	971-7544	0.400	0.340	0.290	0.250	0.220	0.192
4.7	971-7552	0.410	--	--	--	--	--
10	971-7560	0.480	--	--	--	--	--
22	971-7579	0.560	--	--	--	--	--
33	971-7587	0.540	--	--	--	--	--
47	971-7595	0.640	--	--	--	--	--

Class Y2 - Metallised Polypropylene MKP 338 6 Y2 Series 300V ac



- Class Y2 metallised polypropylene suppression capacitors
- Designed to meet the requirements of IEC 60384-14 2nd edition and EN 132400



Voltage rating (ac)	300 V
Voltage rating (dc)	1000 V
Tolerance	±20%
Climatic category	55/105/56/B
Operating temperature	-55°C to +105°C

nF	Dimensions mm			Lead Dimensions			Mftrs. List No.	Order Code
	H	W	D	Pitch	Dia.	Length		
1	9	10	4	7.5	0.5	3.5	BFC233860102	116-6478
2.2	9	10	4	7.5	0.5	3.5	BFC233860222	116-6482
2.7	9	10	4	7.5	0.5	3.5	BFC233860272	116-6483
3.3	10.5	10	5	7.5	0.5	3.5	BFC233860332	116-6484
3.9	10.5	10	5	7.5	0.5	3.5	BFC233860392	116-6485
4.7	11.5	10	6	7.5	0.5	3.5	BFC233860472	116-6486
10	11	17.5	5	15	0.6	3.5	BFC233860103	116-6491
10	6	12	12.5	10			BFC233868105	141-3866
15	12	17.5	6	15	0.6	3.5	BFC233860153	116-6493
22	13.5	17.5	7	15	0.8	3.5	BFC233860223	116-6495
33	15	17.5	8.5	15	0.8	3.5	BFC233860333	116-6497
39	15	17.5	8.5	15	0.8	3.5	BFC233860393	116-6498
47	16.5	17.5	10	15	0.8	3.5	BFC233860473	116-6500
56	16.5	17.5	10	15	0.8	3.5	BFC233860563	116-6501
100	19.5	26	10	22.5	0.8	3.5	BFC233860104	116-6503
120	22	26	12	22.5	0.8	3.5	BFC233860124	116-6504
150	22	26	12	22.5	0.8	3.5	BFC233860154	116-6506
220	23	31	13	27.5	0.8	3.5	BFC233860224	116-6508
270	25	31	15	27.5	0.8	3.5	BFC233860274	116-6509
470	28	31	18	27.5	0.8	3.5	BFC233860474	116-6511

233756

nF	Order Code	Price Each					
		5+	50+	100+	250+	500+	1K+
1	116-6478	0.390	0.370	0.320	0.270	0.230	0.210
2.2	116-6482	0.400	0.300	0.200	0.167	0.145	0.129
2.7	116-6483	0.168	0.155	0.142	0.124	0.118	0.112
3.3	116-6484	0.460	0.350	0.230	0.194	0.167	0.149
3.9	116-6485	0.440	0.330	0.220	0.184	0.159	0.141
4.7	116-6486	0.460	0.350	0.240	0.195	0.168	0.150
10	116-6491	0.470	0.360	0.240	0.198	0.171	0.152
10	141-3866	0.380	--	--	--	--	--
15	116-6493	0.560	0.420	0.280	0.230	0.200	0.181
22	116-6495	0.550	0.530	0.360	0.300	0.260	0.230
33	116-6497	0.550	0.460	0.310	0.260	0.220	0.198
39	116-6498	0.390	0.370	0.310	0.260	0.230	0.210

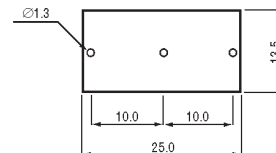
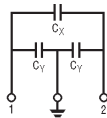
Order Multiple=5

Price Each

nF	Order Code	5+	50+	100+	250+	500+	1K+
47	116-6500	0.550	0.410	0.280	0.230	0.199	0.184
56	116-6501	0.800	0.680	0.460	0.390	0.330	0.290
100	116-6503	0.800	--	--	--	--	--
120	116-6504	1.180	1.130	0.810	0.670	0.580	0.510
150	116-6506	1.190	--	--	--	--	--
220	116-6508	0.860	0.850	0.680	0.570	0.490	0.440
270	116-6509	0.510	0.470	0.440	0.390	0.370	0.360
470	116-6511	2.050	--	--	--	--	--

Suppression - Delta Network

Class X2 Plus 2 x Y2 Delta Formation 275V ac PZB300 Series + 100°C



- Metallised paper suppression capacitors
- One Class X2 and two Class Y2 capacitors arranged in a delta formation
- Excellent self-healing properties
- Approved to SEMKO, NEMKO, DEMKO, FI, VDE, SEV, OVE, IMQ, CSA & EN132400
- UL recognised

Tolerance	±20%	Voltage rating	275V ac
Dissipation factor	≤1.3% @ 1kHz	Temperature range	-40°C to +100°C
Insulation resistance (500Vdc after 60s)	≥12000 MΩ @ +23°C	Climatic category	40/100/46
		Min. lead length	30

CX µF	CF nF	Dimensions			Lead Pitch	Lead Dia.	Mftrs. List No.	Order Code
		H	W	D				
0.1	2 x 2.2	16	24	12.5	20	0.8	PZB300MC11	971-7609
0.1	2 x 4.7	16	24	12.5	20	0.8	PZB300MC13	971-7617
0.15	2 x 4.7	16	24	12.5	20	0.8	PZB300MC23R30	167-8911

204093

Order Code	Price Each					
	1+	+	+	+	+	+
971-7609	1.51	--	--	--	--	--
971-7617	1.51	--	--	--	--	--
NEW 167-8911	2.68	--	--	--	--	--

Suppression - RC Network

Class X2 with Resistor 250V ac PMR209 Series + 85°C



- Metallised paper X2 capacitor with integral series resistor
- Applications include contact protection, suppression of contacts and transient suppression in AC and DC circuits
- Long life when exposed to overvoltages due to excellent self-healing properties
- Approvals include SEMKO, DEMKO, NEMKO, VDE, SEV, FI & EN132400
- UL recognised

Capacitance tolerance	±20%	Resistor tolerance	±30%
Voltage rating	250V ac 630V dc	Peak pulse voltage	1000V
Insulation resistance @ 500V dc, +23°C after 60s	≥12000 MΩ	Power rating	0.5W (case +85°C) C≤0.33µF >3000MΩ C>0.33µF >3000MΩ

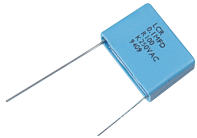
Value µF	Ω	Dimensions			Lead Pitch	Lead Dia.	Mftrs. List No.	Order Code
		H	W	D				
0.22	47	16.5	24	11.3	20.3	0.8	PMR209MC6220M047	971-7285
0.047	47	13	19	7.3	15.2	0.8	PMR209MB5470M047	971-7307
0.1	47	14	24	7.6	20.3	0.8	PMR209MC6100M047	971-7315
0.47	47	22	30.5	15.3	25.4	1	PMR209ME6470M047	971-7382
0.22	22	16.5	24	11.3	20.3	0.8	PMR209MC6220M022	971-7366
0.1	22	14	24	7.6	20.3	0.8	PMR209MC6100M022	971-7404
0.22	100	16.5	24	11.3	20.3	0.8	PMR209MC6220M100	971-7293
0.047	100	13	19	7.3	15.2	0.8	PMR209MB5470M100	971-7374
0.47	100	22	30.5	15.3	25.4	1	PMR209ME6470M100	971-7390
0.1	100	14	24	7.6	20.3	0.8	PMR209MC6100M100	971-7412
0.1	470	16.5	24	11.3	20.3	0.8	PMR209MC6100M470	971-7420

204095

Value µF	Order Code	Price Each					
		1+	50+	100+	250+	500+	1K+
0.22	971-7285	1.15	0.95	0.83	0.72	0.63	0.55
0.047	971-7307	1.49	1.22	1.05	0.91	0.79	0.69
0.1	971-7315	1.49	--	--	--	--	--
0.47	971-7382	2.06	1.71	1.49	1.29	1.12	0.99
0.22	971-7366	1.57	1.29	1.12	0.99	0.85	0.75
0.1	971-7404	1.21	--	--	--	--	--

Value	Order Code	1+	50+	100+	250+	500+	1K+
0.22	971-7293	1.41	1.16	1.01	0.88	0.77	0.68
0.047	971-7374	1.63	--	--	--	--	--
0.47	971-7390	1.99	1.66	1.45	1.26	1.10	0.98
0.1	971-7412	1.67	--	--	--	--	--
0.1	971-7420	1.55	1.27	1.11	0.98	0.85	0.74

RC Network – PCB Mounting



- PCB mounting contact arc suppressor which will suppress interference across switch and relay contacts when switching reactive loads.

H=19, W=25, D=8
Lead pitch=22.5, Lead dia.=0.8, Lead length=20

Power rating 0.5W @ 250V ac Construction C=0.1µF class X ±10%
Operating temperature -55°C to +100°C 0.1µF R=100Ω ±10%10

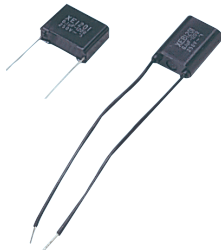
204007

Order Code	1+	50+	100+	500+	1K+
952-0996	1.56	1.52	1.36	1.02	0.89

RC Network – PCB Mounting and Flying Leads



PCB mounting
H=17.5
W=23.5
D=8.5
Lead pitch=20
Lead dia.=0.8
Lead length=15.



Flying leads
H=23
W=19
D=8.5
Lead pitch=15
Lead dia.=20 AWG
Lead length=100.

- RC Networks consisting of a capacitor in series with a high quality metal film resistor
- PCB mounting style or with flying leads
- Applications include suppression when switching reactive loads and as a snubber network in SCR and triac protection. Approved to VDE, SEMKO, DEMKO, NEMKO and CSA.
- UL recognised

Power rating 0.5W @ 250V ac Mfrs. List No. XE1201 = 118-7649
Operating temperature -40°C to +85°C XEB1201 = 118-7659
Construction C=0.1µF class X ±20%
R=120Ω ±30%

204237

Order Code	1+	50+	100+	500+	1K+
PCB Mounting 118-7649	2.18	1.99	1.80	1.51	1.28
Flying Leads 118-7659	3.10	2.84	2.61	2.26	1.89

Spark Quenchers - Chassis Mounting



- Single and three phase suppressors designed to reduce arcing when switching inductive loads
- May also be used to reduce dv/dt across thyristors and other solid state devices

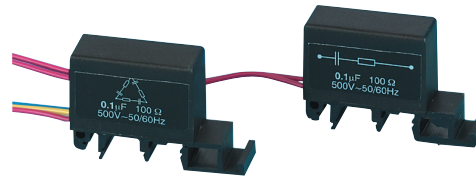
Mfrs. List No. Single Phase FP012 Three Phase FP012
Capacitance 0.33µF 0.33µF x 3
Capacitive Tolerance ±10% ±10%
Resistors 330ohm ± 30%, 6W 330ohm ± 30%, 6W x 3
Operating voltage 500V RMS (max) 500V RMS (max)
Supply frequency 50/60Hz 50/60Hz
Operating temperature -40°C to +70°C -40°C to +70°C
Insulation resistance 100Mohm 500V 100Mohm 500V

233810

Mfrs. List No.	Order Code	1+	10+	50+	100+	250+
Single Phase FP012	952-0864	7.57	7.43	6.96	6.50	6.24
Three Phase FP013	952-0872	16.49	16.16	15.15	14.17	13.57

Over half a million products available online

Spark Quenchers - DIN Rail Mounting



- Single and three phase suppressors designed to reduce arcing when switching inductive loads
- May also be used to reduce dv/dt across thyristors and other solid state devices

Mfrs. List No. Single Phase FP005 Three Phase FP006
Capacitance 0.1µF 0.1µF x 3
Capacitive Tolerance ±10% ±10%
Resistors 100ohm ±5%, 4W 100ohm ±5%, 4W x 3
Operating voltage 500V RMS (max) 500V RMS (max)
Supply frequency 50/60Hz 50/60Hz
Operating temperature -40°C to +70°C -40°C to +70°C
Insulation resistance 100Mohm 500V 100Mohm 500V

233764

Mfrs. List No.	Order Code	1+	10+	50+	100+	250+
Single Phase FP005	952-0848	8.32	8.15	7.64	7.16	6.85
Three Phase FP006	952-0856	12.59	12.31	11.58	10.79	10.37

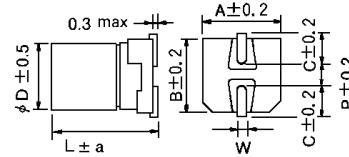
Aluminium Electrolytic - SMD - Multicomp

High capacitance per unit volume dielectric available in a wide range of styles. Characteristics of ranges can be selected to suit a wide range of general purpose to high performance applications. Care should be taken during connection as all units are polarity sensitive unless stated otherwise.

208422

Note: Dimensions do not include insulating sleeve unless stated.

SL Series 85°C — Surface Mount



- Miniature surface mount aluminium electrolytic
- Designed for high density population
- Supplied on tape carrier for automatic placement

Operating Temperature	-40°C to +85°C	Operating life @ 85°C	2000hrs	
Tolerance	±20%			
DC leakage current	≤0.01CV or 3µA whichever is greater			
Case Size	∅D	L	A B C W P	Reel Qty.
B	4	5.2±0.3	4.3 4.3 1.8 0.5 1	2000
D	5	5.2±0.3	5.3 5.3 2.1 0.5 1.4	1000
E	6.3	5.2±0.3	6.6 6.6 2.4 0.5 2.2	1000
G	6.3	7.7±0.3	6.6 6.6 2.4 0.5 2.2	900
H	8	10.5±0.5	8.3 8.3 2.9 0.7 3.2	500

µF	Ripple (mA) @ 120Hz, 85°C	Power Factor @ 120Hz, 20°C	Case Size	Mfrs. List No.	Order Code
6.3 Volt d.c.					
100	70	0.35	E	MCESL6V3107M6.3X5.2	926-5660
10 Volt d.c.					
220	150	0.35	G	MCESL10V227M6.3X7.7	926-5678
16 Volt d.c.					
10	25	0.35	B	MCESL16V106M4X5.2	926-5686
47	58	0.35	E	MCESL16V476M6.3X5.2	926-5694
25 Volt d.c.					
100	130	0.35	G	MCESL25V107M6.3X7.7	926-5708
35 Volt d.c.					
4.7	18	0.35	B	MCESL35V475M4X5.2	926-5716
22	46	0.35	E	MCESL35V226M6.3X5.2	926-5724
50 Volt d.c.					
1	8.4	0.35	B	MCESL50V105M4X5.2	926-5732
4.7	20	0.35	D	MCESL50V475M5X5.2	926-5740
10	33	0.35	E	MCESL50V106M6.3X5.2	926-5759
47	90	0.35	G	MCESL50V476M6.3X7.7	926-5767
100	200	0.35	H	MCESL50V107M8X10.5	926-5775

311916

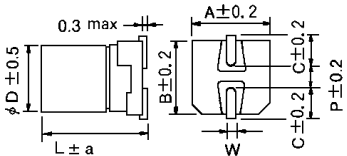
Order Multiple=10	µF	Order Code	10+	50+	100+	500+	1K+
6.3 Volt d.c.							
	100	SMD926-5660	0.158	0.147	0.134	0.123	0.110
10 Volt d.c.							
	220	SMD926-5678	0.330	0.310	0.290	0.270	0.220
16 Volt d.c.							
	10	SMD926-5686	0.110	0.095	0.080	0.068	0.062
	47	SMD926-5694	0.158	0.147	0.134	0.123	0.110

Aluminium Electrolytic - SMD - Multicomp - continued

SL Series 85°C — Surface Mount - continued

Order Multiple=10		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
25 Volt d.c						
100	SMD 926-5708	0.330	0.310	0.290	0.270	0.220
35 Volt d.c						
4.7	SMD 926-5716	0.110	0.095	0.080	0.068	0.062
22	SMD 926-5724	0.063	0.059	0.055	0.051	0.046
50 Volt d.c						
1	SMD 926-5732	0.110	0.095	0.080	0.068	0.062
4.7	SMD 926-5740	0.109	0.094	0.080	0.068	0.061
10	SMD 926-5759	0.183	0.171	0.159	0.147	0.136
47	SMD 926-5767	0.330	0.310	0.290	0.270	0.220
100	SMD 926-5775	0.460	0.440	0.410	0.390	0.350

EL Series 105°C — Surface Mount



- Miniature surface mount aluminium electrolytic
- High temperature - 105°C
- Designed for high density population
- Supplied on tape carrier for automatic placement

Case Size	∅D	L	A	B	C	W	P	Reel Qty.
B	4	5.2±0.3	4.3	4.3	1.8	0.5	1	2000
D	5	5.2±0.3	5.3	5.3	2.1	0.5	1.4	1000
E	6.3	5.2±0.3	6.6	6.6	2.4	0.5	2.2	1000
H	8	10.5±0.5	8.3	8.3	2.9	1.4	3.2	500
J	10	10.5±0.5	10.3	10.3	3.2	1.1	4.6	500

Operating Temperature Tolerance: -40°C to +105°C ±20%

DC leakage current: ≤0.01CV or 3µA whichever is greater

Operating life @ 105°C: 2000hrs

µF	Ripple (mA) @ 120Hz, 105°C	Power Factor @ 120Hz, 20°C	Case Size	Mfrs. List No.	Order Code
6.3 Volt d.c.					
100	66	0.35	E	MCEEL6V3107M6.3X5.2	926-5538
10 Volt d.c.					
220	175	0.35	H	MCEEL10V227M8X10.5	926-5546
16 Volt d.c.					
10	16	0.35	B	MCEEL16V106M4X5.2	926-5554
47	54	0.35	E	MCEEL16V476M6.3X5.2	926-5562
25 Volt d.c.					
100	150	0.35	H	MCEEL25V107M8X10.5	926-5570
35 Volt d.c.					
4.7	14	0.35	B	MCEEL35V475M4X5.2	926-5589
22	40	0.35	E	MCEEL35V226M6.3X5.2	926-5597
50 Volt d.c.					
1	7	0.35	B	MCEEL50V105M4X5.2	926-5619
4.7	19	0.35	D	MCEEL50V475M5X5.2	926-5627
10	32	0.35	E	MCEEL50V106M6.3X5.2	926-5635
47	150	0.35	H	MCEEL50V476M8X10.5	926-5643
100	220	0.35	J	MCEEL50V107M10X10.5	926-5651

311925

Order Multiple=10		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
6.3 Volt d.c						
100	SMD 926-5538	0.330	0.310	0.290	0.270	0.220
10 Volt d.c						
220	SMD 926-5546	0.470	0.440	0.410	0.370	0.340
16 Volt d.c						
10	SMD 926-5554	0.158	0.147	0.134	0.123	0.110
47	SMD 926-5562	0.330	0.310	0.290	0.270	0.220
25 Volt d.c						
100	SMD 926-5570	0.220	0.210	0.187	0.175	0.162
35 Volt d.c						
4.7	SMD 926-5589	0.158	0.147	0.134	0.123	0.110
22	SMD 926-5597	0.330	0.310	0.290	0.270	0.220
50 Volt d.c						
1	SMD 926-5619	0.152	--	--	--	--
4.7	SMD 926-5627	0.183	0.171	0.159	0.147	0.136
10	SMD 926-5635	0.330	0.310	0.290	0.270	0.220
47	SMD 926-5643	0.360	0.340	0.320	0.270	0.230
100	SMD 926-5651	0.490	0.460	0.420	0.350	0.340

Aluminium Electrolytic - SMD - Epcos

B41142 Series

Low Impedance 105°C



- Very low impedance
- Load life of 3000 hours at 105 °C
- Surface mounting device

Operating Temperature Tolerance: -55°C to +105°C ± 20%

Ripple current frequency: 100Hz

Ripple current temperature: 105°C

ESR Temperature: 20°C

Impedance Frequency: 100kHz

Impedance Temperature: 20°C

µF	Impedance (Ω)	Ripple (mA)	ESR (Ω)	Body Dimensions (mm)		Mfrs. List No.	Order Code
				H	Dia		
16 Volt							
100	0.26	300	0.16	7.7	6.3	B41142A4107M	173-5328
220	0.26	300	0.16	7.7	6.3	B41142A4227M	173-5331
470	0.16	600	0.16	10	8	B41142A4477M	173-5333
680	0.08	850	0.16	10	10	B41142A4687M	173-5334
25 Volt							
100	0.26	300	0.14	7.7	6.3	B41142A5107M	173-5335
220	0.16	600	0.14	10	8	B41142A5227M	173-5336
330	0.16	600	0.14	10	8	B41142A5337M	173-5337
470	0.08	850	0.14	10	10	B41142A5477M	173-5338
35 Volt							
47	0.26	300	0.12	7.7	6.3	B41142A7476M	173-5339
100	0.16	600	0.12	10	8	B41142A7107M	173-5340
150	0.16	600	0.12	10	8	B41142A7157M	173-5341
220	0.16	600	0.12	10	8	B41142A7227M	173-5343
330	0.08	850	0.12	10	10	B41142A7337M	173-5344

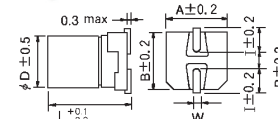
540564

Order Multiple=10		Price Each				
µF	Order Code	10+	50+	100+	250+	500+
16 Volt						
100	SMD 173-5328	0.135	--	--	--	--
220	SMD 173-5331	0.130	--	--	--	--
470	SMD 173-5333	0.340	0.270	0.200	0.169	0.135
680	SMD 173-5334	0.500	0.400	0.300	0.250	0.200
25 Volt						
100	SMD 173-5335	0.135	0.105	0.079	0.066	0.053
220	SMD 173-5336	0.350	0.280	0.210	0.176	0.140
330	SMD 173-5337	0.350	0.280	0.210	0.176	0.140
470	SMD 173-5338	0.500	0.400	0.300	0.250	0.200
35 Volt						
47	SMD 173-5339	0.360	0.280	0.210	0.175	0.141
100	SMD 173-5340	0.340	0.270	0.200	0.169	0.135
150	SMD 173-5341	0.350	0.280	0.210	0.176	0.140
220	SMD 173-5343	3.510	--	--	--	--
330	SMD 173-5344	0.520	0.420	0.310	0.260	0.210

Aluminium Electrolytic - SMD - Panasonic



VS/HB Series – Surface Mount



Supplied on 12mm or 16mm embossed tape

- Surface mount aluminium electrolytic capacitors
- Small case size
- 85°C and 105°C

VS Series – General Purpose – 85°C

Case Size	∅D	L	A	B	I	W	P	Tape Size
A	3	5.4	3.3	3.3	1.5	0.55	0.6	12mm
B	4	5.4	4.3	4.3	1.8	0.65	1	12mm
C	5	5.4	5.3	5.3	2.2	0.65	1.5	12mm
D	6.3	5.4	6.6	6.6	2.6	0.65	2.2	16mm

Operating temperature: -40°C to +85°C

DC leakage current: ≤0.01CV or 3µA, whichever is greater

Operating life: 2000hrs @ 85°C

Tolerance: ±20%

µF	Ripple Current (mA) @ 120Hz 85°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
6.3 Volt d.c.					
22	29	0.26	B	EEE0JA220SR	969-6881
47	46	0.26	C	EEE0JA470SR	969-6890
100	71	0.26	D	EEE0JA101SP	969-6903
10 Volt d.c.					
33	43	0.2	C	EEE1AA330SR	969-6911
16 Volt d.c.					
10	28	0.16	B	EEE1CA100SR	969-6920
22	39	0.16	C	EEE1CA220SR	969-6938

µF	Ripple Current mA @ 120Hz 85°C	Power Factor @ 120Hz	Case Size	Mftrs. List No.	Order Code
16 Volt d.c.					
47	70	0.16	D	EEE1CA470SP	969-6946
25 Volt d.c.					
4.7	22	0.14	B	EEE1EA4R7SR	969-6954
10	28	0.14	C	EEE1EA100SR	969-6962
22	55	0.14	D	EEE1EA220SP	969-6970
33	65	0.14	D	EEE1EA330SP	969-6989
35 Volt d.c.					
3.3	10	0.12	A	EEE1VS3R3SR	969-6997
4.7	22	0.12	B	EEE1VA4R7SR	969-7004
10	30	0.12	C	EEE1VA100SR	969-7012
22	60	0.12	D	EEE1VA220SP	969-7020
50 Volt d.c.					
0.1	1	0.12	B	EEE1HA0R1SR	969-7039
0.22	2	0.12	B	EEE1HAR22SR	969-7047
0.47	5	0.12	B	EEE1HAR47SR	969-7055
1	10	0.12	B	EEE1HA010SR	969-7063
2.2	16	0.12	B	EEE1HA2R2SR	969-7071
3.3	16	0.12	B	EEE1HA3R3SR	969-7080
4.7	23	0.12	C	EEE1HA4R7SR	969-7098
10	35	0.12	D	EEE1HA100SP	969-7110

Order Multiple=10		Price Each			
µF	Order Code	10+	100+	1K+	3K+
6.3 Volt d.c.					
22	SMD 969-6881	0.127	0.101	0.080	0.073
47	SMD 969-6890	0.127	0.109	0.092	0.084
100	SMD 969-6903	0.134	0.132	0.129	0.125
10 Volt d.c.					
33	SMD 969-6911	0.152	0.105	0.095	0.087
16 Volt d.c.					
10	SMD 969-6920	0.106	0.093	0.068	0.061
22	SMD 969-6938	0.152	0.119	0.097	0.087
47	SMD 969-6946	0.177	0.149	0.115	0.102
25 Volt d.c.					
4.7	SMD 969-6954	0.127	0.101	0.080	0.073
10	SMD 969-6962	0.127	0.109	0.092	0.075
22	SMD 969-6970	0.137	0.122	0.119	0.115
33	SMD 969-6989	0.137	0.121	0.097	0.085
35 Volt d.c.					
3.3	SMD 969-6997	0.152	0.105	0.095	0.087
4.7	SMD 969-7004	0.127	0.089	0.079	0.073
10	SMD 969-7012	0.152	0.119	0.097	0.087
22	SMD 969-7020	0.177	0.149	0.115	0.102
50 Volt d.c.					
0.1	SMD 969-7039	0.101	0.090	0.060	0.058
0.22	SMD 969-7047	0.127	0.089	0.079	0.073
0.47	SMD 969-7055	0.127	0.089	0.079	0.073
1	SMD 969-7063	0.106	0.093	0.088	0.086
2.2	SMD 969-7071	0.127	0.093	0.082	0.075
3.3	SMD 969-7080	0.127	0.089	0.079	0.073
4.7	SMD 969-7098	0.152	0.119	0.097	0.087
10	SMD 969-7110	0.137	0.121	0.097	0.085

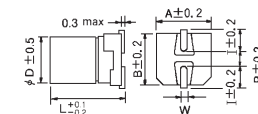
HB Series – High Temperature – 105°C									
Case Size	∅D	L	A	B	I	W	P	Tape Size	
B	4	5.8	4.3	4.3	1.8	0.65	1	12mm	
C	5	5.8	5.3	5.3	2.2	0.65	1.5	12mm	
D	6.3	5.8	6.6	6.6	2.6	0.65	1.8	16mm	
Operating temperature		-40°C to +105°C		DC leakage current		≤0.01CV or 3µA, whichever is greater			
Tolerance		±20%		Operating life		2000hrs @ 105°C			
µF	Ripple Current mA @ 120Hz 85°C	Power Factor @ 120Hz	Case Size	Mftrs. List No.	Order Code				
6.3 Volt d.c.									
22	26	0.3	B	EEEHB0J220R	969-6750				
47	46	0.3	C	EEEHB0J470R	969-6768				
100	71	0.3	D	EEEHB0J101P	969-6776				
10 Volt d.c.									
33	43	0.22	C	EEEHB1A330R	969-6784				
16 Volt d.c.									
10	28	0.16	B	EEEHB1C100R	969-6792				
22	39	0.16	C	EEEHB1C220P	969-6806				
47	70	0.16	D	EEEHB1C470P	969-6814				
25 Volt d.c.									
4.7	22	0.14	B	EEEHB1E4R7R	969-6822				
220	190	0.14	G	EEEHB1E221P	969-6830				
35 Volt d.c.									
10	28	0.12	C	EEEHB1V100R	969-6849				
50 Volt d.c.									
1	10	0.12	B	EEEHB1H1R0R	969-6857				
2.2	16	0.12	B	EEEHB1H2R2R	969-6865				
10	35	0.12	D	EEEHB1H100P	969-6873				

208463

Order Multiple=10		Price Each			
µF	Order Code	10+	100+	1K+	3K+
6.3 Volt d.c.					
22	SMD 969-6750	0.151	0.106	0.088	0.075
47	SMD 969-6768	0.184	0.131	0.125	0.122
100	SMD 969-6776	0.220	0.156	0.150	0.146
10 Volt d.c.					
33	SMD 969-6784	0.184	0.131	0.124	0.121
16 Volt d.c.					
10	SMD 969-6792	0.152	0.110	0.092	0.077
22	SMD 969-6806	0.350	0.330	0.290	0.240
47	SMD 969-6814	0.220	0.156	0.102	0.098
25 Volt d.c.					
4.7	SMD 969-6822	0.151	0.128	0.124	0.121
220	SMD 969-6830	0.390	0.370	0.310	0.270
35 Volt d.c.					
10	SMD 969-6849	0.184	0.142	0.138	0.135
50 Volt d.c.					
1	SMD 969-6857	0.152	0.133	0.129	0.126
2.2	SMD 969-6865	0.152	0.146	0.142	0.138
10	SMD 969-6873	0.220	0.156	0.139	0.137

FC Series 105°C - Surface Mount

Panasonic



- High temperature surface mount aluminium electrolytic
- High ripple current capability
- Low impedance

Case Size	∅D	L	A	I	W	P	Tape Size
B	4	5.4	4.3	1.8	0.65	1	12mm
C	5	5.4	5.3	2.2	0.65	1.5	12mm
D	6.3	5.4	6.6	2.6	0.65	1.8	16mm
E	8	6.2	8.3	3.4	0.65	2.2	16mm
F	8	10.2	8.3	3.4	0.9	3.1	16mm
G	10	10.2	10.3	3.5	0.9	4.6	16mm

Operating Temperature Tolerance: -40°C to +105°C ±20%
DC leakage current: ≤0.01CV or 3A whichever is greater

µF	Ripple (mA) 100Hz @ 105°C	Impedance (Ω) 100KHz @ 20°C	Power Factor @ 120Hz	Case Size	Mftrs. List No.	Order Code
47	80	1.8	0.26	C	EEEF0J470R	969-4323
100	115	1	0.26	D	EEEF0J101P	969-4331
220	150	0.6	0.26	E	EEEF0J221P	969-4340
330	180	0.5	0.26	F	EEEF0J331P	969-4358

Order Multiple=10		Price Each				
µF	Order Code	10+	100+	1K+	3K+	
6.3 Volt d.c.						
47	SMD 969-4323	0.200	0.153	0.136	0.126	
100	SMD 969-4331	0.240	0.181	0.160	0.148	
220	SMD 969-4340	0.410	0.290	0.260	0.240	
330	SMD 969-4358	0.530	0.390	0.340	0.310	
10 Volt d.c.						
µF	Ripple (mA) 100Hz @ 105°C	Impedance (Ω) 100KHz @ 20°C	Power Factor @ 120Hz	Case Size	Mftrs. List No.	Order Code
100	100	0.4	0.19	E	EEEF1A101P	969-3467
470	220	0.4	0.19	G	EEEF1A471P	969-3483

Order Multiple=10		Price Each				
µF	Order Code	10+	100+	1K+	3K+	
10 Volt d.c.						
100	SMD 969-3467	0.41	0.29	0.26	0.24	
470	SMD 969-3483	0.61	0.45	0.40	0.36	
16 Volt d.c.						
µF	Ripple (mA) 100Hz @ 105°C	Impedance (Ω) 100KHz @ 20°C	Power Factor @ 120Hz	Case Size	Mftrs. List No.	Order Code
10	50	3	0.16	B	EEEF1C100R	969-3491
22	80	1.8	0.16	C	EEEF1C220R	969-4366
47	115	1	0.16	D	EEEF1C470P	969-4382
68	150	0.6	0.16	E	EEEF1C680P	969-4390
100	150	0.6	0.16	E	EEEF1C101P	969-4404
220	220	0.4	0.16	G	EEEF1C221P	969-4412
330	220	0.4	0.16	G	EEEF1C331P	969-4420

Order Multiple=10		Price Each			
µF	Order Code	10+	100+	1K+	3K+
16 Volt d.c.					
10	SMD 969-3491	0.177	0.129	0.114	0.105
22	SMD 969-4366	0.210	0.153	0.136	0.126
47	SMD 969-4382	0.250	0.181	0.134	0.119
68	SMD 969-4390	0.400	0.300	0.220	0.210
100	SMD 969-4404	0.410	0.300	0.260	0.240
220	SMD 969-4412	0.610	0.440	0.390	0.350
330	SMD 969-4420	0.610	0.450	0.350	0.340



Aluminium Electrolytic - SMD - Panasonic - continued

FC Series 105°C - Surface Mount - continued

25 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
22	115	1	0.14	D	EEEF1E220P	969-3505
33	115	1	0.14	D	EEEF1E330P	969-3513
47	150	0.6	0.14	E	EEEF1E470P	969-3521
68	180	0.5	0.14	F	EEEF1E680P	969-3530

Order Multiple=10

25 Volt d.c.	Price Each	10+	100+	1K+	3K+
22 SMD 969-3505	0.240	0.181	0.134	0.119	
33 SMD 969-3513	0.230	0.174	0.129	0.114	
47 SMD 969-3521	0.410	0.290	0.260	0.240	
68 SMD 969-3530	0.530	0.370	0.330	0.300	

35 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
2.2	50	3	0.12	B	EEEF1V2R2R	969-4439
3.3	50	3	0.12	B	EEEF1V3R3R	969-4447
4.7	50	3	0.12	B	EEEF1V4R7R	969-4455
6.8	80	1.8	0.12	C	EEEF1V6R8R	969-4463
10	80	1.8	0.12	C	EEEF1V100R	969-4471
22	115	1	0.12	D	EEEF1V220P	969-4480
33	150	0.6	0.12	E	EEEF1V330P	969-4498
47	150	0.6	0.12	E	EEEF1V470P	969-4501
100	220	0.4	0.12	G	EEEF1V101P	969-4510

Order Multiple=10

35 Volt d.c.	Price Each	10+	100+	1K+	3K+
2.2 SMD 969-4439	0.177	0.125	0.110	0.102	
3.3 SMD 969-4447	0.177	0.125	0.110	0.102	
4.7 SMD 969-4455	0.177	0.129	0.095	0.085	
6.8 SMD 969-4463	0.210	0.149	0.132	0.122	
10 SMD 969-4471	0.210	0.153	0.112	0.101	
22 SMD 969-4480	0.250	0.181	0.134	0.130	
33 SMD 969-4498	0.400	0.300	0.220	0.199	
47 SMD 969-4501	0.400	0.300	0.230	0.220	
100 SMD 969-4510	0.610	0.450	0.350	0.340	

FCA Series

High Temperature Lead Free Reflow

- Specifically designed to survive severe lead free reflow soldering conditions
- Development of existing FC series

Diameter	Peak temp.	Time at peak -5K	Time > 217°C
≥ 6.3 mm	260°C	5 sec	45 sec
8 - 10mm	245°C	10 sec	45 sec

6.3 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
22	60	3	0.26	B	EEEF0J220AR	124-4337
100	140	1	0.26	D	EEEF0J101AP	124-4339
330	450	0.3	0.26	F	EEEF0J331AP	124-4341
1000	670	0.15	0.26	G	EEEF0J102AP	124-4342
1500	670	0.15	0.26	G	EEEF0J152AP	124-4343

Order Multiple=10

6.3 Volt d.c.	Price Each	10+	100+	500+	1K+	3K+
22 SMD 124-4337	0.270	0.250	0.220	0.220	0.154	
100 SMD 124-4339	0.400	0.360	0.310	0.290	0.220	
330 SMD 124-4341	0.850	0.770	0.690	0.640	0.460	
1000 SMD 124-4342	1.010	0.920	0.830	0.770	0.560	
1500 SMD 124-4343	1.310	1.180	1.070	1.000	0.710	

10 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
100	230	0.4	0.19	E	EEEF1A101AP	124-4345
220	450	0.3	0.19	F	EEEF1A221AP	124-4347
470	670	0.15	0.19	G	EEEF1A471AP	124-4348
1000	670	0.15	0.19	G	EEEF1A102AP	124-4349

Order Multiple=10

10 Volt d.c.	Price Each	10+	100+	500+	1K+	3K+
100 SMD 124-4345	0.62	0.57	0.51	0.47	0.34	
220 SMD 124-4347	0.62	0.57	0.51	0.47	0.34	
470 SMD 124-4348	0.77	0.69	0.62	0.58	0.42	
1000 SMD 124-4349	1.04	0.94	0.85	0.79	0.57	

16 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
10	60	3	0.16	B	EEEF1C100AR	124-4350
22	95	1.8	0.16	C	EEEF1C220AR	124-4351
47	140	1	0.16	D	EEEF1C470AP	124-4352
100	230	0.4	0.16	E	EEEF1C101AP	124-4353
220	670	0.15	0.16	G	EEEF1C221AP	124-4354
330	670	0.15	0.16	G	EEEF1C331AP	124-4355
470	670	0.15	0.16	G	EEEF1C471AP	124-4356

Order Multiple=10

16 Volt d.c.	Price Each	10+	100+	500+	1K+	3K+
10 SMD 124-4350	0.310	0.290	0.250	0.240	0.176	
22 SMD 124-4351	0.510	0.470	0.400	0.380	0.280	
47 SMD 124-4352	0.410	0.380	0.340	0.320	0.240	
100 SMD 124-4353	0.640	0.590	0.520	0.480	0.350	
220 SMD 124-4354	1.040	0.940	0.850	0.790	0.570	
330 SMD 124-4355	1.010	0.920	0.830	0.770	0.560	
470 SMD 124-4356	1.040	0.940	0.850	0.790	0.570	

25 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
33	140	1	0.14	D	EEEF1E330AP	124-4359
100	450	0.3	0.14	F	EEEF1E101AP	124-4362
220	670	0.15	0.14	G	EEEF1E221AP	124-4363
330	670	0.15	0.14	G	EEEF1E331AP	124-4364
470	670	0.15	0.14	G	EEEF1E471AP	124-4366

Order Multiple=10

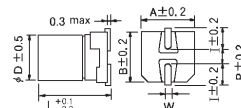
25 Volt d.c.	Price Each	10+	100+	500+	1K+	3K+
33 SMD 124-4359	0.43	0.40	0.36	0.33	0.24	
100 SMD 124-4362	0.62	0.57	0.51	0.47	0.34	
220 SMD 124-4363	1.04	0.94	0.85	0.79	0.57	
330 SMD 124-4364	1.01	0.92	0.83	0.77	0.55	
470 SMD 124-4366	1.01	0.92	0.83	0.77	0.55	

35 Volt d.c.	Ripple (mA)	Impedance (Ω)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	100KHz @ 20°C	@ 120Hz	Size		
1	60	3	0.12	B	EEEF1V1R0AR	124-4367
4.7	60	3	0.12	B	EEEF1V4R7AR	124-4370
33	230	0.4	0.12	E	EEEF1V330AP	124-4375
47	230	0.4	0.12	E	EEEF1V470AP	124-4376
100	670	0.15	0.12	G	EEEF1V101AP	124-4377
220	670	0.15	0.12	G	EEEF1V221AP	124-4378
330	670	0.15	0.12	G	EEEF1V331AP	124-4379

Order Multiple=10

35 Volt d.c.	Price Each	10+	100+	500+	1K+	3K+
1 SMD 124-4367	0.310	0.290	0.250	0.240	0.176	
4.7 SMD 124-4370	0.360	0.340	0.300	0.280	0.198	
33 SMD 124-4375	0.790	0.710	0.630	0.590	0.430	
47 SMD 124-4376	0.640	0.590	0.520	0.480	0.350	
100 SMD 124-4377	1.040	0.940	0.850	0.790	0.570	
220 SMD 124-4378	1.040	0.940	0.850	0.790	0.570	
330 SMD 124-4379	1.040	0.940	0.850	0.790	0.570	

FK Series 105°C - Surface Mount



- High performance surface mount aluminium electrolytic
- Temperature range -55°C to +105°C
- High ripple current capability
- Miniature version of FC series

Case Size	∅D	L	A	W	P	Tape Size
B	4	5.8				
C	5	5.8				
D	6.3	5.8				
E	8	6.2				
F	8	10.2				
G	10	10.2				

Operating Temperature Tolerance: -55°C to +105°C ±20%
 DC leakage current: ≤0.01CV or 3A whichever is greater

10 Volt d.c.	Ripple (mA)	Power Factor	Case	Mftrs. List No.	Order Code
μF	100Hz @ 105°C	@ 120Hz	Size		
220	300	0.19	E	EEEFK1A221P	969-5605
330	600	0.19	F	EEEFK1A331P	969-5613
470	600	0.19	F	EEEFK1A471P	969-5621
1000	850	0.19	G	EEEFK1A102P	969-5630

10 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
220	SMD969-5605	0.47	0.32	0.29	0.27
330	SMD969-5613	0.60	0.43	0.37	0.34
470	SMD969-5621	0.60	0.43	0.37	0.34
1000	SMD969-5630	0.71	0.50	0.44	0.41

16 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
10	90	0.16	B	EEEFK1C100R	969-5648
22	90	0.16	B	EEEFK1C220UR	969-5656
47	160	0.16	C	EEEFK1C470UR	969-5664
100	240	0.16	D	EEEFK1C101P	969-5672
220	300	0.16	E	EEEFK1C221P	969-5680
330	600	0.16	F	EEEFK1C331P	969-5699
470	600	0.16	F	EEEFK1C471P	969-5710

16 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
10	SMD969-5648	0.200	0.142	0.126	0.116
22	SMD969-5656	0.200	0.147	0.096	0.094
47	SMD969-5664	0.240	0.169	0.106	0.102
100	SMD969-5672	0.280	0.210	0.129	0.125
220	SMD969-5680	0.450	0.330	0.240	0.220
330	SMD969-5699	0.600	0.430	0.370	0.340
470	SMD969-5710	0.600	0.440	0.300	0.290

25 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
10	90	0.14	B	EEEFK1E100R	969-5729
22	160	0.14	C	EEEFK1E220R	969-5737
33	160	0.14	C	EEEFK1E330UR	969-5745
47	240	0.14	D	EEEFK1E470P	969-5753
100	300	0.14	E	EEEFK1E101P	969-5770
220	600	0.14	F	EEEFK1E221P	969-5788
330	600	0.14	F	EEEFK1E331P	969-5796
470	850	0.14	G	EEEFK1E471P	969-5800

25 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
10	SMD969-5729	0.200	0.142	0.126	0.116
22	SMD969-5737	0.240	0.170	0.151	0.139
33	SMD969-5745	0.240	0.170	0.151	0.139
47	SMD969-5753	0.290	0.210	0.177	0.170
100	SMD969-5770	0.450	0.330	0.250	0.230
220	SMD969-5788	0.600	0.440	0.320	0.310
330	SMD969-5796	0.600	0.430	0.370	0.360
470	SMD969-5800	0.710	0.510	0.370	0.360

35 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
4.7	90	0.12	B	EEEFK1V4R7R	969-5818
10	90	0.12	B	EEEFK1V100UR	969-5826
22	160	0.12	C	EEEFK1V220R	969-5834
33	240	0.12	D	EEEFK1V330P	969-5842
47	240	0.12	D	EEEFK1V470P	969-5850
100	600	0.12	F	EEEFK1V101P	969-5869
220	600	0.12	F	EEEFK1V221P	969-5877
330	850	0.16	G	EEEFK1V331P	969-5885

35 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
4.7	SMD969-5818	0.200	0.142	0.141	0.138
10	SMD969-5826	0.200	0.147	0.096	0.094
22	SMD969-5834	0.240	0.169	0.112	0.109
33	SMD969-5842	0.290	0.200	0.178	0.164
47	SMD969-5850	0.280	0.210	0.129	0.125
100	SMD969-5869	0.600	0.440	0.320	0.310
220	SMD969-5877	0.600	0.440	0.310	0.300
330	SMD969-5885	0.710	0.500	0.440	0.410

50 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
4.7	60	0.1	B	EEEFK1H4R7R	969-5893
10	165	0.1	C	EEEFK1H100UR	969-5907
22	165	0.1	D	EEEFK1H220P	969-5915
33	195	0.1	E	EEEFK1H330P	969-5923
47	195	0.1	E	EEEFK1H470P	969-5931
100	350	0.1	F	EEEFK1H101P	969-5958
220	670	0.1	G	EEEFK1H221P	969-5966
330	900	0.1	H13	EEVFK1H331Q	969-5974
1000	1610	0.1	J16	EEVFK1H102M	969-5982

50 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
4.7	SMD969-5893	0.200	0.142	0.126	0.116
10	SMD969-5907	0.240	0.169	0.108	0.106
22	SMD969-5915	0.280	0.210	0.129	0.125
33	SMD969-5923	0.470	0.330	0.290	0.270
47	SMD969-5931	0.450	0.340	0.250	0.230
100	SMD969-5958	0.600	0.440	0.330	0.320
220	SMD969-5966	0.710	0.510	0.360	0.350
330	SMD969-5974	1.270	0.930	0.820	0.760
1000	SMD969-5982	1.330	1.190	1.130	1.090

63 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
4.7	40	0.08	C	EEEFK1J4R7R	969-5990
10	80	0.08	D	EEEFK1J100P	969-6008
22	120	0.08	E	EEEFK1J220P	969-6016
33	250	0.08	F	EEEFK1J330P	969-6024
47	250	0.08	F	EEEFK1J470P	969-6032
100	400	0.08	G	EEEFK1J101P	969-6040
220	800	0.08	H13	EEVFK1J221Q	969-6059
470	1410	0.08	J16	EEVFK1J471M	969-6067
680	1690	0.08	K16	EEVFK1J681M	969-6075

63 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
4.7	SMD969-5990	0.250	0.178	0.158	0.146
10	SMD969-6008	0.300	0.210	0.187	0.173
22	SMD969-6016	0.490	0.340	0.300	0.280
33	SMD969-6024	0.630	0.450	0.400	0.360
47	SMD969-6032	0.630	0.450	0.400	0.360
100	SMD969-6040	0.750	0.520	0.470	0.430
220	SMD969-6059	1.270	0.970	0.860	0.790
470	SMD969-6067	2.190	1.580	1.400	1.120
680	SMD969-6075	2.320	1.860	1.650	1.350

80 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
10	130	0.08	E	EEEFK1K100P	969-6083
22	130	0.08	F	EEEFK1K220P	969-6091
47	200	0.08	G	EEEFK1K470P	969-6105
100	500	0.08	H13	EEVFK1K101Q	969-6113
150	500	0.08	H13	EEVFK1K151Q	969-6121
470	917	0.08	K16	EEVFK1K471M	969-6130

80 Volt d.c.

		Price Each			
µF	Order Code	1+	50+	100+	500+
10	SMD969-6083	0.49	0.34	0.30	0.28
22	SMD969-6091	0.63	0.45	0.40	0.36
47	SMD969-6105	0.75	0.52	0.47	0.43
100	SMD969-6113	1.22	0.97	0.86	0.79
150	SMD969-6121	1.27	0.97	0.86	0.79
470	SMD969-6130	2.61	1.86	1.65	1.28


100 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
47	500	0.07	H13	EEVFK2A470Q	969-6148
68	500	0.07	H13	EEVFK2A680Q	969-6156
150	793	0.07	J16	EEVFK2A151M	969-6164

100 Volt d.c.

		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
47	SMD969-6148	1.27	0.97	0.86	0.79	0.72
68	SMD969-6156	1.27	0.97	0.86	0.79	0.72
150	SMD969-6164	1.91	1.58	1.40	1.19	1.06

FKA Series
High Temperature Lead Free Reflow



- Specifically designed to survive severe lead free reflow soldering conditions
- Development of existing FK series

Diameter	Peak temp.	Time at peak -5K	Time > 217°C
≥ 6.3 mm	260°C	5 sec	45 sec
8 - 10mm	245°C	10 sec	45 sec

10 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
22	90	0.19	B	EEEFK1A220AR	124-4396
220	300	0.19	E	EEEFK1A221AP	124-4398
470	600	0.19	F	EEEFK1A471AP	124-4400
1000	850	0.19	G	EEEFK1A102AP	124-4402

10 Volt d.c.

		Price Each				
µF	Order Code	1+	100+	500+	1K+	3K+
22	SMD124-4396	0.39	0.36	0.31	0.29	0.22
220	SMD124-4398	0.49	0.45	0.41	0.38	0.28
470	SMD124-4400	1.07	0.98	0.87	0.81	0.59
1000	SMD124-4402	1.13	1.03	0.92	0.86	0.62

16 Volt d.c.

µF	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
10	90	0.16	B	EEEFK1C100AR	124-4403
47	240	0.16	D	EEEFK1C470AP	124-4405
100	240	0.16	D	EEEFK1C101AP	124-4406
330	600	0.16	F	EEEFK1C331AP	124-4408
470	600	0.16	F	EEEFK1C471AP	124-4409

16 Volt d.c.

		Price Each				
µF	Order Code	1+	100+	500+	1K+	3K+
10	SMD124-4403	0.41	0.38	0.32	0.31	0.23
47	SMD124-4405	0.58	0.53	0.48	0.44	0.32



Aluminium Electrolytic - SMD - Panasonic - continued

FKA Series - continued

High Temperature Lead Free Reflow - continued

25 Volt d.c.	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
10	90	0.14	B	EEEFK1E100AR	124-4410
22	160	0.14	C	EEEFK1E220AR	124-4411
33	240	0.14	D	EEEFK1E330AP	124-4412
47	240	0.14	D	EEEFK1E470AP	124-4414
100	280	0.14	D8	EEEFK1E101XAP	124-4415
100	300	0.14	E	EEEFK1E101AP	124-4416
220	600	0.14	F	EEEFK1E221AP	124-4417
330	600	0.14	F	EEEFK1E331AP	124-4418
470	850	0.14	G	EEEFK1E471AP	124-4419

25 Volt d.c.	Order Code	1+	100+	500+	1K+	3K+
10	SMD 124-4410	0.71	0.65	0.59	0.54	0.39
22	SMD 124-4411	0.49	0.46	0.42	0.39	0.30
33	SMD 124-4412	0.64	0.60	0.55	0.51	0.39
47	SMD 124-4414	0.82	0.75	0.66	0.62	0.45
100	SMD 124-4415	1.00	0.91	0.81	0.75	0.55
100	SMD 124-4416	0.76	0.68	0.61	0.56	0.41
220	SMD 124-4417	0.88	0.80	0.71	0.67	0.49
330	SMD 124-4418	1.24	1.12	1.01	0.93	0.68
470	SMD 124-4419	1.62	1.48	1.33	1.22	0.89

35 Volt d.c.	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
10	90	0.12	B	EEEFK1V100UAR	124-4420
10	160	0.12	C	EEEFK1V100AR	124-4421
22	160	0.12	C	EEEFK1V220AR	124-4422
33	240	0.12	D	EEEFK1V330AP	124-4423
47	240	0.12	D	EEEFK1V470AP	124-4424
100	600	0.12	F	EEEFK1V101AP	124-4426
220	600	0.12	F	EEEFK1V221AP	124-4427
330	850	0.12	G	EEEFK1V331AP	124-4428

35 Volt d.c.	Order Code	1+	100+	500+	1K+	3K+
10	SMD 124-4420	1.00	0.91	0.83	0.76	0.55
10	SMD 124-4421	0.80	0.72	0.66	0.60	0.44
22	SMD 124-4422	0.85	0.77	0.68	0.64	0.46
33	SMD 124-4423	0.64	0.58	0.53	0.49	0.35
47	SMD 124-4424	0.94	0.86	0.77	0.71	0.52
100	SMD 124-4426	1.10	1.01	0.90	0.83	0.60
220	SMD 124-4427	1.19	1.09	0.97	0.90	0.66
330	SMD 124-4428	1.33	1.22	1.09	1.01	0.72

6.3 Volt d.c.	Ripple (mA) 100Hz @ 105°C	Power Factor @ 120Hz	Case Size	Mfrs. List No.	Order Code
22	90	0.26	B	EEEFKJ220AR	124-4386
100	160	0.26	C	EEEFKJ101UAR	124-4388
100	240	0.26	D	EEEFKJ101AP	124-4389
220	240	0.26	D	EEEFKJ221AP	124-4390
330	300	0.26	E	EEEFKJ331AP	124-4391
470	600	0.26	F	EEEFKJ471AP	124-4392
1000	600	0.26	F	EEEFKJ102AP	124-4393
1500	850	0.26	G	EEEFKJ152AP	124-4394

6.3 Volt d.c.	Order Code	1+	100+	500+	1K+	3K+
22	SMD 124-4386	0.250	0.230	0.200	0.192	0.144
100	SMD 124-4388	0.570	0.510	0.460	0.430	0.300
100	SMD 124-4389	0.570	0.510	0.460	0.430	0.300
220	SMD 124-4390	0.730	0.670	0.600	0.560	0.400
330	SMD 124-4391	0.680	0.620	0.550	0.520	0.370
470	SMD 124-4392	1.000	0.910	0.810	0.750	0.550
1000	SMD 124-4393	1.070	0.980	0.870	0.810	0.580
1500	SMD 124-4394	1.160	1.070	0.940	0.880	0.640

FP Series 105°C - Surface Mount



- High performance surface mount aluminium electrolytic
- Suitable for high temperature lead free reflow soldering
- Endurance: 2000 h at +105°C
- Low ESR (30 % to 50 % less than FK series)

Operating Temperature -55°C to +105°C
 Tolerance ± 20%
 DC leakage current ≤ 0.01CV or 3µA (whichever is greater) after two minutes

Case Size	∅D	L	Case Size	∅D	L	Case Size	∅D	L	Case Size	∅D	L
B	4	5.8	D	6.3	5.8	E	8	6.2	G	10	10.2
C	5	5.8	D8	6.3	7.7	F	8	10.2			

Panasonic



6.3 Volt d.c.	Ripple (mA) 100Hz @ 105°C	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
22	160	0.85	B	EEEFPJ220AR	153-9447
47	160	0.85	B	EEEFPJ470UAR	153-9448
47	240	0.36	C	EEEFPJ470AR	153-9451
100	240	0.36	C	EEEFPJ101UAR	153-9452
100	300	0.26	D	EEEFPJ101AP	153-9453
220	300	0.26	D	EEEFPJ221AP	153-9454
330	600	0.16	D	EEEFPJ331XAP	153-9455
330	850	0.18	E	EEEFPJ331AP	153-9456
470	500	0.08	F	EEEFPJ471AP	153-9457
1000	850	0.08	F	EEEFPJ102AP	153-9502
1500	1190	0.06	G	EEEFPJ152AP	153-9505
1800	850	0.08	G	EEEFPJ182UAP	153-9517

6.3 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	SMD 153-9447	0.158	0.139	0.125	0.117	0.083
47	SMD 153-9448	0.440	0.400	0.340	0.330	0.240
47	SMD 153-9451	0.260	0.240	0.210	0.197	0.146
100	SMD 153-9452	0.440	0.400	0.340	0.330	0.240
100	SMD 153-9453	0.520	0.440	0.400	0.370	0.280
220	SMD 153-9454	0.520	0.440	0.400	0.370	0.280
330	SMD 153-9455	0.570	0.510	0.440	0.430	0.310
330	SMD 153-9456	0.790	0.690	0.610	0.580	0.430
470	SMD 153-9457	1.020	0.890	0.800	0.760	0.550
1000	SMD 153-9502	1.020	0.890	0.800	0.760	0.550
1500	SMD 153-9505	1.170	1.010	0.890	0.860	0.610
1800	SMD 153-9517	1.300	1.130	1.000	0.960	0.710

10 Volt d.c.	Ripple (mA) 100Hz @ 105°C	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
22	160	0.85	B	EEEFPA220AR	153-9459
33	160	0.85	B	EEEFPA330UAR	153-9460
33	240	0.36	C	EEEFPA330AR	153-9461
150	300	0.26	D	EEEFPA1A151AP	153-9463
220	600	0.16	D8	EEEFPA221XAP	153-9464
220	500	0.18	E	EEEFPA221AP	153-9465
330	850	0.08	F	EEEFPA331AP	153-9466
470	850	0.08	F	EEEFPA471AP	153-9467
680	850	0.08	F	EEEFPA681AP	153-9506
1000	1190	0.06	G	EEEFPA1A102AP	153-9507
1200	850	0.08	G	EEEFPA122UAP	153-9518

10 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	SMD 153-9459	0.240	0.210	0.185	0.174	0.124
33	SMD 153-9460	0.520	0.440	0.400	0.370	0.280
33	SMD 153-9461	0.176	0.158	0.139	0.132	0.098
150	SMD 153-9463	0.520	0.440	0.400	0.370	0.280
220	SMD 153-9464	0.570	0.510	0.440	0.430	0.310
220	SMD 153-9465	0.430	0.370	0.330	0.310	0.230
330	SMD 153-9466	0.530	0.470	0.410	0.400	0.290
470	SMD 153-9467	1.020	0.890	0.800	0.760	0.550
680	SMD 153-9506	1.020	0.890	0.800	0.760	0.550
1000	SMD 153-9507	1.170	1.010	0.890	0.860	0.610
1200	SMD 153-9518	0.780	0.690	0.600	0.570	0.430

16 Volt d.c.	Ripple (mA) 100Hz @ 105°C	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
10	160	0.85	B	EEEFPC100AR	153-9468
22	160	0.85	B	EEEFPC220UAR	153-9470
22	240	0.36	C	EEEFPC220AR	153-9471
47	240	0.36	C	EEEFPC470UAR	153-9472
47	300	0.26	D	EEEFPC470AP	153-9473
68	300	0.26	D	EEEFPC680AP	153-9475
100	300	0.26	D	EEEFPC101AP	153-9476
100	600	0.16	D8	EEEFPC101XAP	153-9477
150	600	0.16	D8	EEEFPC151XAP	153-9478
220	600	0.16	D8	EEEFPC221XAP	153-9479
220	500	0.18	E	EEEFPC221AP	153-9480
330	850	0.08	F	EEEFPC331AP	175-1938
470	850	0.08	F	EEEFPC471AP	153-9508
680	1190	0.06	G	EEEFPC681AP	153-9509
820	850	0.08	G	EEEFPC821UAP	153-9519

16 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
10	SMD 153-9468	0.400	0.340	0.310	0.290	0.210
22	SMD 153-9470	0.183	0.164	0.145	0.137	0.102
22	SMD 153-9471	0.440	0.400	0.340	0.330	0.240
47	SMD 153-9472	0.520	0.440	0.400	0.370	0.280
47	SMD 153-9473	0.520	0.440	0.400	0.370	0.280
68	SMD 153-9475	0.520	0.440	0.400	0.370	0.280
100	SMD 153-9476	0.520	0.440	0.400	0.370	0.280
100	SMD 153-9477	0.570	0.510	0.440	0.430	0.310
150	SMD 153-9478	0.570	0.510	0.440	0.430	0.310
220	SMD 153-9479	0.570	0.510	0.440	0.430	0.310
220	SMD 153-9480	0.790	0.690	0.610	0.580	0.430
330	SMD 175-1938 NEW	1.020	0.890	0.800	0.760	0.550
470	SMD 153-9508	1.020	0.890	0.800	0.760	0.550
680	SMD 153-9509	1.170	1.010	0.890	0.860	0.610
820	SMD 153-9519	1.300	1.130	1.000	0.960	0.710

25 Volt d.c.

μF	Ripple (mA) 100Hz @ 105°C	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
10	160	0.85	B	EEFFP1E100AR	153-9481
22	240	0.36	C	EEFFP1E220AR	153-9482
33	240	0.36	C	EEFFP1E330UAR	153-9483
33	300	0.26	D	EEFFP1E330AP	153-9484
47	300	0.26	D	EEFFP1E470AP	153-9485
68	300	0.26	D	EEFFP1E680AP	153-9487
100	600	0.16	D8	EEFFPE101XAP	153-9488
100	500	0.18	E	EEFFP1E101AP	153-9489
150	850	0.08	F	EEFFP1E151AP	153-9490
220	850	0.08	F	EEFFP1E221AP	153-9491
330	850	0.08	F	EEFFP1E331AP	153-9510
470	1190	0.06	G	EEFFP1E471AP	153-9511
560	850	0.08	G	EEFFPE561UAP	153-9520

25 Volt d.c.

μF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
10	SMD153-9481	0.400	0.340	0.310	0.290	0.210
22	SMD153-9482	0.440	0.400	0.340	0.330	0.240
33	SMD153-9483	0.195	0.166	0.151	0.145	0.111
33	SMD153-9484	0.520	0.440	0.400	0.370	0.280
47	SMD153-9485	0.520	0.440	0.400	0.370	0.280
68	SMD153-9487	0.520	0.440	0.400	0.370	0.280
100	SMD153-9488	0.570	0.510	0.440	0.430	0.310
100	SMD153-9489	0.790	0.690	0.610	0.580	0.430
150	SMD153-9490	1.020	0.890	0.800	0.760	0.550
220	SMD153-9491	1.020	0.890	0.800	0.760	0.550
330	SMD153-9510	1.020	0.890	0.800	0.760	0.550
470	SMD153-9511	1.170	1.010	0.890	0.860	0.610
560	SMD153-9520	1.300	1.130	1.000	0.960	0.710

35 Volt d.c.

μF	Ripple (mA) 100Hz @ 105°C	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
10	160	0.85	B	EEFFPV100UAR	153-9492
22	240	0.36	C	EEFFP1V220AR	153-9494
33	300	0.26	D	EEFFP1V330AP	153-9495
47	300	0.26	D	EEFFP1V470AP	153-9499
68	600	0.16	D8	EEFFPV680XAP	153-9500
100	600	0.16	D8	EEFFPV101XAP	153-9501
100	850	0.08	F	EEFFP1V101AP	153-9512
150	850	0.08	F	EEFFP1V151AP	153-9513
220	850	0.08	F	EEFFP1V221AP	153-9514
330	1190	0.06	G	EEFFP1V331AP	153-9515
390	850	0.08	G	EEFFPV391UAP	153-9521

35 Volt d.c.

μF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
10	SMD153-9492	0.44	0.40	0.34	0.33	0.24
22	SMD153-9494	0.44	0.40	0.34	0.33	0.24
33	SMD153-9495	0.52	0.44	0.40	0.37	0.28
47	SMD153-9499	0.52	0.44	0.40	0.37	0.28
68	SMD153-9500	0.57	0.51	0.44	0.43	0.31
100	SMD153-9501	0.57	0.51	0.44	0.43	0.31
100	SMD153-9512	1.02	0.89	0.80	0.76	0.55
150	SMD153-9513	1.02	0.89	0.80	0.76	0.55
220	SMD153-9514	1.02	0.89	0.80	0.76	0.55
330	SMD153-9515	1.17	1.01	0.89	0.86	0.61
390	SMD153-9521	1.30	1.13	1.00	0.96	0.71

50 Volt d.c.

μF	Ripple (mA) 100Hz @ 105°C	ESR (Ω) @ 100kHz	Case Size	Mfrs. List No.	Order Code
100	670	0.18	F	EEFFP1H101AP	171-4769
220	900	0.12	G	EEFFP1H221AP	171-4770

50 Volt d.c.

μF	Order Code	Price Each			
		1+	50+	100+	500+
100	NEW SMD171-4769	0.54	0.45	0.34	0.25
220	NEW SMD171-4770	0.65	0.52	0.42	0.30

HC Series



● Life time: 3000 h to 5000 h at 105 °C

Panasonic

New

Operating temperature Tolerance: -40°C to +105°C ± 20% Dielectric Type: Aluminium Electrolytic

μF	Ripple (mA)	Dia mm	Height mm	Mfrs. List No.	Order Code
22	26	4	5.8	EEHC0J220R	171-4683
47	46	5	5.8	EEHC0J470R	171-4684
100	71	6.3	5.8	EEHC0J101P	171-4686
220	101	6.3	7.7	EEHC0J221XP	171-4687
330	230	8	10.2	EEHC0J331P	171-4688
1000	313	10	10.2	EEHC0J102P	171-4689

10 Volt

33	43	5	5.8	EEHC1A330R	171-4690
220	160	8	10.2	EEHC1A221P	171-4691

16 Volt

10	28	4	5.8	EEHC1C100R	171-4692
22	39	5	5.8	EEHC1C220R	171-4693
47	70	6.3	5.8	EEHC1C470P	171-4694
100	81	6.3	7.7	EEHC1C101XP	171-4695
470	340	10	10.2	EEHC1C471P	171-4696

25 Volt

33	65	6.3	5.8	EEHC1E330P	171-4698
47	65	6.3	7.7	EEHC1E470XP	171-4699
100	130	8	10.2	EEHC1E101P	171-4700
330	238	10	10.2	EEHC1E331P	171-4701

35 Volt

4.7	15	4	5.8	EEHC1V47R	171-4702
10	28	5	5.8	EEHC1V100R	171-4704
22	55	6.3	5.8	EEHC1V220P	171-4705
33	57	6.3	7.7	EEHC1V330XP	171-4706
220	220	10	10.2	EEHC1V221P	171-4707

50 Volt

0.1	1	4	5.8	EEHC1HR10R	171-4708
0.22	2.6	4	5.8	EEHC1HR22R	171-4709
0.33	3.2	4	5.8	EEHC1HR33R	171-4710
0.47	5	4	5.8	EEHC1HR47R	171-4711
1	10	4	5.8	EEHC1H10R	171-4712
2.2	16	4	5.8	EEHC1H22R	171-4713
3.3	16	4	5.8	EEHC1H33R	171-4714
4.7	23	5	5.8	EEHC1H47R	171-4716
10	35	6.3	5.8	EEHC1H100P	171-4717
22	49	6.3	7.7	EEHC1H220XP	171-4718
33	91	8	10.2	EEHC1H330P	171-4719
47	100	8	10.2	EEHC1H470P	171-4720
100	160	10	10.2	EEHC1H101P	171-4721

Order Multiple=10

μF	Order Code	Price Each				
		10+	50+	100+	500+	2K+
6.3 Volt						
22	SMD171-4683	0.150	0.127	0.098	0.079	0.072
47	SMD171-4684	0.178	0.147	0.114	0.092	0.084
100	SMD171-4686	0.210	0.168	0.131	0.105	0.096
220	SMD171-4687	0.260	0.210	0.164	0.132	0.121
330	SMD171-4688	0.440	0.350	0.280	0.200	--
1000	SMD171-4689	0.520	0.430	0.330	0.240	--
10 Volt						
33	SMD171-4690	0.178	0.147	0.114	0.092	0.084
220	SMD171-4691	0.440	0.350	0.270	0.200	--
16 Volt						
10	SMD171-4692	0.166	0.140	0.109	0.087	0.080
22	SMD171-4693	0.198	0.163	0.127	0.102	0.094
47	SMD171-4694	0.230	0.189	0.148	0.118	0.108
100	SMD171-4695	0.260	0.210	0.164	0.132	0.121
470	SMD171-4696	0.520	0.430	0.330	0.240	--
25 Volt						
33	SMD171-4698	0.210	0.168	0.131	0.105	0.096
47	SMD171-4699	0.260	0.210	0.164	0.132	0.121
100	SMD171-4700	0.490	0.400	0.310	0.230	--
330	SMD171-4701	0.520	0.430	0.330	0.240	--
35 Volt						
4.7	SMD171-4702	0.150	0.127	0.098	0.079	0.072
10	SMD171-4704	0.178	0.147	0.114	0.092	0.084
22	SMD171-4705	0.210	0.168	0.131	0.105	0.096
33	SMD171-4706	0.240	0.190	0.148	0.119	0.108
220	SMD171-4707	0.570	--	--	--	--
50 Volt						
0.1	SMD171-4708	0.150	0.127	0.098	0.079	0.072
0.22	SMD171-4709	0.150	0.127	0.098	0.079	0.072
0.33	SMD171-4710	0.150	0.127	0.098	0.079	0.072
0.47	SMD171-4711	0.150	0.127	0.098	0.079	0.072
1	SMD171-4712	0.166	0.140	0.109	0.087	0.080
2.2	SMD171-4713	0.150	0.127	0.098	0.079	0.072
3.3	SMD171-4714	0.150	0.127	0.098	0.079	0.072
4.7	SMD171-4716	0.198	0.163	0.127	0.102	0.094
10	SMD171-4717	0.230	0.187	0.146	0.116	0.106
22	SMD171-4718	0.260	0.210	0.164	0.132	0.121
33	SMD171-4719	0.440	0.350	0.280	0.200	--
47	SMD171-4720	0.440	0.350	0.280	0.200	--
100	SMD171-4721	0.520	0.430	0.330	0.240	--

HD Series



● Endurance: 105 °C 5000 h

Panasonic

New



Aluminium Electrolytic - SMD - Panasonic - continued

HD Series - continued

Operating temperature Tolerance		-40°C to +105°C ± 20%		Dielectric Type	Aluminium Electrolytic
µF	Ripple (mA)	Dia mm	Height mm	Mfrs. List No.	Order Code
6.3 Volt					
330	230	8	10.2	EEEHD0J331AP	171-4722
1000	313	10	10.2	EEEHD0J102AP	171-4723
10 Volt					
100	62	8	6.2	EEEHD1A101AP	171-4724
220	160	8	10.2	EEEHD1A221AP	171-4725
330	238	10	10.2	EEEHD1A331AP	171-4726
16 Volt					
10	28	4	5.8	EEEHD1C100AR	171-4728
22	39	5	5.8	EEEHD1C220AR	171-4729
47	70	6.3	5.8	EEEHD1C470AP	171-4730
100	130	8	10.2	EEEHD1C101AP	171-4731
220	220	10	10.2	EEEHD1C221AP	171-4732
470	340	10	10.2	EEEHD1C471AP	171-4733
25 Volt					
4.7	17	4	5.8	EEEHD1E4R7AR	171-4734
10	28	5	5.8	EEEHD1E100AR	171-4735
22	55	6.3	5.8	EEEHD1E220AP	171-4736
33	55	6.3	5.8	EEEHD1E330AP	171-4737
47	56	8	6.2	EEEHD1E470AP	171-4738
100	130	8	10.2	EEEHD1E101AP	171-4741
330	238	10	10.2	EEEHD1E331AP	171-4742
35 Volt					
4.7	17	4	5.8	EEEHD1V4R7AR	171-4743
10	28	5	5.8	EEEHD1V100AR	171-4744
22	55	6.3	5.8	EEEHD1V220AP	171-4745
33	53	8	6.2	EEEHD1V330AP	171-4746
47	79	8	10.2	EEEHD1V470AP	171-4747
100	101	10	10.2	EEEHD1V101AP	171-4748
220	220	10	10.2	EEEHD1V221AP	171-4749
50 Volt					
0.47	5	4	5.8	EEEHD1HR47R	171-4750
1	7	4	5.8	EEEHD1H1R0R	171-4751
2.2	12	4	5.8	EEEHD1H2R2R	171-4753
3.3	16	4	5.8	EEEHD1H3R3R	171-4754
4.7	21	5	5.8	EEEHD1H4R7R	171-4755
10	33	6.3	5.8	EEEHD1H100P	171-4756
22	50	8	6.2	EEEHD1H220P	171-4757
33	74	8	10.2	EEEHD1H330P	171-4758
47	94	10	10.2	EEEHD1H470P	171-4759
100	94	10	10.2	EEEHD1H101P	171-4760
63 Volt					
10	45	8	6.2	EEEHD1J100P	171-4761
22	65	8	10.2	EEEHD1J220P	171-4762
33	80	10	10.2	EEEHD1J330P	171-4763
100 Volt					
3.3	30	8	6.2	EEEHD2A3R3P	171-4765
4.7	50	8	10.2	EEEHD2A4R7P	171-4766
10	55	8	10.2	EEEHD2A100P	171-4767
22	70	10	10.2	EEEHD2A220P	171-4768

537283

Order Multiple=10		Price Each				
µF	Order Code	10+	50+	100+	500+	2K+
6.3 Volt						
22	SMD 171-4683	0.150	0.127	0.098	0.079	0.072
1000	SMD 171-4723	0.600	0.490	0.370	0.280	--
10 Volt						
100	SMD 171-4724	0.390	0.310	0.240	0.194	0.179
220	SMD 171-4725	0.500	0.420	0.320	0.230	--
330	SMD 171-4726	0.600	0.490	0.370	0.280	--
16 Volt						
10	SMD 171-4728	0.198	0.161	0.126	0.100	0.092
22	SMD 171-4729	0.210	0.170	0.132	0.105	0.097
47	SMD 171-4730	0.240	0.192	0.151	0.120	0.110
100	SMD 171-4731	0.500	0.420	0.320	0.230	--
220	SMD 171-4732	0.600	0.490	0.370	0.280	--
470	SMD 171-4733	0.600	0.490	0.370	0.280	--
25 Volt						
4.7	SMD 171-4734	0.178	0.146	0.113	0.089	0.082
10	SMD 171-4735	0.210	0.170	0.132	0.105	0.097
22	SMD 171-4736	0.240	0.192	0.151	0.120	0.110
33	SMD 171-4737	0.240	0.192	0.151	0.120	0.110
47	SMD 171-4738	0.390	0.310	0.240	0.194	0.179
100	SMD 171-4741	0.500	0.420	0.320	0.230	--
330	SMD 171-4742	0.600	0.490	0.370	0.280	--
35 Volt						
4.7	SMD 171-4743	0.178	0.146	0.113	0.089	0.082
10	SMD 171-4744	0.230	0.188	0.147	0.116	0.107
22	SMD 171-4745	0.240	0.192	0.151	0.120	0.110
33	SMD 171-4746	0.390	0.310	0.240	0.194	0.179
47	SMD 171-4747	0.500	0.420	0.320	0.230	--
100	SMD 171-4748	0.600	0.490	0.370	0.280	--
220	SMD 171-4749	0.600	0.490	0.370	0.280	--

Order Multiple=10

Price Each

µF	Order Code	10+	50+	100+	500+	2K+
50 Volt						
0.47	SMD 171-4750	0.178	0.146	0.113	0.089	0.082
1	SMD 171-4751	0.159	0.132	0.103	0.082	0.075
2.2	SMD 171-4753	0.159	0.132	0.103	0.082	0.075
3.3	SMD 171-4754	0.159	0.132	0.103	0.082	0.075
4.7	SMD 171-4755	0.187	0.154	0.120	0.096	0.087
10	SMD 171-4756	0.220	0.176	0.136	0.109	0.100
22	SMD 171-4757	0.460	0.370	0.290	0.210	--
33	SMD 171-4758	0.460	0.370	0.290	0.210	--
47	SMD 171-4759	0.540	0.440	0.340	0.250	--
100	SMD 171-4760	0.540	0.440	0.340	0.250	--
63 Volt						
10	SMD 171-4761	0.340	0.280	0.220	0.177	0.162
22	SMD 171-4762	0.460	0.370	0.290	0.210	--
33	SMD 171-4763	0.540	0.440	0.340	0.250	--
100 Volt						
3.3	SMD 171-4765	0.340	0.280	0.220	0.177	0.162
4.7	SMD 171-4766	0.510	0.420	0.320	0.240	--
10	SMD 171-4767	0.510	--	--	--	--
22	SMD 171-4768	0.540	0.440	0.340	0.250	--

TP Series



- Lower ESR at Low temperature after endurance
- Automotive

Panasonic



Operating Temperature: -40°C to +125°C
 Tolerance: ± 20%
 DC leakage current: I ≤ 0.01CV (µA) After 2 minutes

Case Size	∅D (mm)	L (mm)	Case Size	∅D (mm)	L (mm)
D8	6.3	10.2	G	10	10.2
F	8	10.2			

10 Volt d.c.

µF	Ripple (mA) 100Hz @ 125°C	Impedance (Ω) @ 100kHz, +20 °C	Case Size	Mfrs. List No.	Order Code
220	270	0.2	F	EEETP1A221AP	175-1949
330	270	0.2	F	EEETPA331UAP	175-1953
330	500	0.15	G	EEETP1A331AP	175-1950
470	500	0.15	G	EEETP1A471AP	175-1948

Order Multiple=5

Price Each

µF	Order Code	5+	50+	100+	250+	500+
220	SMD 175-1949	0.76	0.70	0.61	0.54	0.40
330	SMD 175-1953	0.78	0.71	0.63	0.55	0.41
330	SMD 175-1950	0.91	0.82	0.74	0.65	0.47
470	SMD 175-1948	0.91	0.82	0.74	0.65	0.47

16 Volt d.c.

µF	Ripple (mA) 100Hz @ 125°C	Impedance (Ω) @ 100kHz, +20 °C	Case Size	Mfrs. List No.	Order Code
100	270	0.2	F	EEETP1C101AP	175-1951
100	197	0.45	D8	EEETPC101XAP	175-1954
220	270	0.2	F	EEETP1C221AP	175-1945
330	500	0.15	G	EEETP1C331AP	175-1946
470	500	0.15	G	EEETP1C471AP	175-1947

Order Multiple=5

Price Each

µF	Order Code	5+	50+	100+	250+	500+
100	SMD 175-1951	0.760	0.700	0.610	0.540	0.400
100	SMD 175-1954	0.400	0.350	0.320	0.280	0.197
220	SMD 175-1945	0.760	0.700	0.610	0.540	0.400
330	SMD 175-1946	0.910	0.820	0.740	0.650	0.470
470	SMD 175-1947	0.910	0.820	0.740	0.650	0.470

25 Volt d.c.

µF	Ripple (mA) 100Hz @ 125°C	Impedance (Ω) @ 100kHz, +20 °C	Case Size	Mfrs. List No.	Order Code
100	270	0.2	F	EEETP1E101AP	175-1941
220	500	0.15	G	EEETP1E221AP	175-1942
330	500	0.15	G	EEETP1E331AP	175-1944

Order Multiple=5

Price Each

µF	Order Code	5+	50+	100+	250+	500+
100	SMD 175-1941	0.76	0.70	0.61	0.54	0.40
220	SMD 175-1942	0.91	0.82	0.74	0.65	0.47
330	SMD 175-1944	0.91	0.82	0.74	0.65	0.47

35 Volt d.c.

µF	Ripple (mA) 100Hz @ 125°C	Impedance (Ω) @ 100kHz, +20 °C	Case Size	Mfrs. List No.	Order Code
47	270	0.2	F	EEETP1V470AP	175-1952
47	197	0.45	D8	EEETPV470XAP	175-1956
100	270	0.2	F	EEETP1V101AP	175-1939
220	500	0.15	G	EEETP1V221AP	175-1940

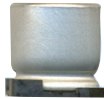
544805

Order Multiple=5

35 Volt d.c.		Price Each				
µF	Order Code	5+	50+	100+	250+	500+
47	SMD175-1952	0.760	0.700	0.610	0.540	0.400
47	SMD175-1956	0.400	0.350	0.320	0.280	0.197
100	SMD175-1939	0.760	0.700	0.610	0.540	0.400
220	SMD175-1940	0.910	0.820	0.740	0.650	0.470

Aluminium Electrolytic - SMD - Rubycon

TZV Series



- High performance surface mount electrolytic capacitor
- High temperature 105°C
- Suitable for lead free soldering
- Available for high density mounting
- Low Impedance



Operating Temperature Tolerance: -55°C to +105°C ±20%
 DC leakage current: ±0.01CV or 3µA whichever is greater
 Operating life @ 105°C: 2000h

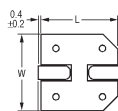
µF	Ripple (mA) 100kHz @ 105°C	Impedance (Ω) 100kHz @ 20°	Dimensions Dia. L	Mfrs. List No.	Order Code
6.3 Volt d.c.					
220	250	0.36	6.3 6.1	6.3TZV220M6.3X6.1	128-1857
220	300	0.34	6.3 8	6.3TZV220M6.3X8	171-2589
330	300	0.34	6.3 8	6.3TZV330M6.3X8	171-2590
1000	600	0.16	8 10.5	6.3TZV1000M8X10.5	128-1856
10 Volt d.c.					
220	300	0.34	6.3 8	10TZV220M6.3X8	171-2591
470	600	0.16	8 10.5	10TZV470M8X10.5	128-1858
16 Volt d.c.					
100	250	0.36	6.3 6.1	16TZV100M6.3X6.1	128-1861
470	600	0.16	8 10.5	16TZV470M8X10.5	128-1862
25 Volt d.c.					
33	250	0.36	6.3 6.1	25TZV33M6.3X6.1	171-2592
220	600	0.16	8 10.5	25TZV220M8X10.5	128-1863
470	850	0.36	10 10.5	25TZV470M10X10.5	171-2593
35 Volt d.c.					
47	250	0.36	6.3 6.1	35TZV47M6.3X6.1	128-1865
100	300	0.34	6.3 8	35TZV100M6.3X8	171-2594
100	600	0.16	8 10.5	35TZV100M8X10.5	171-2595
330	850	0.09	10 10.5	35TZV330M10X10.5	128-1864

Price Each

µF	Order Code	1+	50+	100+	150+	250+	+
6.3 Volt d.c.							
220	SMD128-1857	0.660	0.560	0.440	0.400	0.340	--
220	NEW SMD171-2589	0.230	0.210	0.194	0.183	0.163	--
330	NEW SMD171-2590	0.220	0.200	0.187	0.176	0.157	--
1000	SMD128-1856	0.810	0.730	0.600	0.550	0.480	--
10 Volt d.c.							
220	NEW SMD171-2591	0.220	0.200	0.187	0.176	0.157	--
470	SMD128-1858	0.810	0.730	0.600	0.550	0.480	--
16 Volt d.c.							
100	SMD128-1861	0.660	0.560	0.440	0.400	0.340	--
470	SMD128-1862	0.810	0.730	0.600	0.550	0.480	--
25 Volt d.c.							
33	NEW SMD171-2592	0.198	0.182	0.170	0.161	0.144	--
220	SMD128-1863	0.830	0.750	0.620	0.560	0.490	--
470	NEW SMD171-2593	0.430	0.400	0.360	0.340	0.300	--
35 Volt d.c.							
47	SMD128-1865	0.660	0.560	0.440	0.400	0.340	--
100	NEW SMD171-2594	0.230	0.210	0.194	0.183	0.163	--
100	NEW SMD171-2595	0.320	0.290	0.270	0.250	0.230	--
330	SMD128-1864	0.940	0.830	0.710	0.660	0.600	--

Aluminium Electrolytic - SMD - Vishay

153 CRV Series – Surface Mount
 105 °C – Long Life



- Surface mount aluminium electrolytic capacitors
- High temperature - 105°C
- Long life, high CV per volume



Supplied on tape and reel

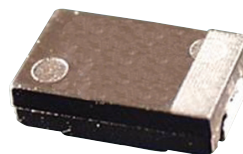
µF	Dimensions L W D	Ripple Current @ 105°C (mA)	ESR @ 100kHz (Ω)	Useful Life @ 105 °C (hrs)	Qty Per Reel	Mfrs. List No.	Order Code
6.3 Volt d.c.							
100	6.8 6.8 5.5	61	2	2000	1000	MAL215373101E3	118-7011
10 Volt d.c.							
220	8.6 8.6 10.5	180	0.5	3000	500	MAL215374221E3	118-7013
16 Volt d.c.							
10	4.5 4.5 5.5	16	8	2000	2000	MAL215375109E3	118-7014
47	6.8 6.8 5.5	47	2.2	2000	1000	MAL215375479E3	118-7015
25 Volt d.c.							
100	8.6 8.6 10.5	180	0.5	3000	500	MAL215376101E3	118-7017
35 Volt d.c.							
4.7	4.5 4.5 5.5	14	8	2000	2000	MAL215370478E3	118-7018
22	6.8 6.8 5.5	50	2.2	2000	1000	MAL215370229E3	118-7019
50 Volt d.c.							
1	4.5 4.5 5.5	7	12	2000	2000	MAL215371108E3	118-7020
4.7	5.5 5.5 5.5	17	6	2000	1000	MAL215371478E3	118-7021
10	6.8 6.8 5.5	26	3	2000	1000	MAL215371109E3	118-7022
47	8.6 8.6 10.5	180	0.5	3000	500	MAL215371479E3	118-7023
100	10.6 10.6 10.5	320	0.3	3000	500	MAL215371101E3	118-7024

Order Multiple=5

Price Each		5+	50+	100+	500+	1K+	2K+
6.3 Volt d.c.							
100	SMD118-7011	0.390	0.360	0.330	0.158	0.147	0.125
10 Volt d.c.							
220	SMD118-7013	1.010	0.990	0.850	0.430	0.380	0.330
16 Volt d.c.							
10	SMD118-7014	0.280	0.260	0.220	0.105	0.093	0.081
47	SMD118-7015	0.390	0.360	0.330	0.156	0.146	0.132
25 Volt d.c.							
100	SMD118-7017	1.070	1.040	0.900	0.450	0.410	0.400
35 Volt d.c.							
4.7	SMD118-7018	0.300	0.270	0.240	0.108	0.097	0.090
22	SMD118-7019	0.350	0.320	0.290	0.140	0.131	0.105
50 Volt d.c.							
1	SMD118-7020	0.250	0.240	0.197	0.097	0.086	0.075
4.7	SMD118-7021	0.360	0.350	0.300	0.135	0.121	0.105
10	SMD118-7022	0.320	0.290	0.260	0.128	0.120	0.096
47	SMD118-7023	0.920	0.890	0.770	0.410	0.350	0.290
100	SMD118-7024	0.910	0.860	0.770	0.390	0.360	0.340

Aluminium Electrolytic - Polymer - Panasonic

CX Series



- Low ESR
- Excellent Noise-absorbent Characteristics



Operating temperature Tolerance: -40°C to +105°C ± 20%
 Ripple Current @ 100 kHz: 2.7 A
 ESR @ 100 kHz: 0.015 ohm

Capacitance µF	Dimensions L W D	Mfrs. List No.	Order Code
2 Volt d.c.			
220	1.9 7.3 4.3	EEFCX0D221R	175-1902
330	1.9 7.3 4.3	EEFCX0D331R	175-1903
470	1.9 7.3 4.3	EEFCX0D471R	175-1904
2.5 Volt d.c.			
220	1.9 7.3 4.3	EEFCX0E221R	175-1905
390	1.9 7.3 4.3	EEFCX0E391R	175-1907
4 Volt d.c.			
150	1.9 7.3 4.3	EEFCX0G151R	175-1908
180	1.9 7.3 4.3	EEFCX0G181R	175-1909
220	1.9 7.3 4.3	EEFCX0G221R	175-1910
6.3 Volt d.c.			
100	1.9 7.3 4.3	EEFCX0J101R	175-1911
150	1.9 7.3 4.3	EEFCX0J151R	175-1912

Price Each

µF	Order Code	1+	50+	250+	1K+
2 Volt d.c.					
220	SMD175-1902	1.20	1.08	0.97	0.86
330	SMD175-1903	1.20	1.08	0.97	0.86
470	SMD175-1904	1.46	1.30	1.18	1.04
2.5 Volt d.c.					
220	SMD175-1905	1.20	1.08	0.97	0.86
390	SMD175-1907	1.46	1.30	1.18	1.04



Aluminium Electrolytic - Polymer - Panasonic - continued

CX Series - continued

µF	Order Code	Price Each			
		1+	50+	250+	1K+
4 Volt d.c.					
150	SMD 175-1908	1.20	1.08	0.97	0.86
180	SMD 175-1909	1.20	1.08	0.97	0.86
220	SMD 175-1910	1.36	1.22	1.09	0.98
6.3 Volt d.c.					
100	SMD 175-1911	1.20	1.08	0.97	0.86
150	SMD 175-1912	1.45	1.30	1.18	1.04

SX Series



- Super Low-ESR
- Lower ESR and Higher Capacitance at the same case size as conventional products.
- Excellent Noise-absorbent Characteristics
- High Ripple Current

Panasonic



Operating temperature Tolerance -40°C to +105°C ± 20%

Capacitance µF	ESR @ 100 kHz Ω	Ripple Current (A)	Dimensions L W D	Mfrs. List No.	Order Code
2 Volt d.c.					
180	0.009	3	1.9 7.3 4.3	EEFSXOD181ER	175-1913
330	0.009	3	1.9 7.3 4.3	EEFSXOD331ER	175-1914
330	0.006	3.5	1.9 7.3 4.3	EEFSXOD331XR	175-1915
330	0.006	3.5	1.9 7.3 4.3	EEFSXOD331XE	175-1916
330	0.0045	3.5	1.9 7.3 4.3	EEFSXOD331E4	175-1917
470	0.009	3	1.9 7.3 4.3	EEFSXOD471ER	175-1919
470	0.006	3.5	1.9 7.3 4.3	EEFSXOD471XE	175-1921
470	0.0045	3.8	1.9 7.3 4.3	EEFSXOD471E4	175-1922
2.5 Volt d.c.					
220	0.009	3	1.9 7.3 4.3	EEFSXOE221ER	175-1923
390	0.009	3	1.9 7.3 4.3	EEFSXOE391ER	175-1924
390	0.006	3.5	1.9 7.3 4.3	EEFSXOE391XE	175-1925
4 Volt d.c.					
150	0.009	3	1.9 7.3 4.3	EEFSXOG151ER	175-1926
180	0.009	3	1.9 7.3 4.3	EEFSXOG181ER	175-1927
220	0.009	3	1.9 7.3 4.3	EEFSXOG221ER	175-1928
6.3 Volt d.c.					
150	0.009	3	1.9 7.3 4.3	EEFSXOJ151ER	175-1929

544684

µF	Order Code	Price Each			
		1+	50+	250+	1K+
2 Volt d.c.					
180	SMD 175-1913	1.41	1.27	1.15	1.02
330	SMD 175-1914	1.41	1.27	1.15	1.02
330	SMD 175-1915	1.49	1.34	1.21	1.08
330	SMD 175-1916	1.49	1.34	1.21	1.08
330	SMD 175-1917	1.77	1.60	1.45	1.28
470	SMD 175-1919	1.67	1.51	1.36	1.21
470	SMD 175-1921	1.76	1.58	1.43	1.27
470	SMD 175-1922	2.10	1.89	1.71	1.52
2.5 Volt d.c.					
220	SMD 175-1923	1.41	1.27	1.15	1.02
390	SMD 175-1924	1.67	1.51	1.36	1.21
390	SMD 175-1925	1.76	1.58	1.43	1.27
4 Volt d.c.					
150	SMD 175-1926	1.41	1.27	1.15	1.02
180	SMD 175-1927	1.58	1.43	1.28	1.14
220	SMD 175-1928	1.92	1.74	1.56	1.39
6.3 Volt d.c.					
150	SMD 175-1929	0.97	0.87	0.80	0.79

SP-AL Series - Speciality Polymer Surface Mount

Panasonic



- Speciality polymer (polypyrrole) surface mount electrolytic capacitors
- D and E tantalum style cases
- High ripple current due to reduced ESR
- High capacitance per unit volume
- Tantalum alternative for power supply smoothing circuits and noise suppression applications



Supplied on 12mm tape

Operating temperature -40°C to +105°C
 Capacitance tolerance ±20%
 Ripple current measured at 100kHz, +20°C to +105°C 969-4676969-4676
 ESR measured at 100kHz, +20°C

µF	Ripple Current (A)	ESR (mΩ)	Tantalum Style Case Size	Reel Qty.	Mfrs List No.	Order Code
4 Volt d.c.						
180	3	12	E	2000	EEFUE0G181R	969-4676
6.3 Volt d.c.						
10	1	55	D	3500	EEFCD0J100R	969-4684
47	1.6	18	D	3500	EEFCD0J470R	969-4714
100	2	15	D	2000	EEFUD0J101R	969-4722
150	3	12	E	2000	EEFUE0J151R	969-4730
8 Volt d.c.						
33	1.6	18	D	3500	EEFCD0K330R	969-4749
68	1.8	15	D	2000	EEFUD0K680R	969-4757
100	3	12	E	2000	EEFUE0K101R	969-4765
12.5 Volt d.c.						
4.7	1	75	D	3500	EEFCD1B4R7R	969-4773
22	1.3	30	D	3500	EEFCD1B220R	969-4790
16 Volt d.c.						
2.2	1	100	D	3500	EEFCD1C2R2R	969-4803

227148

µF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
4 Volt d.c.						
180	SMD 969-4676	4.08	2.60	2.15	1.66	1.58
6.3 Volt d.c.						
10	SMD 969-4684	1.02	0.91	0.81	0.62	0.48
47	SMD 969-4714	1.53	0.98	0.81	0.62	0.60
100	SMD 969-4722	2.61	1.79	1.44	1.10	1.07
150	SMD 969-4730	3.30	2.66	2.15	1.65	1.48
8 Volt d.c.						
33	SMD 969-4749	1.53	0.98	0.81	0.65	0.62
68	SMD 969-4757	2.71	1.73	1.56	1.30	1.25
100	SMD 969-4765	2.93	2.52	2.48	2.05	1.98
12.5 volt d.c.						
4.7	SMD 969-4773	1.51	0.98	0.81	0.62	0.48
22	SMD 969-4790	1.53	0.98	0.81	0.65	0.62
16 Volt d.c.						
2.2	SMD 969-4803	0.87	0.73	0.71	0.50	0.49

Aluminium Electrolytic - Polymer - Rubycon

PC-CON Series



- Conductive polymer aluminium solid electrolytic capacitors
- Low impedance and low ESR at high frequency
- High ripple current capability
- Excellent endurance characteristics
- Reflow soldering method available

Capacitance µF	Ripple (mA)	ESR (mΩ)	Dimensions L W D	Mfrs. List No.	Order Code
2 Volt d.c.					
330	3500	9	7.3 4.3 2.7	2SW330M	154-7028
4 Volt d.c.					
220	3500	9	7.3 4.3 2.7	4SW220M	154-7029
6.3 Volt d.c.					
10	1900	50	7.3 4.3 1.4	6SL10M	154-7022
47	3000	13	7.3 4.3 1.9	6SB47M	154-7023
100	3500	10	7.3 4.3 2.7	6SW100M	128-1876

461927

µF	Order Code	Price Each			
		1+	25+	50+	100+
2 Volt d.c.					
330	SMD 154-7028	5.05	4.66	4.23	3.87
4 Volt d.c.					
220	SMD 154-7029	4.01	3.69	3.49	3.40
6.3 Volt d.c.					
10	SMD 154-7022	2.18	2.01	1.82	1.65
47	SMD 154-7023	2.21	2.07	1.91	1.75
100	SMD 128-1876	2.36	2.24	2.06	1.97

Aluminium Electrolytic - Solid Aluminium - Sanyo

OS-CON Solid Electrolyte

The OS-CON is a solid aluminium capacitor with organic semiconductor electrolyte. Its principle advantages are its high frequency characteristics, very low ESR, high ripple current capabilities and long life.

208478

Over half a million products available online



SVP Series - Surface Mount



- Low ESR
- High temperature - 105°C
- Ripple current ratings guaranteed at 105°C
- No derating required on max. allowable ripple current
- Applications include miniaturised high frequency noise limiters and switching power supplies



Operating temperature -55°C to +105°C Tolerance ±20%

µF	Ripple (mA) @ 100kHz, 105°C	ESR (mΩ) @ 100kHz to 300kHz	Body Dia.	L	W	H	Tape Width	Reel Qty.	Mfrs. List No.	Order Code
4 Volt d.c.										
150	1810	40	6.3	5.9	6.6	6.6			4SVP150MX	918-8738
560	4520	13	8	12.6	8.3	10.3			4SVP560M	918-8754
680	3700	25	10	7.9	10.3	10.3			4SVP680M	918-8762
6.3 Volt d.c.										
22	740	200	4	5.4	4.3	4.3			6SVP22M	918-8789
47	1100	70	5	5.9	5.3	5.3			6SVP47M	918-8797
100	1810	40	6.3	5.9	6.6	6.6			6SVP100M	918-8800
220	2560	35	8	6.9	8.3	8.3			6SVP220MX	918-8819
220	3700	25	10	7.9	10.3	10.3			6SVP220M	918-8827
330	3700	25	10	7.9	10.3	10.3			6SVP330M	918-8835
470	3700	25	10	7.9	10.3	10.3			6SVP470MX	918-8843
470	4210	15	8	12.6	8.3	10.3			6SVP470M	918-8851
820	5440	12	10	12.6	10.3	10.3			6SVP820M	918-8860
10 Volt d.c.										
10	700	220	4	5.4	4.3	4.3			10SVP10M	918-8878
15	740	200	4	5.4	4.3	4.3			10SVP15M	918-8886
33	100	70	5	5.9	5.3	5.3			10SVP33M	918-8894
47	1620	50	6.3	5.9	6.6	6.6			10SVP47M	918-8908
56	1700	45	6.3	5.9	6.6	6.6			10SVP56M	918-8916
120	2560	35	8	6.9	8.3	8.3			10SVP120M	918-8924
150	2560	35	8	6.9	8.3	8.3			10SVP150MX	918-8932
150	3020	30	10.3	7.9	10.3	10.3			10SVP150M	918-8940
270	3700	25	10.3	7.9	10.3	10.3			10SVP270M	918-8959
330	3700	25	10.3	7.9	10.3	10.3			10SVP330MX	918-8967
330	3950	17	8	12.6	8.3	10.3			10SVP330M	918-8975
560	5230	13	10	12.6	10.3	10.3			10SVP560M	918-8983
16 Volt d.c.										
3.3	660	260	4	5.4	4.3	4.3			16SVP3.3M	918-8991
15	1060	120	5	5.9	5.3	5.3			16SVP15M	918-9009
22	1060	90	5	5.9	5.3	5.3			16SVP22M	918-9017
39	1620	50	6.3	5.9	6.6	6.6			16SVP39M	918-9025
56	1890	45	8	6.9	8.3	8.3			16SVP56M	918-9033
82	2120	40	8	6.9	8.3	8.3			16SVP82M	918-9041
100	2670	35	10	7.9	10.3	10.3			16SVP100M	918-9050
180	3020	30	10	7.9	10.3	10.3			16SVP180MX	918-9068
180	3640	20	8	12.6	8.3	10.3			16SVP180M	918-9076
330	4720	16	10	12.6	10.3	10.3			16SVP330M	918-9084
20 Volt d.c.										
10	1020	120	5	5.9	5.3	5.3			20SVP10M	918-9092
22	1450	60	6.3	5.9	6.6	6.6			20SVP22M	918-9106
27	1450	60	6.3	5.9	6.6	6.6			20SVP27M	918-9114
33	1890	45	8	6.9	8.3	8.3			20SVP33M	918-9122
47	1890	45	8	6.9	8.3	8.3			20SVP47M	918-9130
68	2400	40	10	7.9	10.3	10.3			20SVP68M	918-9157
100	3320	24	8	12.6	8.3	10.3			20SVP100M	918-9165
150	4320	20	10	12.6	10.3	10.3			20SVP150M	918-9173
25 Volt d.c.										
10	1500	60	8	6.9	8.3	8.3			25SVP10M	918-9190
22	2000	50	10	7.9	10.3	10.3			25SVP22M	918-9203
33	2980	30	8	12.6	8.3	10.3			25SVP33M	918-9211
56	3800	28	10	12.6	10.3	10.3			25SVP56M	918-9220

249089

µF	Order Code	1+	50+	100+	1K+
4 Volt d.c.					
150	SMD 918-8738	2.36	2.07	1.82	1.66
560	SMD 918-8754	1.51	1.32	1.17	1.06
680	SMD 918-8762	3.26	2.86	2.54	2.29
6.3 Volt d.c.					
22	SMD 918-8789	0.48	0.41	0.36	0.32
47	SMD 918-8797	1.74	1.53	1.34	1.21
100	SMD 918-8800	1.75	1.53	1.34	1.24
220	SMD 918-8819	3.00	2.63	2.31	2.10
220	SMD 918-8827	3.15	2.76	2.45	2.22
330	SMD 918-8835	3.00	2.63	2.34	2.11
470	SMD 918-8843	2.50	2.17	1.95	1.74
470	SMD 918-8851	2.44	2.14	1.89	1.73
820	SMD 918-8860	3.71	3.21	2.86	2.59
10 Volt d.c.					
10	SMD 918-8878	1.03	0.88	0.79	0.72
15	SMD 918-8886	1.37	1.19	1.05	0.97
33	SMD 918-8894	1.24	1.09	0.95	0.86
47	SMD 918-8908	2.10	1.85	1.63	1.49
56	SMD 918-8916	1.70	1.50	1.31	1.21
120	SMD 918-8924	2.11	1.86	1.61	1.49
150	SMD 918-8932	2.31	2.03	1.78	1.61
150	SMD 918-8940	1.24	1.08	0.96	0.86
270	SMD 918-8959	2.33	2.05	1.82	1.64
330	SMD 918-8967	3.30	2.90	2.57	2.34
330	SMD 918-8975	2.44	2.14	1.89	1.73
560	SMD 918-8983	2.85	2.48	2.21	1.99

µF	Order Code	1+	50+	100+	1K+
16 Volt d.c.					
3.3	SMD 918-8991	0.70	0.63	0.56	0.51
15	SMD 918-9009	1.11	0.98	0.84	0.77
22	SMD 918-9017	1.24	1.09	0.96	0.86
39	SMD 918-9025	1.70	1.50	1.31	1.21
56	SMD 918-9033	1.79	1.61	1.47	1.37
82	SMD 918-9041	2.22	1.95	1.71	1.56
100	SMD 918-9050	3.15	2.76	2.45	2.22
180	SMD 918-9068	2.42	2.12	1.88	1.71
180	SMD 918-9076	3.43	3.01	2.66	2.42
330	SMD 918-9084	2.64	2.29	2.04	1.84
20 Volt d.c.					
10	SMD 918-9092	1.07	0.94	0.82	0.75
22	SMD 918-9106	1.50	1.32	1.17	1.06
27	SMD 918-9114	2.09	1.84	1.63	1.49
33	SMD 918-9122	2.03	1.76	1.57	1.44
47	SMD 918-9130	2.36	2.08	1.81	1.65
68	SMD 918-9157	2.32	2.04	1.81	1.63
100	SMD 918-9165	2.44	2.14	1.89	1.73
150	SMD 918-9173	2.71	2.36	2.09	1.90
25 Volt d.c.					
10	SMD 918-9190	2.14	1.87	1.66	1.50
22	SMD 918-9203	3.70	3.21	2.86	2.58
33	SMD 918-9211	3.04	2.65	2.35	2.13
56	SMD 918-9220	3.23	2.85	2.50	2.29

SC - SA Series



- General purpose radial leaded

Operating Temperature Tolerance -55°C to +105°C ±20%

µF	Dia	L	Lead Pitch	Lead. Dia.	Ripple (mA) @ 10kHz +85°C	ESR (mΩ) @ 100kHz	Mfrs. List No.	Order Code
6.3 Volt d.c.								
150	8	10.5	3.5	0.5	1720	43	6SA150M	918-9688
330	10	10.5	5	0.6	3500	25	6SA330M	918-8657
10 Volt d.c.								
10	5	6.8	2	0.45	385	200	10SC10M	918-9483
22	6.3	6.8	2.5	0.45	616	150	10SC22M	918-9491
47	6.3	9.8	2.5	0.5	994	125	10SC47M	918-9505
68	6.3	9.8	2.5	0.5	1140	90	10SA68M	918-9513
220	10	10.5	5	0.6	2090	45	10SA220M	918-9521
6.3 Volt d.c. Price Each								
µF	Order Code	1+	50+	100+	1K+			
150	918-9688	1.81	1.67	1.58	1.35			
330	918-8657	2.03	1.76	1.57	1.44			
10 Volt d.c.								
10	918-9483	0.73	0.70	0.66	0.59			
22	918-9491	1.11	1.04	0.98	0.82			
47	918-9505	1.44	1.34	1.26	1.05			
68	918-9513	1.25	1.18	1.11	0.95			
220	918-9521	2.43	2.30	2.19	1.84			
16 Volt d.c.								
µF	Dia	L	Lead Pitch	Lead. Dia.	Ripple (mA) @ 10kHz +85°C	ESR (mΩ) @ 100kHz	Mfrs. List No.	Order Code
3.3	4	6.8	2	0.45	242	350	16SC3R3M	918-9530
6.8	5	6.8	2	0.45	378	200	16SC6R8M	918-9548
22	6.3	9.8	2.5	0.5	889	125	16SC22M	918-9564
33	6.3	9.8	2.5	0.5	938	125	16SC33M	918-9572
47	6.3	9.8	2.5	0.6	1830	60	16SA47M	918-8673
100	8	10.5	3.5	0.5	1480	45	16SA100M	918-9580
470	12.5	22	5	0.8	3752	20	16SA470M	918-9599
16 Volt d.c. Price Each								
µF	Order Code	1+	50+	100+	1K+			
3.3	918-9530	0.210	0.200	0.194	0.171			
6.8	918-9548	0.470	0.440	0.420	0.360			
22	918-9564	1.000	0.940	0.880	0.760			
33	918-9572	1.440	1.340	1.260	1.050			
47	918-8673	1.120	0.990	0.860	0.790			
100	918-9580	1.960	1.860	1.760	1.470			
470	918-9599	5.850	5.330	4.810	3.920			
20 Volt d.c								



Aluminium Electrolytic - Solid Aluminium - Sanyo - continued

SC - SA Series - continued

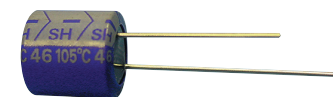
25 Volt d.c.	µF	Dia	L	Lead Pitch	Lead Dia.	Ripple (mA) @ 10kHz +85°C	ESR (mΩ) @ 100kHz	Mfrs. List No.	Order Code
4.7	6.3	6.8	2.5	0.45		371	150	25SC4R7M	918-9629
10	6.3	6.8	2.5	0.45		1150	90	25SC10M	918-8690
15	6.3	9.8	2.5	0.5		784	125	25SC15M	918-9645
22	8	10.5	3.5	0.5		889	125	25SC22M	918-9653
33	10	10.5	5	0.5		1575	40	25SC33M	918-9661
47	10	10.5	5	0.5		1610	40	25SC47M	918-9670

25 Volt d.c.	µF	Order Code	1+	50+	100+	1K+
4.7		918-9629	0.67	0.62	0.57	0.48
10		918-8690	0.89	0.80	0.70	0.63
15		918-9645	1.40	1.30	1.19	1.01
22		918-9653	1.56	1.43	1.29	1.07
33		918-9661	2.58	2.34	2.14	1.76
47		918-9670	3.17	2.88	2.59	2.14

30 Volt d.c.	µF	Dia	L	Lead Pitch	Lead Dia.	Ripple (mA) @ 10kHz +85°C	ESR (mΩ) @ 100kHz	Mfrs. List No.	Order Code
1	4	6.8	2	0.45		430	350	30SC1M	918-8703
10	8	10.5	3.5	0.6		1380	110	30SC10M	918-8711
22	10	10.5	5	0.6		1830	80	30SC22M	918-8720

30 Volt d.c.	µF	Order Code	1+	50+	100+	1K+
1		918-8703	0.66	0.58	0.52	0.49
10		918-8711	2.42	2.12	1.88	1.71
22		918-8720	2.85	2.51	2.21	2.02

SH Series



- Low ESR
- Ripple current ratings guaranteed at 105°C
- No derating required on max. allowable ripple current
- Long life - 5000 hrs

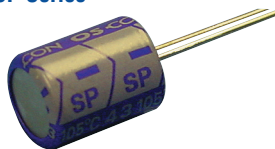
Operating temperature	Tolerance	Operating life @ 105°C	Ripple (mA) @ 100kHz, 45°C	ESR (mΩ) @ 100kHz to 300kHz	H	Dia.	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
-55°C to +105°C	±20%	5000 hrs								

6.3 Volt d.c.	µF	Order Code	1+	50+	100+	1K+			
47	1430		60	6.8	6.3	0.45	2.5	6SH47M	918-9238
150	2780		30	10.5	8	0.6	3.5	6SH150M	918-9246
330	3500		25	10.5	10	0.6	5	6SH330M	918-9254
10 Volt d.c.									
10	780		150	6.8	5	0.45	2	10SH10M	918-9262
68	2000		50	9.8	6.3	0.6	2.5	10SH68M	918-9270
220	3370		27	10.5	10	0.6	5	10SH220M	918-9289
16 Volt d.c.									
2.2	450		280	6.8	4	0.45	2	16SH2.2M	918-9297
4.7	720		180	6.8	5	0.45	2	16SH4.7M	918-9300
33	1370		70	6.8	6.3	0.45	2.5	16SH33M	918-9327
47	1830		60	9.8	6.3	0.6	2.5	16SH47M	918-9335
100	2740		30	10.5	8	0.6	3.5	16SH100M	918-9343
150	3260		28	10.5	10	0.6	5	16SH150M	918-9351
20 Volt d.c.									
22	1300		70	6.8	6.3	0.45	2.5	20SH22M	918-9378
33	1710		70	9.8	6.3	0.6	2.5	20SH33M	918-9386
47	2450		40	10.5	8	0.6	3.5	20SH47M	918-9394
68	2600		36	10.5	8	0.6	3.5	20SH68M	918-9408
100	3210		30	10.5	10	0.6	5	20SH100M	918-9416
25 Volt d.c.									
1	430		350	6.8	4	0.45	2	25SH1M	918-9424
1.5	435		300	6.8	4	0.45	2	25SH1.5M	918-9432
4.7	1130		100	6.8	6.3	0.45	2.5	25SH4.7M	918-9440
6.8	1140		100	6.8	6.3	0.45	2.5	25SH6.8M	918-9459
10	1150		90	6.8	6.3	0.45	2.5	25SH10M	918-9467
15	1650		70	9.8	6.3	0.6	2.5	25SH15M	918-9475

µF	Order Code	1+	50+	100+	1K+
47	918-9238	1.50	1.32	1.18	1.05
150	918-9246	2.63	2.27	2.02	1.82
330	918-9254	2.89	2.55	2.23	2.03
10 Volt d.c.					
10	918-9262	0.63	0.56	0.51	0.48
68	918-9270	1.28	1.12	0.98	0.88
220	918-9289	2.23	1.96	1.72	1.56
16 Volt d.c.					
2.2	918-9297	0.39	0.33	0.30	0.28
4.7	918-9300	0.63	0.56	0.51	0.48
33	918-9327	1.65	1.46	1.27	1.14

µF	Order Code	1+	50+	100+	1K+
47	918-9335	0.79	0.69	0.62	0.61
100	918-9343	2.01	1.77	1.54	1.41
150	918-9351	2.45	2.17	1.89	1.74
20 Volt d.c.					
22	918-9378	1.38	1.21	1.07	0.98
33	918-9386	1.74	1.53	1.34	1.21
47	918-9394	2.02	1.74	1.55	1.40
68	918-9408	2.71	2.39	2.09	1.91
100	918-9416	2.23	1.96	1.72	1.56
25 Volt d.c.					
1	918-9424	0.52	0.47	0.43	0.40
1.5	918-9432	0.41	0.35	0.32	0.30
4.7	918-9440	1.01	0.87	0.77	0.70
6.8	918-9459	0.99	0.87	0.77	0.70
10	918-9467	1.38	1.21	1.07	0.98
15	918-9475	1.28	1.13	1.01	0.95

SP Series



- Low ESR
- Ripple current ratings guaranteed at 105°C
- No derating required on max. allowable ripple current
- For designing around MPUs for computer equipment and audio applications
- Adopted OFC (Oxygen Free Copper) wire for improved tone quality

Operating temperature	Tolerance	Ripple (mA) @ 100kHz, 45°C	ESR (mΩ) @ 100kHz to 300kHz	H	Dia.	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
-55°C to +105°C	±20%								
10 Volt d.c.									
100	2350	32	5	8	0.6	3.5	10SP100M	121-7611	
470	4510	15	10.5	10	0.6	5	10SP470M	121-7612	
16 Volt d.c.									
33	1580	50	5	6.3	0.6	2.5	16SP33M	121-7613	
20 Volt d.c.									
22	1580	50	5	6.3	0.6	2.5	20SP22M	121-7614	
47	2210	36	5	8	0.6	2.5	20SP47M	121-7615	
25 Volt d.c.									
10	1560	55	6.8	6.3	0.6	2.5	25SP10M	121-7617	
56	3260	25	10.5	10	0.6	5	25SP56M	121-7618	

µF	Order Code	1+	50+	100+	1K+
100	121-7611	1.82	1.60	1.45	1.30
470	121-7612	2.48	2.18	1.97	1.79
16 Volt d.c.					
33	121-7613	0.68	0.58	0.54	0.49
20 Volt d.c.					
22	121-7614	1.83	1.60	1.46	1.34
47	121-7615	2.50	2.17	1.96	1.78
25 Volt d.c.					
10	121-7617	2.00	1.75	1.59	1.45
56	121-7618	3.40	3.00	2.69	2.45

Aluminium Electrolytic - Solid Aluminium - Vishay

128 SAL-RPM Series



- High performance
- Extremely long operating life
- Extended operating temperature

Operating temperature	Tolerance	DC leakage current	Operating life @ 40°C
-55°C to +125°C (6.3 to 25V)	±20%	0.025CV or 2µA whichever is >	>300,000 hrs
-55°C to +85°C (40V)			

Volt d.c.	µF	ESR (Ω) @ 100Hz	Impedance (Ω) @ 100kHz	Dimensions H W D	Mfrs. List No.	Order Code
6.3	10	20	3	9.5 7 3.5	2222 128 53109	116-6612
6.3	22	9	1	9.5 7 4	2222 128 53229	116-6613
6.3	47	4.8	0.5	9.5 8 5	2222 128 53479	116-6614
6.3	68	3	0.5	9.5 8 6	2222 128 53689	116-6615
10	4.7	43	3	9.5 7 3.5	2222 128 54478	116-6616
10	22	9	1.7	9.5 7 5	2222 128 54229	116-6618
10	33	6.1	0.5	9.5 8 5	2222 128 54339	116-6619
10	47	4.3	0.5	9.5 8 6	2222 128 54479	116-6620
16	2.2	91	5	9.5 7 3.5	2222 128 55228	116-6622
16	4.7	43	2	9.5 7 4	2222 128 55478	116-6623
16	6.8	30	1.5	9.5 7 4	2222 128 55688	116-6624
16	10	20	1	9.5 7 5	2222 128 55109	116-6625

Volt d.c	ESR (Ω) @ 100kHz	Impedance (Ω) @ 100kHz	Dimensions			Mfrs. List No.	Order Code
			H	W	D		
16 15	14	0.7	9.5	8	5	2222 128 55159	116-6626
16 22	9	0.7	9.5	8	6	MAL212855229	116-6627
25 1	200	15	9.5	7	3.5	2222 128 56108	116-6628
25 4.7	43	5	9.5	8	5	2222 128 56478	116-6630
25 10	20	2	9.5	8	6	2222 128 56109	116-6632
40 0.47	430	15	9.5	7	5	2222 128 37477	116-6596
40 1	200	10	9.5	8	6	2222 128 57108	116-6634

208503

Order Multiple=5		Price Each				
Volt d.c.	μF	Order Code	5+	100+	1K+	3K+
6.3	10	116-6612	1.44	1.05	0.92	0.71
6.3	22	116-6613	1.30	1.06	0.89	0.81
6.3	47	116-6614	0.88	0.69	0.58	0.50
6.3	68	116-6615	1.66	1.19	0.98	0.80
10	4.7	116-6616	1.09	0.86	0.73	0.65
10	22	116-6618	1.60	1.27	1.02	0.95
10	33	116-6619	1.83	1.45	1.21	1.04
10	47	116-6620	1.51	1.18	1.01	0.88
16	2.2	116-6622	1.64	1.24	1.00	0.93
16	4.7	116-6623	1.15	0.92	0.78	0.69
16	6.8	116-6624	1.34	1.04	0.84	0.83
16	10	116-6625	1.52	1.21	1.02	0.91
16	15	116-6626	1.87	1.24	1.08	1.05
16	22	116-6627	1.86	1.40	1.05	1.04
25	1	116-6628	1.50	1.12	0.99	0.88
25	4.7	116-6630	1.46	1.09	0.87	0.84
25	10	116-6632	1.55	1.30	1.12	1.01
40	0.47	116-6596	1.30	0.97	0.85	0.80
40	1	116-6634	1.84	1.34	1.12	0.88

Aluminium Electrolytic - Axial - Multicomp

ECA 1 Series — General Purpose



- General purpose 85°C
- Axial leaded electrolytic

Lead Length=30mm

Operating temp. -40°C to +85°C; 10 to 100V dc DC leakage current 0.02CV or 3μA; 10 to 100V d.c. -25°C to +85°C; 250 to 450V d.c. 0.03CV or 15μA (CV<1000)

Tolerance	Dimensions		Lead Dia	Order Code	Dimensions		Lead Dia	Order Code
±20%	μF	L Dia.		μF	L Dia.			
	470	16 8	0.6	941-8288	4700	28 16	0.8	941-8318
	1000	17 10	0.6	941-8296				
	2200	22 13	0.6	941-8300				

Order Multiple=5		Price Each					
10 Volt dc	μF	Order Code	5+	50+	100+	500+	1K+
470	941-8288	0.190	0.167	0.145	0.130	0.119	
1000	941-8296	0.260	0.240	0.220	0.191	0.175	
2200	941-8300	0.184	0.162	0.153	0.133	0.128	
4700	941-8318	0.300	0.280	0.260	0.240	0.210	

16 Volt d.c.	Dimensions	Lead Dia	Order Code	16 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
22	13 5	0.6	941-8326	1000	21 10	0.6	941-8369
100	14 6.3	0.6	941-8334	2200	24 13	0.6	941-8377
220	13 8	0.6	941-8342	4700	33 16	0.8	941-8385
470	16 8	0.6	941-8350				

Order Multiple=5		Price Each					
16 Volt dc	μF	Order Code	5+	50+	100+	500+	1K+
22	941-8326	0.126	0.112	0.104	0.088	0.082	
100	941-8334	0.127	0.112	0.105	0.089	0.083	
220	941-8342	0.181	0.165	0.146	0.129	0.119	
470	941-8350	0.096	0.086	0.080	0.068	0.061	
1000	941-8369	0.260	0.240	0.230	0.194	0.185	
2200	941-8377	0.480	0.430	0.400	0.360	0.320	
4700	941-8385	0.810	0.750	0.710	0.600	0.540	

25 Volt d.c.	Dimensions	Lead Dia	Order Code	25 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
10	13 5	0.6	941-8393	470	21 10	0.6	941-8440
22	13 5	0.6	941-8407	1000	22 13	0.6	941-8458
47	13 6	0.6	941-8415	2200	28 16	0.6	941-8466
100	13 8	0.6	941-8423	4700	36 18	0.8	941-8482
220	16 8	0.6	941-8431				

Order Multiple=5		Price Each					
25 Volt dc	μF	Order Code	5+	50+	100+	500+	1K+
10	941-8393	0.121	0.106	0.099	0.083	0.078	
22	941-8407	0.126	0.110	0.098	0.087	0.081	
47	941-8415	0.131	0.121	0.109	0.096	0.086	
100	941-8423	0.170	0.153	0.137	0.122	0.110	
220	941-8431	0.190	0.171	0.157	0.134	0.125	
470	941-8440	0.137	0.114	0.110	0.092	0.086	
1000	941-8458	0.470	0.420	0.400	0.340	0.320	
2200	941-8466	0.810	0.740	0.700	0.600	0.540	
4700	941-8482	1.460	1.340	1.230	1.080	0.980	

35 Volt d.c.	Dimensions	Lead Dia	Order Code	35 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
22	13 6	0.6	941-8490	1000	27 13	0.6	941-8539
100	16 8	0.6	941-8504	2200	36 16	0.8	941-8547
220	17 10	0.6	941-8512	4700	43 22	0.8	941-8555
470	22 13	0.6	941-8520				

Order Multiple=5		Price Each					
35 Volt dc	μF	Order Code	5+	50+	100+	500+	1K+
22	941-8490	0.130	0.120	0.108	0.095	0.086	
100	941-8504	0.179	0.162	0.146	0.129	0.119	
220	941-8512	0.220	0.194	0.181	0.153	0.141	
470	941-8520	0.340	0.300	0.260	0.240	0.220	
1000	941-8539	0.490	0.460	0.410	0.370	0.330	
2200	941-8547	0.850	0.780	0.730	0.620	0.570	
4700	941-8555	1.700	1.520	1.370	1.210	1.110	

63 Volt d.c.	Dimensions	Lead Dia	Order Code	63 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
22	14 6.3	0.6	941-8563	1000	33 16	0.8	941-8610
47	16 8	0.6	941-8571	2200	42 20	0.8	941-8628
100	17 10	0.6	941-8580	4700	52 25	0.8	941-8636
220	22 13	0.6	941-8598				
470	27 13	0.6	941-8601				

Order Multiple=5		Price Each					
63 Volt dc	μF	Order Code	5+	50+	100+	500+	1K+
22	941-8563	0.165	0.147	0.134	0.118	0.108	
47	941-8571	0.189	0.167	0.157	0.134	0.133	
100	941-8580	0.240	0.230	0.210	0.179	0.173	
220	941-8598	0.420	0.390	0.340	0.300	0.260	
470	941-8601	0.660	0.580	0.550	0.480	0.430	
1000	941-8610	1.250	1.120	1.010	0.890	0.810	
2200	941-8628	2.280	2.000	1.840	1.590	1.450	
4700	941-8636	3.830	3.490	3.170	2.760	2.530	

100 Volt d.c.	Dimensions	Lead Dia	Order Code	100 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
2.2	13 5	0.6	941-8644	47	21 10	0.6	941-8679
4.7	13 6	0.6	941-8652	100	22 13	0.6	941-8687
22	6 8	0.6	941-8660				

Order Multiple=5		Price Each					
100 Volt dc	μF	Order Code	5+	50+	100+	500+	1K+
2.2	941-8644	0.126	0.110	0.098	0.087	0.081	
4.7	941-8652	0.096	0.091	0.084	0.076	0.070	
22	941-8660	0.147	0.136	0.129	0.111	0.108	
47	941-8679	0.310	0.260	0.240	0.220	0.192	
100	941-8687	0.480	0.430	0.400	0.360	0.320	

250 Volt d.c.	Dimensions	Lead Dia	Order Code	250 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
4.7	20 8	0.6	941-8695	100	40 16	0.8	941-8725
10	21 10	0.6	941-8709				
22	26 13	0.6	941-8717				

Order Multiple=1		Price Each					
250 Volt dc	μF	Order Code	1+	50+	100+	500+	1K+
4.7	941-8695	0.63	0.58	0.54	0.48	0.43	
10	941-8709	0.81	0.73	0.63	0.56	0.54	
22	941-8717	0.83	0.76	0.71	0.68	0.64	
100	941-8725	1.15	1.03	0.95	0.88	0.85	

450 Volt d.c.	Dimensions	Lead Dia	Order Code	450 Volt d.c.	Dimensions	Lead Dia	Order Code
μF	L Dia.		μF	L Dia.			μF
1	16 8	0.6	941-8733	22	32 16	0.8	941-8776
4.7	26 10	0.6	941-8750	100	50 25	0.8	941-8784
10	26 13	0.6	941-8768				

208517

Order Multiple=1		Price Each					
450 Volt dc	μF	Order Code	1+	50+	100+	500+	1K+
1	941-8733	0.49	0.45	0.42	0.39	0.34	
4.7	941-8750	0.75	0.65	0.57	0.53	0.51	
10	941-8768	0.97	0.82	0.75	0.66	0.63	
22	941-8776	1.75	1.52	1.34	1.22	1.13	
100	941-8784	4.26	3.94	3.62	3.11	2.63	



Aluminium Electrolytic - Axial - Multicomp - continued

ECA 2 Series — 105°C



- General purpose 105°C
 - Axial leaded electrolytic
- Lead length=30mm

Operating Temperature Tolerance: -40 to +105°C ±20%
 Dc leakage current: 0.02CV or 4µA whichever is greater

10 Volt dc µF	Dimensions L Dia.	Lead Dia.	Order Code	10 Volt dc µF	Dimensions L Dia.	Lead Dia.	Order Code
1000	17 10	0.6	941-8806	2200	22 13	0.6	941-8814

Order Multiple=5						
10 Volt dc						
µF	Order Code	5+	50+	100+	500+	1K+
1000	941-8806	0.300	0.240	0.230	0.198	0.184
2200	941-8814	0.470	0.420	0.400	0.340	0.320

16 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code	16 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code
100	14 6.3	0.6	941-8822	2200	24 13	0.6	941-8865
220	13 8	0.6	941-8830	4700	33 16	0.8	941-8873
470	16 8	0.6	941-8849				
1000	21 10	0.6	941-8857				

Order Multiple=5						
16 Volt dc						
µF	Order Code	5+	50+	100+	500+	1K+
100	941-8822	0.137	0.125	0.112	0.098	0.086
220	941-8830	0.181	0.162	0.146	0.129	0.119
470	941-8849	0.210	0.188	0.173	0.145	0.136
1000	941-8857	0.300	0.250	0.240	0.210	0.191
2200	941-8865	0.500	0.460	0.420	0.390	0.330
4700	941-8873	0.820	0.770	0.720	0.610	0.560

25 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code	25 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code
10	13 5	0.6	941-8881	470	21 10	0.6	941-8938
22	13 5	0.6	941-8890	1000	22 13	0.6	941-8946
47	13 6	0.6	941-8903	2200	28 16	0.8	941-8954
100	13 8	0.6	941-8911	4700	36 18	0.8	941-8962
220	16 8	0.6	941-8920				

Order Multiple=5						
25 Volt dc						
µF	Order Code	5+	50+	100+	500+	1K+
10	941-8881	0.127	0.112	0.105	0.089	0.083
22	941-8890	0.127	0.112	0.105	0.089	0.083
47	941-8903	0.135	0.125	0.111	0.098	0.086
100	941-8911	0.179	0.162	0.151	0.129	0.119
220	941-8920	0.200	0.181	0.167	0.141	0.133
470	941-8938	0.310	0.260	0.250	0.220	0.199
1000	941-8946	0.480	0.450	0.410	0.360	0.330
2200	941-8954	0.850	0.790	0.730	0.620	0.570
4700	941-8962	1.540	1.370	1.280	1.110	1.020

35 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code	35 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code
10	13 5	0.6	941-8970	470	22 13	0.6	941-9012
47	14 6.3	0.6	941-8989	1000	27 13	0.6	941-9020
100	16 8	0.6	941-8997	2200	36 16	0.8	941-9039
220	17 10	0.6	941-9004	4700	42 22	0.8	941-9047

Order Multiple=5						
35 Volt dc						
µF	Order Code	5+	50+	100+	500+	1K+
10	941-8970	0.137	0.126	0.113	0.101	0.093
47	941-8989	0.153	0.137	0.127	0.109	0.101
100	941-8997	0.193	0.177	0.158	0.137	0.127
220	941-9004	0.240	0.210	0.192	0.168	0.151
470	941-9012	0.340	0.310	0.260	0.240	0.220
1000	941-9020	0.540	0.490	0.460	0.400	0.370
2200	941-9039	2.090	1.920	1.810	1.560	1.430
4700	941-9047	2.180	2.000	1.880	1.670	1.470

63 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code	63 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code
10	13 6	0.6	941-9055	220	22 13	0.6	941-9098
22	14 6.3	0.6	941-9063	470	27 13	0.6	941-9101
47	16 8	0.6	941-9071	1000	33 16	0.8	941-9110
100	17 10	0.6	941-9080	2200	42 20	0.8	941-9128

Order Multiple=5

63 Volt dc						
µF	Order Code	5+	50+	100+	500+	1K+
10	941-9055	0.127	0.113	0.105	0.089	0.085
22	941-9063	0.175	0.159	0.141	0.127	0.112
47	941-9071	0.194	0.176	0.162	0.138	0.129
100	941-9080	0.260	0.240	0.220	0.193	0.173
220	941-9098	0.430	0.400	0.370	0.310	0.300
470	941-9101	0.720	0.620	0.570	0.500	0.470
1000	941-9110	1.320	1.200	1.090	0.950	0.870
2200	941-9128	2.700	2.440	2.250	1.920	1.800

100 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code	100 Volt d.c. µF	Dimensions L Dia.	Lead Dia.	Order Code
1	13 5	0.6	941-9136	22	16 8	0.6	941-9179
2.2	13 5	0.6	941-9144	47	21 10	0.6	941-9187
4.7	13 6	0.6	941-9152	100	22 13	0.6	941-9195
10	14 6.3	0.6	941-9160				

Order Multiple=5

100 Volt dc						
µF	Order Code	5+	50+	100+	500+	1K+
1	941-9136	0.127	0.112	0.105	0.089	0.083
2.2	941-9144	0.127	0.112	0.105	0.089	0.083
4.7	941-9152	0.134	0.123	0.111	0.098	0.088
10	941-9160	0.175	0.159	0.141	0.126	0.112
22	941-9179	0.162	0.144	0.132	0.113	0.106
47	941-9187	0.320	0.300	0.250	0.230	0.200
100	941-9195	0.500	0.460	0.420	0.410	0.330

Aluminium Electrolytic - Axial - Evox Rifa

PEG Series



PEG 226 is a new generation of high performance axial electrolytic capacitors, designed for automotive applications with extremely high demands.

Operating Temperature -40°C to +105°C

µF	Voltage	Dimensions H Dia.	Tolerance	Mfrs. List No.	Order Code
PEG225 Series					
2200	25V	26.5 16	± 20%	PEG225HF4220ME1	167-8925
3000	25V	34.5 16	± 20%	PEG225HG4300ME1	167-8926
4800	25V	34.5 20	+30%, -10%	PEG225HJ4480QE1	167-8927
1200	40V	26.5 16	± 20%	PEG225KF4120ME1	167-8928
1800	40V	34.5 16	± 20%	PEG225KG4180ME1	167-8931
3000	40V	34.5 20	+30%, -10%	PEG225KJ4300QE1	167-8932
470	63V	26.5 16	+30%, -10%	PEG225MF3470QE1	167-8933
680	63V	34.5 16	+30%, -10%	PEG225MG3680QE1	167-8934
1400	63V	34.5 20	+30%, -10%	PEG225MJ4140QE1	167-8935
PEG220 Series					
800	40V	26.5 16	+30%, -10%	PEG220KF3800QE1	167-8937
2700	40V	42.5 20	+30%, -10%	PEG220KL4270QE1	167-8938
PEG226 Series					
1500	25V	26.5 16	± 20%	PEG226HF4150ME1	167-8939
800	40V	26.5 16	+30%, -10%	PEG226KF3800QE1	167-8940

Order Multiple=1

Price Each						
µF	Order Code	1+	10+	25+	50+	100+
PEG225 Series						
2200	167-8925	3.02	2.87	2.78	2.57	2.32
3000	167-8926	3.33	3.14	3.03	2.79	2.49
4800	167-8927	3.04	2.89	2.78	2.59	2.33
1200	167-8928	3.02	2.87	2.77	2.57	2.32
1800	167-8931	3.02	2.88	2.77	2.57	2.32
3000	167-8932	3.28	3.10	2.99	2.75	2.47
470	167-8933	3.35	3.16	3.04	2.80	2.50
680	167-8934	3.33	3.15	3.03	2.79	2.50
1400	167-8935	3.29	3.11	2.99	2.76	2.47
PEG220 Series						
800	167-8937	2.69	2.54	2.45	2.25	2.10
2700	167-8938	3.03	2.88	2.77	2.58	2.32
PEG226 Series						
1500	167-8939	3.35	3.16	3.04	2.80	2.50
800	167-8940	3.35	3.16	3.04	2.80	2.51

Aluminium Electrolytic - Axial - Vishay

021 ASM Series – Miniature Long Life



Lead dia = 0.8

Operating Temperature: -55°C to +85°C
 Tolerance: ±20%
 Climatic category (IEC68): 55/085/56

- Long life aluminium electrolytic
- High gain foil for smaller dimensions
- High CV per unit volume

DC Leakage current: 0.006CV + 4µA
 Ripple Current measured at: 100Hz @ 85°C
 Useful life @ 85°C: 2500 hrs (L10 to 25), 5000 hrs (L30 to 40)

16 Volt d.c.	Ripple μF	ESR (Ω)	Dimensions L Dia.	Mfrs. List No.	Order Code
1000	530	0.26	30.5 10.5	MAL202115102E3	116-5376
2200	880	0.15	30.5 13	MAL202115222E3	116-5377
3300	1120	0.111	30.5 15.5	MAL202115332E3	116-5378
4700	1380	0.087	30.5 18.5	MAL202115472E3	116-5381
10000	2100	0.058	41.5 21.5	MAL202115103E3	116-5382

16 Volt dc		Price Each			
μF	Order Code	1+	100+	1K+	3K+
1000	116-5376	1.69	1.24	0.93	0.76
2200	116-5377	2.16	1.57	1.18	0.96
3300	116-5378	2.55	1.87	1.40	1.14
4700	116-5381	2.23	2.14	1.77	1.45
10000	116-5382	5.76	4.21	3.15	2.57

25 Volt d.c.	Ripple (mA)	ESR (Ω)	Dimensions L Dia.	Mfrs. List No.	Order Code
47	80	4.8	10 4.5	2222 021 36479	116-5466
100	150	2.3	10 6	2222 021 36101	116-5467
220	250	1	18 6.5	2222 021 36221	116-5468
470	450	0.48	18 10	2222 021 36471	116-5469
680	480	0.323	30.5 10.5	MAL202116681E3	116-5383
1000	480	0.22	30.5 13	MAL202116102E3	116-5384
1500	780	0.179	30.5 13	MAL202116152E3	116-5385
2200	1020	0.132	30.5 15.5	MAL202116222E3	116-5386
3300	1240	0.099	30.5 18.5	MAL202116332E3	116-5387
4700	1650	0.079	41.5 18.5	MAL202190062E3	118-7040
6800	2000	0.064	41.5 21.5	MAL202116682E3	116-5388

25 Volt dc		Price Each			
μF	Order Code	1+	100+	1K+	3K+
47	116-5466	0.32	0.23	0.21	0.20
100	116-5467	0.30	0.27	0.26	0.23
220	116-5468	0.46	0.33	0.30	0.29
470	116-5469	1.11	0.81	0.61	0.49
680	116-5383	1.19	0.94	0.80	0.70
1000	116-5384	1.22	0.92	0.84	0.75
1500	116-5385	2.18	1.59	1.19	0.97
2200	116-5386	1.19	1.05	0.96	0.93
3300	116-5387	3.17	2.31	1.73	1.42
4700	118-7040	3.94	2.88	2.15	1.76
6800	116-5388	3.15	2.41	1.85	1.45

40 Volt d.c.	Ripple (mA)	ESR (Ω)	Dimensions L Dia.	Mfrs. List No.	Order Code
22	60	8	10 4.5	MAL202137229E3	116-5470
47	110	3.8	10 6	MAL202137479E3	116-5472
100	190	1.8	18 6.5	2222 021 37101	116-5473
220	440	0.8	18 10	2222 021 37221	116-5474
470	440	0.404	30.5 10.5	MAL202117471E3	116-5389
680	580	0.279	30.5 13	MAL202117681E3	116-5390
1000	730	0.19	30.5 13	MAL202117102E3	116-5391
1500	815	0.159	30.5 15.5	MAL202117152E3	116-5393
2200	1170	0.118	30.5 18.5	MAL202117222E3	116-5394
3300	1500	0.09	41.5 18.5	MAL202117332E3	116-5395
4700	1815	0.072	41.5 21.5	MAL202117472E3	118-7042

40 Volt dc		Price Each			
μF	Order Code	1+	100+	1K+	3K+
22	116-5470	0.27	0.24	0.22	0.21
47	116-5472	0.64	0.48	0.36	0.30
100	116-5473	0.82	0.60	0.45	0.36
220	116-5474	1.08	0.79	0.60	0.47
470	116-5389	1.65	1.20	0.90	0.73
680	116-5390	1.83	1.33	1.00	0.81
1000	116-5391	1.03	0.83	0.71	0.69
1500	116-5393	1.43	1.06	0.86	0.69
2200	116-5394	1.39	1.21	1.10	1.04
3300	116-5395	4.19	3.06	2.30	1.88
4700	118-7042	4.58	3.62	3.06	2.73

63 Volt d.c.	Ripple (mA)	ESR (Ω)	Dimensions L Dia.	Mfrs. List No.	Order Code
4.7	31	31	10 4.5	2222 021 38478	116-5475
10	31	13	10 4.5	2222 021 38109	116-5476
22	90	5.8	10 6	2222 021 38229	116-5477
47	150	2.7	18 6.5	2222 021 38479	116-5478
100	250	1.3	18 8	2222 021 38101	116-5479
220	350	0.614	30.5 10.5	MAL202118221E3	116-5396
470	570	0.287	30.5 13	MAL202118471E3	116-5397
680	770	0.199	30.5 15.5	MAL202118681E3	116-5398
1000	1035	0.135	30.5 18.5	MAL202118102E3	116-5399
2200	1740	0.099	41.5 21.5	MAL202118222E3	116-5400

63 Volt dc		Price Each			
μF	Order Code	1+	100+	1K+	3K+
4.7	116-5475	0.550	0.410	0.300	0.250
10	116-5476	0.280	--	--	--
22	116-5477	0.270	0.220	0.200	0.192
47	116-5478	0.390	0.340	0.310	0.300
100	116-5479	0.430	0.370	0.340	0.320
220	116-5396	0.840	0.760	0.690	0.610
470	116-5397	0.970	0.860	0.780	0.740
680	116-5398	2.480	1.800	1.350	1.110
1000	116-5399	1.490	1.320	1.200	1.160
2200	116-5400	3.040	2.680	2.430	2.170

100 Volt d.c.	Ripple μF	ESR (Ω)	Dimensions L Dia.	Mfrs. List No.	Order Code
100	262	1.15	30.5 10.5	MAL202119101E3	116-5401
220	560	0.61	30 12.5	2222 021 19221	116-5480
470	695	0.31	30.5 18.5	2222 021 19471	116-5402
1000	1161	0.16	41.5 21.5	2222 021 19102	116-5403

100 Volt dc		Price Each			
μF	Order Code	1+	100+	1K+	3K+
100	116-5401	0.86	0.75	0.69	0.68
220	116-5480	0.99	0.87	0.79	0.72
470	116-5402	1.64	1.26	0.96	0.75
1000	116-5403	5.60	--	--	--

030/031 AS Series



● General purpose axial leaded electrolytic capacitors

Operating Temperature -40°C to +85°C Useful life @ 85°C 3000
 Tolerance 10% to +50% DC leakage current 0.006CV +4μA
 Ripple Current Measured at 100Hz @ 85°C Climatic category (IEC68) 55/085/56

6.3 Volt d.c.	Ripple (mA)	Dimensions L Dia.	Lead Dia	Mfrs. List No.	Order Code
150	87	10.5 6.3	0.6	MAL203033151E3	116-5404
470	220	18.5 8.3	0.8	MAL203133471E3	116-5405

6.3 Volt dc		Price Each			
μF	Order Code	5+	100+	1K+	3K+
150	116-5404	0.300	0.240	0.210	0.184
470	116-5405	0.470	0.370	0.310	0.280

10 Volt d.c.	Ripple (mA)	Dimensions L Dia.	Lead Dia	Mfrs. List No.	Order Code
22	42	10.5 5	0.6	MAL203034229E3	116-5406
47	53	10.5 5	0.6	MAL203034479E3	116-5407
100	87	10.5 6.3	0.6	MAL203034101E3	116-5408
220	150	11.5 8.5	0.6	MAL203034221E3	116-5412
330	220	18.5 8.5	0.8	MAL203134331E3	116-5413

10 Volt dc		Price Each			
μF	Order Code	5+	100+	1K+	3K+
22	116-5406	0.168	0.129	0.111	0.096
47	116-5407	0.370	0.290	0.250	0.220
100	116-5408	0.390	0.290	0.250	0.220
220	116-5412	0.500	0.400	0.340	0.290
330	116-5413	0.590	0.460	0.400	0.340

16 Volt d.c.	Ripple (mA)	Dimensions L Dia.	Lead Dia	Mfrs. List No.	Order Code
15	42	10.5 5	0.6	MAL203035159E3	116-5414
33	53	10.5 5	0.6	MAL203035339E3	116-5415
68	87	10.5 6.3	0.6	MAL203035689E3	116-5416
150	150	11.5 8.5	0.6	MAL203035151E3	116-5417
220	220	18.5 8.5	0.8	MAL203135221E3	116-5418

16 Volt dc		Price Each			
μF	Order Code	5+	100+	1K+	3K+
15	116-5414	0.270	0.220	0.191	0.161
33	116-5415	0.330	0.260	0.210	0.186
68	116-5416	0.290	0.230	0.191	0.171
150	116-5417	0.320	0.260	0.230	0.200
220	116-5418	0.560	0.440	0.370	0.330

25 Volt d.c.	Ripple (mA)	Dimensions L Dia.	Lead Dia	Mfrs. List No.	Order Code
10	36	10.5 5	0.6	MAL203036109E3	116-5419
22	43	10.5 5	0.6	MAL203036229E3	116-5420
47	83	10.5 6.3	0.6	MAL203036479E3	116-5421
100	120	11.5 8.5	0.6	MAL203036101E3	116-5423
150	190	18.5 8.5	0.8	MAL203136151E3	116-5424

25 Volt dc		Price Each			
μF	Order Code	5+	100+	1K+	3K+
10	116-5419	0.370	0.290	0.250	0.200
22	116-5420	0.350	0.270	0.240	0.200
47	116-5421	0.410	0.330	0.270	0.220
100	116-5423	0.420	0.310	0.270	0.240
150	116-5424	0.370	0.300	0.240	0.173

40 Volt d.c.	Ripple (mA)	Dimensions L Dia.	Lead Dia	Mfrs. List No.	Order Code
6.8	36	10.5 5	0.6	MAL203037688E3	116-5425
15	43	10.5 5	0.6	MAL203037159E3	116-5426
33	83	10.5 6.3	0.6	MAL203037339E3	116-5427
47	120	11.5 8.5	0.6	MAL203037479E3	116-5428
100	190	18.5 8.5	0.8	MAL203137101E3	116-5429



Aluminium Electrolytic - Axial - Vishay - continued

030/031 AS Series - continued

Order Multiple=5

40 Volt dc		Price Each			
µF	Order Code	5+	100+	1K+	3K+
6.8	116-5425	0.310	0.250	0.220	0.181
15	116-5426	0.330	0.260	0.220	0.186
33	116-5427	0.330	0.260	0.220	0.196
47	116-5428	0.430	0.340	0.280	0.260
100	116-5429	0.490	0.390	0.330	0.290

63 Volt d.c.	Ripple (mA)	Dimensions L Dia.	Lead Dia.	Mftrs. List No.	Order Code
1	12	10.5 5	0.6	MAL203038108E3	116-5430
2.2	21	10.5 5	0.6	MAL203038228E3	116-5431
3.3	25	10.5 5	0.6	MAL203038338E3	116-5432
4.7	31	10.5 5	0.6	MAL203038478E3	116-5433
6.8	35	10.5 5	0.6	MAL203038688E3	116-5435
10	51	10.5 6.3	0.6	MAL203038109E3	116-5436
15	61	10.5 6.3	0.6	MAL203038159E3	116-5437
22	90	11.5 8.5	0.6	MAL203038229E3	116-5438
47	120	18.5 8.5	0.8	MAL203138479E3	116-5440

Order Multiple=5

63 Volt dc		Price Each			
µF	Order Code	5+	100+	1K+	3K+
1	116-5430	0.370	0.290	0.250	0.220
2.2	116-5431	0.340	0.270	0.220	0.200
3.3	116-5432	0.330	0.260	0.220	0.196
4.7	116-5433	0.330	0.260	0.220	0.193
6.8	116-5435	0.330	0.260	0.220	0.196
10	116-5436	0.340	0.270	0.230	0.200
15	116-5437	0.450	0.350	0.280	0.240
22	116-5438	0.510	0.410	0.340	0.290
47	116-5440	0.540	0.430	0.360	0.320

041 - 043 ASH Series - High Voltage



- High voltage
- Extended life



Lead Dia = 0.8

Operating Temperature: °C-40 to +85°C
 Tolerance: 10 to +50%
 Climatic category (IEC 68): 40/085/56
 Ripple current measured at 100Hz @ 85°C
 Useful life @ 85°C: ≥5000 hrs

160 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions L Dia.	Mftrs. List No.	Order Code
µF					
22	150	11	25 10	MAL204121229E3	116-5631
47	190	3.2	30 15	MAL204211479E3	116-5632
100	350	1.5	30 18	MAL204211101E3	116-5633
220	610	0.7	40 21	MAL204311221E3	116-5634

160 Volt dc		Price Each			
µF	Order Code	1+	100+	1K+	3K+
22	116-5631	0.74	0.59	0.49	0.44
47	116-5632	1.45	1.14	0.96	0.86
100	116-5633	1.73	1.36	1.15	1.03
220	116-5634	2.75	2.17	1.83	1.64

250 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions L Dia.	Mftrs. List No.	Order Code
µF					
2.2	35	72	18 6.5	MAL204133228E3	116-5635
10	90	16	25 10	MAL204133109E3	116-5636
22	130	6.8	30 12.5	MAL204213229E3	116-5637
47	220	3.2	30 18	MAL204213479E3	116-5638
100	390	1.5	38 21	MAL204313101E3	116-5639

250 Volt dc		Price Each			
µF	Order Code	1+	100+	1K+	3K+
2.2	116-5635	0.65	0.51	0.43	0.35
10	116-5636	0.88	0.70	0.59	0.53
22	116-5637	1.22	0.98	0.81	0.72
47	116-5638	1.72	1.35	1.14	1.02
100	116-5639	2.79	2.25	1.79	1.36

350 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions L Dia.	Mftrs. List No.	Order Code
µF					
4.7	60	34	18 10	MAL204135478E3	116-5640
10	90	15	30 12.5	MAL204225109E3	116-5642
22	140	6.8	30 15	MAL204215229E3	116-5643
47	270	3.2	40 18	MAL204315479E3	116-5644

350 Volt dc		Price Each			
µF	Order Code	1+	100+	1K+	3K+
4.7	116-5640	0.77	0.60	0.51	0.46
10	116-5642	0.74	0.66	0.60	0.56
22	116-5643	1.73	1.36	1.14	1.03
47	116-5644	3.36	2.65	2.25	2.00

385 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions L Dia.	Mftrs. List No.	Order Code
µF					
1	20	160	18 6.5	MAL204138108E3	116-5645
2.2	40	72	18 8	MAL204138228E3	116-5646

385 Volt dc		Price Each			
µF	Order Code	1+	100+	1K+	3K+
1	116-5645	0.340	0.240	0.189	0.134
2.2	116-5646	0.480	0.390	0.330	0.280

400 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions L Dia.	Mftrs. List No.	Order Code
µF					
10	130	7.5	30 12.5	MAL204226109E3	116-5648
22	210	3.5	30 18	MAL204216229E3	116-5649
47	330	1.7	40 18	MAL204316479E3	116-5650

400 Volt dc		Price Each			
µF	Order Code	1+	100+	1K+	3K+
10	116-5648	1.44	1.13	0.96	0.85
22	116-5649	2.08	1.64	1.38	1.25
47	116-5650	3.29	2.60	2.19	1.91

450 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions L Dia.	Mftrs. List No.	Order Code
µF					
10	90	10	30 12.5	MAL204217109E3	116-5651
22	140	4.1	30 15	MAL204217229E3	116-5652
47	250	2.1	40 18	MAL204317479E3	116-5654

450 Volt dc		Price Each			
µF	Order Code	1+	100+	1K+	3K+
10	116-5651	1.62	1.37	1.20	1.19
22	116-5652	2.34	1.99	1.88	1.73
47	116-5654	3.76	3.19	3.18	3.11

118 Series — Axial High Temperature



New

- Polarised aluminum electrolytic capacitors, non-solid electrolyte
- Charge and discharge proof
- Extended temperature range: 125 °C (usable up to 150 °C)

Normal case sizes (∅ D x L in mm): 6.5 x 18, 10 x 30, 10 x 25, 21 x 38
 Tolerance: ± 20%
 Climatic category (IEC 60068): 40/125/56, 55/125/56
 Useful life @ 125°C: 4000 hours, 8000 hours
 Ripple Current measured at 100 Hz, 125 °C

µF	Ripple (mA)	ESR max. (Ω) @ 100Hz	Dimensions H Dia.	Mftrs. List No.	Order Code
6.3 V					
1000	251	0.79	18 10	MAL2 118 33102 E3	169-5242
1500	352	0.53	25 10	MAL2 118 90503 E3	169-5243
10 V					
220	109	2.53	18 6.5	MAL2 118 34221 E3	169-5244
330	150	1.69	18 8	MAL2 118 34331 E3	169-5245
470	179	1.19	18 8	MAL2 118 34471 E3	169-5246
1000	343	0.56	25 10	MAL2 118 90505 E3	169-5247
2200	830	0.29	30 12.5	MAL2 118 24222 E3	169-5248
3300	1070	0.19	30 15	MAL2 118 24332 E3	169-5249
4700	1350	0.155	30 18	MAL2 118 14472 E3	169-5250
6800	1730	0.1	38 18	MAL2 118 14682 E3	169-5251
10000	1860	0.084	38 18	MAL2 118 14103 E3	169-5252
16 V					
220	145	1.81	18 8	MAL2 118 35221 E3	169-5254
330	204	1.21	18 10	MAL2 118 35331 E3	169-5255
470	243	0.85	18 10	MAL2 118 35471 E3	169-5256
680	510	0.525	30 10	MAL2 118 25681 E3	169-5257
1000	720	0.345	30 12.5	MAL2 118 90039 E3	169-5258
2200	1010	0.205	30 15	MAL2 118 25222 E3	169-5259
3300	1300	0.165	30 18	MAL2 118 15332 E3	169-5260
4700	1670	0.105	38 16	MAL2 118 15472 E3	169-5261
6800	1790	0.088	38 21	MAL2 118 15682 E3	169-5262
25 V					
100	102	2.86	18 6.5	MAL2 118 36101 E3	169-5263
220	196	1.3	18 10	MAL2 118 36221 E3	169-5264
330	274	0.87	25 10	MAL2 118 36331 E3	169-5266
470	490	0.61	25 10	MAL2 118 90509 E3	169-5267
680	680	0.42	30 12.5	MAL2 118 26681 E3	169-5268
1000	760	0.375	30 12.5	MAL2 118 26102 E3	169-5269
1500	980	0.263	30 15	MAL2 118 26152 E3	169-5270
2200	1240	0.185	30 18	MAL2 118 16222 E3	169-5271
3300	1610	0.12	38 18	MAL2 118 16332 E3	169-5272
4700	1710	0.095	38 21	MAL2 118 16472 E3	169-5273
40 V					
47	89.8	3.72	18 6.5	MAL2 118 37479 E3	169-5274
100	147	1.75	18 8	MAL2 118 37101 E3	169-5275
150	207	1.17	18 10	MAL2 118 37151 E3	169-5276
220	287	0.8	25 10	MAL2 118 90512 E3	169-5278
330	570	0.43	30 12.5	MAL2 118 27331 E3	169-5279
470	620	0.38	30 12.5	MAL2 118 27471 E3	169-5280
680	810	0.255	30 15	MAL2 118 27681 E3	169-5281
1000	1070	0.205	30 18	MAL2 118 17102 E3	169-5282
1500	1390	0.13	38 18	MAL2 118 17152 E3	169-5283
2200	1540	0.105	38 21	MAL2 118 17222 E3	169-5284
63 V					
1	16.4	110	18 6.5	MAL2 118 38108 E3	169-5285
2.2	24.3	51	18 6.5	MAL2 118 38228 E3	169-5286
4.7	35.6	24	18 6.5	MAL2 118 38478 E3	169-5287
10	51.9	11	18 6.5	MAL2 118 38109 E3	169-5288
22	77	5.1	18 6.5	MAL2 118 38229 E3	169-5291
47	126	2.4	18 8	MAL2 118 38479 E3	169-5292

	Ripple	ESR max. (Ω)	Dimensions		Mftrs.	
63 V						
100	243	1.1	25	10	MAL2 118 90514 E3	169-5293
150	490	1	30	12.5	MAL2 118 28151 E3	169-5294
220	550	0.94	30	12.5	MAL2 118 28221 E3	169-5295
330	730	0.63	30	15	MAL2 118 28331 E3	169-5296
470	970	0.44	30	18	MAL2 118 18471 E3	169-5297
680	1230	0.3	38	18	MAL2 118 18681 E3	169-5298
1000	1400	0.16	38	21	MAL2 118 18102 E3	169-5299
100 V						
4.7	36	24	18	6.5	MAL2 118 39478 E3	169-5300
10	52	11	18	6.5	MAL2 118 39109 E3	169-5301
22	91	5.1	18	8	MAL2 118 39229 E3	169-5302
33	140	3.4	25	10	MAL2 118 39339 E3	169-5303
47	170	2.6	25	10	MAL2 118 90536 E3	169-5304
68	320	1.8	30	12.5	MAL2 118 29689 E3	169-5305
150	500	0.94	30	15	MAL2 118 29151 E3	169-5306
220	690	0.66	30	18	MAL2 118 19221 E3	169-5308
330	890	0.45	38	18	MAL2 118 19331 E3	169-5309
470	1050	0.33	38	21	MAL2 118 19471 E3	169-5310
200 V						
2.2	27	44	18	6.5	MAL2 118 90538 E3	169-5311
4.7	46	21	18	8	MAL2 118 90541 E3	169-5312
10	85	9.4	25	10	MAL2 118 90543 E3	169-5313
15	150	4.76	30	10	MAL2 118 90012 E3	169-5314
22	210	3.17	30	12.5	MAL2 118 90013 E3	169-5315
33	290	2.11	30	15	MAL2 118 90014 E3	169-5316
47	390	1.48	30	18	MAL2 118 92479 E3	169-5317
68	500	1.02	38	18	MAL2 118 92689 E3	169-5318
100	610	0.96	38	21	MAL2 118 92101 E3	169-5321

Capacitance µF	Order Code	Price Each			
		1+	25+	100+	500+
63 V					
470	169-5297	5.60	4.26	3.34	3.04
680	169-5298	7.25	5.51	4.33	3.93
1000	169-5299	9.75	7.42	5.82	5.28
100 V					
4.7	169-5300	2.17	1.65	1.30	1.18
10	169-5301	2.17	1.65	1.30	1.18
22	169-5302	2.19	1.67	1.31	1.19
33	169-5303	2.34	1.78	1.39	1.27
47	169-5304	2.38	1.81	1.43	1.29
68	169-5305	3.21	2.44	1.92	1.75
150	169-5306	4.52	3.44	2.69	2.45
220	169-5308	5.64	4.29	3.36	3.06
330	169-5309	7.37	5.61	4.40	3.99
470	169-5310	9.62	7.32	5.74	5.22
200 V					
2.2	169-5311	2.13	1.62	1.28	1.15
4.7	169-5312	2.19	1.67	1.31	1.19
10	169-5313	2.38	1.81	1.43	1.29
15	169-5314	2.67	2.04	1.60	1.46
22	169-5315	3.13	2.38	1.88	1.71
33	169-5316	3.87	2.93	2.31	2.10
47	169-5317	4.78	3.64	2.85	2.60
68	169-5318	5.69	4.33	3.40	3.09
100	169-5321	8.24	6.27	4.92	4.46

Capacitance µF	Order Code	Price Each			
		1+	25+	100+	500+
6.3 V					
1000	169-5242	2.10	1.58	1.25	1.13
1500	169-5243	2.38	1.81	1.43	1.29
10 V					
220	169-5244	2.13	1.62	1.28	1.15
330	169-5245	2.19	1.67	1.31	1.19
470	169-5246	2.19	1.67	1.31	1.19
1000	169-5247	2.34	1.78	1.39	1.27
2200	169-5248	3.43	2.61	2.05	1.87
3300	169-5249	4.22	3.21	2.53	2.30
4700	169-5250	5.23	3.97	3.12	2.84
6800	169-5251	6.73	5.13	4.01	3.66
10000	169-5252	9.05	6.89	5.41	4.92
16 V					
220	169-5254	2.19	1.67	1.31	1.19
330	169-5255	2.26	1.72	1.34	1.23
470	169-5256	2.26	1.72	1.34	1.23
680	169-5257	2.57	1.96	1.54	1.39
1000	169-5258	2.90	2.21	1.74	1.57
2200	169-5259	3.86	2.92	2.31	2.10
3300	169-5260	4.93	3.74	2.95	2.67
4700	169-5261	6.28	4.78	3.74	3.41
6800	169-5262	8.31	6.32	4.97	4.52
25 V					
100	169-5263	2.13	1.62	1.28	1.15
220	169-5264	2.26	1.72	1.34	1.23
330	169-5266	2.38	1.81	1.43	1.29
470	169-5267	2.38	1.81	1.43	1.29
680	169-5268	3.10	2.36	1.86	1.69
1000	169-5269	3.63	2.77	2.16	1.97
1500	169-5270	4.43	3.37	2.65	2.41
2200	169-5271	5.59	4.25	3.33	3.03
3300	169-5272	7.37	5.61	4.40	3.99
4700	169-5273	9.62	7.32	5.74	5.22
40 V					
47	169-5274	2.13	1.62	1.28	1.15
100	169-5275	2.19	1.67	1.31	1.19
150	169-5276	2.26	1.72	1.34	1.23
220	169-5278	2.38	1.81	1.43	1.29
330	169-5279	3.08	2.35	1.84	1.67
470	169-5280	3.60	2.74	2.14	1.96
680	169-5281	4.26	3.23	2.55	2.32
1000	169-5282	5.34	4.07	3.19	2.89
1500	169-5283	7.02	5.34	4.19	3.82
2200	169-5284	9.34	7.10	5.59	5.07
63 V					
1	169-5285	2.13	1.62	1.28	1.15
2.2	169-5286	2.13	1.62	1.28	1.15
4.7	169-5287	2.13	1.62	1.28	1.15
10	169-5288	2.13	1.62	1.28	1.15
22	169-5291	2.13	1.62	1.28	1.15
47	169-5292	2.19	1.67	1.31	1.19
100	169-5293	2.38	1.81	1.43	1.29
150	169-5294	3.10	2.36	1.86	1.69
220	169-5295	3.65	2.78	2.18	1.98
330	169-5296	4.51	3.43	2.68	2.44

120 ATC Series 5mm - Long Life 125°C



Lead dia.=0.8 Supplied loose.

µF	Ripple (mA)	ESR max. (mΩ) @ 100Hz	Dimensions H Dia.	Mftrs. List No.	Order Code
16 Volt dc					
1000	2550	128	30 12.5	2222 120 15102	116-5546
2200	2940	79	30 15	2222 120 15222	116-5547
4700	4350	45	40 18	2222 120 15472	116-5548
25 Volt dc					
470	2100	187	30 10	2222 120 16471	116-5551
1000	2600	107	30 12.5	2222 120 16102	116-5552
2200	3310	71	30 18	2222 120 16222	116-5553
40 Volt dc					
220	1990	320	30 10	2222 120 17221	116-5555
470	2550	169	30 12.5	2222 120 17471	116-5556
1000	3150	99	30 18	2222 120 17102	116-5557
2200	4170	56	40 21	2222 120 17222	116-5559
63 Volt dc					
100	1560	495	30 10	2222 120 18101	116-5560
220	2150	249	30 12.5	2222 120 18221	116-5561
470	2860	135	30 18	2222 120 18471	116-5563
1000	3780	74	40 21	2222 120 18102	116-5564
100 Volt dc					
47	760	1269	30 10	2222 120 19479	116-5565
100	1140	648	30 12.5	2222 120 19101	116-5566
220	1960	302	30 18	2222 120 19221	116-5567

µF	Order Code	1+	10+	50+	100+	500+
16 Volt dc						
1000	116-5546	2.24	1.71	1.33	1.22	1.08
2200	116-5547	2.74	2.06	1.62	1.49	1.31
4700	116-5548	5.08	3.87	3.04	2.76	2.44
25 Volt dc						
470	116-5551	2.53	1.92	1.51	1.37	1.23
1000	116-5552	3.84	2.90	2.30	2.08	1.84
2200	116-5553	5.45	4.13	3.26	2.96	2.62
40 Volt dc						
220	116-5555	3.36	2.56	2.01	1.82	1.61
470	116-5556	3.68	2.80	2.21	2.00	1.78
1000	116-5557	3.95	--	--	--	--
2200	116-5559	9.68	7.36	5.79	5.26	4.66



Aluminium Electrolytic - Axial - Vishay - continued

120 ATC Series 5mm - Long Life 125°C - continued

µF	Order Code	Price Each				
		1+	10+	50+	100+	500+
63 Volt dc						
100	116-5560	3.02	2.31	1.80	1.64	1.47
220	116-5561	3.41	--	--	--	--
470	116-5563	4.15	3.17	2.48	2.26	2.00
1000	116-5564	8.94	6.80	5.34	4.85	4.32
100 Volt dc						
47	116-5565	2.05	--	--	--	--
100	116-5566	2.41	2.30	2.03	1.84	1.64
220	116-5567	5.38	--	--	--	--

Aluminium Electrolytic - Radial - Multicomp

MCUMR Series 5mm - 85°C



- Ultra miniature radial electrolytic capacitors
- 5mm profile for extra high density applications

µF	Ripple (mA) @ 120Hz 85°C	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.				
6.3 Volt d.c.							
100	70	5	5	0.45	2	MCUMR6V3107M5X5	945-2176
330	170	5	8	0.5	3.5	MCUMR6V3337M8X5	945-2184
16 Volt d.c.							
10	23	5	4	0.45	1.5	MCUMR16V106M4X5	945-2192
22	37	5	4	0.45	1.5	MCUMR16V226M4X5	945-2206
47	58	5	6.3	0.45	2.5	MCUMR16V476M6.3X5	945-2214
100	92	5	6.3	0.45	2.5	MCUMR16V107M6.3X5	945-2222
25 Volt d.c.							
4.7	16	5	4	0.45	1.5	MCUMR25V475M4X5	945-2230
10	27	5	4	0.45	1.5	MCUMR25V106M4X5	945-2249
22	42	5	5	0.45	2	MCUMR25V226M5X5	945-2257
33	52	5	6.3	0.45	2.5	MCUMR25V336M6.3X5	945-2265
35 Volt d.c.							
4.7	18	5	4	0.45	1.5	MCUMR35V475M4X5	945-2273
10	29	5	5	0.45	2	MCUMR35V106M5X5	945-2281
22	46	5	6.3	0.45	2.5	MCUMR35V226M6.3X5	945-2290
50 Volt d.c.							
1	28	5	4	0.45	1.5	MCUMR50V105M4X5	945-2303
4.7	20	5	5	0.45	2	MCUMR50V475M5X5	945-2320
10	33	5	6.3	0.45	2.5	MCUMR50V106M6.3X5	945-2338
22	52	5	8	0.5	3.5	MCUMR50V226M8X5	945-2346

µF	Order Code	Price Each				
		5+	25+	100+	500+	1K+
6.3 Volt d.c.						
100	945-2176	0.110	0.102	0.089	0.080	0.075
330	945-2184	0.280	0.260	0.210	0.190	0.182
16 Volt d.c.						
10	945-2192	0.082	0.074	0.067	0.056	0.054
22	945-2206	0.054	0.049	0.042	0.037	0.034
47	945-2214	0.110	0.109	0.096	0.087	0.076
100	945-2222	0.290	0.270	0.210	0.194	0.191
25 Volt d.c.						
4.7	945-2230	0.060	0.056	0.046	0.045	0.042
10	945-2249	0.094	0.087	0.074	0.064	0.063
22	945-2257	0.110	0.102	0.089	0.080	0.075
33	945-2265	0.127	0.122	0.098	0.086	0.085
35 Volt d.c.						
4.7	945-2273	0.082	0.074	0.064	0.054	0.052
10	945-2281	0.070	0.066	0.056	0.049	0.048
22	945-2290	0.110	0.102	0.089	0.080	0.076
50 Volt d.c.						
1	945-2303	0.082	0.074	0.067	0.056	0.052
4.7	945-2320	0.068	0.064	0.056	0.053	0.050
10	945-2338	0.111	0.100	0.085	0.077	0.072
22	945-2346	0.280	0.260	0.210	0.190	0.146

MCMR Series 7mm - 85°C



- Ultra miniature radial electrolytic capacitors
- 7mm profile for high density applications

µF	Ripple (mA) @ 120Hz 85°C	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.				
10 Volt d.c.							
47	59	7	4	0.45	1.5	MCMR10V476M4X7	945-2427
100	87	7	5	0.45	2	MCMR10V107M5X7	945-2435
220	145	7	6.3	0.45	2.5	MCMR10V227M6.3X7	945-2443
16 Volt d.c.							
22	180	7	4	0.45	1.5	MCMR16V226M4X7	945-2451
47	65	7	5	0.45	2	MCMR16V476M5X7	945-2460
100	98	7	6.3	0.4	2.5	MCMR16V107M6.3X7	945-2478
25 Volt d.c.							
10	28	7	4	0.45	1.5	MCMR25V106M4X7	945-2486
47	71	7	6.3	0.45	2.5	MCMR25V476M6.3X7	945-2494
35 Volt d.c.							
10	31	7	4	0.45	1.5	MCMR35V106M4X7	945-2508
47	73	7	6.3	0.45	2.5	MCMR35V476M6.3X7	945-2516
63 Volt d.c.							
1	13	7	4	0.45	1.5	MCMR63V105M4X7	945-2524
2.2	21.5	7	4	0.45	1.5	MCMR63V225M4X7	945-2532

µF	Order Code	Price Each				
		5+	25+	100+	500+	1K+
10 Volt d.c.						
47	945-2427	0.032	0.030	0.026	0.024	0.023
100	945-2435	0.078	0.074	0.049	0.048	0.047
220	945-2443	0.102	--	--	--	--
16 Volt d.c.						
22	945-2451	0.068	0.062	0.043	0.041	0.038
47	945-2460	0.078	0.074	0.049	0.048	0.047
100	945-2478	0.102	0.097	0.069	0.062	0.059
25 Volt d.c.						
10	945-2486	0.053	0.049	0.035	0.033	0.032
47	945-2494	0.102	0.097	0.069	0.062	0.059
35 Volt d.c.						
10	945-2508	0.068	0.061	0.055	0.048	0.042
47	945-2516	0.104	0.096	0.066	0.062	0.057
63 Volt d.c.						
1	945-2524	0.068	0.062	0.043	0.041	0.038
2.2	945-2532	0.023	0.022	0.019	0.017	0.015

MCMHR Series 5mm - 105°C



- Ultra miniature radial electrolytic capacitors
- 5mm profile for extra high density applications

µF	Ripple (mA) @ 120Hz 105°C	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.				
6.3 Volt d.c.							
100	60	5	6.3	0.45	2.5	MCMHR6V3107M6.3X5	945-2354
16 Volt d.c.							
47	50	5	6.3	0.45	2.5	MCMHR16V476M6.3X5	945-2362
35 Volt d.c.							
47	50	5	6.3	0.45	2.5	MCMHR16V476M6.3X5	945-2362
10	25	5	5	0.45	2	MCMHR35V106M5X5	945-2389
22	42	5	6.3	0.45	2.5	MCMHR35V226M6.3X5	945-2397
50 Volt d.c.							
1	6.2	5	4	0.45	1.5	MCMHR50V105M4X5	945-2400
2.2	11	5	4	0.45	1.5	MCMHR50V225M4X5	945-2419

µF	Order Code	Price Each				
		5+	25+	100+	500+	1K+
6.3 Volt d.c.						
100	945-2354	0.188	0.158	0.148	0.121	0.096
16 Volt d.c.						
47	945-2362	0.188	0.158	0.148	0.121	0.096
35 Volt d.c.						
4.7	945-2370	0.134	--	--	--	--
10	945-2389	0.121	0.101	0.086	0.077	0.058
22	945-2397	0.188	0.158	0.148	0.121	0.096
50 Volt d.c.						
1	945-2400	0.134	0.113	0.102	0.088	0.069
2.2	945-2419	0.067	0.056	0.051	0.045	0.035

MCMHR Series 7mm - 105°C



- Ultra miniature radial electrolytic capacitors
- 7mm profile for high density applications

µF	Ripple (mA) @ 120Hz 20°C	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.				
10 Volt d.c.							
47	59	7	4	0.45	1.5	MCMR10V476M4X7	945-2427
100	87	7	5	0.45	2	MCMR10V107M5X7	945-2435
220	145	7	6.3	0.45	2.5	MCMR10V227M6.3X7	945-2443
16 Volt d.c.							
22	180	7	4	0.45	1.5	MCMR16V226M4X7	945-2451
47	65	7	5	0.45	2	MCMR16V476M5X7	945-2460
100	98	7	6.3	0.4	2.5	MCMR16V107M6.3X7	945-2478
25 Volt d.c.							
10	28	7	4	0.45	1.5	MCMR25V106M4X7	945-2486
47	71	7	6.3	0.45	2.5	MCMR25V476M6.3X7	945-2494
35 Volt d.c.							
10	31	7	4	0.45	1.5	MCMR35V106M4X7	945-2508
47	73	7	6.3	0.45	2.5	MCMR35V476M6.3X7	945-2516
63 Volt d.c.							
1	13	7	4	0.45	1.5	MCMR63V105M4X7	945-2524
2.2	21.5	7	4	0.45	1.5	MCMR63V225M4X7	945-2532

µF	Ripple (mA) @ 120Hz 105°C	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.				
6.3 Volt d.c.							
47	50	7	5	0.45	2	MCMR6V3476M5X7	945-2559
100	77	7	6.3	0.45	2.5	MCMR6V3107M6.3X7	945-2567
220	130	7	8	0.5	3.5	MCMR6V3227M8X7	945-2575
330	170	7	8	0.5	3.5	MCMHR6V3337M8X7	945-2583
16 Volt d.c.							
10	29	7	4	0.45	1.5	MCMHR16V106M4X7	945-2591
22	44	7	5	0.45	2	MCMHR16V226M5X7	945-2613
33	57	7	6.3	0.45	2.5	MCMHR16V336M6.3X7	945-2621
47	68	7	6.3	0.45	2.5	MCMHR16V476M6.3X7	945-2630
100	107	7	6.3	0.45	2.5	MCMHR16V107M6.3X7	945-2648
35 Volt d.c.							
10	36	7	5	0.45	2	MCMHR35V106M5X7	945-2656
22	57	7	6.3	0.45	2.5	MCMHR35V226M6.3X7	945-2664
33	72	7	6.3	0.45	2.5	MCMHR35V336M6.3X7	945-2672
47	81	7	8	0.5	3.5	MCMHR35V476M8X7	945-2680
50 Volt d.c.							
3.3	24	7	4	0.45	1.5	MCMHR50V335M4X7	945-2699
10	44	7	6.3	0.45	2.5	MCMHR50V106M6.3X7	945-2702
22	65	7	6.3	0.45	2.5	MCMHR50V226M6.3X7	945-2710
63 Volt d.c.							
0.1	2	7	4	0.45	1.5	MCMHR63V104M4X7	945-2729
1	13	7	4	0.45	1.5	MCMHR63V105M4X7	945-2737
4.7	32.4	7	5	0.45	2	MCMHR63V475M5X7	945-2745

208569

Order Multiple=5		Price Each				
µF	Order Code	5+	25+	100+	500+	1K+
6.3 Volt d.c.						
47	945-2559	0.107	0.092	0.083	0.071	0.055
100	945-2567	0.125	0.109	0.096	0.083	0.068
220	945-2575	0.280	0.210	0.193	0.164	0.134
330	945-2583	0.280	0.210	0.193	0.164	0.134
16 Volt d.c.						
10	945-2591	0.092	0.077	0.066	0.056	0.046
22	945-2613	0.107	0.092	0.083	0.071	0.055
33	945-2621	0.125	0.109	0.096	0.083	0.068
47	945-2630	0.125	0.109	0.096	0.083	0.068
100	945-2648	0.125	0.109	0.096	0.083	0.068
35 Volt d.c.						
10	945-2656	0.107	0.092	0.083	0.071	0.055
22	945-2664	0.125	0.109	0.096	0.083	0.068
33	945-2672	0.125	--	--	--	--
47	945-2680	0.280	0.210	0.182	0.159	0.127
50 Volt d.c.						
3.3	945-2699	0.090	0.078	0.070	0.057	0.048
10	945-2702	0.125	0.109	0.096	0.083	0.068
22	945-2710	0.125	--	--	--	--
63 Volt d.c.						
0.1	945-2729	0.090	0.078	0.070	0.057	0.048
1	945-2737	0.090	0.078	0.070	0.057	0.048
4.7	945-2745	0.107	0.092	0.083	0.071	0.055

GPR Series – General Purpose



- General purpose radial leaded electrolytic
 - Supplied loose with straight leads
- Operating temp. -40°C to +85°C
 Tolerance ±20%
 DC leakage current I = 0.01CV + 3 (µA) max
 Ripple current measured at 120Hz @ 85°C

µF	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
		H	Dia.			
16 Volt d.c.						
10	39	11	5	0.5	2	945-1056
22	50	11	5	0.5	2	945-1064
47	78	11	5	0.5	2	945-1072
100	123	12	6.3	0.5	2.5	945-1080
220	232	12	6	0.5	2.5	945-1099
330	310	12	8	0.6	3.5	945-1102
470	390	12	8	0.6	3.5	945-1110
1000	690	17	10	0.6	5	945-1129
2200	1052	21	13	0.6	5	945-1137
4700	1960	26	16	0.8	7.5	945-1145
Order Multiple=10						
16 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
10	945-1056	0.036	0.033	0.030	0.028	0.025
22	945-1064	0.042	0.036	0.034	0.030	0.025
47	945-1072	0.042	0.036	0.034	0.030	0.029
100	945-1080	0.054	0.048	0.045	0.040	0.038
220	945-1099	0.078	0.073	0.067	0.054	0.053

Order Multiple=10						
16 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
330	945-1102	0.090	0.084	0.076	0.070	0.062
470	945-1110	0.130	0.123	0.111	0.099	0.088
1000	945-1129	0.200	0.186	0.171	0.139	0.134
2200	945-1137	0.400	0.370	0.340	0.290	0.280
4700	945-1145	0.970	0.850	0.750	0.690	0.590

µF	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
		H	Dia.			
10	39	11	5	0.5	2	945-1153
22	50	11	5	0.5	2	945-1161
47	89	11	5	0.5	2	945-1170
100	142	12	6.3	0.5	2.5	945-1188
220	270	12	8	0.5	3.5	945-1196
470	460	17	10	0.6	5	945-1200
1000	850	21	10	0.6	5	945-1226

Order Multiple=10						
25 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
10	945-1153	0.036	0.033	0.030	0.025	0.024
22	945-1161	0.042	0.036	0.034	0.030	0.029
47	945-1170	0.048	0.043	0.038	0.034	0.032
100	945-1188	0.056	0.048	0.046	0.042	0.038
220	945-1196	0.118	0.105	0.098	0.082	0.080
470	945-1200	0.174	0.154	0.138	0.119	0.112
1000	945-1226	0.370	0.340	0.320	0.280	0.270

µF	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
		H	Dia.			
4.7	27	11	5	0.5	2	945-1234
10	39	11	5	0.5	2	945-1242
22	69	11	5	0.5	2	945-1250
33	75	12	6.3	0.5	2.5	945-1269
47	102	12	6.3	0.5	2.5	945-1277
100	140	12	8	0.6	3.5	945-1285
220	315	13	10	0.6	5	945-1293
330	435	16	10	0.6	5	945-1307
470	560	21	10	0.6	5	945-1315
1000	875	22	13	0.6	5	945-1323
2200	1462	32	16	0.8	7.5	945-1331

Order Multiple=10						
35 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
4.7	945-1234	0.042	0.033	0.030	0.025	0.024
10	945-1242	0.040	0.033	0.030	0.024	0.023
22	945-1250	0.043	0.038	0.037	0.032	0.030
33	945-1269	0.052	0.047	0.044	0.036	0.034
47	945-1277	0.052	0.048	0.045	0.037	0.036
100	945-1285	0.078	0.073	0.062	0.053	0.052
220	945-1293	0.163	--	--	--	--
330	945-1307	0.171	0.156	0.148	0.124	0.106
470	945-1315	0.210	0.200	0.184	0.158	0.147
1000	945-1323	0.430	0.390	0.350	0.320	0.290
2200	945-1331	0.860	0.780	0.710	0.620	0.560

µF	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
		H	Dia.			
0.47	8	11	5	0.5	2	945-1340
1	12	11	5	0.5	2	945-1358
2.2	18	11	5	0.5	2	945-1366
4.7	27	11	5	0.5	2	945-1374
10	39	11	5	0.5	2	945-1382
22	65	11	5	0.5	2	945-1390
47	112	12	6	0.5	2.5	945-1404
100	220	11	8	0.6	3.5	945-1412
220	395	17	10	0.6	5	945-1420
470	670	21	13	0.6	5	945-1439
1000	1140	26	16	0.8	7.5	945-1447

Order Multiple=10						
50 Volt d.c.		Price Each				
µF	Order Code	10+	50+	100+	500+	1K+
0.47	945-1340	0.037	0.033	0.031	0.025	0.024
1	945-1358	0.037	0.033	0.031	0.025	0.024
2.2	945-1366	0.037	0.033	0.031	0.025	0.024
4.7	945-1374	0.037	0.033	0.031	0.025	0.024
10	945-1382	0.043	0.037	0.034	0.031	0.028
22	945-1390	0.050	0.046	0.041	0.036	0.034
47	945-1404	0.076	0.069	0.064	0.052	0.050
100	945-1412	0.126	0.113	0.098	0.089	0.083
220	945-1420	0.210	0.186	0.167	0.148	0.137
470	945-1439	0.420	0.390	0.350	0.310	0.290
1000	945-1447	0.850	0.760	0.700	0.600	0.550

µF	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
		H	Dia.			
1	12	11	5	0.5	2.5	945-1455
2.2	20	11	5	0.5	2.5	945-1463
4.7	30	11	5	0.5	2.5	945-1471
10	50	11	5	0.5	2.5	945-1480
22	85	11	6.3	0.5	2.5	945-1498



Aluminium Electrolytic - Radial - Multicomp - continued

GPR Series – General Purpose - continued

63 Volt d.c.	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
μF		H	Dia.			
47	146	11	8	0.6	2.5	945-1501
100	285	13	10	0.6	5	945-1510
220	460	21	10	0.6	5	945-1528
470	768	26	13	0.6	5	945-1536
1000	1435	32	16	0.8	7.5	945-1544

Order Multiple=10

63 Volt d.c.	Order Code	10+	50+	100+	500+	1K+
1	945-1455	0.041	0.036	0.034	0.030	0.028
2.2	945-1463	0.041	0.036	0.034	0.030	0.028
4.7	945-1471	0.041	0.036	0.034	0.030	0.028
10	945-1480	0.048	0.043	0.038	0.034	0.032
22	945-1498	0.054	0.048	0.044	0.037	0.036
47	945-1501	0.086	0.077	0.071	0.057	0.054
100	945-1510	0.141	0.126	0.110	0.098	0.093
220	945-1528	0.230	0.210	0.191	0.164	0.152
470	945-1536	0.460	0.420	0.390	0.340	0.320
1000	945-1544	0.960	0.840	0.740	0.660	0.600

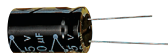
100 Volt d.c.	Ripple (mA)	Dimensions		Lead Dia.	Lead Pitch	Order Code
μF		H	Dia.			
1	15	11	5	0.5	2	945-1552
10	61	11	6.3	0.5	2.5	945-1560
22	106	11	8	0.6	3.5	945-1579
47	190	16	10	0.6	5	945-1587
100	320	21	13	0.6	5	945-1595
220	665	26	16	0.8	7.5	945-1609
470	925	32	16	0.8	7.5	945-1617

208525

Order Multiple=10

100 Volt d.c.	Order Code	10+	50+	100+	500+	1K+
1	945-1552	0.043	0.036	0.035	0.032	0.030
10	945-1560	0.049	0.044	0.037	0.035	0.033
22	945-1579	0.077	--	--	--	--
47	945-1587	0.148	0.126	0.121	0.104	0.097
100	945-1595	0.290	0.260	0.220	0.194	0.179
220	945-1609	0.590	0.500	0.480	0.420	0.410
470	945-1617	0.940	0.820	0.780	0.690	0.630

ECRH Series – 105°C



- High temperature radial lead electrolytic
- Supplied loose with straight leads

Operating temperature
Tolerance
Ripple current measured at DC leakage current

-40°C to +105°C
±20%
120Hz@85°C
I = 0.03CV

10 Volt d.c.	Ripple (mA)	H	Dimensions		Pitch	Order Code
μF			Dia.	Dia.		
100	99	11	5	0.5	2	945-1625
220	171	11	6.3	0.5	2.5	945-1633
470	328	11	8	0.6	3.5	945-1641
1000	570	16	10	0.6	5	945-1650
2200	960	21	13	0.6	5	945-1668
3300	1194	21	13	0.6	5	945-1676
4700	1423	26	16	0.8	7.5	945-1684

Order Multiple=5

10 Volt d.c.	Order Code	5+	50+	100+	500+	1K+
100	945-1625	0.100	0.092	0.084	0.074	0.062
220	945-1633	0.134	0.124	0.115	0.098	0.082
470	945-1641	0.187	0.165	0.160	0.145	0.112
1000	945-1650	0.330	0.310	0.300	0.230	0.200
2200	945-1668	0.510	0.470	0.420	0.370	0.340
3300	945-1676	0.340	0.320	0.290	0.270	0.210
4700	945-1684	0.860	0.810	0.750	0.610	0.520

16 Volt d.c.	Ripple (mA)	H	Dimensions		Pitch	Order Code
μF			Dia.	Dia.		
10	39	11	5	0.5	2	945-1692
22	49	11	5	0.5	2	945-1706
47	76	11	5	0.5	2	945-1714
100	129	12	6.3	0.5	2.5	945-1722
220	225	11	8	0.6	3.5	945-1730
330	295	11	8	0.6	3.5	945-1749
470	392	13	10	0.6	5	945-1765
1000	577	21	10	0.6	5	945-1773
2200	1053	21	13	0.6	5	945-1781
3300	1586	26	13	0.6	5	945-1790
4700	1889	32	16	0.8	7.5	945-1803

Order Multiple=5

16 Volt d.c.	Order Code	5+	50+	100+	500+	1K+
10	945-1692	0.099	0.094	0.089	0.080	0.075
22	945-1706	0.094	0.089	0.084	0.076	0.072
47	945-1714	0.094	0.089	0.084	0.076	0.071
100	945-1722	0.130	0.124	0.121	0.106	0.100
220	945-1730	0.179	0.168	0.163	0.147	0.137
330	945-1749	0.260	0.220	0.210	0.196	0.183
470	945-1765	0.270	0.260	0.230	0.210	0.196
1000	945-1773	0.390	0.360	0.350	0.320	0.300
2200	945-1781	0.620	0.560	0.540	0.480	0.460
3300	945-1790	0.990	0.940	0.910	0.820	0.760
4700	945-1803	1.050	0.960	0.950	0.850	0.810

25 Volt d.c.	Ripple (mA)	H	Dimensions		Pitch	Order Code
μF			Dia.	Dia.		
33	88	11	5	0.5	2	945-1811
47	81	11	5	0.5	2	945-1820
100	137	11	6.3	0.5	2.5	945-1838
220	200	11	8	0.6	3.5	945-1846
330	347	13	10	0.6	5	945-1854
470	458	16	10	0.6	5	945-1862
1000	505	21	13	0.6	5	945-1870
2200	1234	26	13	0.6	5	945-1889
3300	1630	32	16	0.8	7.5	945-1897

Order Multiple=5

25 Volt d.c.	Order Code	5+	50+	100+	500+	1K+
33	945-1811	0.052	0.046	0.044	0.037	0.032
47	945-1820	0.109	0.093	0.089	0.076	0.062
100	945-1838	0.134	0.120	0.114	0.097	0.082
220	945-1846	0.196	0.166	0.161	0.144	0.114
330	945-1854	0.300	0.260	0.230	0.191	0.167
470	945-1862	0.350	0.310	0.290	0.230	0.200
1000	945-1870	0.550	0.480	0.460	0.370	0.340
2200	945-1889	0.940	0.780	0.760	0.670	0.550
3300	945-1897	1.190	1.010	0.990	0.870	0.730

35 Volt d.c.	Ripple (mA)	H	Dimensions		Pitch	Order Code
μF			Dia.	Dia.		
10	39	11	5	0.5	2	945-1900
22	60	11	5	0.5	2	945-1919
33	72	11	5	0.5	2	945-1927
47	101	11	6.3	0.5	2.5	945-1935
100	172	11	8	0.6	3.5	945-1943
220	300	13	10	0.6	5	945-1951
330	417	16	10	0.6	5	945-1960
470	535	21	10	0.6	5	945-1978
1000	869	21	13	0.6	5	945-1986
2200	1362	32	16	0.8	7.5	945-1994

Order Multiple=5

35 Volt d.c.	Order Code	5+	50+	100+	500+	1K+
10	945-1900	0.090	0.086	0.080	0.073	0.070
22	945-1919	0.098	0.093	0.088	0.080	0.075
33	945-1927	0.102	0.096	0.087	0.084	0.074
47	945-1935	0.130	0.124	0.121	0.106	0.100
100	945-1943	0.210	0.184	0.171	0.140	0.124
220	945-1951	0.300	0.270	0.260	0.194	0.173
330	945-1960	0.360	--	--	--	--
470	945-1978	0.440	0.390	0.360	0.310	0.270
1000	945-1986	0.720	0.630	0.600	0.510	0.450
2200	945-1994	1.210	1.060	1.040	0.830	0.710

63 Volt d.c.	Ripple (mA)	H	Dimensions		Pitch	Order Code
μF			Dia.	Dia.		
1	12	11	5	0.5	2	945-2001
2.2	20	11	5	0.5	2	945-2010
4.7	30	11	5	0.5	2	945-2028
10	50	11	6.3	0.5	2	945-2036
22	85	11	6.3	0.5	2.5	945-2044
33	105	11	6.3	0.5	2.5	945-2052
47	146	11	8	0.6	3.5	945-2060
100	285	13	10	0.6	5	945-2079
220	460	21	10	0.6	5	945-2087
330	551	21	13	0.6	5	945-2095
470	768	26	13	0.6	5	945-2109
1000	1435	32	16	0.8	7.5	945-2117

Order Multiple=5

63 Volt d.c.	Order Code	5+	50+	100+	500+	1K+
1	945-2001	0.106	0.094	0.088	0.069	0.056
2.2	945-2010	0.106	0.094	0.088	0.069	0.056
4.7	945-2028	0.106	0.094	0.088	0.069	0.056
10	945-2036	0.109	0.097	0.092	0.072	0.062
22	945-2044	0.133	0.123	0.114	0.097	0.082
33	945-2052	0.133	0.123	0.114	0.096	0.082
47	945-2060					

Order Multiple=5

63 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
100	945-2079	0.310	0.280	0.270	0.210	0.175
220	945-2087	0.440	--	--	--	--
330	945-2095	0.570	0.500	0.480	0.430	0.350
470	945-2109	0.670	0.610	0.600	0.510	0.420
1000	945-2117	1.210	1.060	1.010	0.870	0.750

µF	Ripple (mA)	H	Di.	Di.	Pitch	Order Code
22	106	11	8	0.6	3.5	945-2125
47	190	16	10	0.6	5	945-2133
100	320	21	13	0.6	5	945-2141
220	665	26	16	0.8	7.5	945-2150
330	702	26	16	0.8	7.5	945-2168

Order Multiple=5

100 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
22	945-2125	0.210	0.184	0.171	0.137	0.121
47	945-2133	0.054	0.048	0.045	0.040	0.033
100	945-2141	0.550	0.490	0.460	0.420	0.350
220	945-2150	0.930	0.750	0.710	0.570	0.520
330	945-2168	0.980	0.890	0.850	0.700	0.610

Aluminium Electrolytic - Radial - Panasonic

M Series - General Purpose



● Miniature general purpose radial electrolytic

Operating temperature -40°C to +85°C
 Tolerance ±20%
 Ripple current measured at 120Hz @ 85°C
 DC leakage current 0.01CV or 3µA whichever is greater

µF	Ripple (mA)	H	Di.	Di.	Pitch	Mftrs. List No.	Order Code
10	30	11	5	0.5	2	ECA1CM100	969-3548
22	75	11	5	0.5	2	ECA1CM220	969-3564
47	130	11	5	0.5	2	ECA1CM470	969-3572
100	180	11	5	0.5	2	ECA1CM101	969-3580
220	280	11.2	6.3	0.5	2.5	ECA1CM221	969-3599
470	440	11.5	8	0.6	3.5	ECA1CM471	969-3602
1000	680	16	10	0.6	5	ECA1CM102	969-3610
2200	1000	20	12.5	0.6	5	ECA1CM222	969-3629

Order Multiple=5

16 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
10	969-3548	0.052	0.042	0.024	0.021	0.019
22	969-3564	0.052	0.042	0.024	0.021	0.020
47	969-3572	0.053	0.042	0.037	0.026	0.019
100	969-3580	0.073	0.062	0.044	0.029	0.021
220	969-3599	0.096	0.081	0.054	0.038	0.029
470	969-3602	0.137	0.116	0.079	0.059	0.044
1000	969-3610	0.250	0.200	0.139	0.104	0.092
2200	969-3629	0.480	0.390	0.260	0.193	0.177

µF	Ripple (mA)	H	Di.	Di.	Pitch	Mftrs. List No.	Order Code
10	60	11	5	0.5	2	ECA1VM100	969-3637
22	95	11	5	0.5	2	ECA1VM220	969-3645
33	110	11	5	0.5	2	ECA1VM330	969-3653
47	130	11	5	0.5	2	ECA1VM470	969-3661
100	210	11.2	6.3	0.5	2.5	ECA1VM101	969-3670
220	350	11.5	8	0.6	3.5	ECA1VM221	969-3688
330	440	12.5	10	0.6	5	ECA1VM331	969-3696
470	550	16	10	0.6	5	ECA1VM471	969-3700
1000	900	20	12.5	0.6	5	ECA1VM102	969-3718
2200	1250	25	16	0.8	7.5	ECA1VM222	969-3726

Order Multiple=5

35 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
10	969-3637	0.052	0.042	0.031	0.025	0.019
22	969-3645	0.052	0.042	0.025	0.018	0.017
33	969-3653	0.052	0.042	0.033	0.023	0.018
47	969-3661	0.062	0.052	0.044	0.031	0.022
100	969-3670	0.096	0.081	0.054	0.038	0.029
220	969-3688	0.137	0.116	0.079	0.059	0.046
330	969-3696	0.191	0.160	0.123	0.093	0.078
470	969-3700	0.240	0.191	0.141	0.106	0.079
1000	969-3718	0.470	0.410	0.280	0.210	0.182
2200	969-3726	0.990	0.650	0.450	0.330	0.260

µF	Ripple (mA)	H	Di.	Di.	Pitch	Mftrs. List No.	Order Code
0.47	5	11	5	0.5	2	ECA1HMR47	119-8285
1	10	11	5	0.5	2	ECA1HM010	969-3734
2.2	20	11	5	0.5	2	ECA1HM2R2	969-3742
4.7	45	11	5	0.5	2	ECA1HM4R7	969-3750
10	65	11	5	0.5	2	ECA1HM100	969-3769
22	100	11	5	0.5	2	ECA1HM220	969-3777
47	130	11.2	6.3	0.5	2.5	ECA1HM470	969-3785
100	250	11.5	8	0.6	3.5	ECA1HM101	969-3793
220	400	12.5	10	0.6	5	ECA1HM221	969-3807
470	650	20	10	0.6	5	ECA1HM471	969-3815
1000	1050	25	12.5	0.6	5	ECA1HM102	969-3823

Order Multiple=5

50 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
0.47	119-8285	0.053	0.044	0.028	0.019	0.017
1	969-3734	0.052	0.042	0.025	0.018	0.017
2.2	969-3742	0.053	0.042	0.025	0.018	0.017
4.7	969-3750	0.052	0.042	0.037	0.026	0.019
10	969-3769	0.053	0.042	0.025	0.017	0.016
22	969-3777	0.053	0.042	0.033	0.023	0.019
47	969-3785	0.073	0.062	0.060	0.043	0.031
100	969-3793	0.106	0.096	0.087	0.062	0.047
220	969-3807	0.160	0.137	0.131	0.098	0.073
470	969-3815	0.340	0.270	0.186	0.139	0.106
1000	969-3823	0.760	0.500	0.350	0.340	0.330

µF	Ripple (mA)	H	Di.	Di.	Pitch	Mftrs. List No.	Order Code
10	70	11	5	0.5	2	ECA1JM100	969-3831
22	105	11	5	0.5	2	ECA1JM220	969-3840
47	160	11.2	6.3	0.5	2.5	ECA1JM470	969-3858
100	270	11.5	8	0.6	3.5	ECA1JM101	969-3866
220	450	16	10	0.6	5	ECA1JM221	969-3874
470	750	20	12.5	0.6	5	ECA1JM471	969-3882
1000	1100	25	16	0.6	7.5	ECA1JM102	969-3890

Order Multiple=5

63 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
10	969-3831	0.053	0.042	0.033	0.029	0.021
22	969-3840	0.073	0.062	0.044	0.031	0.022
47	969-3858	0.096	0.085	0.058	0.040	0.036
100	969-3866	0.137	0.116	0.096	0.072	0.053
220	969-3874	0.250	0.200	0.141	0.106	0.088
470	969-3882	0.470	0.410	0.290	0.220	0.188
1000	969-3890	1.090	0.680	0.470	0.340	0.310

µF	Ripple (mA)	H	Di.	Di.	Pitch	Mftrs. List No.	Order Code
0.47	10	11	5	0.5	2	ECA2AMR47	119-8286
1	20	11	5	0.5	2	ECA2AM010	969-3904
2.2	30	11	5	0.5	2	ECA2AM2R2	119-8287
4.7	50	11	5	0.5	2	ECA2AM4R7	119-8289
10	70	11	5	0.5	2	ECA2AM100	969-3912
22	115	11.2	6.3	0.5	2.5	ECA2AM220	969-3920
47	180	11.5	8	0.6	3.5	ECA2AM470	969-3939
100	350	16	10	0.6	5	ECA2AM101	969-3947
220	550	20	12.5	0.6	5	ECA2AM221	969-3955
470	900	25	16	0.8	7.5	ECA2AM471	969-3963
1000	1300	35.5	18	0.8	7.5	ECA2AM102	969-3971

Order Multiple=5

100 Volt d.c.

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
0.47	119-8285	0.053	0.044	0.028	0.019	0.017
1	969-3904	0.053	0.042	0.033	0.023	0.019
4.7	119-8289	0.052	0.042	0.033	0.023	0.022
4.7	119-8289	0.052	0.042	0.033	0.023	0.022
10	969-3912	0.073	0.062	0.046	0.033	0.025
22	969-3920	0.099	0.085	0.058	0.042	0.032
47	969-3939	0.181	0.150	0.100	0.076	0.056
100	969-3947	0.360	0.240	0.160	0.120	0.115
220	969-3955	0.630	0.430	0.300	0.220	0.210
470	969-3963	1.180	0.760	0.530	0.410	0.340
1000	969-3971	1.920	1.450	1.010	0.780	0.730

µF	Ripple (mA)	H	Di.	Di.	Pitch	Mftrs. List No.	Order Code
1	34	11.2	6.3	0.5	2.5	ECA2EM010	969-3980
2.2	50	11.2	6.3	0.5	2.5	ECA2EM2R2	969-3998
4.7	86	11.5	8	0.6	3.5	ECA2EM4R7	969-4005
10	110	16	10	0.6	5	ECA2EM100	969-4013
22	180	20	12.5	0.6	5	ECA2EM220	969-4021
47	330	25	12.5	0.6	5	ECA2EM470	969-4030
100	530	31.5	16	0.8	7.5	ECA2EM101	969-4048
220	930	40	18	0.8	7.5	ECA2EM221	969-4056



Aluminium Electrolytic - Radial - Panasonic - continued

M Series - General Purpose - continued

Order Multiple=5
250 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
1	969-3980	0.181	0.101	0.071	0.069	0.067
2.2	969-3998	0.175	0.101	0.071	0.069	0.067
4.7	969-4005	0.280	0.146	0.110	0.108	0.105
10	969-4013	0.370	0.210	0.147	0.129	0.126
22	969-4021	0.570	0.270	0.260	0.240	0.230
47	969-4030	0.940	0.500	0.350	0.330	0.320
100	969-4048	1.570	0.790	0.570	0.560	0.540
220	969-4056	2.830	1.990	1.440	1.400	1.360

µF	Ripple (mA)	Dimensions H Dia.	Lead Dia. Pitch	Mftrs. List No.	Order Code
47	350	31.5 16	0.8 7.5	ECA2GM470	969-4064
100	600	40 18	0.8 7.5	ECA2GM101	969-4072

Order Multiple=5
400 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
47	969-4064	1.52	1.28	1.13	1.06	0.95
100	969-4072	2.80	2.38	2.14	2.00	1.78

µF	Ripple (mA)	Dimensions H Dia.	Lead Dia. Pitch	Mftrs. List No.	Order Code
47	350	31.5 16	0.8 7.5	ECA2GM470	969-4064
100	600	40 18	0.8 7.5	ECA2GM101	969-4072

Order Multiple=5
450 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
1	969-4080	0.250	0.158	0.104	0.091	0.089
2.2	969-4099	0.350	0.220	0.148	0.129	0.126
4.7	969-4102	0.530	0.290	0.210	0.200	0.198
10	969-4110	0.670	0.450	0.310	0.270	0.260
22	969-4129	1.020	0.670	0.490	0.470	0.460
33	969-4137	1.810	0.880	0.630	0.550	0.530

NHG Series - 105°C



● High temperature miniature radial electrolytic

Operating temperature -55°C to +105°C 6.3 to 100V
 -55°C to +105°C 160 to 450V
 Leakage current 0.01CV or 3uA 6.3 to 100V
 0.06CV + 10uA 160 to 450V
 Tolerance ±20%
 Ripple current measured at 120Hz @ 105°C

µF	Ripple (mA)	Dimensions H Dia.	Lead Dia. Pitch	Mftrs. List No.	Order Code
1000	380	11.5 8	0.6 3.5	ECA0JHG102	969-2738

Order Multiple=5
6.3 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
1000	969-2738	0.183	0.154	0.085	0.084	0.082

µF	Ripple (mA)	Dimensions H Dia.	Lead Dia. Pitch	Mftrs. List No.	Order Code
3300	1000	20 12.5	0.6 5	ECA1AHG332	969-2746
4700	1260	25 12.5	0.6 5	ECA1AHG472	969-2754
6800	1570	25 16	0.8 7.5	ECA1AHG682	969-2762

Order Multiple=5
10 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
4700	969-2754	0.73	0.60	0.44	0.32	0.31
6800	969-2762	0.96	0.82	0.59	0.47	0.46
6800	969-2762	0.96	0.82	0.59	0.47	0.46

µF	Ripple (mA)	Dimensions H Dia.	Lead Dia. Pitch	Mftrs. List No.	Order Code
330	260	11.5 8	0.6 3.5	ECA1CHG331	969-2770
470	310	11.5 8	0.6 3.5	ECA1CHG471	969-2789
1000	560	16 10	0.6 5	ECA1CHG102	969-2797
2200	920	20 12.5	0.6 5	ECA1CHG222	969-2800
4700	1480	25 16	0.8 7.5	ECA1CHG472	969-2819

Order Multiple=5
16 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
330	969-2770	0.193	0.160	0.108	0.082	0.074
470	969-2789	0.200	0.171	0.121	0.090	0.085
1000	969-2797	0.270	0.230	0.141	0.132	0.129
2200	969-2800	0.460	0.420	0.320	0.250	0.240
4700	969-2819	0.990	0.760	0.530	0.410	0.400

µF	Ripple (mA)	Dimensions H D	Lead Dia. Pitch	Mftrs. List No.	Order Code
100	130	11.2 6.3	0.5 2.5	ECA1EHG101	969-2827
220	230	11.5 8	0.6 3.5	ECA1EHG221	969-2835
470	380	12.5 10	0.6 5	ECA1EHG471	969-2843
2200	1090	25 12.5	0.6 5	ECA1EHG222	969-2851
3300	1400	25 16	0.8 7.5	ECA1EHG332	969-2860

Order Multiple=5
25 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
100	969-2827	0.106	0.096	0.081	0.058	0.044
220	969-2835	0.193	0.160	0.108	0.082	0.074
470	969-2843	0.280	0.230	0.162	0.122	0.101
2200	969-2851	0.720	0.600	0.440	0.320	0.290
3300	969-2860	0.950	0.780	0.560	0.440	0.420

µF	Ripple (mA)	Dimensions H D	Lead Dia. Pitch	Mftrs. List No.	Order Code
1000	810	20 12.5	0.6 5	ECA1VHG102	969-2878

Order Multiple=5
35 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
1000	969-2878	0.46	0.41	0.33	0.25	0.22

µF	Ripple (mA)	Dimensions H D	Lead Dia. Pitch	Mftrs. List No.	Order Code
1	10	11 5	0.5 2	ECA1HHG010	969-2886
2.2	18	11 5	0.5 2	ECA1HHG2R2	969-2894
3.3	22	11 5	0.5 2	ECA1HHG3R3	969-2908
4.7	26	11 5	0.5 2	ECA1HHG4R7	969-2916
10	39	11 5	0.5 2	ECA1HHG100	969-2924
22	65	11 5	0.5 2	ECA1HHG220	969-2932
33	90	11 5	0.5 2	ECA1HHG330	969-2940
47	110	11.2 6.3	0.5 2.5	ECA1HHG470	969-2959
100	180	11.5 8	0.6 3.5	ECA1HHG101	969-2967
220	300	12.5 10	0.6 5	ECA1HHG221	969-2975
330	410	16 10	0.6 5	ECA1HHG331	969-2983
470	530	20 10	0.6 5	ECA1HHG471	969-2991
1000	950	25 12.5	0.6 5	ECA1HHG102	969-3009
2200	1470	31.5 16	0.8 7.5	ECA1HHG222	969-3017

Order Multiple=5
50 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
1	969-2886	0.085	0.075	0.056	0.041	0.030
2.2	969-2894	0.085	0.075	0.057	0.041	0.030
3.3	969-2908	0.099	0.088	0.058	0.040	0.029
4.7	969-2916	0.075	0.064	0.057	0.041	0.030
10	969-2924	0.075	0.064	0.056	0.041	0.030
22	969-2932	0.085	0.075	0.050	0.034	0.026
33	969-2940	0.106	0.079	0.050	0.036	0.035
47	969-2959	0.106	0.096	0.081	0.058	0.044
100	969-2967	0.183	0.150	0.114	0.086	0.076
220	969-2975	0.280	0.230	0.162	0.122	0.093
330	969-2983	0.320	0.280	0.196	0.147	0.130
470	969-2991	0.390	0.330	0.260	0.193	0.186
1000	969-3009	0.730	0.600	0.440	0.320	0.300
2200	969-3017	1.300	1.010	0.710	0.600	0.590

µF	Ripple (mA)	Dimensions H D	Lead Dia. Pitch	Mftrs. List No.	Order Code
33	100	11.2 6.3	0.5 2.5	ECA1JHG330	969-3025
47	120	11.2 6.3	0.5 2.5	ECA1JHG470	969-3033
220	335	16 10	0.6 5	ECA1JHG221	969-3041
330	510	20 10	0.6 5	ECA1JHG331	969-3050
470	640	20 12.5	0.6 5	ECA1JHG471	969-3068
1000	930	25 16	0.8 7.5	ECA1JHG102	969-3076

Order Multiple=5
63 Volt d.c.

µF	Order Code	5+	50+	100+	500+	1K+
33	969-3025	0.106	0.096	0.083	0.058	0.044
47	969-3033	0.139	0.112	0.077	0.057	0.043
220	969-3041	0.290	0.250	0.220	0.160	0.129
330	969-3050	0.370	0.320	0.280	0.210	0.200
470	969-3068	0.490	0.410	0.370	0.270	0.260
1000	969-3076	1.030	0.830	0.580	0.520	0.510

µF	Ripple (mA)	Dimensions H D	Lead Dia. Pitch	Mftrs. List No.	Order Code
0.47	9	11 5	0.5 2	ECA2AHGR47	969-3084
1	14	11 5	0.5 2	ECA2AHG010	969-3092
2.2	21	11 5	0.5 2	ECA2AHG2R2	969-3106
3.3	31	11 5	0.5 2	ECA2AHG3R3	969-3114
4.7	38	11 5	0.5 2	ECA2AHG4R7	969-3122

Panasonic

100 Volt d.c.	Ripple	Dimensions		Lead			Order
μ F	(mA)	H	Dia.	Dia.	Pitch	Mfrs. List No.	Code
10	54	11.2	6.3	0.5	2.5	ECA2AHG100	969-3130
22	93	11.2	6.3	0.5	2.5	ECA2AHG220	969-3149
330	540	25	16	0.8	7.5	ECA2AHG331	969-3157
470	715	25	16	0.8	7.5	ECA2AHG471	969-3165
33	130	11.5	8	0.6	3.5	ECA2AHG330	969-4609
47	165	12.5	10	0.6	5	ECA2AHG470	969-4617
100	265	20	10	0.6	5	ECA2AHG101	969-4625
220	440	25	12.5	0.6	5	ECA2AHG221	969-4633

Order Multiple=5

100 Volt d.c.		Price Each				
μ F	Order Code	5+	50+	100+	500+	1K+
0.47	969-3084	0.128	0.080	0.054	0.037	0.033
1	969-3092	0.085	0.075	0.054	0.037	0.031
2.2	969-3106	0.085	0.075	0.054	0.038	0.033
3.3	969-3114	0.105	0.080	0.054	0.034	0.033
4.7	969-3122	0.085	0.075	0.054	0.038	0.031
10	969-3130	0.116	0.106	0.083	0.060	0.051
22	969-3149	0.160	0.118	0.077	0.057	0.047
330	969-3157	0.850	0.720	0.610	0.460	0.450
470	969-3165	1.050	0.890	0.690	0.510	0.490
33	969-4609	0.410	0.193	0.134	0.105	0.100
47	969-4617	0.270	0.230	0.158	0.129	0.126
100	969-4625	0.400	0.340	0.280	0.210	0.190
220	969-4633	0.850	0.630	0.440	0.390	0.360

160 Volt d.c.	Ripple	Dimensions		Lead			Order
μ F	(mA)	H	Dia.	Dia.	Pitch	Mfrs. List No.	Code
4.7	43	11.2	6.3	0.5	2.5	ECA2CHG4R7	969-3173
10	70	12.5	10	0.6	5	ECA2CHG100	969-3181

Order Multiple=5

160 Volt d.c.		Price Each				
μ F	Order Code	5+	50+	100+	500+	1K+
4.7	969-3173	0.220	0.125	0.085	0.074	0.072
10	969-3181	0.290	0.220	0.150	0.126	0.123

200 Volt d.c.	Ripple	Dimensions		Lead			Order
μ F	(mA)	H	Dia.	Dia.	Pitch	Mfrs. List No.	Code
3.3	36	11.2	6.3	0.5	2.5	ECA2DHG3R3	969-3190
22	140	20	10	0.6	5	ECA2DHG220	969-3203
47	220	20	12.5	0.6	5	ECA2DHG470	969-3211
100	335	25	16	0.8	7.5	ECA2DHG101	969-3220

Order Multiple=5

200 Volt d.c.		Price Each				
μ F	Order Code	5+	50+	100+	500+	1K+
3.3	969-3190	0.200	0.171	0.154	0.144	0.129
22	969-3203	0.350	0.300	0.280	0.260	0.210
47	969-3211	0.520	0.360	0.350	0.310	0.260
100	969-3220	1.080	0.910	0.820	0.770	0.670

250 Volt d.c.	Ripple	Dimensions		Lead			Order
μ F	(mA)	H	Dia.	Dia.	Pitch	Mfrs. List No.	Code
1	17	11.2	6.3	0.5	2.5	ECA2EHG010	969-3238
2.2	29	11.2	6.3	0.5	2.5	ECA2EHG2R2	969-3246
4.7	50	11.5	8	0.6	3.5	ECA2EHG4R7	969-3254
10	88	16	10	0.6	5	ECA2EHG100	969-3262
22	155	20	12.5	0.6	5	ECA2EHG220	969-3270
33	190	20	12.5	0.6	5	ECA2EHG330	969-3289
47	230	25	12.5	0.6	5	ECA2EHG470	969-3300

Order Multiple=5

250 Volt d.c.		Price Each				
μ F	Order Code	5+	50+	100+	500+	1K+
1	969-3238	0.150	0.123	0.081	0.067	0.066
2.2	969-3246	0.220	0.125	0.087	0.085	0.083
4.7	969-3254	0.280	0.171	0.128	0.125	0.121
10	969-3262	0.350	0.290	0.196	0.147	0.134
22	969-3270	0.530	0.410	0.280	0.260	0.250
33	969-3289	0.560	0.450	0.310	0.230	0.220
47	969-3300	0.830	0.570	0.400	0.360	0.350

400 Volt d.c.	Ripple	Dimensions		Lead			Order
μ F	(mA)	H	Dia.	Dia.	Pitch	Mfrs. List No.	Code
1	18	11.2	6.3	0.5	2.5	ECA2GHG010	969-3319
2.2	30	11.5	8	0.6	3.5	ECA2GHG2R2	969-3327
3.3	40	12.5	10	0.6	5	ECA2GHG3R3	969-3335
4.7	50	16	10	0.6	5	ECA2GHG4R7	969-3343
10	80	20	10	0.6	5	ECA2GHG100	969-3351
22	145	25	12.5	0.6	5	ECA2GHG220	969-3360
33	195	25	16	0.8	7.5	ECA2GHG330	969-3378
47	250	31.5	16	0.8	7.5	ECA2GHG470	969-3386

Order Multiple=5

400 Volt d.c.		Price Each				
μ F	Order Code	5+	50+	100+	500+	1K+
1	969-3319	0.200	0.150	0.123	0.108	0.089
2.2	969-3327	0.320	0.280	0.260	0.240	0.220
3.3	969-3335	0.420	0.350	0.320	0.300	0.250
4.7	969-3343	0.390	0.330	0.300	0.280	0.240
10	969-3351	0.590	0.500	0.450	0.420	0.370
22	969-3360	0.930	0.790	0.710	0.660	0.550
33	969-3378	1.180	1.000	0.880	0.820	0.710
47	969-3386	1.530	1.290	1.150	1.070	0.970

450 Volt d.c.	Ripple	Dimensions		Lead			Order
μ F	(mA)	H	Dia.	Dia.	Pitch	Mfrs. List No.	Code
1	18	11.5	8	0.6	3.5	ECA2WHG010	969-3394
2.2	29	12.5	10	0.6	5	ECA2WHG2R2	969-3408
3.3	41	16	10	0.6	5	ECA2WHG3R3	969-3416
4.7	49	20	10	0.6	5	ECA2WHG4R7	969-3424
10	75	20	12.5	0.6	5	ECA2WHG100	969-3432
22	115	25	16	0.8	7.5	ECA2WHG220	969-3440
33	155	31.5	16	0.8	7.5	ECA2WHG330	969-3459

208591

Order Multiple=5

450 Volt d.c.		Price Each				
μ F	Order Code	5+	50+	100+	500+	1K+
1	969-3394	0.330	0.190	0.146	0.142	0.138
2.2	969-3408	0.400	0.230	0.181	0.176	0.172
3.3	969-3416	0.450	0.300	0.200	0.170	0.164
4.7	969-3424	0.590	0.300	0.250	0.230	0.220
10	969-3432	0.720	0.530	0.370	0.330	0.320
22	969-3440	1.310	0.760	0.680	0.660	0.640
33	969-3459	1.650	0.950	0.690	0.660	0.630

FC Series – Low Impedance 105°C

Panasonic



- High performance miniature radial electrolytic
- High temperature 105°C
- Low impedance
- Long life

Operating temperature	-55°C to +105°C	Operating life @ 105°C	Dependent on case dia.
Tolerance	±20%		4.0 to 6.3 1000hrs
Leakage current	0.01CV or 3 μ A whichever is greater		8.0 2000hrs
			10 3000hrs
			12.5 5000hrs

μ F	Ripple (mA)	Impedance (Ω)	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
			H	Dia.				
6.3 Volt d.c.								
560	555	0.117	11.5	8	0.6	3.5	EEUFC0J561	969-1847
1000	755	0.09	12.5	10	0.6	5	EEUFC0J102	969-1855
1200	1050	0.068	16	10	0.6	5	EEUFC0J122	969-1863
2700	1690	0.43	15	16	0.8	7.5	EEUFC0J272S	969-1871
3900	1945	0.03	25	12.5	0.6	5	EEUFC0J392	969-1880
4700	2310	0.025	30	12.5	0.8	5	EEUFC0J472	969-1898
5600	2205	0.029	20	16	0.8	7.5	EEUFC0J562	969-1901
6800	2555	0.022	25	16	0.8	7.5	EEUFC0J682	969-1910
10 Volt d.c.								
180	290	0.35	11.2	6.3	0.5	2.5	EEUFC1A181	969-1928
220	400	0.25	15	6.3	0.5	2.5	EEUFC1A221	969-1936
470	555	0.117	11.5	8	0.6	3.5	EEUFC1A471	969-1944
1000	1050	0.068	16	10	0.6	5	EEUFC1A102	969-1952
1200	1220	0.052	20	10	0.6	5	EEUFC1A122	969-1960
2200	1655	0.038	20	12.5	0.6	5	EEUFC1A222	969-1979
3300	2310	0.025	30	12.5	0.6	5	EEUFC1A332	969-1987
5600	2555	0.022	25	16	0.8	7.5	EEUFC1A562	969-1995
6800	3010	0.018	31.5	16	0.8	7.5	EEUFC1A682	969-2002
10000	3680	0.015	35.5	18	0.8	7.5	EEUFC1A103	969-2010
16 Volt d.c.								
82	235	0.5	15	5	0.5	2	EEUFC1C820	969-2029
180	400	0.25	15	6.3	0.5	2.5	EEUFC1C181	969-2037
330	555	0.117	11.5	8	0.6	3.5	EEUFC1C331	969-2045
470	755	0.09	12.5	10	0.6	5	EEUFC1C471	969-2053
820	1220	0.052	20	10	0.6	5	EEUFC1C821	969-2061
1200	1440	0.045	25	10	0.6	5	EEUFC1C122	969-2070
2200	1945	0.03	25	12.5	0.6	5	EEUFC1C222	969-2088
3300	2510	0.022	35	12.5	0.8	5	EEUFC1C332	969-2096
4700	3010	0.018	31.5	16	0.8	7.5	EEUFC1C472	969-2100
8200	3680	0.015	35.5	18	0.8	7.5	EEUFC1C822	969-2126
25 Volt d.c.								
120	400	0.25	15	6.3	0.5	2.5	EEUFC1E121	969-2134
220	555	0.117	11.5	8	0.6	3.5	EEUFC1E221	969-2142
330	755	0.09	12.5	10	0.6	5	EEUFC1E331	969-2150
470	1050	0.068	16	10	0.6	5	EEUFC1E471	969-2169
560	1220	0.052	20	10	0.6	5	EEUFC1E561	969-2177
820	1440	0.045	25	10	0.6	5	EEUFC1E821	969-2185
1000	1655	0.038	20	12.5	0.6	5	EEUFC1E102	969-2193
1800	2205	0.029	20	16	0.8	7.5	EEUFC1E182	969-2207
2200	2510	0.022	35	12.5	0.8	5	EEUFC1E222	969-2215
3300	3010	0.018	31.5	16	0.8	7.5	EEUFC1E332	969-2223
4700	3680	0.015						



Aluminium Electrolytic - Radial - Panasonic - continued

FC Series – Low Impedance 105°C - continued

µF	Ripple (mA)	Impedance (Ω)	Dimensions H	Dia.	Lead Dia.	Lead Pitch	Mftrs. List No.	Order Code
35 Volt d.c.								
1000	1945	0.03	25	12.5	0.6	5	EEUFC1V102	969-2312
1200	2205	0.029	20	16	0.6	7.5	EEUFC1V122	969-2320
1800	2555	0.022	25	16	0.6	7.5	EEUFC1V182	969-2339
2200	3010	0.018	31.5	16	0.8	7.5	EEUFC1V222	969-2347
3300	3680	0.015	35.5	18	0.8	7.5	EEUFC1V332	969-2355
50 Volt d.c.								
10	90	2.5	11	4	0.45	1.5	EEUFC1H100	969-2363
18	155	1.3	11	5	0.5	2	EEUFC1H180	969-2371
27	215	0.9	11	5	0.5	2	EEUFC1H270	969-2398
33	260	0.6	11.2	6.3	0.5	2.5	EEUFC1H330	969-2401
82	485	0.234	11.5	8	0.6	3.5	EEUFC1H820	969-2410
120	615	0.162	12.5	10	0.6	5	EEUFC1H121	969-2428
270	1200	0.082	25	10	0.6	5	EEUFC1H271	969-2436
390	1480	0.063	20	12.5	0.6	5	EEUFC1H391	969-2444
680	1835	0.048	20	16	0.6	7.5	EEUFC1H681	969-2452
1000	2235	0.034	25	16	0.6	7.5	EEUFC1H102	969-2460
1200	2700	0.028	31.5	16	0.8	7.5	EEUFC1H122	969-2479
2200	3100	0.023	35.5	18	0.8	7.5	EEUFC1H222	969-2487
63 Volt d.c.								
22	240	1	11.2	6.3	0.5	2.5	EEUFC1J220	969-2495
39	330	0.7	15	6.3	0.5	2.5	EEUFC1J390	969-2509
100	535	0.256	12.5	10	0.6	5	EEUFC1J101	969-2517
180	885	0.147	20	10	0.6	5	EEUFC1J181	969-2525
220	1050	0.13	25	10	0.6	5	EEUFC1J221	969-2533
390	1720	0.07	25	12.5	0.6	5	EEUFC1J391	969-2541
470	1765	0.059	20	16	0.6	7.5	EEUFC1J471	969-2550
680	2160	0.05	25	16	0.6	7.5	EEUFC1J681	969-2568
1000	2770	0.036	35.5	16	0.8	7.5	EEUFC1J102	969-2576
1200	2950	0.032	31.5	18	0.8	7.5	EEUFC1J122	969-2584
100 Volt d.c.								
22	260	0.55	11.5	8	0.6	3.5	EEUFC2A220	969-2592
33	306	0.42	12.5	10	0.6	5	EEUFC2A330	969-2606
100	671	0.18	20	12.5	0.6	5	EEUFC2A101	969-2614
220	1170	0.089	25	16	0.8	7.5	EEUFC2A221	969-2622
330	1520	0.062	31.5	16	0.8	7.5	EEUFC2A331	969-2630
470	1920	0.047	40	16	0.8	7.5	EEUFC2A471	969-2649
680	2300	0.036	40	18	0.8	7.5	EEUFC2A681	969-2657

208559

µF	Order Code	5+	50+	100+	500+	1K+
6.3 Volt d.c.						
560	969-1847	0.220	0.185	0.129	0.074	0.066
1000	969-1855	0.270	0.220	0.154	0.114	0.111
1200	969-1863	0.280	0.250	0.163	0.135	0.131
2700	969-1871	0.890	0.770	0.500	0.370	0.360
3900	969-1880	0.660	0.550	0.420	0.300	0.290
4700	969-1898	0.790	0.620	0.440	0.360	0.340
5600	969-1901	0.840	0.730	0.630	0.390	0.360
6800	969-1910	1.090	0.870	0.610	0.410	0.400
10 Volt d.c.						
180	969-1928	0.220	0.134	0.090	0.056	0.049
220	969-1936	0.164	0.141	0.135	0.090	0.087
470	969-1944	0.220	0.175	0.123	0.072	0.071
1000	969-1952	0.230	0.196	0.158	0.145	0.140
1200	969-1960	0.430	0.350	0.250	0.193	0.184
2200	969-1979	0.610	0.480	0.390	0.360	0.340
3300	969-1987	0.770	0.620	0.440	0.320	0.310
5600	969-1995	1.070	0.910	0.760	0.450	0.440
6800	969-2002	1.810	0.980	0.740	0.610	0.600
10000	969-2010	1.860	1.410	1.080	1.060	1.030
16 Volt d.c.						
82	969-2029	0.210	0.159	0.107	0.076	0.074
180	969-2037	0.170	0.147	0.123	0.087	0.085
330	969-2045	0.230	0.178	0.116	0.101	0.099
470	969-2053	0.280	0.230	0.154	0.116	0.114
820	969-2061	0.430	0.360	0.250	0.148	0.144
1200	969-2070	0.470	0.410	0.320	0.184	0.179
2200	969-2088	0.660	0.560	0.420	0.340	0.320
3300	969-2096	0.890	0.770	0.560	0.480	0.470
4700	969-2100	1.380	1.010	0.710	0.590	0.570
8200	969-2126	1.860	1.410	0.990	0.780	0.760
25 Volt d.c.						
120	969-2134	0.170	0.147	0.123	0.088	0.086
220	969-2142	0.220	0.175	0.116	0.099	0.097
330	969-2150	0.280	0.230	0.154	0.106	0.103
470	969-2169	0.340	0.280	0.210	0.153	0.149
560	969-2177	0.430	0.360	0.290	0.179	0.175
820	969-2185	0.540	0.450	0.320	0.210	0.200
1000	969-2193	0.590	0.480	0.330	0.300	0.290
1800	969-2207	0.840	0.730	0.630	0.440	0.420
2200	969-2215	0.880	0.760	0.560	0.430	0.420
3300	969-2223	1.340	1.010	0.710	0.650	0.630
4700	969-2231	1.900	1.410	0.990	0.890	0.860

µF	Order Code	5+	50+	100+	500+	1K+
35 Volt d.c.						
39	969-2240	0.112	0.096	0.085	0.071	0.069
56	969-2258	0.136	0.125	0.089	0.052	0.047
82	969-2266	0.164	0.141	0.123	0.101	0.098
150	969-2274	0.220	0.175	0.116	0.079	0.077
220	969-2282	0.280	0.230	0.154	0.093	0.092
330	969-2290	0.340	0.280	0.210	0.132	0.129
680	969-2304	0.590	0.470	0.330	0.260	0.240
1000	969-2312	0.660	0.560	0.420	0.400	0.390
1200	969-2320	0.880	0.760	0.630	0.440	0.430
1800	969-2339	1.070	0.910	0.760	0.450	0.440
2200	969-2347	1.340	1.010	0.710	0.660	0.630
3300	969-2355	1.770	1.410	0.990	0.890	0.870

µF	Order Code	5+	50+	100+	500+	1K+
50 Volt d.c.						
10	969-2363	0.112	0.101	0.087	0.074	0.072
18	969-2371	0.128	0.108	0.073	0.041	0.040
27	969-2398	0.240	0.167	0.115	0.084	0.081
33	969-2401	0.131	0.121	0.081	0.048	0.043
82	969-2410	0.220	0.185	0.129	0.074	0.069
120	969-2428	0.280	0.240	0.181	0.120	0.117
270	969-2436	0.470	0.410	0.320	0.184	0.170
390	969-2444	0.600	0.500	0.410	0.230	0.220
680	969-2452	0.840	0.730	0.520	0.390	0.370
1000	969-2460	1.090	0.870	0.610	0.490	0.470
1200	969-2479	1.370	1.270	0.970	0.580	0.560
2200	969-2487	1.830	1.410	0.990	0.920	0.890

µF	Order Code	5+	50+	100+	500+	1K+
63 Volt d.c.						
22	969-2495	0.131	0.121	0.081	0.048	0.047
39	969-2509	0.156	0.133	0.107	0.104	0.102
100	969-2517	0.270	0.220	0.154	0.127	0.124
180	969-2525	0.430	0.360	0.300	0.191	0.187
220	969-2533	0.470	0.400	0.300	0.280	0.270
390	969-2541	0.660	0.550	0.520	0.290	0.260
470	969-2550	0.820	0.700	0.520	0.410	0.400
680	969-2568	1.090	0.870	0.620	0.500	0.490
1000	969-2576	1.360	1.110	0.800	0.680	0.660
1200	969-2584	1.410	1.200	0.970	0.730	0.720

µF	Order Code	5+	50+	100+	500+	1K+
100 Volt d.c.						
22	969-2592	0.270	0.197	0.133	0.084	0.082
33	969-2606	0.290	0.230	0.166	0.148	0.144
100	969-2614	0.670	0.530	0.500	0.480	0.470
220	969-2622	1.260	0.860	0.600	0.550	0.530
330	969-2630	1.460	1.110	0.800	0.730	0.710
470	969-2649	1.800	1.390	0.990	0.930	0.890
680	969-2657	2.560	1.840	1.520	1.490	1.450

FK Series



- Low impedance (10 % to 30 % less than FC Series)
- Miniaturization (30 % to 40 % less than FC Series)

Panasonic



Operating temperature Tolerance: -55°C to +105°C ± 20%
Ripple current measured at: 100kHz @ 105°C
Impedance measured at: 100kHz @ 20°C

µF	Ripple (mA)	Impedance (Ω)	Body Dimensions (mm) H	Dia.	Lead Dimensions (mm) Spacing	Dia.	Mftrs. List No.	Order Code
6.3 Volt d.c.								
680	630	0.09	11.5	8	3.5	0.6	EEUFKJ681	174-4868
1000	900	0.063	12.5	10	5	0.6	EEUFKJ102	174-4869
1000	860	0.062	15	8	3.5	0.6	EEUFKJ102L	174-4870

µF	Ripple (mA)	Impedance (Ω)	Body Dimensions (mm)	Lead Dimensions (mm)	Mfrs. List No.	Order Code		
			H	Dia.	Spacing	Dia		
10 Volt d.c.								
1500	1400	0.048	15	12.5	5	0.6	EEUFK1A152S	174-4895
1800	1490	0.035	20	10	5	0.6	EEUFK1A182	174-4897
1800	1680	0.033	25	10	5	0.6	EEUFK1A182L	174-4898
2700	1890	0.029	20	12.5	5	0.6	EEUFK1A272	174-4899
2700	2140	0.025	30	10	5	0.6	EEUFK1A272S	174-4900
2700	1800	0.038	15	16	7.5	0.8	EEUFK1A272S	174-4901
3900	2280	0.022	25	12.5	5	0.6	EEUFK1A392	174-4903
3900	2060	0.036	15	18	7.5	0.8	EEUFK1A392S	174-4904
4700	2720	0.018	30	12.5	5	0.8	EEUFK1A472L	174-4905
4700	2330	0.026	20	16	7.5	0.8	EEUFK1A472S	174-4906
5600	2940	0.016	35	12.5	5	0.8	EEUFK1A562L	174-4907
6800	2760	0.019	25	16	7.5	0.8	EEUFK1A682	174-4908
6800	3010	0.014	40	12.5	5	0.8	EEUFK1A682L	174-4909
6800	2640	0.025	20	18	7.5	0.8	EEUFK1A682S	174-4910
8200	2850	0.018	25	18	7.5	0.8	EEUFK1A822S	174-4911

16 Volt d.c.								
390	630	0.09	11.5	8	3.5	0.6	EEUFK1C391	174-4912
680	900	0.063	12.5	10	5	0.6	EEUFK1C681	174-4913
680	860	0.062	15	8	3.5	0.6	EEUFK1C681L	174-4915
820	1220	0.044	20	8	3.5	0.6	EEUFK1C821L	174-4916
1000	1240	0.049	16	10	5	0.6	EEUFK1C102	174-4917
1200	1490	0.035	20	10	5	0.6	EEUFK1C122	174-4918
1200	1400	0.048	15	12.5	5	0.6	EEUFK1C122S	174-4919
1500	1680	0.033	25	10	5	0.6	EEUFK1C152L	174-4920
2200	1890	0.029	20	12.5	5	0.6	EEUFK1C222	174-4921
2200	2140	0.025	30	10	5	0.6	EEUFK1C222L	174-4922
2200	1800	0.038	15	16	7.5	0.8	EEUFK1C222S	174-4923
2700	2280	0.022	25	12.5	5	0.6	EEUFK1C272	174-4924
2700	2060	0.036	15	18	7.5	0.8	EEUFK1C272S	174-4925
3300	2720	0.018	30	12.5	5	0.8	EEUFK1C332L	174-4927
3900	2940	0.016	35	12.5	5	0.8	EEUFK1C392L	174-4928
3900	2330	0.026	20	16	7.5	0.8	EEUFK1C392S	174-4929
4700	3010	0.014	40	12.5	5	0.8	EEUFK1C472L	174-4930
4700	2640	0.025	20	18	7.5	0.8	EEUFK1C472S	174-4931
5600	2760	0.019	25	16	7.5	0.8	EEUFK1C562	174-4932
6800	2850	0.018	25	18	7.5	0.8	EEUFK1C682S	174-4933

25 Volt d.c.								
270	630	0.09	11.5	8	3.5	0.6	EEUFK1E271	174-4934
390	860	0.062	15	8	3.5	0.6	EEUFK1E391L	174-4935
470	900	0.063	12.5	10	5	0.6	EEUFK1E471	174-4936
560	1240	0.049	16	10	5	0.6	EEUFK1E561	174-4937
560	1220	0.044	20	8	3.5	0.6	EEUFK1E561L	174-4939
820	1490	0.035	20	10	5	0.6	EEUFK1E821	174-4941
820	1400	0.048	15	12.5	5	0.6	EEUFK1E821S	174-4942
1000	1680	0.033	25	10	5	0.6	EEUFK1E102L	174-4943
1200	1890	0.029	20	12.5	5	0.6	EEUFK1E122	174-4944
1500	2140	0.025	30	10	5	0.6	EEUFK1E152L	174-4945
1500	1800	0.038	15	16	7.5	0.8	EEUFK1E152S	174-4946
1800	2280	0.022	25	12.5	5	0.6	EEUFK1E182	174-4947
1800	2060	0.036	15	18	7.5	0.6	EEUFK1E182S	174-4948
2200	2720	0.018	30	12.5	5	0.8	EEUFK1E222L	174-4949
2200	2330	0.026	20	16	7.5	0.8	EEUFK1E222S	174-4950
2700	2940	0.016	35	12.5	5	0.8	EEUFK1E272L	174-4952
3300	2760	0.019	25	16	7.5	0.8	EEUFK1E332	174-4953
3300	3010	0.014	40	12.5	5	0.8	EEUFK1E332L	174-4954
3300	2640	0.025	20	18	7.5	0.8	EEUFK1E332S	174-4955
4700	2850	0.018	25	18	7.5	0.8	EEUFK1E472S	174-4956

35 Volt d.c.								
180	630	0.09	11.5	8	3.5	0.6	EEUFK1V181	174-4957
270	900	0.063	12.5	10	5	0.6	EEUFK1V271	174-4958
270	860	0.062	15	8	3.5	0.6	EEUFK1V271L	174-4959
390	1240	0.049	16	10	5	0.6	EEUFK1V391	174-4960
390	1220	0.044	20	8	3.5	0.6	EEUFK1V391L	174-4961
560	1490	0.035	20	10	5	0.6	EEUFK1V561	174-4962
560	1400	0.048	15	12.5	5	0.6	EEUFK1V561S	174-4964
680	1680	0.033	25	10	5	0.6	EEUFK1V681L	174-4965
820	1890	0.029	20	12.5	5	0.6	EEUFK1V821	174-4966
1000	2140	0.025	30	10	5	0.6	EEUFK1V102L	174-4967
1000	1800	0.038	15	16	7.5	0.8	EEUFK1V102S	174-4968
1200	2280	0.022	25	12.5	5	0.6	EEUFK1V122	174-4969
1200	2060	0.036	15	18	7.5	0.8	EEUFK1V122S	174-4970
1500	2720	0.018	30	12.5	5	0.8	EEUFK1V152L	174-4971
1800	2940	0.016	35	12.5	5	0.8	EEUFK1V182L	174-4972
1800	2330	0.026	20	16	7.5	0.8	EEUFK1V182S	174-4973
2200	2760	0.019	25	16	7.5	0.8	EEUFK1V222	174-4974
2200	3010	0.014	40	12.5	5	0.8	EEUFK1V222L	174-4976
2200	2640	0.025	20	18	7.5	0.8	EEUFK1V222S	174-4977
3300	2850	0.018	25	18	7.5	0.8	EEUFK1V332S	174-4978

208559

µF	Order Code	5+	50+	100+	500+	1K+
6.3 Volt d.c.						
680	174-4868	0.300	0.280	0.240	0.210	0.159
1000	174-4869	0.390	0.350	0.310	0.260	0.210
1000	174-4870	0.340	0.320	0.280	0.240	0.187
1500	174-4871	0.480	0.440	0.390	0.330	0.250
1500	174-4873	0.390	0.350	0.310	0.260	0.210
1800	174-4874	0.810	0.750	0.660	0.550	0.440
2200	174-4875	0.580	0.530	0.470	0.400	0.310
2200	174-4876	0.630	0.590	0.520	0.430	0.340
3300	174-4877	0.850	0.790	0.690	0.580	0.460
3300	174-4878	0.880	0.800	0.710	0.600	0.480
3300	174-4879	1.140	1.050	0.920	0.770	0.610
4700	174-4880	1.010	0.930	0.810	0.690	0.540
4700	174-4881	1.550	1.430	1.250	1.050	0.830
5600	174-4882	1.110	1.020	0.890	0.750	0.600
5600	174-4883	1.270	1.170	1.020	0.850	0.680
6800	174-4885	1.670	1.550	1.350	1.130	0.890

µF	Order Code	5+	50+	100+	500+	1K+
6.3 Volt d.c.						
8200	174-4886	1.910	1.760	1.550	1.290	1.030
8200	174-4887	1.910	1.760	1.550	1.290	1.030
8200	174-4888	2.010	1.830	1.610	1.360	1.080
12000	174-4889	2.480	2.280	2.000	1.670	1.330
10 Volt d.c.						
560	174-4890	0.300	0.280	0.240	0.210	0.159
820	174-4891	0.390	0.350	0.310	0.260	0.210
820	174-4892	0.340	0.320	0.280	0.240	0.187
1200	174-4893	0.480	0.440	0.390	0.330	0.250
1200	174-4894	0.390	0.350	0.310	0.260	0.210
1500	174-4895	0.810	0.750	0.660	0.550	0.440
1800	174-4897	0.580	0.530	0.470	0.400	0.310
1800	174-4898	0.630	0.590	0.520	0.430	0.340
2700	174-4899	0.850	0.790	0.690	0.580	0.460
2700	174-4900	0.810	0.750	0.660	0.550	0.440
2700	174-4901	1.140	1.050	0.920	0.770	0.610
3900	174-4903	1.010	0.930	0.810	0.690	0.540
3900	174-4904	1.550	1.430	1.250	1.050	0.830
4700	174-4905	1.110	1.020	0.890	0.750	0.600
4700	174-4906	1.270	1.170	1.020	0.850	0.680
5600	174-4907	1.670	1.550	1.350	1.130	0.890
6800	174-4908	1.550	1.430	1.250	1.050	0.830
6800	174-4909	1.910	1.760	1.550	1.290	1.030
6800	174-4910	2.010	1.830	1.610	1.360	1.080
8200	174-4911	2.480	2.280	2.000	1.670	1.330

16 Volt d.c.						
390	174-4912	0.300	0.280	0.240	0.210	0.159
680	174-4913	0.390	0.350	0.310	0.260	0.210
680	174-4915	0.340	0.320	0.280	0.240	0.187
820	174-4916	0.390	0.350	0.310	0.260	0.210
1000	174-4917	0.480	0.440	0.390	0.330	0.250
1200	174-4918	0.580	0.530	0.470	0.400	0.310
1200	174-4919	0.810	0.750	0.660	0.550	0.440
1500	174-4920	0.630	0.590	0.520	0.430	0.340
2200	174-4921	0.850	0.790	0.690	0.580	0.460
2200	174-4922	0.880	0.800	0.710	0.600	0.480
2200	174-4923	1.140	1.050	0.920	0.770	0.610
2700	174-4924	1.010	0.930	0.810	0.690	0.540
2700	174-4925	1.550	1.430	1.250	1.050	0.830
3300	174-4927	1.110	1.020	0.890	0.750	0.600
3900	174-4928	1.670	1.550	1.350	1.130	0.890
3900	174-4929	1.270	1.170	1.020	0.850	0.680
4700	174-4930	1.910	1.760	1.550	1.290	1.030
4700	174-4931	2.010	1.830	1.610	1.360	1.080
5600	174-4932	1.550	1.430	1.250	1.050	0.830
6800	174-4933	2.480	2.280	2.000	1.670	1.330

25 Volt d.c.						
270</						

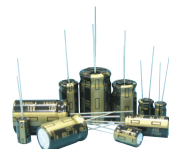


Aluminium Electrolytic - Radial - Panasonic - continued

FK Series - continued

µF	Order Code	Price Each				
		5+	50+	100+	500+	1K+
35 Volt d.c.						
1200	174-4970 ●	1.550	1.430	1.250	1.050	0.830
1500	174-4971 ●	1.110	1.020	0.890	0.750	0.600
1800	174-4972 ●	1.670	1.550	1.350	1.130	0.890
1800	174-4973 ●	1.270	1.170	1.020	0.850	0.680
2200	174-4974 ●	1.550	1.430	1.250	1.050	0.830
2200	174-4976 ●	1.910	1.760	1.550	1.290	1.030
2200	174-4977 ●	2.010	1.830	1.610	1.360	1.080
3300	174-4978 ●	2.480	2.280	2.000	1.670	1.330

FM Series - Low Impedance 105°C



- High temperature - 105°C
- Low impedance
- High ripple current capability
- Long life - 2000 to 7000 hours
- Approximately 30% smaller case size than standard FC series
- Applications include the secondary circuit of a switching power supply

Operating temperature Tolerance -40°C to +105°C ±20%
 DC Leakage current (max) 0.01µA
 Ripple current measured at 100kHz @ 105°C
 Impedance measured at 100kHz @ 20°C

µF	Ripple (mA)	Impedance (Ω)	Operating Life (h)	Dimensions H Dia.	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
6.3 Volt d.c.								
150	280	0.3	2000	11 5	0.5	2	EEUFMOJ151	121-9442
330	455	0.13	2000	11.2 6	0.5	2.5	EEUFMOJ331	121-9445
1200	1560	0.03	4000	20 8	0.6	3.5	EEUFMOJ122L	121-9446
1000	1290	0.038	4000	12.5 10	0.6	5	EEUFMOJ102L	121-9447
1500	2180	0.019	5000	20 10	0.6	5	EEUFMOJ152L	121-9448
2200	2470	0.018	5000	25 10	0.6	5	EEUFMOJ222L	121-9449
3300	2600	0.018	5000	20 12.5	0.6	5	EEUFMOJ332	121-9450
4700	3630	0.013	7000	30 12.5	0.8	5	EEUFMOJ472L	121-9451
6800	3820	0.014	7000	25 16	0.8	7.5	EEUFMOJ682	121-9452
10 Volt d.c.								
100	280	0.3	2000	11 5	0.5	2	EEUFM1A101	121-9453
220	455	0.13	2000	11.2 6	0.5	2.5	EEUFM1A221	121-9454
1000	1560	0.03	4000	20 8	0.6	3.5	EEUFM1A102L	121-9456
3300	3190	0.015	7000	25 12.5	0.6	5	EEUFM1A332	121-9458
4700	3750	0.012	7000	35 12.5	0.8	5	EEUFM1A472L	121-9459
5600	3820	0.014	7000	25 16	0.8	7.5	EEUFM1A562	121-9460
16 Volt d.c.								
330	950	0.056	3000	11.5 8	0.6	3.5	EEUFM1C331	121-9461
470	1240	0.041	3000	15 8	0.6	3.5	EEUFM1C471L	121-9462
1000	2180	0.019	5000	20 10	0.6	5	EEUFM1C102	121-9463
2200	3190	0.015	7000	25 12.5	0.6	5	EEUFM1C222	121-9464
3300	3750	0.012	7000	35 12.5	0.8	5	EEUFM1C332L	121-9465
25 Volt d.c.								
100	455	0.13	2000	11.2 6	0.5	2.5	EEUFM1E101	121-9466
220	950	0.056	3000	11.5 8	0.6	3.5	EEUFM1E221	121-9468
330	1240	0.041	3000	15 8	0.6	3.5	EEUFM1E331L	121-9469
470	1560	0.03	4000	20 8	0.6	3.5	EEUFM1E471L	121-9470
1000	2600	0.018	5000	20 12.5	0.6	5	EEUFM1E102	121-9471
2200	3750	0.012	7000	35 12.5	0.8	5	EEUFM1E222L	121-9472
35 Volt d.c.								
220	1240	0.04	3000	15 8	0.6	3.5	EEUFM1V221L	121-9473
330	1560	0.03	4000	20 8	0.6	3.5	EEUFM1V331L	121-9474
470	2180	0.019	5000	20 10	0.6	5	EEUFM1V471	121-9475
1000	3190	0.015	7000	25 12.5	0.6	5	EEUFM1V102	121-9476
1500	3630	0.013	7000	30 12.5	0.8	5	EEUFM1V152L	121-9477
50 Volt d.c.								
100	870	0.061	3000	11.5 8	0.6	3.5	EEUFM1H101	121-9478
220	1650	0.03	4000	16 10	0.6	5	EEUFM1H221	121-9481
330	2150	0.022	5000	25 10	0.6	5	EEUFM1H331L	121-9482
470	2260	0.022	5000	20 12.5	0.6	5	EEUFM1H471	121-9483
1000	3320	0.016	7000	25 16	0.8	7.5	EEUFM1H102	121-9484

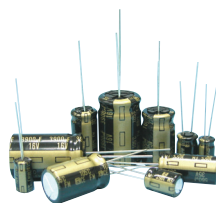
438036

µF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
6.3 Volt d.c.						
150	121-9442 ●	0.083	0.073	0.062	0.036	0.032
330	121-9445 ●	0.114	0.094	0.077	0.045	0.041
1200	121-9446 ●	0.280	0.240	0.168	0.099	0.094
1000	121-9447 ●	0.270	0.220	0.146	0.085	0.083
1500	121-9448 ●	0.410	0.340	0.240	0.136	0.121
2200	121-9449 ●	0.460	0.360	0.250	0.151	0.149
3300	121-9450 ●	0.620	0.460	0.310	0.185	0.171
4700	121-9451 ●	0.760	0.590	0.410	0.260	0.240
6800	121-9452 ●	1.030	0.800	0.550	0.370	0.350
10 Volt d.c.						
100	121-9453 ●	0.094	0.083	0.062	0.036	0.032
220	121-9454 ●	0.114	0.094	0.077	0.045	0.041
1000	121-9456 ●	0.300	0.290	0.196	0.114	0.101
3300	121-9458 ●	0.750	0.580	0.400	0.240	0.230
4700	121-9459 ●	0.980	0.790	0.570	0.360	0.340
5600	121-9460 ●	1.030	0.800	0.550	0.350	0.340

Panasonic

µF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
16 Volt d.c.						
330	121-9461 ●	0.198	0.166	0.114	0.064	0.058
470	121-9462 ●	0.250	0.220	0.146	0.084	0.075
1000	121-9463 ●	0.410	0.340	0.240	0.148	0.145
2200	121-9464 ●	0.750	0.580	0.400	0.250	0.230
3300	121-9465 ●	0.980	0.790	0.570	0.370	0.360
25 Volt d.c.						
100	121-9466 ●	0.114	0.094	0.077	0.043	0.037
220	121-9468 ●	0.187	0.156	0.114	0.064	0.054
330	121-9469 ●	0.260	0.220	0.146	0.084	0.081
470	121-9470 ●	0.300	0.260	0.168	0.099	0.097
1000	121-9471 ●	0.620	0.460	0.310	0.185	0.171
2200	121-9472 ●	1.120	0.820	0.570	0.360	0.350
35 Volt d.c.						
220	121-9473 ●	0.260	0.220	0.146	0.084	0.075
330	121-9474 ●	0.290	0.250	0.171	0.099	0.087
470	121-9475 ●	0.410	0.340	0.240	0.136	0.121
1000	121-9476 ●	0.750	0.580	0.400	0.250	0.230
1500	121-9477 ●	1.010	0.820	0.570	0.360	0.340
50 Volt d.c.						
100	121-9478 ●	0.178	0.148	0.114	0.064	0.054
220	121-9481 ●	0.330	0.280	0.196	0.114	0.101
330	121-9482 ●	0.480	0.360	0.250	0.151	0.149
470	121-9483 ●	0.620	0.460	0.310	0.190	0.186
1000	121-9484 ●	1.060	0.800	0.550	0.340	0.330

FR Series



- Low ESR
- Endurance : 2000 h to 10000 h at +105 °C
- RoHS directive compliant

Operating temperature Tolerance -40°C to +105°C ± 20%

µF	Ripple (mA)	Impedance (Ω)	Operating Life	Dimensions H Dia.	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
6.3 Volt								
820	950	0.056	6000h	11.5 8	0.6	3.5	EEUFROJ821	180-0604
1220	1240	0.041	8000h	15 8	0.6	3.5	EEUFROJ122L	180-0605
1200	1290	0.043	6000h	12.5 10	0.6	5	EEUFROJ122	180-0606
1500	1560	0.03	9000h	20 8	0.6	3.5	EEUFROJ152L	180-0608
1800	1790	0.028	8000h	16 10	0.6	5	EEUFROJ182	180-0609
2200	2180	0.02	10000h	20 10	0.6	5	EEUFROJ222	180-0610
2700	2470	0.018	10000h	25 10	0.6	5	EEUFROJ272L	180-0611
3900	2600	0.018	10000h	20 12.5	0.6	5	EEUFROJ392	180-0612
4700	3190	0.015	10000h	25 12.5	0.6	5	EEUFROJ472	180-0613
5600	3630	0.013	10000h	30 12.5	0.8	5	EEUFROJ562L	180-0614
6800	3750	0.012	10000h	35 12.5	0.8	5	EEUFROJ682L	180-0615
6800	3300	0.017	10000h	20 16	0.8	7.5	EEUFROJ682S	180-0616
8200	3820	0.014	10000h	25 16	0.8	7.5	EEUFROJ822	180-0617
10 Volt								
680	950	0.056	6000h	11.5 8	0.6	3.5	EEUFR1A681	180-0618
820	1290	0.043	6000h	12.5 10	0.6	5	EEUFR1A821	180-0621
1000	1240	0.041	8000h	15 8	0.6	3.5	EEUFR1A102L	180-0622
1500	1560	0.03	9000h	20 8	0.6	3.5	EEUFR1A152L	180-0623
1500	1790	0.028	8000h	16 10	0.6	5	EEUFR1A152	180-0624
1800	2180	0.02	10000h	20 10	0.6	5	EEUFR1A182	180-0625
2200	2470	0.018	10000h	25 10	0.6	5	EEUFR1A222L	180-0626
3300	2600	0.018	10000h	20 12.5	0.6	5	EEUFR1A332	180-0627
3900	3190	0.015	10000h	25 12.5	0.6	5	EEUFR1A392	180-0628
4700	3630	0.013	10000h	30 12.5	0.8	5	EEUFR1A472L	180-0629
4700	3300	0.017	10000h	20 16	0.8	7.5		

µF	Ripple (mA)	Impedance (Ω)	Operating Life	Dimensions H Dia.	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
35 Volt								
180	950	0.056	6000h	11.5 8	0.6	3.5	EEUFR1V181	180-0662
270	1240	0.041	8000h	15 8	0.6	3.5	EEUFR1V271L	180-0663
270	1290	0.043	6000h	12.5 10	0.6	5	EEUFR1V271	180-0664
390	1560	0.03	9000h	20 8	0.6	3.5	EEUFR1V391L	180-0665
470	1790	0.028	8000h	16 10	0.6	5	EEUFR1V471	180-0666
560	2180	0.02	10000h	20 10	0.6	5	EEUFR1V561	180-0667
680	2470	0.018	10000h	25 10	0.6	5	EEUFR1V681L	180-0669
1000	2600	0.018	10000h	20 12.5	0.6	5	EEUFR1V102	180-0671
1200	3190	0.015	10000h	25 12.5	0.6	5	EEUFR1V122	180-0672
1500	3630	0.013	10000h	30 12.5	0.8	5	EEUFR1V152L	180-0673
1500	3300	0.017	10000h	20 16	0.8	7.5	EEUFR1V152S	180-0674
1800	3750	0.012	10000h	35 12.5	0.8	5	EEUFR1V182L	180-0675
2200	3820	0.014	10000h	25 16	0.8	7.5	EEUFR1V222	180-0676
50 Volt								
100	870	0.061	6000h	11.5 8	0.6	3.5	EEUFR1H101	180-0677
120	1140	0.045	8000h	15 8	0.6	3.5	EEUFR1H121L	180-0678
150	1170	0.042	6000h	12.5 10	0.6	5	EEUFR1H151	180-0679
180	1430	0.033	9000h	20 8	0.6	3.5	EEUFR1H181L	180-0680
220	1650	0.03	8000h	16 10	0.6	5	EEUFR1H221	180-0682
270	1890	0.023	10000h	20 10	0.6	5	EEUFR1H271	180-0683
330	2150	0.022	10000h	25 10	0.6	5	EEUFR1H331L	180-0684
470	2260	0.022	10000h	20 12.5	0.6	5	EEUFR1H471	180-0685
560	2660	0.018	10000h	25 12.5	0.6	5	EEUFR1H561	180-0686
680	3160	0.016	10000h	30 12.5	0.8	5	EEUFR1H681L	180-0687
820	2870	0.019	10000h	20 16	0.8	7.5	EEUFR1H821S	180-0688
820	3270	0.014	10000h	35 12.5	0.8	5	EEUFR1H821L	180-0689
1000	3320	0.016	10000h	25 16	0.8	7.5	EEUFR1H102	180-0690

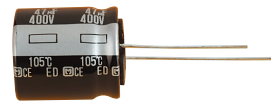
605808

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	500+	1K+
6.3 Volt						
820	180-0604	0.157	0.139	0.118	0.090	0.076
1220	180-0605	0.218	0.194	0.164	0.125	0.105
1200	180-0606	0.220	0.195	0.165	0.125	0.106
1500	180-0608	0.250	0.224	0.190	0.144	0.122
1800	180-0609	0.300	0.260	0.220	0.167	0.141
2200	180-0610	0.350	0.310	0.260	0.201	0.169
2700	180-0611	0.400	0.350	0.300	0.226	0.191
3900	180-0612	0.500	0.440	0.370	0.280	0.237
4700	180-0613	0.620	0.550	0.470	0.360	0.300
6800	180-0615	0.940	0.840	0.710	0.540	0.450
6800	180-0616	0.770	0.680	0.580	0.440	0.370
8200	180-0617	0.920	0.810	0.690	0.520	0.440
10 Volt						
680	180-0618	0.160	0.140	0.120	0.090	0.080
820	180-0621	0.220	0.200	0.170	0.130	0.110
1000	180-0622	0.220	0.190	0.160	0.130	0.110
1500	180-0623	0.250	0.220	0.190	0.140	0.120
1500	180-0624	0.290	0.260	0.220	0.170	0.140
1800	180-0625	0.350	0.310	0.260	0.200	0.170
2200	180-0626	0.400	0.350	0.300	0.230	0.190
3300	180-0627	0.490	0.440	0.370	0.280	0.240
3900	180-0628	0.620	0.550	0.470	0.360	0.300
4700	180-0629	0.640	0.570	0.480	0.370	0.310
4700	180-0630	0.770	0.680	0.580	0.440	0.370
5600	180-0631	0.940	0.830	0.710	0.540	0.450
6800	180-0633	0.920	0.810	0.690	0.520	0.440
16 Volt						
470	180-0634	0.160	0.140	0.120	0.090	0.080
680	180-0635	0.220	0.190	0.160	0.130	0.110
680	180-0636	0.220	0.200	0.170	0.130	0.110
1000	180-0637	0.290	0.260	0.220	0.170	0.140
1000	180-0638	0.250	0.220	0.190	0.140	0.120
1500	180-0639	0.350	0.310	0.260	0.200	0.170
1500	180-0640	0.400	0.350	0.300	0.230	0.190
2200	180-0641	0.490	0.440	0.370	0.280	0.240
2700	180-0642	0.620	0.550	0.470	0.360	0.300
3300	180-0643	0.640	0.570	0.480	0.370	0.310
3300	180-0645	0.770	0.680	0.580	0.440	0.370
3900	180-0646	0.940	0.840	0.710	0.540	0.450
4700	180-0647	0.910	0.810	0.690	0.520	0.440
25 Volt						
330	180-0648	0.160	0.140	0.120	0.090	0.080
390	180-0649	0.220	0.190	0.160	0.130	0.110
470	180-0650	0.220	0.190	0.160	0.130	0.110
560	180-0651	0.250	0.220	0.190	0.140	0.120
680	180-0652	0.290	0.260	0.220	0.170	0.140
820	180-0653	0.350	0.310	0.260	0.200	0.170
1000	180-0654	0.400	0.350	0.300	0.230	0.190
1500	180-0655	0.490	0.440	0.370	0.280	0.240
1800	180-0657	0.620	0.550	0.470	0.360	0.300
2200	180-0658	0.640	0.570	0.480	0.370	0.310
2200	180-0659	0.770	0.680	0.580	0.440	0.370
2700	180-0660	0.940	0.840	0.710	0.540	0.450
3300	180-0661	0.920	0.810	0.690	0.520	0.440

Order Multiple=5		Price Each				
µF	Order Code	5+	50+	100+	500+	1K+
35 Volt						
180	180-0662	0.160	0.140	0.120	0.090	0.080
270	180-0663	0.220	0.200	0.170	0.130	0.110
270	180-0664	0.220	0.200	0.170	0.130	0.110
390	180-0665	0.250	0.220	0.190	0.140	0.120
470	180-0666	0.290	0.260	0.220	0.170	0.140
560	180-0667	0.350	0.310	0.260	0.200	0.170
680	180-0669	0.400	0.350	0.300	0.230	0.190
1000	180-0671	0.490	0.440	0.370	0.280	0.240
1200	180-0672	0.620	0.550	0.470	0.360	0.300
1500	180-0673	0.640	0.570	0.480	0.370	0.310
1500	180-0674	0.770	0.680	0.580	0.440	0.370
1800	180-0675	0.940	0.840	0.710	0.540	0.450
2200	180-0676	0.920	0.810	0.690	0.520	0.440
50 Volt						
100	180-0677	0.160	0.140	0.120	0.090	0.080
120	180-0678	0.220	0.190	0.160	0.130	0.110
150	180-0679	0.220	0.200	0.170	0.130	0.110
180	180-0680	0.250	0.220	0.190	0.140	0.120
220	180-0682	0.290	0.260	0.220	0.170	0.140
270	180-0683	0.350	0.310	0.260	0.200	0.170
330	180-0684	0.400	0.350	0.300	0.230	0.190
470	180-0685	0.490	0.440	0.370	0.280	0.240
560	180-0686	0.620	0.550	0.470	0.360	0.300
680	180-0687	0.640	0.570	0.480	0.370	0.310
820	180-0688	0.770	0.680	0.580	0.440	0.370
820	180-0689	0.940	0.840	0.710	0.540	0.450
1000	180-0690	0.920	0.810	0.690	0.520	0.440

ED Series – Low Impedance, Long Life, 105°C

Panasonic



- High performance miniature radial electrolytic
- High temperature 105°C
- Low impedance
- High ripple current (at high frequency)
- Long life

Operating temperature: -25°C to +105°C
 Tolerance: ±20%
 Leakage current: 0.06CV + 10µA
 Ripple current measured at: 100kHz @ 105°C
 Operating life @ °C: 12.5 or greater 10000hrs / 10 8000hrs

160 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
22	969-6180	0.560	0.350	0.330	0.320	0.310
33	969-6199	0.560	0.360	0.350	0.340	0.320
47	969-6202	0.560	0.330	0.250	0.196	0.189
68	969-6210	0.840	0.500	0.420	0.410	0.400
100	969-6229	1.080	0.650	0.560	0.540	0.530
150	969-6237	1.490	0.990	0.880	0.730	0.670
220	969-6245	1.930	1.160	0.870	0.710	0.700
330	969-6253	2.670	2.240	1.670	1.600	1.560
200 Volt d.c.						
µF	Order Code	1+	50+	100+	500+	1K+
22	969-6261	0.56	0.33	0.25	0.22	0.21
33	969-6270	0.56	0.37	0.36	0.35	0.34
47	969-6288	0.84	0.50	0.45	0.44	0.43
100	969-6296	1.48	0.89	0.67	0.63	0.61
150	969-6300	1.48	0.89	0.67	0.55	0.53
220	969-6318	2.47	2.09	1.67	1.35	1.32
330	969-6326	3.28	2.78	2.27	1.75	1.71
200 Volt d.c.						
µF	Order Code	1+	50+	100+	500+	1K+
22	969-6261	0.56	0.33	0.25	0.22	0.21
33	969-6270	0.56	0.37	0.36	0.35	0.34
47	969-6288	0.84	0.50	0.45	0.44	0.43
100	969-6296	1.48	0.89	0.67	0.63	0.61
150	969-6300	1.48	0.89	0.67	0.55	0.53
220	969-6318	2.47	2.09	1.67	1.35	1.32
330	969-6326	3.28	2.78	2.27	1.75	1.71

Passive Components

7

Capacitors



Aluminium Electrolytic - Radial - Panasonic - continued

ED Series – Low Impedance, Long Life, 105°C - continued

250 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
22	560	20	10	0.6	5	EEUED2E220	969-6334
33	710	20	12.5	0.6	5	EEUED2E330	969-6342
47	920	25	12.5	0.6	5	EEUED2E470	969-6369
68	1000	20	16	0.8	7.5	EEUED2E680S	969-6377
100	1500	31.5	16	0.8	7.5	EEUED2E101	969-6385
150	1800	31.5	18	0.8	7.5	EEUED2E151	969-6393
220	2100	40	18	0.8	7.5	EEUED2E221	969-6407

250 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	969-6334	0.56	0.35	0.34	0.33	0.32
33	969-6342	0.84	0.57	0.56	0.54	0.53
47	969-6369	1.08	0.65	0.49	0.31	0.29
68	969-6377	1.27	0.85	0.61	0.60	0.58
100	969-6385	1.93	1.16	0.87	0.72	0.71
150	969-6393	2.67	2.24	1.67	1.36	1.33
220	969-6407	3.60	3.03	2.27	1.71	1.66

350 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
10	350	20	10	0.6	5	EEUED2V100	969-6415
22	480	20	12.5	0.6	5	EEUED2V220	969-6423
33	640	20	16	0.8	7.5	EEUED2V330S	969-6431
47	800	25	16	0.8	7.5	EEUED2V470	969-6440
100	1200	31.5	18	0.8	7.5	EEUED2V101	969-6458

350 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
10	969-6415	0.65	0.40	0.33	0.32	0.31
22	969-6423	0.92	0.59	0.53	0.51	0.50
33	969-6431	1.37	0.97	0.70	0.56	0.54
47	969-6440	1.61	1.07	0.77	0.69	0.67
100	969-6458	2.95	2.31	1.67	1.41	1.37

400 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
10	300	20	10	0.6	5	EEUED2G100	969-6466
15	410	20	12.5	0.6	5	EEUED2G150	969-6474
22	500	25	12.5	0.6	5	EEUED2G220	969-6482
33	730	20	16	0.8	7.5	EEUED2G330S	969-6490
47	840	25	16	0.8	7.5	EEUED2G470	969-6504
47	840	20	18	0.8	7.5	EEUED2G470S	153-9446
68	1200	31.5	18	0.8	7.5	EEUED2G680	969-6512
82	1500	40	18	0.8	7.5	EEUED2G820	969-6520

400 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
10	969-6466	0.65	0.40	0.29	0.22	0.20
15	969-6474	0.92	0.59	0.52	0.51	0.49
22	969-6482	1.20	0.72	0.54	0.46	0.44
33	969-6490	1.54	0.93	0.69	0.58	0.57
47	969-6504	1.72	1.07	0.80	0.68	0.66
47	153-9446	1.69	1.43	0.95	0.93	0.87
68	969-6512	2.96	2.31	1.82	1.78	1.73
82	969-6520	3.34	2.83	2.27	1.70	1.65

450 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
10	350	20	12.5	0.6	5	EEUED2W100	969-6539
15	560	25	12.5	0.6	5	EEUED2W150	969-6547
22	680	20	16	0.8	7.5	EEUED2W220S	969-6555
33	850	31.5	16	0.8	7.5	EEUED2W330	969-6563
47	1000	31.5	18	0.8	7.5	EEUED2W470	969-6571
68	1300	40	18	0.8	7.5	EEUED2W680	969-6580

450 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
10	969-6539	0.97	0.59	0.44	0.37	0.36
15	969-6547	1.08	0.65	0.59	0.58	0.56
22	969-6555	1.54	0.93	0.69	0.54	0.52
33	969-6563	2.30	1.43	1.07	1.05	1.02
47	969-6571	3.20	2.31	1.67	1.52	1.48
68	969-6580	3.60	3.03	2.27	1.56	1.52

EE Series



- High performance miniature radial electrolytic
- High ripple current (at high frequency) - 40% higher than ED Series
- High temperature 105°C
- Long life

Operating temperature -25°C to +105°C
 Tolerance ± 20%
 Leakage current 0.06CV + 10µA
 Ripple current measured at 100kHz @ 105°C

Operating life Dependent on case dia.
 12.5 or greater 10000hrs
 10 8000hrs

Panasonic

160 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Pitch	Mfrs. List No.	Order Code
22	700	20	10	5	EEUEE2C220	167-3438
33	810	20	10	5	EEUEE2C330	167-3441
47	1065	20	10	5	EEUEE2C470	167-3442
68	1350	20	12.5	5	EEUEE2C680	167-3443
82	1480	25	12.5	5	EEUEE2C820	167-3444
100	1660	25	12.5	5	EEUEE2C101	167-3445
100	1700	20	16	7.5	EEUEE2C101S	167-3446
150	1890	25	16	7.5	EEUEE2C151	167-3447
150	1820	20	18	7.5	EEUEE2C151S	167-3448
220	2280	31.5	16	7.5	EEUEE2C221	167-3449
220	1950	25	18	7.5	EEUEE2C221S	167-3450
330	2600	31.5	18	7.5	EEUEE2C331	167-3451

160 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	167-3438	0.37	0.34	0.31	0.26	0.24
33	167-3441	0.34	0.31	0.29	0.24	0.22
47	167-3442	0.37	0.34	0.31	0.26	0.24
68	167-3443	0.52	0.47	0.43	0.38	0.35
82	167-3444	0.80	0.73	0.62	0.55	0.51
100	167-3445	0.80	0.73	0.62	0.55	0.51
100	167-3446	0.90	0.83	0.73	0.63	0.58
150	167-3447	1.08	0.99	0.87	0.78	0.73
150	167-3448	1.11	1.02	0.90	0.80	0.74
220	167-3449	1.44	1.31	1.14	0.99	0.92
220	167-3450	1.31	1.21	1.08	0.94	0.87
330	167-3451	2.30	2.10	1.83	1.59	1.47

200 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Pitch	Mfrs. List No.	Order Code
33	920	20	10	5	EEUEE2D330	167-3454
68	1330	25	12.5	5	EEUEE2D680	167-3456
82	1460	20	16	7.5	EEUEE2D820S	167-3458
100	1730	25	16	7.5	EEUEE2D101	167-3459
100	1665	20	18	7.5	EEUEE2D101S	167-3460
150	1860	25	16	7.5	EEUEE2D151	167-3461
330	3120	40	18	7.5	EEUEE2D331	167-3463

200 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
33	167-3454	0.37	0.34	0.31	0.26	0.24
68	167-3456	0.72	0.66	0.57	0.51	0.48
82	167-3458	0.83	0.78	0.69	0.61	0.56
100	167-3459	1.21	1.09	0.95	0.84	0.78
100	167-3460	1.25	1.13	0.99	0.86	0.80
150	167-3461	1.32	1.21	1.05	0.92	0.84
330	167-3463	3.32	3.03	2.65	2.30	2.11

250 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Pitch	Mfrs. List No.	Order Code
22	785	20	10	5	EEUEE2E220	167-3465
33	995	20	12.5	5	EEUEE2E330	167-3466
47	1290	25	12.5	5	EEUEE2E470	167-3467
47	1400	20	16	7.5	EEUEE2E470S	167-3468
82	1680	20	18	7.5	EEUEE2E820S	167-3471
100	2100	25	18	7.5	EEUEE2E101S	167-3473
220	2940	40	18	7.5	EEUEE2E221	167-3475

250 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	167-3465	0.37	0.34	0.31	0.26	0.24
33	167-3466	0.52	0.47	0.43	0.38	0.35
47	167-3467	0.80	0.73	0.62	0.55	0.51
47	167-3468	0.84	0.78	0.69	0.61	0.56
82	167-3471	1.36	1.25	1.08	0.95	0.87
100	167-3473	1.31	1.21	1.07	0.94	0.87
220	167-3475	3.32	3.03	2.65	2.30	2.11

350 Volt d.c.	Ripple (mA)	Dimensions H	Dimensions D	Lead Pitch	Mfrs. List No.	Order Code
15	480	20	10	5	EEUEE2V150	167-3477
22	660	20	12.5	5	EEUEE2V220	167-3478
33	790	25	12.5	5	EEUEE2V330	167-3479
33	900	20	16	7.5	EEUEE2V330S	167-3480
47	1070	25	16	7.5	EEUEE2V470	167-3481
47	1070	20	18	7.5	EEUEE2V470S	167-3482
68	1530	31.5	16	7.5	EEUEE2V680	167-3483
68	1330	25	18	7.5	EEUEE2V680S	167-3484
100	1600	31.5	18	7.5	EEUEE2V101	167-3486

350 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
15	167-3477	0.38	0.36	0.31	0.29	0.26
22	167-3478	0.66	0.60	0.52	0.46	0.43
33	167-3479	0.87	0.80	0.69	0.60	0.55
33	167-3480	1.05	0.95	0.84	0.74	0.68
47	167-3481	1.32	1.21	1.05	0.92	0.84
47	167-3482	1.36	1.25	1.08	0.95	0.87
68	167-3483	1.57	1.45	1.27	1.09	1.01
68	167-3484	1.59	1.45	1.28	1.11	1.02
100	167-3486	2.25	2.08	1.84	1.63	1.50

400 Volt d.c.	Ripple (mA)	Dimensions		Lead Pitch	Mfrs. List No.	Order Code
μF		H	D			
10	430	20	10	5	EEUEE2G100	167-3487
22	760	25	12.5	5	EEUEE2G220	167-3491
22	860	20	16	7.5	EEUEE2G220S	167-3492
33	1020	20	16	7.5	EEUEE2G330S	167-3493
47	1180	25	16	7.5	EEUEE2G470	167-3494
68	1470	25	18	7.5	EEUEE2G680	167-3496
82	1645	18	31.5	7.5	EEUEE2G820	167-3497
100	2060	40	18	7.5	EEUEE2G101	167-3498

400 Volt d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
10	167-3487	0.43	0.40	0.34	0.31	0.28
22	167-3491	0.87	0.80	0.69	0.60	0.55
22	167-3492	1.05	0.95	0.84	0.74	0.68
33	167-3493	1.05	0.95	0.84	0.74	0.68
47	167-3494	1.32	1.21	1.05	0.92	0.84
68	167-3496	1.74	1.58	1.38	1.21	1.10
82	167-3497	2.25	2.08	1.84	1.63	1.50
100	167-3498	3.32	3.03	2.65	2.30	2.11

450 Volt d.c.	Ripple (mA)	Dimensions		Lead Pitch	Mfrs. List No.	Order Code
μF		H	D			
10	330	20	10	5	EEUEE2W100U	167-3499
10	490	20	12.5	5	EEUEE2W100	167-3500
15	780	25	12.5	5	EEUEE2W150	167-3501
22	945	20	16	7.5	EEUEE2W220S	167-3502
33	1000	25	16	7.5	EEUEE2W330	167-3503
33	1000	20	18	7.5	EEUEE2W330S	167-3504
47	1200	31.5	16	7.5	EEUEE2W470	167-3505
47	1200	25	18	7.5	EEUEE2W470S	167-3507

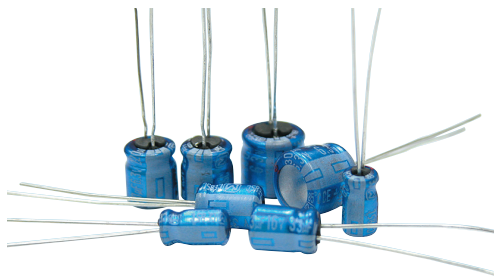
450 Volt d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
10	167-3499	0.43	0.40	0.34	0.31	0.28
10	167-3500	0.66	0.60	0.52	0.46	0.43
15	167-3501	0.87	0.80	0.69	0.60	0.55
22	167-3502	1.05	0.95	0.84	0.74	0.68
33	167-3503	1.32	1.21	1.05	0.92	0.84
33	167-3504	1.36	1.25	1.08	0.95	0.87
47	167-3505	1.61	1.48	1.30	1.12	1.03
47	167-3507	1.74	1.58	1.38	1.21	1.10

Panasonic Audio Capacitors



A range of three series of capacitors suitable for audio applications. AD series with a maximum height of 5mm and AK series with a maximum height of 7mm are ideal for applications for where height is limited, e.g. car audio equipment. The AM series has a wide range of capacitance and voltage to give the user the maximum choice. All three series have been included in the module below for ease of selection.

ECA Audio Caps



- High Quality Audio Grade Electrolytic Capacitor
- For use in a variety of Audio Applications

Special Features Include:

- High Fidelity
- Low Distortion, High Resolution, Low Range Loudness
- For Improved Sound Quality It Features A Special Electrolyte and Vibration Controlled Outer Sleeve

Operating Temperature: -40°C to +85°C
 Tolerance: ± 20
 DC Leakage current: $\leq 0.01\text{CV}$ or $3\mu\text{A}$ whichever is greater

6.3 Volts d.c.	Ripple Current (mA)	Dimensions (mm)		Mfrs. List No.	Order Code
μF		D	L		
220	240	5	11	ECA0JAM221X	876-7033
470	380	6.3	11.2	ECA0JAM471X	876-7041

6.3 Volts d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
220	876-7033	0.071	0.061	0.052	0.038	0.030
470	876-7041	0.113	0.096	0.086	0.059	0.048

10 Volts d.c.	Ripple Current (mA)	Dimensions (mm)		Mfrs. List No.	Order Code
μF		D	L		
33	43	5	5	ECA1AAD330X	876-6860
100	80	6.3	5	ECA1AAD101X	876-6878
330	330	6.3	11.2	ECA1AAM331X	876-7068

10 Volts d.c.	μF	Order Code	1+	50+	100+	500+	1K+
33	876-6860	0.142	0.124	0.094	0.077	0.057	
100	876-6878	0.173	0.144	0.113	0.087	0.066	
330	876-7068	0.108	0.089	0.081	0.055	0.046	

16 Volts d.c.	Ripple Current (mA)	Dimensions (mm)		Mfrs. List No.	Order Code
μF		D	L		
10	28	4	5	ECA1CAD100X	876-6894
10	30	5	11	ECA1CAM100X	876-7084
22	39	4	7	ECA1CAK220X	876-6711
33	60	5	7	ECA1CAK330X	876-6720
33	110	5	11	ECA1CAM330X	876-7106
47	70	5	7	ECA1CAK470X	876-6738
47	70	6.3	5	ECA1CAD470X	876-6916
47	130	5	11	ECA1CAM470X	876-7114
100	91	6	7	ECA1CAK101X	876-6746
100	91	8	5	ECA1CAD101X	876-6924
100	180	5	11	ECA1CAM101X	876-7122
220	280	6.3	11.2	ECA1CAM221X	876-7149
470	440	8	11.5	ECA1CAM471X	876-7157
1000	680	10	16	ECA1CAM102X	876-7165
2200	1000	12.5	20	ECA1CAM222X	876-7173
3300	1200	12.5	25	ECA1CAM332X	876-7181
4700	1360	16	25	ECA1CAM472X	876-7190
6800	1600	16	31.5	ECA1CAM682X	876-7203

16 Volts d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
10	876-6894	0.120	0.101	0.082	0.064	0.047
10	876-7084	0.071	0.061	0.052	0.038	0.030
22	876-6711	0.078	0.062	0.047	0.037	0.030
33	876-6720	0.111	0.094	0.085	0.058	0.048
33	876-7106	0.071	0.061	0.052	0.038	0.030
47	876-6738	0.089	0.075	0.068	0.047	0.038
47	876-6916	0.173	0.144	0.113	0.087	0.066
47	876-7114	0.071	0.061	0.052	0.038	0.030
100	876-6746	0.131	0.111	0.093	0.066	0.056
100	876-6924	0.270	0.240	0.179	0.136	0.107
100	876-7122	0.071	0.061	0.052	0.038	0.030
220	876-7149	0.110	0.093	0.084	0.057	0.047
470	876-7157	0.178	0.148	0.116	0.089	0.068
1000	876-7165	0.340	0.290	0.240	0.182	0.144
2200	876-7173	0.780	0.670	0.540	0.420	0.330
3300	876-7181	0.850	0.700	0.580	0.440	0.350
4700	876-7190	0.740	0.610	0.510	0.390	0.300
6800	876-7203	1.370	1.170	0.940	0.740	0.550

25 Volts d.c.	Ripple Current (mA)	Dimensions (mm)		Mfrs. List No.	Order Code
μF		D	L		
10	28	4	7	ECA1EAK100X	876-6754
22	55	5	7	ECA1EAK220X	876-6762

25 Volts d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
10	876-6754	0.103	0.084	0.062	0.050	0.040
22	876-6762	0.111	0.094	0.085	0.058	0.048

35 Volts d.c.	Ripple Current (mA)	Dimensions (mm)		Mfrs. List No.	Order Code
μF		D	L		
4.7	22	4	5	ECA1VAD4R7X	876-6932
10	30	5	5	ECA1VAD100X	876-6940
22	60	6.3	5	ECA1VAD220X	876-6959
47	85	8	7	ECA1VAK470X	876-6770
47	130	5	11	ECA1VAM470X	876-7246
100	210	6.3		ECA1VAM101X	876-7254
220	350	8	11.5	ECA1VAM221X	876-7262
330	440	10	12.5	ECA1VAM331X	876-7270
470	550	10	16	ECA1VAM471X	876-7289
1000	900	12.5	20	ECA1VAM102X	876-7297
2200	1250	16	25	ECA1VAM222X	876-7300
3300	1400	16	31.5	ECA1VAM332X	876-7319
4700	1600	18	35.5	ECA1VAM472X	876-7327

35 Volts d.c.		Price Each				
μF	Order Code	1+	50+	100+	500+	1K+
4.7	876-6932	0.098	0.083	0.068	0.053	0.038
10	876-6940	0.146	0.127	0.096	0.079	0.059
22	876-6959	0.173	0.144	0.113	0.087	0.066
47	876-6770	0.240	0.187	0.155	0.112	0.096
47	876-7246	0.071	0.061	0.052	0.038	0.030
100	876-7254	0.113	0.096	0.086	0.059	0.048
220	876-7262	0.230	0.170	0.138	0.107	0.078
330	876-7270	0.310	0.260	0.210	0.161	0.125
470	876-7289	0.350	0.300	0.250	0.186	0.148
1000	876-7297	0.780	0.670	0.540	0.420	0.330
2200	876-7300	1.260	1.050	0.860	0.660	0.520
3300	876-7319	1.730	1.460	1.180	0.920	0.710
4700	876-7327	2.580	2.190	1.750	1.360	1.040

50 Volts d.c.	Ripple Current (mA)	Dimensions (mm)		Mfrs. List No.	Order Code
μF		D	L		
1	1.3	5	11	ECA1HAM010X	876-7335
1	10	4	7	ECA1HAK010X	876-6789
2.2	16	4	5	ECA1HAD2R2X	876-6983
2.2	16	4	7	ECA1HAK2R2X	876-6797
4.7	45	5	11	ECA1HAM4R7X	876-7360
10	35	5	7	ECA1HAK100X	876-6827
10	65	5	11	ECA1HAM100X	876-7378

Passive Components

7

Capacitors



Aluminium Electrolytic - Radial - Panasonic - continued

ECA Audio Caps - continued

50 Volts d.c.	Ripple Current (AC)	Dimensions (mm)		Mfrs. List No.	Order Code
μF	mA	D	L		
22	60	6.3	7	ECA1HAK220X	876-6835
22	100	5	11	ECA1HAM220X	876-7386
33	110	5	11	ECA1HAM330X	876-7394
47	130	6.3	11.2	ECA1HAM470X	876-7408
100	250	8	11.5	ECA1HAM101X	876-7416
220	400	10	12.5	ECA1HAM221X	876-7424
470	650	10	20	ECA1HAM471X	876-7440
1000	1050	12.5	25	ECA1HAM102X	876-7459
2200	1300	16	31.5	ECA1HAM222X	876-7467
3300	1500	18	35.5	ECA1HAM332X	876-7475

50 Volts d.c.	Order Code	1+	50+	100+	500+	1K+
1	876-7335	0.071	0.061	0.052	0.038	0.030
1	876-6789	0.082	0.067	0.051	0.041	0.032
2.2	876-6983	0.124	0.104	0.085	0.067	0.048
2.2	876-6797	0.103	0.084	0.062	0.050	0.040
4.7	876-7360	0.056	0.050	0.042	0.031	0.024
10	876-6827	0.111	0.094	0.085	0.058	0.048
10	876-7378	0.071	0.061	0.052	0.038	0.030
22	876-6835	0.131	0.111	0.093	0.066	0.056
22	876-7386	0.071	0.061	0.052	0.038	0.030
33	876-7394	0.071	0.061	0.052	0.038	0.030
47	876-7408	0.113	0.096	0.086	0.059	0.048
100	876-7416	0.173	0.144	0.113	0.087	0.066
220	876-7424	0.310	0.260	0.210	0.161	0.125
470	876-7440	0.440	0.370	0.320	0.240	0.186
1000	876-7459	1.220	1.010	0.830	0.620	0.500
2200	876-7467	1.670	1.410	1.130	0.890	0.680
3300	876-7475	2.510	2.110	1.710	1.320	1.010

63 Volts d.c.	Ripple Current (AC)	Dimensions (mm)		Mfrs. List No.	Order Code
μF	mA	D	L		
10	70	5	11	ECA1JAM100X	876-7483
22	105	5	11	ECA1JAM220X	876-7491
47	160	6.3	11.2	ECA1JAM470X	876-7513
100	270	8	11.5	ECA1JAM101X	876-7521
220	450	10	16	ECA1JAM221X	876-7530
330	550	10	20	ECA1JAM331X	876-7548
470	750	12.5	20	ECA1JAM471X	876-7556
1000	1100	16	25	ECA1JAM102X	876-7564
2200	1400	18	35.5	ECA1JAM222X	876-7572


63 Volts d.c.	Order Code	1+	50+	100+	500+	1K+
10	876-7483	0.071	0.061	0.052	0.038	0.030
22	876-7491	0.071	0.061	0.052	0.038	0.030
47	876-7513	0.131	0.111	0.093	0.066	0.056
100	876-7521	0.230	0.170	0.138	0.107	0.078
220	876-7530	0.350	0.300	0.250	0.186	0.148
330	876-7548	0.510	0.420	0.340	0.270	0.197
470	876-7556	0.780	0.670	0.540	0.420	0.330
1000	876-7564	1.260	1.050	0.860	0.660	0.520
2200	876-7572	2.580	2.190	1.750	1.360	1.040

100 Volts d.c.	Ripple Current (AC)	Dimensions (mm)		Mfrs. List No.	Order Code
μF	mA	D	L		
2.2	30	5	11	ECA2AAM2R2X	876-7599
4.7	50	5	11	ECA2AAM4R7X	876-7610
10	70	5	11	ECA2AAM100X	876-7629
22	115	6.3	11.2	ECA2AAM220X	876-7637
33	145	8	11.5	ECA2AAM330X	876-7645
47	180	8	11.5	ECA2AAM470X	876-7653
100	350	10	16	ECA2AAM101X	876-7661
220	550	12.5	20	ECA2AAM221X	876-7670
330	700	12.5	25	ECA2AAM331X	876-7688
470	900	16	25	ECA2AAM471X	876-7696

100 Volts d.c.	Order Code	1+	50+	100+	500+	1K+
2.2	876-7599	0.071	0.061	0.052	0.038	0.030
4.7	876-7610	0.071	0.061	0.052	0.038	0.030
10	876-7629	0.071	0.061	0.052	0.038	0.030
22	876-7637	0.127	0.108	0.089	0.063	0.054
33	876-7645	0.210	0.164	0.135	0.104	0.076
47	876-7653	0.157	0.124	0.101	0.079	0.056
100	876-7661	0.440	0.360	0.310	0.240	0.182
220	876-7670	0.870	0.730	0.590	0.440	0.350
330	876-7688	0.550	0.460	0.370	0.330	0.310
470	876-7696	0.920	0.780	0.630	0.470	0.390

Aluminium Electrolytic - Radial - Rubycon

MS5 Series - Micro-Miniature





● Micro miniature radial electrolytic capacitors
● Low profile for compact designs

Operating temperature Tolerance	-40°C to +85°C	DC leakage current	0.01CV or 3 μA whichever is greater					
ESR measured at	Ripple current measured at	Dimensions	Lead Spacing	Lead Dia.	Order Code			
Volt d.c.	μF	Ripple (mA) @ 120Hz 85°C	ESR Ω	H	Dia.			
6.3	100	62	3.45	5	6.3	2.5	0.45	114-4596
16	10	20	23.9	5	4	1.5	0.45	114-4605
16	47	65	5.08	5	6.3	2.5	0.45	114-4597
35	22	46	8.44	5	6.3	2.5	0.45	114-4598
50	4.7	20	33.8	5	5	2	0.45	114-4602
50	6.8	26	23.4	5	6.3	2.5	0.45	114-4603
50	10	31	15.9	5	6.3	2.5	0.45	114-4604

Order Multiple=5	Price Each					
Volt d.c.	μF	Order Code	5+	50+	100+	500+
6.3	100	114-4596	0.159	0.131	0.113	0.105
16	10	114-4605	0.162	0.133	0.114	0.106
16	47	114-4597	0.172	0.145	0.122	0.105
35	22	114-4598	0.172	0.141	0.122	0.115
50	4.7	114-4602	0.163	0.134	0.116	0.105
50	6.8	114-4603	0.198	0.159	0.126	0.105
50	10	114-4604	0.196	0.151	0.119	0.099

ML Series - Long Life, 105°C (Miniature Aluminum Electrolytic)

● New much lower profile alternative to standard components
● Load Life of 3000 hours
● 5mm to 10mm Height
● Complimenting lower profile, body diameter is kept to a minimum
● Ideally suited for multiple applications where height is a key consideration

Tolerance	±20%	Operating temperature	-40°C to +105°C		
Leakage current (max)	0.01 CV or 3 μA whichever is greater	Ripple current measured at	105°C @ 100kHz		
6.3 Volt d.c.	μF	Ripple (mA)	Dimensions (mm)	Mfrs. List No.	Order Code
			H Dia. Pitch		
47	47	7	4 1.5	6.3ML47M4X7	812-7131
220	125	5	8 2.5	6.3ML220M8X5	812-7123
470	190	7.5	8 3.5	6.3ML470M8X7.5	812-7140
1000	480	9	10 5	6.3ML1000M10X9	812-7115

6.3 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
47	812-7131	0.135	0.122	0.099	0.097	0.085
220	812-7123	0.197	0.162	0.140	0.130	0.115
470	812-7140	0.320	0.290	0.250	0.210	0.200
1000	812-7115	0.580	0.500	0.440	0.410	0.390

10 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	812-6178	0.147	0.122	0.110	0.098	0.096
47	812-6194	0.134	0.121	0.109	0.097	0.084
100	812-6160	0.188	0.162	0.139	0.124	0.113
220	812-6186	0.290	0.260	0.230	0.192	0.184
470	812-6208	0.350	0.310	0.280	0.250	0.240

16 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	812-6259	0.135	0.122	0.099	0.097	0.085
100	812-6240	0.200	0.177	0.152	0.137	0.128
220	812-6267	0.310	0.280	0.240	0.210	0.190
470	812-6275	0.580	0.490	0.440	0.400	0.370

16 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	812-6259	0.135	0.122	0.099	0.097	0.085
100	812-6240	0.200	0.177	0.152	0.137	0.128
220	812-6267	0.310	0.280	0.240	0.210	0.190
470	812-6275	0.580	0.490	0.440	0.400	0.370

Over half a million products available online



25 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
10	18	5	4	1.5	25ML10M4X5	812-6380
22	42	5	5	2	25ML22M5X5	812-6402
47	65	5	6.3	2.5	25ML47M6.3X5	812-6429
100	112	7	8	3.5	25ML100M8X7	812-6399
220	190	9	8	3.5	25ML220M8X9	812-6410

25 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
10	812-6380	0.151	0.126	0.113	0.101	0.098
22	812-6402	0.151	0.126	0.113	0.101	0.098
47	812-6429	0.188	0.163	0.140	0.138	0.128
100	812-6399	0.300	0.270	0.240	0.199	0.189
220	812-6410	0.350	0.320	0.280	0.270	0.240

35 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
10	28	7	4	1.5	35ML10M4X7	812-6542
47	80	5	8	2.5	35ML47M8X5	812-6577
100	125	7.5	8	3.5	35ML100M8X7.5	812-6550
220	360	9	10	5	35ML220M10X9	812-6569

35 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
10	812-6542	0.199	0.175	0.151	0.123	0.101
47	812-6577	0.280	0.240	0.200	0.187	0.164
100	812-6550	0.320	0.290	0.250	0.240	0.200
220	812-6569	0.610	0.510	0.460	0.420	0.390

50 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
1	8	5	4	1.5	50ML1M4X5	812-6933
2.2	11	5	4	1.5	50ML2R2M4X5	812-6950
4.7	23	7	4	1.5	50ML4R7M4X7	812-6976
10	30	7	5	2	50ML10M5X7	812-6941
22	50	5	8	2.5	50ML22M8X5	812-6968

50 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
1	812-6933	0.151	0.126	0.113	0.101	0.098
2.2	812-6950	0.147	0.122	0.110	0.098	0.096
4.7	812-6976	0.171	0.145	0.122	0.108	0.084
10	812-6941	0.175	0.148	0.126	0.111	0.086
22	812-6968	0.280	0.240	0.200	0.186	0.164

BXA Series – 105°C (Miniature Aluminum Electrolytic)



- Upgraded Ultra Long Life (12,000 Hours at 105 degrees)
- Very High Ripple Current Handling further enhances life characteristics
- Miniaturised Package with High CV values available
- Ideally suited for Light Ballast or Power supply applications

Tolerance ±20%
 Leakage 0.02 CV + 25 μF
 current (max) whichever is greater

Operating temperature -25°C to +105°C
 Ripple current measured at 105°C@ 100kHz

250 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
10	280	20	10	5	250BXA10MEFG10X20	812-6470
22	600	20	12.5	5	250BXA22MEFG12.5X20	812-6500
33	600	20	12.5	5	250BXA33MEFG12.5X20	812-6518
47	720	25	12.5	5	250BXA47MEFG12.5X25	812-6526
100	1200	31.5	16	7.5	250BXA100MEFG16X31.5	812-6488

250 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
10	812-6470	0.58	0.49	0.45	0.40	0.37
22	812-6500	0.80	0.71	0.62	0.56	0.51
33	812-6518	0.88	0.77	0.67	0.61	0.57
47	812-6526	1.10	0.98	0.84	0.77	0.72
100	812-6488	2.09	1.83	1.58	1.46	1.35

400 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
6.8	220	16	10	5	400BXA6R8MEFG10X16	812-6828
10	280	20	10	5	400BXA10MEFG10X20	812-6780
22	430	25	12.5	5	400BXA22MEFG12.5X25	812-6798
33	640	25	16	7.5	400BXA33MEFG16X25	812-6801
68	1000	31.5	18	7.5	400BXA68MEFG18X31.5	812-6836

400 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
6.8	812-6828	0.60	0.50	0.45	0.41	0.39
10	812-6780	0.75	0.66	0.57	0.50	0.48
22	812-6798	1.30	1.12	1.00	0.92	0.83
33	812-6801	2.06	1.78	1.55	1.43	1.31
68	812-6836	3.46	3.03	2.64	2.41	2.24

450 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
6.8	150	20	10	5	450BXA6R8MEFG10X20	812-6925
10	320	20	12	5	450BXA10MEFG12.5X20	812-6887
22	560	25	16	7.5	450BXA22MEFG16X25	812-6895
47	880	31.5	18	7.5	450BXA47MEFG18X31.5	812-6917

450 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
6.8	812-6925	0.60	0.51	0.45	0.41	0.39
10	812-6887	1.10	0.97	0.83	0.77	0.71
22	812-6895	2.13	1.87	1.62	1.48	1.37
47	812-6917	3.53	3.09	2.69	2.47	2.28

KXW Series – 105°C (Miniature Aluminum Electrolytic)



- Body diameter of 10mm to 18mm with high ripple current capability
- Wide range of rated voltages up to 450 Volts
- Ultra high ripple current in a miniature package
- Specifically designed for Switch Mode applications
- One case size smaller than standard Switch Mode Capacitors

200 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
470	1.27	40	18	7.5	200KXW470MLST18X40	812-6364
560	1.39	45	18	7.5	200KXW560MLST18X45	812-6372

200 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
470	812-6364	4.75	4.16	3.62	3.31	3.07
560	812-6372	5.39	4.84	4.20	3.83	3.57

400 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
47	0.37	30	12.5	5	400KXW47MLST12.5X30	812-6860
56	420	35	12.5	5	400KXW56M12.5X35	154-7015
68	480	40	12.5	5	400KXW68M12.5X40	154-7016
82	0.52	35	14.5	7.5	400KXW82MLST14.5X35	812-6879
100	0.58	30	16	7.5	400KXW100MLST16X30	812-6844
120	670	30	18	7.5	400KXW120M18X30	154-7017
180	880	40	18	7.5	400KXW180M18X40	154-7018
220	1	45	18	7.5	400KXW220MLST18X45	812-6852

400 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
47	812-6860	1.80	1.58	1.36	1.24	1.14
56	154-7015	1.32	1.22	1.05	0.95	0.84
68	154-7016	1.28	1.20	1.02	0.93	0.83
82	812-6879	3.22	2.82	2.47	2.24	2.08
100	812-6844	4.32	3.77	3.28	2.99	2.78
120	154-7017	2.60	2.43	2.09	1.87	1.71
180	154-7018	3.61	3.36	2.89	2.59	2.35
220	812-6852	9.00	7.89	6.87	6.28	5.79

450 Volt d.c.						
μF	Ripple (mA)	Dimensions (mm)			Mfrs. List No.	Order Code
		H	Dia.	Pitch		
47	380	40	12.5	5	450KXW47M12.5X40	154-7019
150	800	45	18	7.5	450KXW150M18X45	154-7020

450 Volt d.c.						
μF	Order Code	1+	50+	100+	500+	1K+
47	154-7019	1.19	1.10	0.95	0.85	0.84
150	154-7020	5.56	5.19	4.45	3.99	3.62

YXF Series – Low Impedance 105°C



- High performance radial electrolytic capacitors
- 105°C, low impedance

Operating temperature -40°C to +105°C DC leakage 0.01CV or 3μA
 Tolerance ±20% whichever is greater
 Impedance Ω max. at 100kHz @ 20°C Ripple current measured at 100kHz @105°C

6.3 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions (mm)	Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
1000	576	0.17	12.5	10	5	6.3YXF1000M10X12.5	114-4606
2200	1296	0.078	20	12.5	5	6.3YXF2200M12.5X20	114-4607

Order Multiple=5						
6.3 Volt d.c.						
μF	Order Code	5+	50+	100+	500+	1K+
1000	114-4606	0.193	0.181	0.175	0.162	0.137
2200	114-4607	0.600	0.570	0.500	0.460	0.420



Aluminium Electrolytic - Radial - Rubycon - continued

YXF Series - Low Impedance 105°C - continued

10 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
100	147	0.9	11 5	2 0.5	10YXF100M5X11	114-4608	
220	244	0.4	11 6.3	2.5 0.5	10YXF220M6.3X11	114-4609	
470	391	0.26	11.5 8	3.5 0.6	10YXF470M8X11.5	114-4610	
4700	1839	0.034	25 16	7.5 0.8	10YXF4700M16X25	114-4611	

Order Multiple=5		Price Each					
10 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	100	114-4608	0.120	0.101	0.084	0.074	0.064
	220	114-4609	0.166	0.139	0.112	0.101	0.094
	470	114-4610	0.250	0.193	0.158	0.141	0.132
	4700	114-4611	1.080	0.920	0.750	0.670	0.610

16 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
47	147	0.9	11 5	2 0.5	16YXF47M5X11	114-4612	
100	244	0.4	11 6.3	2.5 0.5	16YXF100M6.3X11	114-4614	
220	391	0.26	11.5 8	3.5 0.6	16YXF220M8X11.5	114-4615	
470	576	0.17	12.5 10	5 0.6	16YXF470M10X12.5	114-4616	
1000	1009	0.095	20 10	5 0.6	16YXF1000M10X20	114-4617	
2200	1646	0.06	25 12.5	5 0.6	16YXF2200M12.5X25	114-4618	

Order Multiple=5		Price Each					
16 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	47	114-4612	0.116	0.112	0.103	0.096	0.085
	100	114-4614	0.157	0.147	0.135	0.128	0.116
	220	114-4615	0.230	0.210	0.183	0.175	0.159
	470	114-4616	0.320	0.300	0.280	0.270	0.240
	1000	114-4617	0.460	0.440	0.390	0.370	0.350
	2200	114-4618	0.760	0.710	0.660	0.580	0.550

25 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
47	147	0.9	11 5	2 0.5	25YXF47M5X11	114-4619	
100	244	0.4	11 6.3	2.5 0.5	25YXF100M6.3X11	114-4620	
220	391	0.26	11.5 8	3.5 0.6	25YXF220M8X11.5	114-4621	
330	576	0.17	12.5 10	5 0.6	25YXF330M10X12.5	114-4622	
470	762	0.12	16 10	5 0.6	25YXF470M10X16	114-4623	
1000	1296	0.078	20 12.5	5 0.6	25YXF1000M12.5X20	114-4624	

Order Multiple=5		Price Each					
25 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	47	114-4619	0.128	0.116	0.102	0.087	0.070
	100	114-4620	0.163	0.155	0.140	0.118	0.099
	220	114-4621	0.250	0.230	0.200	0.172	0.142
	330	114-4622	0.360	0.290	0.250	0.199	0.184
	470	114-4623	0.440	0.400	0.340	0.300	0.250
	1000	114-4624	0.700	0.630	0.560	0.470	0.400

35 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
47	244	0.4	11 6.3	2.5 0.5	35YXF47M6.3X11	114-4626	
100	391	0.26	11.5 8	3.5 0.6	35YXF100M8X11.5	114-4627	
220	576	0.17	12.5 10	5 0.6	35YXF220M10X12.5	114-4628	
470	1009	0.095	20 10	5 0.6	35YXF470M10X20	114-4629	
1000	1646	0.06	25 12.5	5 0.6	35YXF1000M12.5X25	114-4630	
2200	1994	0.029	31.5 16	7.5 0.8	35YXF2200M16X31.5	114-4631	

Order Multiple=5		Price Each					
35 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	47	114-4626	0.155	0.145	0.134	0.126	0.115
	100	114-4627	0.280	0.240	0.200	0.172	0.144
	220	114-4628	0.350	0.330	0.310	0.250	0.230
	470	114-4629	0.550	0.480	0.430	0.370	0.310
	1000	114-4630	0.920	0.770	0.710	0.610	0.530
	2200	114-4631	1.520	1.290	1.180	0.960	0.790

50 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
10	100	1.5	11 5	2 0.5	50YXF10M5X11	114-4632	
47	244	0.4	11 6.3	2.5 0.5	50YXF47M6.3X11	114-4633	
100	391	0.26	11.5 8	3.5 0.6	50YXF100M8X11.5	114-4634	
220	762	0.12	16 10	5 0.6	50YXF220M10X16	114-4635	
1000	1839	0.034	25 16	7.5 0.8	50YXF1000M16X25	114-4636	

Order Multiple=5		Price Each					
50 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	10	114-4632	0.132	0.107	0.094	0.079	0.066
	47	114-4633	0.186	0.152	0.134	0.114	0.094
	100	114-4634	0.290	0.240	0.194	0.168	0.136
	220	114-4635	0.480	0.400	0.340	0.300	0.250
	1000	114-4636	1.400	1.140	0.970	0.840	0.690

63 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
100	300	0.45	12.5 10	5 0.6	63YXF100M10X12.5	114-4638	
470	750	0.14	25 12.5	5 0.6	63YXF470M12.5X25	114-4639	

Order Multiple=5		Price Each					
63 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	100	114-4638	0.350	0.320	0.290	0.250	0.194
	470	114-4639	0.820	0.690	0.610	0.510	0.430

100 Volt d.c.	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
10	138	2.2	11 6.3	2.5 0.5	100YXF10M6.3X11	114-4640	
47	290	0.53	16 10	5 0.6	100YXF47M10X16	114-4641	
100	430	0.37	20 12.5	5 0.6	100YXF100M12.5X20	114-4642	
220	900	0.12	25 16	7.5 0.8	100YXF220M16X25	114-4643	

Order Multiple=5		Price Each					
100 Volt d.c.	μF	Order Code	5+	50+	100+	500+	1K+
	10	114-4640	0.167	0.137	0.108	0.099	0.090
	47	114-4641	0.440	0.350	0.300	0.260	0.250
	100	114-4642	0.710	0.600	0.500	0.400	0.370
	220	114-4643	1.170	0.920	0.730	0.660	0.600

YXM Series 10,000 hours - 105°C



- Miniaturised aluminium electrolytic can size
- Extremely long life of 10,000 hours

Tolerance	±20%	Operating temperature	-25°C to +105°C
Leakage current (max)	0.01 CV or 3μA whichever is greater	Ripple current measured at	105°C@ 100kHz

16 Volt d.c.	μF	Ripple (mA)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
	220	330	11.5 8	0.6 3.5		16YXM220M8X11.5	128-1849

Order Multiple=5		Price Each					
16 Volt d.c.	μF	Order Code	1+	50+	100+	500+	1K+
	220	128-1849	0.51	0.44	0.36	0.31	0.27

35 Volt d.c.	μF	Ripple (mA)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
	100	330	11.5 8	0.6 3.5		35YXM100M8X11.5	128-1853

Order Multiple=5		Price Each					
35 Volt d.c.	μF	Order Code	1+	50+	100+	500+	1K+
	100	128-1853	0.73	0.62	0.53	0.45	0.40

50 Volt d.c.	μF	Ripple (mA)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
	2.2	35	11 5	0.5 2		50YXM2R2M5X11	128-1850
	47	190	11 6.3	0.5 2.5		50YXM47M6.3X11	128-1851
	4.7	80	11 5	0.5 2		50YXM47M5X11	128-1852

Order Multiple=5		Price Each					
50 Volt d.c.	μF	Order Code	1+	50+	100+	500+	1K+
	2.2	128-1850	0.310	0.280	0.240	0.199	0.166
	47	128-1851	0.450	0.390	0.330	0.290	0.250
	4.7	128-1852	0.300	0.270	0.230	0.187	0.166

63 Volt d.c.	μF	Ripple (mA)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
	33	170	11 6.3	0.5 2.5		63YXM33M6.3X11	128-1854

Order Multiple=5		Price Each					
63 Volt d.c.	μF	Order Code	1+	50+	100+	500+	1K+
	33	128-1854	0.47	0.41	0.34	0.30	0.27

100 Volt d.c.	μF	Ripple (mA)	Dimensions H Dia.	Lead Pitch Dia.	Lead Dia.	Mfrs. List No.	Order Code
	22	230	11.5 8	0.6 3.5		100YXM22M8X11.5	128-1855

Order Multiple=5		Price Each					
100 Volt d.c.	μF	Order Code	1+	50+	100+	500+	1K+
	22	128-1855	0.340	0.290	0.240	0.210	0.187

Spotted an error?



Now you can update our product information online. Simply search for the order code at www.farnell.co.uk and look for this logo to notify us of an error.

ZA Series – Ultra Low Impedance -105°C



- 60% lower impedance than conventional low impedance electrolytics
- Ideal for high speed digital and switching power supply applications

Tolerance ±20% Operating temperature -40°C to +105°C
 Leakage current (max) 0.01 CV or 3µA whichever is greater Ripple current measured at 105°C@ 100kHz

10 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
100	480	7 6.3 0.45 2.5	10ZA100M6.3X7 114-4647

10 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
100	114-4647	0.70	0.67	0.62	0.53	0.50

16 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
47	480	7 6.3 0.45 2.5	16ZA47M6.3X7 114-4652
470	1650	16 10 0.6 5	16ZA470M10X16 114-4656

16 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
47	114-4652	0.70	0.67	0.62	0.53	0.50
470	114-4656	2.45	2.35	2.23	1.99	1.87

25 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
22	350	7 5 0.45 2	25ZA22M5X7 114-4658
33	480	7 6.3 0.45 2.5	25ZA33M6.3X7 114-4659

25 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	114-4658	0.35	0.33	0.31	0.28	0.26
33	114-4659	0.36	0.35	0.32	0.31	0.30

35 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
10	350	7 5 0.45 2	35ZA10M5X7 114-4665
33	480	7 6.3 0.45 2.5	35ZA33M6.3X7 114-4667
220	1650	16 10 0.6 5	35ZA220M10X16 114-4670

35 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
10	114-4665	0.44	0.42	0.39	0.35	0.33
33	114-4667	0.70	0.67	0.62	0.53	0.50
220	114-4670	2.55	2.47	2.36	2.14	2.02

ZL Series – Ultra Low Impedance



– High Ripple 105°C



- 40% Lower impedance than conventional low impedance electrolytics
- High ripple and low impedance offers component reduction or miniaturisation opportunities

Tolerance ±20% Operating temperature -40°C to +105°C
 Leakage current (max) 0.01 CV or 3µA whichever is greater Ripple current measured at 105°C@ 100kHz

6.3 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
1000	1030	12.5 10 0.6 5	6.3ZL1000M10X12.5 114-4671
1500	1820	20 10 0.6 5	6.3ZL1500M10X20 114-4672
2200	2150	23 10 0.6 5	6.3ZL2200M10X23 114-4673
4700	3290	30 12.5 0.6 5	6.3ZL4700M12.5X30 114-4675
5600	3140	20 16 0.8 7.5	6.3ZL5600M16X20 114-4676
6800	3460	25 16 0.8 7.5	6.3ZL6800M16X25 114-4677

6.3 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
1000	114-4671	0.35	0.34	0.32	0.30	0.28
1500	114-4672	0.60	0.56	0.51	0.46	0.43
2200	114-4673	0.63	0.60	0.55	0.48	0.46
4700	114-4675	0.92	0.86	0.80	0.71	0.67
5600	114-4676	1.22	1.14	1.06	0.97	0.88
6800	114-4677	1.41	1.34	1.25	1.10	1.04

10 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
100	250	11 5 0.5 2	10ZL100M5X11 114-4678
220	405	11 6.3 0.5 2.5	10ZL220M6.3X11 114-4679
470	760	11.5 8 0.6 3.5	10ZL470M8X11.5 114-4680
680	995	16 8 0.6 3.5	10ZL680M8X16 114-4681
1000	1250	20 8 0.6 3.5	10ZL1000M8X20 114-4682
1500	2150	23 10 0.6 5	10ZL1500M10X23 114-4684
2200	2360	20 12.5 0.6 5	10ZL2200M12.5X20 114-4685
3300	2770	25 12.5 0.6 5	10ZL3300M12.5X25 114-4687
4700	3400	35 12.5 0.8 5	10ZL4700M12.5X35 114-4688

10 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
100	114-4678	0.156	0.147	0.141	0.118	0.105
220	114-4679	0.112	0.101	0.098	0.084	0.083
470	114-4680	0.290	0.270	0.250	0.210	0.193
680	114-4681	0.220	0.210	0.196	0.179	0.164
1000	114-4682	0.390	0.360	0.330	0.310	0.290
1500	114-4684	0.660	0.620	0.570	0.500	0.470
2200	114-4685	0.700	0.670	0.620	0.530	0.500
3300	114-4687	1.070	1.020	0.950	0.830	0.780
4700	114-4688	1.040	0.990	0.930	0.810	0.760

16 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
330	760	11.5 8 0.6 3.5	16ZL330M8X11.5 114-4688
470	995	16 8 0.6 3.5	16ZL470M8X16 114-4689
470	1030	12.5 10 0.6 5	16ZL470M10X12.5 114-4690
680	1430	16 10 0.6 5	16ZL680M10X16 114-4691
1000	1820	20 10 0.6 5	16ZL1000M10X20 114-4692
1500	2360	20 12.5 0.6 5	16ZL1500M12.5X20 114-4693
2200	2770	25 12.5 0.6 5	16ZL2200M12.5X25 114-4694
3300	3400	35 12.5 0.8 5	16ZL3300M12.5X35 114-4695

16 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
330	114-4688	0.29	0.27	0.25	0.23	0.21
470	114-4689	0.34	0.31	0.30	0.28	0.27
470	114-4690	0.37	0.36	0.33	0.31	0.29
680	114-4691	0.47	0.45	0.41	0.39	0.35
1000	114-4692	0.60	0.57	0.53	0.46	0.43
1500	114-4693	0.70	0.67	0.63	0.55	0.50
2200	114-4694	0.95	0.92	0.84	0.77	0.70
3300	114-4695	1.33	1.26	1.17	1.04	0.97

25 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
47	250	11 5 0.5 2	25ZL47M5X11 114-4696
100	405	11 6.3 0.5 2.5	25ZL100M6.3X11 114-4697
220	760	11.5 8 0.6 3.5	25ZL220M8X11.5 114-4699
470	1250	20 8 0.6 3.5	25ZL470M8X20 114-4700
470	1430	16 10 0.6 5	25ZL470M10X16 114-4701
680	1820	20 10 0.6 5	25ZL680M10X20 114-4702
1000	2360	20 12.5 0.6 5	25ZL1000M12.5X20 114-4703
1500	2770	25 12.5 0.6 5	25ZL1500M12.5X25 114-4705
2200	3400	35 12.5 0.8 5	25ZL2200M12.5X35 114-4706

25 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
47	114-4696	0.155	0.144	0.140	0.116	0.103
100	114-4697	0.210	0.199	0.192	0.155	0.152
220	114-4699	0.290	0.280	0.260	0.230	0.210
470	114-4700	0.390	0.370	0.340	0.330	0.300
470	114-4701	0.450	0.420	0.400	0.360	0.340
680	114-4702	0.560	0.510	0.480	0.420	0.410
1000	114-4703	0.710	0.690	0.660	0.560	0.510
1500	114-4705	1.090	1.040	0.970	0.850	0.790
2200	114-4706	1.380	1.320	1.220	1.070	1.020

35 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
220	995	16 8 0.6 3.5	35ZL220M8X16 114-4707
470	1820	20 10 0.6 5	35ZL470M10X20 114-4708
680	2360	20 12.5 0.6 5	35ZL680M12.5X20 114-4709
1000	2770	25 12.5 0.6 5	35ZL1000M12.5X25 114-4710
1500	3400	35 12.5 0.8 5	35ZL1500M12.5X35 114-4711

35 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
220	114-4707	0.35	0.33	0.31	0.29	0.26
470	114-4708	0.58	0.55	0.51	0.45	0.42
680	114-4709	0.76	0.72	0.69	0.58	0.55
1000	114-4710	1.01	0.97	0.88	0.79	0.74
1500	114-4711	1.41	1.34	1.25	1.10	1.04

50 Volt d.c.	Impedance	Dimensions	Order Code
µF	(Ω Max @ 20°C 100kHz)	H Dia. Dia. Pitch	Mftrs. List No.
22	238	11 5 0.5 2	50ZL22M5X11 114-4712
100	724	11.5 8 0.6 3.5	50ZL100M8X11.5 114-4713
220	1370	16 10 0.6 5	50ZL220M10X16 114-4714
470	2050	20 12.5 0.6 5	50ZL470M12.5X20 114-4715
680	2860	30 12.5 0.6 5	50ZL680M12.5X30 114-4717
1000	3010	25 16 0.8 7.5	50ZL1000M16X25 114-4718

50 Volt d.c.	Order Code	1+	50+	100+	500+	1K+
22	114-4712	0.156	0.147	0.141	0.118	0.105
100	114-4713	0.310	0.290	0.270	0.230	0.220
220	114-4714	0.470	0.450	0.410	0.390	0.350
470	114-4715	0.780	0.760	0.710	0.610	0.570
680	114-4717	1.260	1.180	1.090	0.980	0.920
1000	114-4718	1.540	1.460	1.360	1.200	1.110

Passive Components

7

Capacitors



Aluminium Electrolytic - Radial - Rubycon - continued

63 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
33	265	0.35	11	6.3	0.5	2.5	63ZL33M6.3X11	128-1840
180	945	0.11	20	10	0.6	5	63ZL180M10X20	128-1838
220	1300	0.073	23	10	0.6	5	63ZL220M10X23	128-1839
680	2780	0.029	40	12.5	0.6	5	63ZL680M12.5X40	128-1842
470	1990	0.045	20	16	0.8	7.5	63ZL470M16X20	128-1841
1000	2835	0.021	35.5	16	0.8	7.5	63ZL1000M16X35.5	128-1837

63 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
33	128-1840	0.101	0.088	0.087	0.077	0.067
180	128-1838	0.350	0.340	0.310	0.280	0.260
220	128-1839	0.400	0.390	0.350	0.310	0.290
680	128-1842	1.050	1.020	0.930	0.800	0.750
470	128-1841	0.840	0.810	0.740	0.660	0.610
1000	128-1837	1.550	1.510	1.350	1.200	1.110

100 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
15	205	0.57	11	6.3	0.5	2.5	100ZL15M6.3X11	128-1844
68	580	0.18	16	10	0.6	5	100ZL68M10X16	128-1848
100	880	0.12	23	10	0.6	5	100ZL100M10X23	128-1843
220	1410	0.063	30	12.5	0.6	5	100ZL220M12.5X30	128-1845
680	2570	0.028	40	18	0.8	7.5	100ZL680M18X40	128-1846
150	1000	0.036	11.5	8	0.6	3.5	35ZLG150M8X11.5	128-1819

100 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
15	128-1844	0.101	0.088	0.087	0.078	0.077
68	128-1848	0.310	0.300	0.270	0.250	0.230
100	128-1843	0.430	0.420	0.370	0.330	0.310
220	128-1845	0.800	0.780	0.700	0.620	0.580
680	128-1846	2.230	2.140	1.920	1.720	1.570
150	128-1819	0.330	0.300	0.280	0.260	0.250

ZLG Series – Ultra Low Impedance 105°C



- Extremely reduced impedance at high frequency than the ZL Series
- High ripple and low impedance offers component reduction or miniaturisation opportunities

Tolerance ±20%
Leakage 0.03 CV or 3µA whichever is greater
current (max)

Operating temperature -40°C to +105°C
Ripple current measured at 105°C@ 100kHz

6.3 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
100	405	0.15	7	6.3	2.5	2.5	6.3ZLG100M6.3X7	127-8842
330	760	0.15	11	6.3	0.5	2.5	6.3ZLG330M6.3X11	128-1805
560	1000	0.036	11.5	8	0.6	3.5	6.3ZLG560M8X11.5	128-1806

6.3 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
100	127-8842	0.178	0.167	0.154	0.144	0.133
330	128-1805	0.210	0.188	0.177	0.154	0.144
560	128-1806	0.310	0.280	0.270	0.250	0.230

10 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
100	405	0.15	11	5	0.5	2	10ZLG100M5X11	128-1807
470	1000	0.065	11.5	8	0.6	3.5	10ZLG470M8X11.5	128-1808

10 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
100	128-1807	0.145	0.134	0.121	0.110	0.100
470	128-1808	0.310	0.280	0.270	0.250	0.230

16 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
47	480	0.15	7	6.3	0.45	2.5	16ZLG47M6.3X7	128-1810
120	760	0.065	11	6.3	0.5	2.5	16ZLG120M6.3X11	128-1809
330	1000	0.036	11.5	8	0.6	3.5	16ZLG330M8X11.5	171-2582
470	1430	0.027	12.5	10	0.6	5	16ZLG470M10X12.5	171-2583

16 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
47	128-1810	0.178	0.167	0.154	0.144	0.133
120	128-1809	0.210	0.188	0.177	0.154	0.144
330	NEW 171-2582	0.160	0.147	0.137	0.128	0.116
470	NEW 171-2583	0.260	0.240	0.220	0.210	0.186

25 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
10	230	0.52	7	4	0.45	1.5	25ZLG10M4X7	128-1813
22	350	0.27	7	5	0.45	2	25ZLG22M5X7	128-1815
33	480	0.16	7	6.3	0.45	2.5	25ZLG33M6.3X7	128-1816
47	480	0.15	7	6.3	0.5	2.5	25ZLG47M6.3X7	171-2584
100	760	0.065	11	6.3	0.5	2.5	25ZLG100M6.3X11	128-1812
220	1000	0.036	11.5	8	0.6	3.5	25ZLG220M8X11.5	128-1814
330	1430	0.027	12.5	10	0.6	5	25ZLG330M10X12.5	171-2586

25 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
10	128-1813	0.135	0.123	0.111	0.102	0.101
22	128-1815	0.155	0.134	0.133	0.121	0.110
33	128-1816	0.178	0.167	0.154	0.144	0.133
47	NEW 171-2584	0.100	0.091	0.085	0.079	0.072
100	128-1812	0.230	0.200	0.187	0.177	0.154
220	128-1814	0.320	0.290	0.270	0.250	0.240
330	NEW 171-2586	0.270	0.250	0.230	0.220	0.195

35 Volt d.c.		Impedance	Dimensions				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
4.7	230	0.64	7	4	0.45	1.5	35ZLG4.7M4X7	128-1822
10	350	0.33	7	5	0.45	2	35ZLG10M5X7	128-1818
22	480	0.16	7	6.3	0.45	2.5	35ZLG22M6.3X7	128-1820
33	480	0.15	7	6.3	0.45	2.5	35ZLG33M6.3X7	128-1821
56	760	0.065	11	6.3	0.5	2.5	35ZLG56M6.3X11	171-2587
150	1000	0.036	11.5	8	0.6	3.5	35ZLG150M8X11.5	128-1819
220	1430	0.027	12.5	10	0.6	5	35ZLG220M10X12.5	171-2588

35 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
4.7	128-1822	0.135	0.123	0.111	0.101	0.088
10	128-1818	0.155	0.134	0.133	0.121	0.110
22	128-1820	0.188	0.167	0.166	0.144	0.133
33	128-1821	0.178	0.167	0.154	0.144	0.133
56	NEW 171-2587	0.110	0.101	0.094	0.088	0.080
150	128-1819	0.330	0.300	0.280	0.260	0.250
220	NEW 171-2588	0.280	0.260	0.240	0.220	0.200

ZLH Series – 105°C (Miniature Aluminium Electrolytic)



- Ultra Low Impedance at High frequencies
- Achieved endurance improvement and miniaturization of ZL series, as well as high frequency impedance reduction
- Load Life of up to 10000 hours

- Developed for high reliability applications
- Ideally suited for output filtering on switching power supplies, High end Audio, Servers

Tolerance ±20%
Leakage 0.01 CV or 3µA whichever is greater
current (max)

Operating temperature -40°C to +105°C
Ripple current measured at 105°C@ 100kHz

6.3 Volt d.c.		Impedance	Dimensions (mm)				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
220	345	11	5	2			6.3ZLH220M5X11	812-7158
470	540	11	6.3	2.5			6.3ZLH470M6.3X11	812-7174
820	945	11.5	8	3.5			6.3ZLH820M8X11.5	171-2577
2200	1960	20	10	5			6.3ZLH2200M10X20	812-7166
4700	2900	25	12.5	5			6.3ZLH4700M12.5X25	812-7182
6800	3250	20	16	7.5			6.3ZLH6800M16X20	812-7190

6.3 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
220	812-7158	0.172	0.146	0.136	0.121	0.110
470	812-7174	0.280	0.240	0.200	0.187	0.164
820	NEW 171-2577	0.180	0.164	0.153	0.145	0.129
2200	812-7166	0.700	0.620	0.550	0.490	0.460
4700	812-7182	1.250	1.090	0.950	0.860	0.790
6800	812-7190	1.720	1.500	1.310	1.190	1.090

10 Volt d.c.		Impedance	Dimensions (mm)				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
1000	1250						10ZLH1000M8X16	812-6216
4700	3450	12.5	30	5			10ZLH4700M12.5X30	812-6224
4700	3250	16	20	7.5			10ZLH4700M16X20	812-6232

10 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
1000	812-6216	0.45	0.41	0.34	0.32	0.30
4700	812-6224	1.60	1.40	1.24	1.10	1.04
4700	812-6232	1.77	1.54	1.36	1.24	1.13

16 Volt d.c.		Impedance	Dimensions (mm)				Mftrs. List No.	Order Code
µF	Ripple (mA)	(Ω Max @ 20°C 100kHz)	H	Dia.	Dia.	Pitch		
100	345	5	11	2			16ZLH100M5X11	812-6283
220	540	11	6.3	2.5			16ZLH220M6.3X11	812-6305
470	945	8	11.5	3.5			16ZLH470M8X11.5	812-6321
1000	1500						16ZLH1000M8X20	812-6291
1500	1960	20	10	5			16ZLH1500M10X20	171-2578
2200	2480	12.5	20	5			16ZLH2200M12.5X20	812-6313
4700	3630	16	25	7.5			16ZLH4700M16X25	812-6330

16 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
100	812-6283	0.172	0.146	0.136	0.121	0.110
220	812-6305	0.280	0.240	0.200	0.187	0.164
470	812-6321	0.420	0.360	0.320	0.300	0.270
1000	812-6291	0.610	0.510	0.460	0.420	0.390
1500	NEW 171-2578	0.460	0.430	0.400	0.380	0.340
2200	812-6313	1.310	1.130	1.000	0.920	0.830
4700	812-6330	2.380	2.070	1.790	1.630	1.510

25 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
330	945	11.5	8	3.5	25ZLH330M8X11.5	171-2579
470	1330	12.5	10	5	25ZLH470M10X12.5	812-6461
820	1960	20	10	5	25ZLH820M10X20	171-2580
1000	2250	23	10	5	25ZLH1000M10X23	812-6437
2200	3450	30	12.5	5	25ZLH2200M12.5X30	812-6445
2200	3250	20	16	7.5	25ZLH2200M16X20	812-6453
3300	3630	25	16	7.5	25ZLH3300M16X25	171-2581

25 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
330	NEW 171-2579	0.220	0.198	0.187	0.173	0.154
470	812-6461	0.580	0.490	0.450	0.400	0.370
820	NEW 171-2580	0.490	0.450	0.420	0.400	0.350
1000	812-6437	0.940	0.810	0.710	0.660	0.600
2200	812-6445	1.870	1.620	1.440	1.300	1.200
2200	812-6453	2.050	1.780	1.550	1.430	1.310
3300	NEW 171-2581	1.380	1.270	1.190	1.120	1.000

35 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
47	345	11	5	2	35ZLH47M5X11	812-6747
100	540	11	6.3	2.5	35ZLH100M6.3X11	812-6658
220	945	11.5	8	3.5	35ZLH220M8X11.5	812-6690
270	1250	16	8	3.5	35ZLH270M8X16	812-6712
330	1330	12.5	10	5	35ZLH330M10X12.5	812-6720
390	1500	20	8	3.5	35ZLH390M8X20	812-6739
470	1760	16	10	5	35ZLH470M10X16	812-6755
560	1960	20	10	5	35ZLH560M10X20	812-6763
680	2250	23	10	5	35ZLH680M10X23	812-6771
1000	2480	20	12.5	5	35ZLH1000M12.5X20	812-6666
1200	2900	25	12.5	5	35ZLH1200M12.5X25	812-6674
1500	3450	30	12.5	5	35ZLH1500M12.5X30	812-6682
2200	3630	25	16	7.5	35ZLH2200M16X25	812-6704

35 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
47	812-6747	0.177	0.163	0.141	0.126	0.114
100	812-6658	0.290	0.250	0.220	0.198	0.177
220	812-6690	0.430	0.370	0.330	0.310	0.290
270	812-6712	0.450	0.410	0.340	0.320	0.300
330	812-6720	0.580	0.500	0.440	0.410	0.390
390	812-6739	0.440	0.390	0.330	0.310	0.290
470	812-6755	0.700	0.620	0.590	0.580	0.560
560	812-6763	0.790	0.690	0.620	0.550	0.500
680	812-6771	0.940	0.800	0.710	0.660	0.590
1000	812-6666	1.350	1.170	1.040	0.950	0.860
1200	812-6674	1.490	1.310	1.120	1.040	0.960
1500	812-6682	1.880	1.630	1.440	1.310	1.200
2200	812-6704	2.570	2.260	1.970	1.790	1.650

50 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
100	724	11.5	8	3.5	50ZLH100M8X11.5	812-7077
220	1370	16	10	5	50ZLH220M10X16	812-7093
470	2050	20	12.5	5	50ZLH470M12.5X20	812-7107
1000	3010	25	16	7.5	50ZLH1000M16X25	812-7085

50 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
100	812-7077	0.35	0.32	0.28	0.27	0.24
220	812-7093	0.67	0.57	0.50	0.46	0.42
470	812-7107	1.29	1.11	0.97	0.89	0.82
1000	812-7085	2.26	1.97	1.70	1.55	1.45

80 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
330	1620	25	12.5	5	80ZLH330M16X20	154-7009

80 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
330	154-7009	1.31	1.21	1.05	0.95	0.84

100 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
100	1040	20	10	5	100ZLH100M10X20	154-7012
150	1430	20	12.5	5	100ZLH150M12.5X20	154-7013
330	2140	35	12.5	5	100ZLH330M12.5X40	154-7014

372156

100 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
100	154-7012	0.57	0.51	0.45	0.40	0.36
150	154-7013	0.83	0.78	0.68	0.60	0.55
330	154-7014	1.75	1.63	1.40	1.26	1.13

ZT Series – Ultra Low Impedance 125°C



- Miniature aluminium electrolytic capacitors
- Ultra low impedance
- High temperature

Tolerance ±20% Operating temperature -40°C to +125°C
 Leakage 0.03 CV or 3µA whichever is greater Ripple current measured at 105°C@ 100kHz
 current (max)

25 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
56	405	11	6.3	0.5	25ZT56M6.3X11	128-1869
220	995	12.5	10	0.6	25ZT220M10X12.5	128-1868
1000	1900	25	12.5	0.6	25ZT1000M12.5X25	128-1866

25 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	250+	500+
56	128-1869	0.178	0.155	0.133	0.110	0.100
220	128-1868	0.390	0.340	0.280	0.250	0.210
1000	128-1866	1.100	0.990	0.800	0.690	0.590

35 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
100	760	11.5	8	0.6	35ZT100M8X11.5	128-1870
220	1430	16	10	0.6	35ZT220M10X16	128-1871
470	1720	20	12.5	0.6	35ZT470M12.5X20	128-1873

35 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	250+	500+
100	128-1870	0.270	0.240	0.187	0.166	0.144
220	128-1871	0.480	0.430	0.350	0.300	0.270
470	128-1873	1.010	0.890	0.730	0.620	0.550

RX30 Series – 130°C (Miniature Aluminum Electrolytic)



- 1 Load Life of up to 4000 hours
- Low Impedance and high reliability
- Low impedance at 100KHz with selected material
- Ideally suited for Automotive or other high temperature applications
- The highest operating temperature V load life of any electrolytic range

Tolerance ±20% Operating temperature -40°C to +130°C
 Leakage 0.01 CV or 3µA whichever is greater Ripple current measured at 105°C@ 100kHz
 current (max)

35 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
100	360	11.5	8	3.5	35RX30100MEFG8X11.5	812-6585
220	620	12.5	10	5	35RX30220MEFG10X12.5	812-6607
330	800	16	10	5	35RX30330MEFG10X16	812-6623
470	960	20	10	5	35RX30470MEFG10X20	812-6640
1000	1430	25	12.5	5	35RX301000MEFG12.5X25	812-6593
3300	2800	35.5	18	7.5	35RX303300MEFG18X35.5	812-6631

35 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
100	812-6585	0.49	0.45	0.41	0.32	0.30
220	812-6607	0.69	0.62	0.57	0.44	0.40
330	812-6623	1.08	0.95	0.92	0.69	0.65
470	812-6640	1.10	0.96	0.93	0.65	0.60
1000	812-6593	1.83	1.62	1.25	1.13	1.06
3300	812-6631	5.94	5.19	4.51	4.12	3.82

50 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions (mm)			Mftrs. List No.	Order Code
		H	Dia.	Pitch		
1	35	11.5	8	3.5	50RX301MEFG8X11.5	812-6984
2.2	50	11.5	8	3.5	50RX302R2MEFG8X11.5	812-7018
4.7	100	11.5	8	3.5	50RX304R7MEFG8X11.5	812-7042
10	200	11.5	8	3.5	50RX3010MEFG8X11.5	812-6992
22	260	11.5	8	3.5	50RX3022MEFG8X11.5	812-7026
47	300	11.5	8	3.5	50RX3047MEFG8X11.5	812-7050
100	520	12.5	10	5	50RX30100MEFG10X12.5	812-7000
220	890	20	10	5	50RX30220MEFG10X20	812-7034
470	1200	25	12.5	5	50RX30470MEFG12.5X25	812-7069

Passive Components

7

Capacitors



Aluminium Electrolytic - Radial - Rubycon - continued

RX30 Series - 130°C (Miniature Aluminum Electrolytic) - continued

50 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
1	812-6984	0.43	0.36	0.32	0.30	0.28
2.2	812-7018	0.45	0.41	0.34	0.32	0.30
4.7	812-7042	0.45	0.39	0.34	0.32	0.30
10	812-6992	0.44	0.37	0.33	0.31	0.29
22	812-7026	0.43	0.36	0.32	0.31	0.28
47	812-7050	0.43	0.36	0.32	0.31	0.28
100	812-7000	0.62	0.53	0.47	0.42	0.40
220	812-7034	0.95	0.82	0.73	0.67	0.61
470	812-7069	1.54	1.35	1.15	1.07	1.01

63 Volt d.c.		Price Each				
µF	Ripple (mA)	H	Di.	Pitch	Mfrs. List No.	Order Code
47	400	12.5	10	5	63RX3047MEFG10X12.5	812-7220
100	450	16	10	5	63RX30100MEFG10X16	812-7204
220	820	20	12.5	5	63RX30220MEFG12.5X20	812-7212

63 Volt d.c.		Price Each				
µF	Order Code	1+	50+	100+	500+	1K+
47	812-7220	0.70	0.63	0.56	0.50	0.42
100	812-7204	0.76	0.67	0.59	0.55	0.45
220	812-7212	1.77	1.56	1.38	1.28	1.07

Aluminium Electrolytic - Radial - Vishay

134 RLP Series - 85°C



- Extremely miniature radial electrolytic capacitors
- Very low profile, 5mm height
- High CV per unit volume

H = 5, Lead dia. = 0.4 to 0.45
Supplied loose

µF	Ripple (mA)	Dimensions H	Di.	Lead Pitch	Mfrs. List No.	Order Code
10	17	5	4	1.5	MAL213495105E3	116-5535
22	32	5	5	2	MAL213455229E3	116-5536
47	50	5	6.3	2.5	MAL213455479E3	116-5538
4.7	15	5	4	1.5	MAL213450478E3	116-5540
10	25	5	5	2	MAL213450109E3	116-5541
22	40	5	6.3	2.5	MAL213450229E3	116-5542
50 Volt dc						
1	6.2	5	3	1	MAL213491105E3	116-5543
4.7	19	5	5	2	MAL213451478E3	116-5545

5		Price Each				
µF	Order Code	5+	25+	100+	500+	1K+
10	116-5535	0.240	0.181	0.141	0.129	0.114
22	116-5536	0.178	0.135	0.106	0.097	0.086
47	116-5538	0.199	0.161	0.131	0.120	0.109
4.7	116-5540	0.128	0.114	0.096	0.081	0.077
10	116-5541	0.220	0.167	0.131	0.119	0.106
22	116-5542	0.280	--	--	--	--
50 Volts dc						
1	116-5543	0.220	0.162	0.128	0.115	0.103
4.7	116-5545	0.168	0.133	0.109	0.100	0.091

097 RLP Series 7 - 85°C



- Miniature radial electrolytic capacitors
- Low profile, 7mm height
- High CV per unit volume

H = 7, Lead dia. = 0.45
Supplied loose.

µF	Ripple (mA)	Dimensions H	Di.	Lead Pitch	Mfrs. List No.	Order Code
100	80	7	6.3	2.5	MAL209754101E6	116-5517
10	25	7	4	1.5	MAL209755109E6	116-5518
22	39	7	5	2	MAL209755229E6	116-5519
47	59	7	6.3	2.5	MAL209755479E6	116-5520
100	90	7	6.3	2.5	MAL209755101E6	116-5521

µF	Ripple (mA)	Dimensions H	Di.	Lead Pitch	Mfrs. List No.	Order Code
25 Volt d.c.						
33	53	7	6.3	2.5	MAL209756339E6	116-5522
47	65	7	6.3	2.5	MAL209756479E6	116-5523
35 Volt d.c.						
4.7	20	7	4	1.5	MAL209750478E6	116-5524
10	30	7	5	2	MAL209750109E6	116-5526
22	47	7	6.3	2.5	MAL209750229E6	116-5527
50 Volt d.c.						
3.3	18	7	4	1.5	MAL209751338E6	116-5528
63 Volt d.c.						
1	11	7	4	1.5	MAL209758108E6	116-5529
2.2	17	7	4	1.5	MAL209758228E6	116-5530
4.7	26	7	6.3	2.5	MAL209758478E6	116-5531
10	40	7	6.3	2.5	MAL209758109E6	116-5532

Order Multiple=5		Price Each				
µF	Order Code	5+	25+	100+	500+	1K+
10 Volt d.c.						
100	116-5517	0.109	0.102	0.094	0.079	0.074
16 Volt d.c.						
10	116-5518	0.181	0.157	0.124	0.112	0.100
22	116-5519	0.137	0.105	0.090	0.074	0.067
47	116-5520	0.159	0.122	0.095	0.086	0.077
100	116-5521	0.186	0.141	0.114	0.101	0.089
25 Volt d.c.						
33	116-5522	0.109	0.103	0.094	0.078	0.075
47	116-5523	0.220	0.166	0.133	0.118	0.105
35 Volt d.c.						
4.7	116-5524	0.189	0.144	0.112	0.103	0.090
10	116-5526	0.130	0.099	0.082	0.071	0.062
22	116-5527	0.210	0.158	0.125	0.113	0.101
50 Volt d.c.						
3.3	116-5528	0.104	0.093	0.087	0.073	0.069
60 Volt d.c.						
1	116-5529	0.210	0.157	0.126	0.112	0.100
2.2	116-5530	0.130	0.098	0.080	0.071	0.062
4.7	116-5531	0.230	0.174	0.136	0.124	0.110
10	116-5532	0.200	0.152	0.123	0.109	0.097

136 RVI Series - Very low Impedance 105°C



- High performance radial electrolytic capacitors
- Very low impedance and ESR
- High ripple current capabilities
- Suitable for high frequency industrial applications, SMPS, DC/DC converters

Lead length = 5


Operating temperature: -55°C to +105°C
Tolerance: ±20%
Climatic category (IEC6068): 55/105/56
DC Leakage current: 0.01CV (µA)

Useful life @ 4000hrs105°C
Ripple current measured at 100kHz @ 20°C
ESR measured at 120Hz @ 20°C
Impedance measured at 100kHz @ 20°C

µF	Ripple (mA)	ESR (Ω)	Impedance (Ω)	H	Di.	Di.	Pitch	Mfrs. List No.	Order Code
10 Volt d.c.									
1000	1000	0.3	0.062	20	10	0.6	5	MAL213664102E3	116-5601
2200	1700	0.15	0.034	25	12.5	0.6	5	MAL213664222E3	116-5602
16 Volt d.c.									
470	1700	0.54	0.034	16	10	0.6	5	MAL213665471E3	116-5603
4700	2600	0.075	0.022	35	16	0.8	7.5	MAL213665472E3	116-5605
25 Volt d.c.									
470	1000	0.47	0.062	20	10	0.6	5	MAL213666471E3	116-5510
1000	1700	0.22	0.034	25	12.5	0.6	5	MAL213666102E3	116-5606
3300	2600	0.087	0.022	35	16	0.8	7.5	MAL213666332E3	116-5607
35 Volt d.c.									
220	830	0.87	0.084	16	10	0.6	5	MAL213660221E3	116-5608
1000	1700	0.19	0.038	20	16	0.8	7.5	MAL213660102E3	116-5511
2200	2600	0.1	0.022	35	16	0.8	7.5	MAL213660222E3	116-5609
50 Volt d.c.									
100	480	1.6	0.2	12	10	0.6	5	MAL213661101E3	116-5512
470	1500	0.34	0.044	25	12.5	0.6	5	MAL213661471E3	116-5510
1000	2200	0.16	0.03	31	16	0.8	7.5	MAL213661102E3	116-5511
63 Volt d.c.									
47	380	3.4	0.3	12	10	0.6	5	MAL213668479E3	116-5612
100	580	1.6	0.19	16	10	0.6	5	MAL213668101E3	116-5613
220	870	0.72	0.11	20	12.5	0.6	5	MAL213668221E3	116-5614
470	1500	0.34	0.055	25	16	0.8	7.5	MAL213668471E3	116-5615
100 Volt d.c.									
47	450	2.4	0.32	16	10	0.6	5	MAL213669479E3	116-5514
100	800	1.1	0.15	20	12.5	0.6	5	MAL213669101E3	116-5515
220	1300	0.51	0.081	25	16	0.8	7.5	MAL213669221E3	116-5516

µF	Order Code	Price Each			
		1+	100+	1K+	3K+
10 Volt d.c.					
1000	116-5601	0.68	0.55	0.46	0.41
2200	116-5602	1.25	0.99	0.83	0.74
16 Volt d.c.					
470	116-5603	0.61	0.48	0.41	0.37
4700	116-5605	2.30	1.82	1.53	1.36
25 Volt d.c.					
470	116-5510	0.70	0.56	0.47	0.42
1000	116-5606	1.25	0.99	0.83	0.74
3300	116-5607	1.81	1.44	1.21	1.08
35 Volt d.c.					
220	116-5608	0.62	0.49	0.41	0.37
1000	116-5511	1.65	1.30	1.10	0.99
2200	116-5609	2.28	1.80	1.53	1.35
50 Volt d.c.					
100	116-5512	0.62	0.49	0.42	0.37
470	116-5610	0.98	--	--	--
1000	116-5611	1.93	--	--	--
63 Volt d.c.					
47	116-5612	0.62	0.49	0.42	0.37
100	116-5613	0.79	0.62	0.52	0.47
220	116-5614	1.03	0.81	0.69	0.61
470	116-5615	1.35	1.15	0.96	0.81
100 Volt d.c.					
47	116-5514	0.70	0.56	0.47	0.42
100	116-5515	0.83	0.66	0.56	0.49
220	116-5516	1.93	1.53	1.29	1.15

152 RMH Series – 105°C

● High voltage radial electrolytic
● Long life, high temperature
● Applications include filtering, decoupling high voltages


Lead length = 5

Operating temperature Tolerance: -40°C to +105°C ±20%
Useful life @ 105°C: case 10 and 12.5 16 dia. 3000hrs 3000hrs

Voltage	µF	Ripple (mA)	ESR (Ω)	Impedance (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
200	10	85	19.1	3.5	12 10	0.6 5	MAL215262109E3	116-5453
200	22	120	8.7	3.2	16 10	0.6 5	MAL215262229E3	116-5454
200	47	240	4.1	0.8	20 12.5	0.6 5	MAL215262479E3	116-5455
200	100	340	1.9	0.4	20 16	0.8 7.5	MAL215262101E3	116-5456
250	47	18	4.1	0.9	25 12.5	0.6 5	MAL215263479E3	116-5457
400	4.7	15	50.8	18	16 10	0.6 5	MAL215266478E3	116-5459
400	10	16	23.9	9	20 10	0.6 5	MAL215266109E3	116-5461
400	22	18	10.9	3.8	25 12.5	0.6 5	MAL215266229E3	116-5462
400	47	18	5.1	2	25 16	0.6 7.5	MAL215266479E3	116-5463
450	10	17	31.8	10	20 12.5	0.6 5	MAL215267109E3	116-5464
450	22	19	14.5	4.6	25 16	0.6 7.5	MAL215267229E3	116-5465

Voltage	µF	Order Code	Price Each				
			1+	50+	100+	1K+	2K+
200	10	116-5453	0.70	0.53	0.42	0.39	0.34
200	22	116-5454	0.83	0.69	0.56	0.51	0.45
200	47	116-5455	1.18	0.89	0.70	0.65	0.57
200	100	116-5456	1.64	1.25	0.98	0.88	0.79
250	47	116-5457	1.51	1.14	0.89	0.82	0.73
400	4.7	116-5459	0.89	0.70	0.55	0.49	0.44
400	10	116-5461	1.13	0.86	0.68	0.61	0.55
400	22	116-5462	1.88	1.50	1.18	1.07	0.95
400	47	116-5463	2.64	2.01	1.58	1.45	1.28
450	10	116-5464	1.30	1.00	0.78	0.71	0.63
450	22	116-5465	1.01	0.82	0.70	0.62	0.60

165RHT Series – High Temperature – 125°C

● High performance radial electrolytic capacitors
● Extended temperature range + 125°C
● High reliability, stability and long life

Operating temperature Tolerance: -40°C to +125°C ±20%
Climatic category (IEC68): 40/125/56
ESR measured at: 100Hz @20°C

DC Leakage current: 0.02CV+3µA
Useful life @ 125°C: 1500 hrs
Ripple current measured at: 100kHz @ 125°C

µF	Ripple (mA)	ESR (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
2200	1100	0.13	35 16	0.8 7.5	2222 165 55222	116-5349

µF	Order Code	Price Each					
		1+	50+	100+	500+	1K+	3K+
2200	116-5349	2.96	2.65	2.32	1.89	1.76	1.39

µF	Ripple (mA)	ESR (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
220	280	0.91	20 10	0.6 5	2222 165 56221	116-5351
1000	830	0.2	31 16	0.8 7.5	2222 165 56102	116-5353

µF	Order Code	Price Each					
		1+	50+	100+	500+	1K+	3K+
220	116-5351	0.76	0.68	0.61	0.48	0.43	0.36
1000	116-5353	2.05	1.84	1.65	1.39	1.33	1.02

µF	Ripple (mA)	ESR (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
100	200	1.7	16 10	0.6 5	2222 165 60101	116-5492
330	460	0.52	25 12.5	0.6 5	2222 165 50331	116-5354

µF	Order Code	Price Each					
		1+	50+	100+	500+	1K+	3K+
100	116-5492	0.57	0.46	0.42	0.35	0.31	0.26
330	116-5354	1.38	1.27	1.09	0.91	0.84	0.66

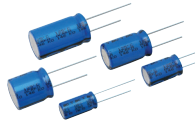
µF	Ripple (mA)	ESR (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
47	130	3.7	12 10	0.6 5	2222 165 37479	116-5356
100	210	1.7	20 10	0.6 5	2222 165 57101	116-5357
220	340	0.78	20 12.5	0.6 5	2222 165 57221	116-5358

µF	Order Code	Price Each					
		1+	50+	100+	500+	1K+	3K+
47	116-5356	0.51	0.46	0.41	0.34	0.33	0.25
100	116-5357	0.77	0.69	0.61	0.48	0.43	0.36
220	116-5358	1.15	1.05	0.92	0.74	0.69	0.54

µF	Ripple (mA)	ESR (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
33	120	4.3	12 10	0.6 5	2222 165 51339	116-5360
100	260	1.4	20 12.5	0.6 5	2222 165 51101	116-5361
1000	1250	0.14	35 16	0.8 7.5	2222 165 90506	116-5617

µF	Order Code	Price Each					
		1+	50+	100+	500+	1K+	3K+
33	116-5360	0.46	0.41	0.37	0.32	0.30	0.25
100	116-5361	1.00	0.92	0.81	0.65	0.61	0.48
1000	116-5617	1.47	1.37	1.30	1.25	1.18	1.11

146RT1 Series

● Polarised aluminium electrolytic capacitors, non-solid electrolyte
● Very low ESR
● Excellent ripple current capability

Operating temperature Tolerance: -55°C to +125°C ± 20%

µF	Ripple (mA)	Impedance (Ω)	Dimensions H Dia.	Lead Dia. Pitch	Mfrs. List No.	Order Code
16 Volt						
470	620	0.12	12 10	0.6 5	MAL214635471E3	180-0841
1000	1250	0.06	20 10	0.6 5	MAL214635102E3	180-0842
25 Volt						
330	620	0.12	12 10	0.6 5	MAL214636331E3	180-0843
470	1100	0.075	16 10	0.6 5	MAL214636471E3	180-0844
1000	1600	0.043	20 12.5	0.6 5	MAL214636102E3	180-0845
35 Volt						
220	600	0.12	12 10	0.6 5	MAL214630221E3	180-0846
470	1250	0.06	20 10	0.6 5	MAL214630471E3	180-0847
1000	2000	0.033	25 12.5	0.6 5	MAL214630102E3	180-0848
50 Volt						
100	420	0.19	12 10	0.6 5	MAL214631101E3	180-0849
470	1250	0.065	20 12.5	0.6 5	MAL214631471E3	180-0850
1000	1800	0.039	20 18	0.8 7.5	MAL214631102E3	180-0852
1800	2700	0.026	31 18	0.8 7.5	MAL214631182E3	180-0853
63 Volt						
100	600	0.22	16 10	0.6 5	MAL214638101E3	180-0854
330	1300	0.076	25 12.5	0.6 5	MAL214638331E3	180-0855
680	2100	0.041	25 18	0.8 7.5	MAL214638681E3	180-0856

µF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
16 Volt						
470	180-0841	0.48	0.41	0.34	0.29	0.23
1000	180-0842	0.64	0.55	0.46	0.38	0.30
25 Volt						
330	180-0843	0.48	0.41	0.34	0.29	0.23
470	180-0844	0.55	0.47	0.39	0.33	0.26
1000	180-0845	0.92	0.79	0.66	0.55	0.44
35 Volt						
220	180-0846	0.48	0.41	0.34	0.29	0.23
470	180-0847	0.64	0.55	0.46	0.38	0.30
1000	180-0848	1.13	0.97	0.81	0.68	0.54



Aluminium Electrolytic - Radial - Vishay - continued

146RTI Series - continued

µF	Order Code	Price Each				
		1+	50+	100+	500+	1K+
50 Volt						
470	180-0850	0.92	0.79	0.66	0.55	0.44
1000	180-0852	1.64	1.41	1.17	0.99	0.78
1800	180-0853	2.35	2.01	1.68	1.41	1.12
100	180-0854	0.55	0.47	0.39	0.33	0.26
63 Volt						
100	180-0849	0.48	0.41	0.34	0.29	0.23
330	180-0855	1.13	0.97	0.81	0.68	0.54
680	180-0856	2.00	1.71	1.43	1.20	0.95

Aluminium Electrolytic - Bipolar

NP Series - Non-Polarised



- Non-Polarized aluminium electrolytic capacitors
- Have excellent frequency characteristic and small deviation of capacitance
- suitable for crossover network for HI-FI equipments and speakers, etc.

Operating temp. -40°C to +85°C
 Tolerance ±20%
 DC leakage current I = 0.03CV or 3 (µA) after 5 minutes
 Ripple current measured at 120Hz @ 85°C

16 Volt d.c.						
µF	Ripple (mA)	Dimensions H Dia.	Lead Dia.	Lead Pitch	Order Code	
1	15	11 5	0.5	2	123-6655	
4.7	30	11 5	0.5	2	123-6656	
10	40	11 5	0.5	2	123-6657	
22	55	11 5	0.5	2	123-6658	
47	95	11 6.3	0.5	2.5	123-6661	
100	160	11.5 8	0.6	3.5	123-6662	
220	275	12.5 10	0.6	5	123-6663	
470	485	20 10	0.6	5	123-6664	
1000	855	25 13	0.6	5	123-6665	

16 Volt d.c.							
µF	Order Code	5+	25+	50+	100+	500+	1K+
1	123-6655	0.029	0.028	0.025	0.022	0.019	0.016
4.7	123-6656	0.031	0.030	0.029	0.024	0.021	0.017
10	123-6657	0.061	0.059	0.057	0.050	0.045	0.036
22	123-6658	0.061	0.059	0.057	0.050	0.045	0.036
47	123-6661	0.075	0.074	0.073	0.061	0.053	0.046
100	123-6662	0.124	0.122	0.113	0.102	0.086	0.073
220	123-6663	0.200	0.196	0.192	0.164	0.145	0.114
470	123-6664	0.320	--	--	--	--	--
1000	123-6665	0.610	0.590	0.560	0.500	0.440	0.360

35 Volt d.c.						
µF	Ripple (mA)	Dimensions H Dia.	Lead Dia.	Lead Pitch	Order Code	
1	15	11 5	0.5	2	123-6666	
2.2	20	11 5	0.5	2	123-6667	
4.7	30	11 5	0.5	2	123-6668	
10	40	11 5	0.5	2	123-6669	
22	70	11 6.3	0.5	2.5	123-6670	
47	120	11.5 8	0.6	3.5	123-6671	
100	230	16 10	0.6	5	123-6673	
220	410	20 13	0.6	5	123-6674	
470	655	25 13	0.6	5	123-6675	

35 Volt d.c.							
µF	Order Code	5+	25+	50+	100+	500+	1K+
1	123-6666	0.031	0.028	0.025	0.022	0.020	0.017
2.2	123-6667	0.031	0.030	0.029	0.024	0.021	0.017
4.7	123-6668	0.031	0.030	0.029	0.024	0.021	0.017
10	123-6669	0.059	0.058	0.056	0.049	0.044	0.036
22	123-6670	0.098	0.096	0.089	0.082	0.069	0.056
47	123-6671	0.130	0.128	0.125	0.109	0.095	0.077
100	123-6673	0.230	0.210	0.194	0.175	0.155	0.136
220	123-6674	0.500	0.490	0.480	0.440	0.370	0.310
470	123-6675	0.630	0.620	0.610	0.520	0.450	0.370

63 Volt d.c.						
µF	Ripple (mA)	Dimensions H Dia.	Lead Dia.	Lead Pitch	Order Code	
0.47	13	11 5	0.5	2	123-6676	
1	19	11 5	0.5	2	123-6677	
2.2	25	11 5	0.5	2	123-6678	
4.7	35	11 6.3	0.5	2.5	123-6679	
10	55	11 6.3	0.5	2.5	123-6680	
22	90	11.5 8	0.6	3.5	123-6681	
47	180	16 10	0.6	5	123-6682	
100	320	20 13	0.6	5	123-6683	
220	575	25 16	0.8	7.5	123-6685	

Order Multiple=5

63 Volt d.c.		Price Each					
µF	Order Code	5+	25+	50+	100+	500+	1K+
0.47	123-6676	0.031	0.030	0.029	0.024	0.021	0.017
1	123-6677	0.031	0.030	0.029	0.024	0.021	0.017
2.2	123-6678	0.059	0.058	0.056	0.049	0.044	0.036
4.7	123-6679	0.062	0.061	0.057	0.051	0.044	0.037
10	123-6680	0.087	0.078	0.073	0.068	0.063	0.057
22	123-6681	0.134	0.131	0.127	0.114	0.098	0.080
47	123-6682	0.290	--	--	--	--	--
100	123-6683	0.480	0.460	0.440	0.430	0.400	0.330
220	123-6685	1.070	1.050	1.030	0.880	0.760	0.620

100 Volt d.c.		Ripple (mA)	Dimensions H Dia.	Lead Dia.	Lead Pitch	Order Code
µF						
1		19	11 5	0.5	2	123-6686
2.2		25	11 6.3	0.5	2.5	123-6687
3.3		35	11 6.3	0.5	2.5	123-6688
4.7		40	11 6.3	0.5	2.5	123-6689
10		70	11.5 8	0.6	3.5	123-6690
33		220	20 13	0.6	5	123-6691
47		240	20 13	0.6	5	123-6692
100		425	25 16	0.8	7.5	123-6693

443140

Order Multiple=5

100 Volt d.c.		Price Each					
µF	Order Code	5+	25+	50+	100+	500+	1K+
1	123-6686	0.032	0.029	0.025	0.023	0.020	0.017
2.2	123-6687	0.045	0.041	0.037	0.033	0.030	0.025
3.3	123-6688	0.045	0.041	0.037	0.033	0.030	0.025
4.7	123-6689	0.123	--	--	--	--	--
10	123-6690	0.136	0.133	0.128	0.114	0.099	0.080
33	123-6691	0.470	0.460	0.450	0.400	0.340	0.290
47	123-6692	0.470	--	--	--	--	--
100	123-6693	0.870	0.860	0.840	0.730	0.630	0.500

SU Series - 50 Volt d.c. Bi-polar



- General purpose miniature bi-polar aluminium electrolytic
- Compact version of S series
- Suitable for circuits where polarity is not constant or where reverse voltage may be applied

Operating temperature -40°C to +85°C
 Tolerance ±20%
 Power factor 0.15
 DC leakage current 0.03CV + 3µA
 Operating life @ 85°C 2000 hrs

µF	Dimensions H Dia.	Lead Pitch	Lead Dia.	Mfrs. List No.	Order Code
1	11 5	2	0.5	ECEA1HN010U	969-6601
2.2	11 5	2	0.5	ECEA1HN2R2U	969-6610
4.7	11 5	2	0.5	ECEA1HN4R7U	969-6628
10	11.2 6.3	2.5	0.5	ECEA1HN100U	969-6636
22	11.5 8	3.5	0.6	ECEA1HN220U	969-6644
47	12.5 10	5	0.6	ECEA1HN470U	969-6652
100	20 10	5	0.6	ECEA1HN101U	969-6660

234320

Order Multiple=5

50 Volt d.c.		Price Each					
µF	Order Code	5+	25+	50+	100+	500+	1K+
1	969-6601	0.096	0.094	0.075	0.056	0.043	
2.2	969-6610	0.096	0.094	0.075	0.056	0.043	
4.7	969-6628	0.093	0.092	0.073	0.055	0.043	
10	969-6636	0.149	0.131	0.111	0.083	0.062	
22	969-6644	0.260	0.230	0.159	0.114	0.087	
47	969-6652	0.320	0.290	0.220	0.159	0.121	
100	969-6660	0.560	0.420	0.300	0.210	0.167	

Aluminium Electrolytic - Snap In - Multicom

LPR Series - 85°C (PCB Mounting Snap-In)



- General purpose snap-in aluminium electrolytic
- "Self-standing" terminals for easy soldering

Operating temperature -40°C to +85°C (16 to 100V dc)
 -25°C to +85°C (400V dc)
 Tolerance ±20%
 DC leakage current 0.02CV or 3000µA max whichever is greater
 Useful life @ 85°C 2000 hrs

16 Volt d.c.		Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
µF					
4700		2.3	25 22	MCLPR16V478M22X25	945-2753
10000		3.32	25 22	MCLPR16V109M22X25	945-2761
15000		4.29	35 22	MCLPR16V159M22X35	945-2770

16 Volt d.c.		Price Each					
µF	Order Code	1+	10+	50+	100+	250+	
4700	945-2753	0.84	0.74	0.71	0.69	0.62	
10000	945-2761	1.44	--	--	--	--	
15000	945-2770	1.95	1.75	1.64	1.57	1.46	

25 Volt d.c.	Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mftrs. List No.	Order Code
4700	2.5	25 22	MCLPR25V478M22X25	945-2788
6800	3.06	30 22	MCLPR25V688M22X30	945-2796
10000	3.99	25 30	MCLPR25V109M30X25	945-2800
15000	5.1	35 30	MCLPR25V159M30X35	945-2818
22000	6.22	45 30	MCLPR25V229M30X45	945-2826

25 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
4700	945-2788	1.18	1.06	1.01	0.96	0.87
6800	945-2796	1.46	1.29	1.22	1.18	1.08
10000	945-2800	2.16	1.95	1.85	1.74	1.59
15000	945-2818	2.67	2.42	2.27	2.16	1.99
22000	945-2826	3.89	3.51	3.31	3.17	2.88

35 Volt d.c.	Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mftrs. List No.	Order Code
2200	1.8	25 22	MCLPR35V228M22X25	945-2834
4700	3.06	30 22	MCLPR35V478M22X30	945-2842
6800	3.57	30 26	MCLPR35V688M26X30	945-2850
10000	4.58	30 30	MCLPR35V109M30X30	945-2869
22000	7.07	45 35	MCLPR35V229M35X45	945-2877

35 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
2200	945-2834	0.89	0.82	0.75	0.73	0.67
4700	945-2842	1.50	1.35	1.26	1.21	1.11
6800	945-2850	1.95	1.74	1.63	1.56	1.45
10000	945-2869	2.82	2.54	2.42	2.30	2.11
22000	945-2877	5.77	5.19	4.88	4.69	4.30

50 Volt d.c.	Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mftrs. List No.	Order Code
2200	2.3	25 22	MCLPR50V228M22X25	945-2885
4700	3.86	25 30	MCLPR50V478M30X25	945-2893
10000	5.97	35 35	MCLPR50V109M35X35	945-2907

50 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
2200	945-2885	1.29	--	--	--	--
4700	945-2893	2.16	1.95	1.84	1.74	1.59
10000	945-2907	4.20	3.78	3.59	3.39	3.13

63 Volt d.c.	Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mftrs. List No.	Order Code
2200	2.58	25 26	MCLPR63V228M26X25	945-2915
4700	4.19	40 26	MCLPR63V478M26X40	945-2923
6800	5.16	40 30	MCLPR63V688M30X40	945-2931
10000	6.32	50 30	MCLPR63V109M30X50	945-2940

63 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
2200	945-2915	1.66	1.50	1.43	1.35	1.23
4700	945-2923	2.27	--	--	--	--
6800	945-2931	4.07	3.66	3.44	3.29	3.01
10000	945-2940	4.53	4.20	4.05	3.90	3.68

100 Volt d.c.	Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mftrs. List No.	Order Code
1000	2.3	30 22	MCLPR100V108M22X30	945-2958
2200	3.74	40 26	MCLPR100V228M26X40	945-2966
4700	5.86	50 30	MCLPR100V478M30X50	945-2974

100 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
1000	945-2958	1.62	1.47	1.39	1.32	1.21
2200	945-2966	3.11	2.79	2.65	2.52	2.31
4700	945-2974	5.08	--	--	--	--

400 Volt d.c.	Ripple (A) @ 120Hz, 85°C	Dimensions H Dia.	Mftrs. List No.	Order Code
100	0.78	30 22	MCLPR400V107M22X30	945-2990
220	1.41	40 26	MCLPR400V227M26X40	945-3008
470	2.4	40 35	MCLPR400V477M35X40	945-3016

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
100	945-2990	2.99	2.69	2.54	2.43	2.22
220	945-3008	4.23	3.69	3.17	2.94	2.67
470	945-3016	6.70	5.78	5.40	4.99	4.72

Aluminium Electrolytic - Snap In - Epcos

B43511 Series - 85°C (PCB Mounting 4 Pin Snap-In)



- 4 pin snap-in electrolytic
- Compact size, high capacitance per unit volume
- For frequency converters and switch mode power supplies in industrial and consumer electronics applications

Operating temperature	-40°C to +85°C (400V)	Useful life @ 85°C	12000 hrs
Tolerance	±20%	Climatic category	40/085/56 (400V)

µF	Ripple Current (A)	Impedance max (mΩ) @10kHz, 20°C	ESR (mΩ) @ 100Hz	Dimensions H Dia.	Mftrs. List No.	Order Code
1000	4.8	110	130	60 45	B43511B9108M	121-9089
1500	7.2	70	90	100 40	B43511A9158M	121-9088

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
1000	121-9089	14.82	13.96	12.50	11.06	10.84
1500	121-9088	21.32	19.98	19.28	18.60	17.31

B43504 Series - 105°C (PCB Mounting Snap-In)



- High performance snap-in electrolytic
- Temperature rating 105°C
- Low ESR, high capacitance per unit volume
- Aluminum case, fully insulated
- Negative terminal not insulated and marked on case

Operating temperature	-40°C to +105°C	Useful life @ 105°C	2000 hrs
	-25°C to +105°C (450V)	Climatic category	25/105/56 (450V)
Tolerance	±20%		

µF	Ripple Current (A)	Impedance max (mΩ) @10kHz, 20°C	ESR (mΩ) @ 100Hz	Dimensions H Dia.	Mftrs. List No.	Order Code
220	0.89	700	580	30 22	B43504A2227M	121-9073
330	1.2	470	390	30 25	B43504C2337M	121-9085
470	1.6	330	280	30 30	B43504B2477M	121-9084
1000	2.8	160	130	40 35	B43504A2108M	121-9072

400 Volts d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
47	0.39	2310	1870	25 22	B43504A9476M	121-9082
100	0.64	1090	880	35 22	B43504A9107M	121-9077
150	0.82	730	590	40 22	B43504A9157M	121-9079
220	1.2	500	400	30 35	B43504C9227M	121-9087
330	1.5	330	270	45 30	B43504A9337M	121-9081
470	2	240	190	45 35	B43504A9477M	121-9083

450 Volts d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
220	1.2	730	620	30 35	B43504C5227M	121-9086
330	1.6	490	410	50 30	B43504A5337M	121-9075
470	2.1	340	290	50 35	B43504A5477M	121-9076

250 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
220	121-9073	2.94	2.50	2.21	1.95	1.81
330	121-9085	3.45	--	--	--	--
470	121-9084	4.11	3.48	3.15	2.79	2.59
1000	121-9072	8.02	--	--	--	--

400 Volts d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
47	121-9082	2.66	2.32	1.80	1.51	1.44
100	121-9077	3.63	3.14	2.48	2.07	1.93
150	121-9079	3.21	2.80	2.19	1.90	1.85
220	121-9087	5.48	4.76	3.73	3.10	2.93
330	121-9081	5.94	5.14	4.01	3.35	3.18
470	121-9083	9.00	7.69	6.72	5.93	5.51

450 Volts d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
220	121-9086	7.21	--	--	--	--
330	121-9075	9.94	8.61	6.76	5.65	5.31
470	121-9076	13.13	--	--	--	--

B43514 Series - 105°C (PCB Mounting 4 Pin Snap-In)



- High performance 4 pin snap-in electrolytic
- Temperature rating 105°C
- Compact size, high capacitance per unit volume
- For frequency converters and switch mode power supplies in industrial and consumer electronics applications

Operating temperature	-40°C to +105°C (400V)	Useful life @ 85°C	3000 hrs
	-25°C to +105°C (450V)	Climatic category	40/105/56
Tolerance	±20%		
			25/105/56 (450V)

µF	Ripple Current (A)	Impedance max (mΩ) @10kHz, 20°C	ESR (mΩ) @ 100Hz	Dimensions H Dia.	Mftrs. List No.	Order Code
470	2.4	220	280	60 35	B43514A9477M	121-9090
680	2.8	150	190	60 40	B43514C9687M	121-9094
1000	3.8	110	130	80 40	B43514C9108M	121-9093
450 Volt d.c.						
680	3	240	300	70 40	B43514A5687M	121-9135



Aluminium Electrolytic - Snap In - Epcos - continued

B43514 Series - 105°C (PCB Mounting 4 Pin Snap-In) - continued

333324

µF	Order Code	Price Each				
		1+	10+	50+	100+	250+
400 Volt d.c.						
470	121-9090	10.77	9.49	8.79	8.21	7.94
680	121-9094	12.94	11.65	11.00	10.36	9.94
1000	121-9093	14.40	13.14	12.50	11.88	11.52
450 Volt d.c.						
680	121-9135	15.44	14.22	13.60	13.01	12.71

Aluminium Electrolytic - Snap In - Panasonic

TSUP Series -85°C (PCB Mounting Snap-In)



● General purpose wide CV range

Lead pitch=10
Mounting hole dia.=2.0

Operating temperature -40°C to +85°C (16 to 250V d.c.)
-25°C to +85°C (400 to 450V d.c.)

Tolerance ±20%
DC leakage current 3√CV µA

16 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
4700	1.6	20 22	ECOS1CP472BL	119-8569
10000	3.78	30 22	ECOS1CP103BA	119-8710
15000	3.2	20 35	ECOS1CP153EL	119-8570
22000	6.1	35 25	ECOS1CP223CA	119-8711
47000	7.47	50 30	ECOS1CP473DA	119-8712
68000	9.05	50 35	ECOS1CP683EA	119-8714

16 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
4700	119-8569	2.07	1.76	1.36	1.21	1.12
10000	119-8710	2.06	1.81	1.57	1.40	1.31
15000	119-8570	3.08	2.79	2.71	2.64	2.45
22000	119-8711	3.10	2.77	2.44	2.14	1.99
47000	119-8712	5.70	4.61	3.17	3.09	3.01
68000	119-8714	7.18	5.27	5.03	4.90	4.77

35 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
4700	3.26	30 22	ECOS1VP472BA	119-8715
6800	3.68	30 25	ECOS1VP682CA	119-8716
10000	4.42	40 25	ECOS1VP103CA	119-8717
22000	6.1	50 30	ECOS1VP223DA	119-8718
33000	7.15	50 35	ECOS1VP333EA	119-8719

35 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
4700	119-8715	2.04	1.73	1.59	1.41	1.31
6800	119-8716	2.04	1.73	1.66	1.46	1.41
10000	119-8717	2.97	2.53	2.24	1.98	1.84
22000	119-8718	5.74	4.41	3.33	3.23	3.15
33000	119-8719	7.41	6.40	6.23	6.07	5.91

63 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
1000	1.2	20 22	ECOS1JP102BL	119-8571
1500	1.3	20 25	ECOS1JP152CL	119-8573
2200	2.52	30 22	ECOS1JP222BA	119-8720
3300	4.1	30 25	ECOS1JP332CA	119-8721
4700	4.86	40 25	ECOS1JP472CA	119-8722
6800	5.84	40 30	ECOS1JP682DA	119-8723
10000	6.52	40 35	ECOS1JP103EA	119-8724

63 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
1000	119-8571	2.27	1.92	1.49	1.32	1.23
1500	119-8573	2.28	1.95	1.77	1.57	1.53
2200	119-8720	2.13	1.82	1.59	1.41	1.31
3300	119-8721	2.70	2.30	2.10	1.86	1.73
4700	119-8722	3.19	2.73	2.49	2.19	2.04
6800	119-8723	4.51	3.84	3.46	3.05	2.84
10000	119-8724	6.28	5.61	3.70	3.34	3.19

100 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
470	1	20 22	ECOS2AP471BL	119-8574
4700	5.13	50 30	ECOS2AP472DA	119-8728
6800	6.6	50 35	ECOS2AP682EA	119-8729

100 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
470	119-8574	2.38	2.15	1.96	1.65	1.53
4700	119-8728	5.93	4.36	3.20	3.12	3.04
6800	119-8729	7.29	7.28	7.08	6.90	6.72

200 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
220	0.87	20 25	ECOS2DP221CL	119-8575
330	1.56	30 22	ECOS2DP331BA	119-8576
470	1.85	30 25	ECOS2DP471CA	119-8577
680	2.68	35 25	ECOS2DP681CA	119-8578
1000	3.25	40 30	ECOS2DP102DA	119-8581
1500	3.87	40 35	ECOS2DP152EA	119-8582
2200	4.92	50 35	ECOS2DP222EA	119-8583

200 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
220	119-8575	3.15	2.78	2.12	1.81	1.62
330	119-8576	2.49	2.12	1.63	1.45	1.34
470	119-8577	3.19	2.73	2.49	2.19	2.04
680	119-8578	4.25	3.61	3.30	2.92	2.71
1000	119-8581	5.71	4.86	4.42	3.90	3.63
1500	119-8582	6.39	4.60	4.42	4.31	4.20
2200	119-8583	7.34	5.39	4.38	4.26	4.16

250 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
220	1.17	30 22	ECOS2EP221BA	119-8730
470	2.11	40 25	ECOS2EP471CA	119-8732

250 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
220	119-8730	2.21	1.92	1.76	1.57	1.47
470	119-8732	2.53	2.16	1.65	1.46	1.42

400 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
47	0.25	20 22	ECOS2GP470BL	119-8585
68	0.76	25 22	ECOS2GP680BA	119-8736
100	0.92	30 22	ECOS2GP101BA	119-8738
150	1.16	30 25	ECOS2GP151CA	119-8586
220	1.49	40 25	ECOS2GP221CA	119-8739
560	2.69	50 35	ECOS2GP561EA	119-8741

400 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	100+	250+
47	119-8585	2.65	2.26	2.07	1.84	1.71
68	119-8736	2.48	2.11	1.48	1.18	1.15
100	119-8738	2.81	2.38	2.17	1.92	1.79
150	119-8586	3.64	3.09	2.75	2.43	2.27
220	119-8739	4.72	4.01	3.66	3.22	3.00
560	119-8741	7.57	5.56	4.26	4.15	4.04

450 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
47	0.29	20 25	ECOS2WP470CL	119-8588
68	0.76	30 22	ECOS2WP680BA	119-8742
100	0.93	30 25	ECOS2WP101CA	119-8743

450 Volt d.c.	Price Each					
µF	Order Code	1+	50+	100+	500+	1K+
47	119-8588	3.18	2.84	2.50	2.08	1.90
68	119-8742	3.14	2.66	2.44	2.14	1.99
100	119-8743	3.58	3.04	2.78	2.45	2.28

TSUQ Series - 85°C (PCB Mounting Snap-In) Miniature Can Size



- General purpose snap-in electrolytic
- Highly miniaturised can size
- 30% smaller than TSUP series
- 2000 hrs life expectancy @ 85°C

Lead pitch=10
Mounting hole dia.=2.0

Operating temperature -40°C to +85°C (160 to 250V d.c.)
-40°C to +85°C (400 to 450V d.c.)

Tolerance ±20%
DC leakage current 3√CV µA

160 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
1000	3	30 25	EETUQ2C102CA	119-8665
1500	3.73	40 25	EETUQ2C152CA	119-8666
2200	4.78	40 30	EETUQ2C222DA	119-8667
2700	5.45	40 35	EETUQ2C272EA	119-8668
3900	6	50 35	EETUQ2C392EA	119-8669

160 Volt d.c.	Price Each					
µF	Order Code	1+	10+	50+	200+	600+
1000	119-8665	3.34	2.33	1.87	1.65	1.61
1500	119-8666	5.07	3.59	2.88	2.52	2.39
2200	119-8667	5.05	3.64	3.58	3.48	3.39
2700	119-8668	6.11	4.40	3.86	3.76	3.66
3900	119-8669	5.80	5.35	4.95	4.62	4.32

250 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
330	1.75	30 22	EETUQ2E331BA	119-8670
470	2.11	30 25	EETUQ2E471CA	119-8672
680	2.5	35 25	EETUQ2E681CA	119-8673
820	2.77	40 25	EETUQ2E821CA	119-8674
1000	3.32	35 30	EETUQ2E102DA	119-8675
1500	4.04	40 35	EETUQ2E152EA	119-8676

250 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
330	119-8670	3.17	2.16	1.70	1.36	1.33
470	119-8672	3.28	2.29	1.83	1.72	1.67
680	119-8673	3.94	2.78	2.38	2.30	2.23
820	119-8674	4.42	3.09	2.49	2.04	1.99
1000	119-8675	5.46	3.81	3.06	2.97	2.90
1500	119-8676	6.60	4.75	4.15	4.05	3.94

400 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions		Mftrs. List No.	Order Code
µF		H	Dia.		
150	1.16	30	22	EETUQ2G151BA	119-8677
220	1.49	30	25	EETUQ2G221CA	119-8678
270	1.67	35	25	EETUQ2G271CA	119-8679
330	1.9	40	25	EETUQ2G331CA	119-8680
470	2.39	40	30	EETUQ2G471DA	119-8681
680	2.96	45	35	EETUQ2G681EA	119-8682
820	3.25	50	35	EETUQ2G821EA	119-8684

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
150	119-8677	3.12	2.18	1.76	1.71	1.66
220	119-8678	3.86	2.70	2.34	2.28	2.22
270	119-8679	4.41	3.07	2.47	2.40	2.34
330	119-8680	6.61	4.60	3.76	3.21	2.96
470	119-8681	5.74	4.14	3.80	3.69	3.60
680	119-8682	9.11	6.71	5.75	5.37	5.19
820	119-8684	8.29	6.31	6.03	5.88	5.72

450 Volt d.c.	Ripple (A rms) @ 120Hz 85°C	Dimensions		Mftrs. List No.	Order Code
µF		H	Dia.		
100	0.93	25	22	EETUQ2W101BA	119-8685
150	1.19	30	25	EETUQ2W151CA	119-8686
220	1.55	40	25	EETUQ2W221CA	119-8687
330	2.01	40	30	EETUQ2W331DA	119-8688
470	2.53	40	35	EETUQ2W471EA	119-8689
560	2.82	50	30	EETUQ2W561DA	119-8690

311595

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
100	119-8685	3.02	2.11	1.70	1.64	1.60
150	119-8686	3.69	2.58	2.07	2.00	1.95
220	119-8687	4.61	3.21	2.58	2.52	2.45
330	119-8688	5.71	4.12	3.69	3.60	3.51
470	119-8689	7.50	5.41	5.31	5.17	5.04
560	119-8690	8.71	6.44	5.73	5.47	5.34

TSHA Series – 105°C (PCB Mounting Snap-In) Panasonic



- High temperature snap-in capacitors offering high performance in a compact size

Lead pitch=10
Mounting hole dia.=2.0

Operating temperature	-40°C to +105°C (10 to 200V) -25°C to +105°C (400V)	DC leakage current	≤3 \sqrt{CV} μ A
Tolerance	±20%	Power factor 16V	0.45
Operating life @ 105°C	2000 hrs	35V	0.30
		63V	0.20
		100-400V	0.15

Volt d.c.	µF	Ripple (A) @ 120Hz, 105°C	Dimensions		Mftrs. List No.	Order Code
			H	Dia.		
16	10000	2.6	30	22	ECOS1CA103BA	119-8691
16	15000	3.2	35	25	ECOS1CA153CA	119-8539
16	22000	3.8	45	25	ECOS1CA223CA	119-8692
16	47000	5.5	45	35	ECOS1CA473EA	119-8540
25	10000	3	35	25	ECOS1EA103CA	119-8541
25	15000	3.6	35	30	ECOS1EA153DA	119-8542
25	22000	4.3	35	35	ECOS1EA223EA	119-8544
35	3300	1.9	25	22	ECOS1VA332BA	119-8545
35	4700	2.2	25	25	ECOS1VA472CA	119-8547
35	6800	2.6	40	22	ECOS1VA682BA	119-8693
35	22000	5	50	35	ECOS1VA223EA	119-8548
35	10000	3.2	45	25	ECOS1VA103CA	119-8694
50	2700	1.8	30	22	ECOS1HA272BA	119-8549
50	4700	2.5	30	30	ECOS1HA472DA	119-8550
50	6800	3.3	50	25	ECOS1HA682CA	119-8551
50	10000	4	40	35	ECOS1HA103EA	119-8552
63	2200	2	35	22	ECOS1JA222BA	119-8697
63	3300	2.5	40	25	ECOS1JA332CA	119-8553
63	4700	3	50	25	ECOS1JA472CA	119-8699
63	6800	3.6	40	35	ECOS1JA682EA	119-8554
63	10000	4.4	50	35	ECOS1JA103EA	119-8556
100	560	1.1	25	22	ECOS2AA561BA	119-8557
100	1000	1.7	35	22	ECOS2AA102BA	119-8700
100	1000	1.7	30	25	ECOS2AA102CA	119-8558
100	1500	2.1	45	22	ECOS2AA152BA	119-8559
100	2200	2.6	50	25	ECOS2AA222CA	119-8702
100	4700	3.8	50	35	ECOS2AA472EA	119-8560
160	470	1.4	35	22	ECOS2CA471BA	119-8561
200	330	1.2	30	22	ECOS2DA331BA	119-8704
200	470	1.4	35	25	ECOS2DA471CA	119-8705
200	680	1.7	40	25	ECOS2DA681CA	119-8706
400	68	0.56	30	22	ECOS2GA680BA	119-8707
400	100	0.69	35	22	ECOS2GA101BA	119-8708
400	220	1	50	25	ECOS2GA221CA	119-8709

208643

Volt d.c.		Price Each					
µF	Order Code	1+	10+	50+	100+	250+	
16	10000	119-8691	2.04	1.73	1.56	1.38	1.36
16	15000	119-8539	2.22	1.88	1.86	1.85	1.72
16	22000	119-8692	2.49	2.11	2.10	1.52	1.35
16	47000	119-8540	5.57	4.74	3.56	3.45	3.37
25	10000	119-8541	2.22	1.88	1.83	1.79	1.66
25	15000	119-8542	3.12	2.63	2.53	2.48	2.30
25	22000	119-8544	4.42	3.77	3.01	2.92	2.85
35	3300	119-8545	3.07	2.54	1.66	1.27	1.24
35	4700	119-8547	1.91	1.61	1.54	1.28	1.27
35	6800	119-8693	2.15	1.84	1.75	1.28	1.14
35	22000	119-8548	5.64	4.79	3.89	3.79	3.69
35	10000	119-8694	2.22	1.88	1.74	1.55	1.43
50	2700	119-8549	1.63	1.39	1.31	1.27	1.24
50	4700	119-8550	2.64	2.25	2.15	2.07	1.97
50	6800	119-8551	3.12	2.63	2.25	1.67	1.63
50	10000	119-8552	5.04	4.29	3.35	3.27	3.18
63	2200	119-8697	1.99	1.70	1.34	1.12	1.00
63	3300	119-8553	2.49	2.11	2.02	1.92	1.79
63	4700	119-8699	2.60	2.31	1.92	1.57	1.45
63	6800	119-8554	4.32	3.80	3.45	3.03	2.94
63	10000	119-8556	6.18	5.24	4.33	3.39	3.31
100	560	119-8557	2.62	1.84	1.24	1.20	1.17
100	1000	119-8700	2.22	1.88	1.69	1.49	1.38
100	1000	119-8558	3.88	2.74	2.06	1.62	1.52
100	1500	119-8559	3.29	2.79	1.95	1.82	1.77
100	2200	119-8702	3.58	3.12	2.14	1.61	1.44
100	4700	119-8560	7.25	5.66	5.51	5.36	5.23
160	470	119-8561	2.70	2.30	2.03	1.79	1.66
200	220	119-8703	2.22	1.88	1.39	1.27	1.24
200	470	119-8705	2.67	2.31	2.07	1.82	1.69
200	680	119-8706	3.84	3.10	2.81	2.74	2.66
400	68	119-8707	2.06	1.75	1.57	1.38	1.29
400	100	119-8708	2.37	2.00	1.71	1.43	1.38
400	220	119-8709	3.07	3.02	2.93	2.86	2.78

TSHC Series - 105°C (PCB Mounting Snap-In) Panasonic



- High performance snap-in electrolytic
- Temperature rating 105°C
- Highly miniaturised can size
- 2000 hrs life expectancy @ 105°C

Lead pitch=10, Mounting hole dia.=2.0

Operating temperature	-40°C to +105°C (160 to 250V d.c.) -40°C to +105°C (400 to 450V d.c.)	Tolerance	±20%
		DC leakage current	3 \sqrt{CV} μ A

160 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mftrs. List No.	Order Code
µF		H	Dia.		
1000	2.2	35	25	EETHC2C102CA	119-8640
2200	2.9	45	30	EETHC2C222DA	119-8642

160 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
1000	119-8640	3.85	2.69	2.18	1.80	1.73
2200	119-8642	5.17	3.72	3.37	3.29	3.19

250 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mftrs. List No.	Order Code
µF		H	Dia.		
330	1.2	30	22	EETHC2E331BA	119-8644
470	1.4	30	25	EETHC2E471CA	119-8645
680	1.7	40	25	EETHC2E681CA	119-8647
1000	2.2	40	30	EETHC2E102DA	119-8648
1200	2.3	45	30	EETHC2E122DA	119-8649

250 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
330	119-8644	2.84	1.98	1.59	1.53	1.50
470	119-8645	3.38	2.36	1.90	1.66	1.62
680	119-8647	5.40	3.76	3.06	2.58	2.33
1000	119-8648	4.97	3.59	3.15	3.07	2.99
1200	119-8649	5.61	4.04	3.34	3.23	3.16

400 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mftrs. List No.	Order Code
µF		H	Dia.		
100	0.7	25	22	EETHC2G101BA	119-8650
150	0.88	30	22	EETHC2G151BA	119-8651
220	1.1	35	25	EETHC2G221CA	119-8652
270	1.22	40	25	EETHC2G271CA	119-8653
330	1.44	35	30	EETHC2G331DA	119-8654
470	1.68	45	30	EETHC2G471DA	119-8655
680	2.12	45	35	EETHC2G681EA	119-8656



Aluminium Electrolytic - Snap In - Panasonic - continued

TSHC Series - 105°C (PCB Mounting Snap-In) Miniature Can Size - continued

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
100	119-8650	2.85	2.00	1.60	1.37	1.34
150	119-8651	3.89	2.71	2.27	1.88	1.85
220	119-8652	4.30	3.01	2.41	2.39	2.33
270	119-8653	4.97	3.47	2.80	2.40	2.34
330	119-8654	6.17	4.47	3.76	3.51	3.37
470	119-8655	6.58	4.74	4.14	4.04	3.93
680	119-8656	8.27	6.30	6.14	5.97	5.82

450 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mfrs. List No.	Order Code
µF		H	Dia.		
100	0.64	30	22	EETHC2W101BA	119-8657
150	0.79	30	25	EETHC2W151CA	119-8659
220	1	45	25	EETHC2W221CA	119-8661
270	1.19	40	30	EETHC2W271DA	119-8662
470	1.74	45	35	EETHC2W471EA	119-8663
560	1.9	50	35	EETHC2W561EA	119-8664

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
100	119-8657	3.34	2.34	1.88	1.76	1.71
150	119-8659	4.21	2.94	2.37	2.30	2.25
220	119-8661	6.82	4.84	4.01	3.21	2.90
270	119-8662	5.70	4.11	3.73	3.64	3.55
470	119-8663	7.93	7.00	6.10	5.50	5.39
560	119-8664	10.51	7.73	6.94	6.74	6.59

TSED Series - 105°C (PCB Mounting Snap-In)



- High performance snap-in electrolytic
- Temperature rating 105°C
- Very high ripple current capability for demanding inverter applications
- Operates cooler to give longer life
- 3000 hrs life expectancy @ 105°C

Lead pitch = 10
Mounting hole dia. = 2.0

Operating temperature -40°C to +105°C (200 to 250V d.c.) Tolerance ±20%
-40°C to +105°C (400 to 450V d.c.) DC leakage current 3√CV µA

200 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mfrs. List No.	Order Code
µF		H	Dia.		
270	1.42	25	22	EETED2D271BA	119-8608
330	1.56	30	22	EETED2D331BA	119-8611
470	1.85	30	25	EETED2D471CA	119-8612
680	2.42	35	25	EETED2D681CA	119-8613
1000	2.84	45	25	EETED2D102CA	119-8614
1800	3.84	45	35	EETED2D182EA	119-8615
2200	4.12	50	35	EETED2D222EA	119-8616

200 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
270	119-8608	2.51	2.07	1.70	1.33	1.24
330	119-8611	2.81	1.97	1.55	1.32	1.29
470	119-8612	3.40	2.37	1.92	1.59	1.54
680	119-8613	4.51	3.14	2.57	2.11	2.04
1000	119-8614	4.48	3.13	2.52	2.43	2.37
1800	119-8615	6.30	4.56	4.22	4.12	4.01
2200	119-8616	7.57	5.45	4.97	4.85	4.72

250 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mfrs. List No.	Order Code
µF		H	Dia.		
220	1.28	30	22	EETED2E221BA	119-8617
560	2.14	40	25	EETED2E561CA	119-8618
820	2.63	40	30	EETED2E821DA	119-8619
1000	2.84	40	35	EETED2E102EA	119-8620
1200	3.13	45	35	EETED2E122EA	119-8621
1500	3.56	50	35	EETED2E152EA	119-8623

250 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
220	119-8617	3.06	2.09	1.64	1.49	1.45
560	119-8618	5.53	3.86	3.12	2.60	2.54
820	119-8619	5.22	3.77	3.49	3.40	3.32
1000	119-8620	5.95	4.29	3.55	3.44	3.35
1200	119-8621	6.24	5.38	4.59	4.13	4.00
1500	119-8623	7.09	5.88	5.72	5.57	5.43

400 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mfrs. List No.	Order Code
µF		H	Dia.		
100	0.91	30	22	EETED2G101BA	119-8624
150	1.07	30	25	EETED2G151CA	119-8625
220	1.42	40	25	EETED2G221CA	119-8626
330	1.71	40	30	EETED2G331DA	119-8627
470	2.01	40	35	EETED2G471EA	119-8628
560	2.35	45	35	EETED2G561EA	119-8629

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
100	119-8624	2.96	2.13	1.72	1.65	1.61
150	119-8625	3.72	2.60	2.09	2.04	1.99
220	119-8626	4.66	3.26	2.61	2.30	2.25
330	119-8627	5.63	4.06	3.70	3.60	3.51
470	119-8628	7.63	5.50	4.97	4.85	4.72
560	119-8629	10.12	7.45	6.37	6.08	5.95

450 Volt d.c.	Ripple (A rms) @ 120Hz 105°C	Dimensions		Mfrs. List No.	Order Code
µF		H	Dia.		
56	0.714	25	22	EETED2W560BA	119-8630
68	0.76	30	22	EETED2W680BA	119-8631
100	0.91	30	25	EETED2W101CA	119-8632
120	1.02	35	25	EETED2W121CA	119-8633
180	1.12	40	25	EETED2W181CA	119-8635
220	1.42	35	30	EETED2W221DA	119-8636
330	1.85	50	30	EETED2W331DA	119-8637
390	1.97	40	35	EETED2W391EA	119-8638
470	2.47	50	35	EETED2W471EA	119-8639

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	600+
56	119-8630	3.17	2.16	1.70	1.54	1.50
68	119-8631	3.00	2.09	1.69	1.63	1.59
100	119-8632	3.01	2.54	2.09	1.99	1.93
120	119-8633	3.98	2.78	2.24	2.07	2.02
180	119-8635	4.72	3.98	3.29	2.90	2.78
220	119-8636	5.17	3.72	3.40	3.31	3.22
330	119-8637	6.97	5.02	4.30	4.19	4.08
390	119-8638	8.81	6.47	5.57	5.32	5.20
470	119-8639	10.37	7.61	6.61	6.27	6.14

Aluminium Electrolytic - Snap In - Rubycon

HXC Series - Higher Ripple - 105°C



- Load life: 105°C 2000 hours
- High ripple current endurance

Operating temperature -25°C to 105°C
Tolerance ±20%
Useful life @105°C 2000h
Ripple current measured at 120Hz @ 105°C
Leakage Current (µA) 3√CV

400 Volt d.c.		Price Each				
µF	Ripple (mA)	Dimensions	Mfrs. List No.	Order Code		
		H Dia.				
330	2.29	35 35	400HXC330M35X35	141-5834		
560	3.15	50 35	400HXC560M35X50	141-5835		

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	500+
330	141-5834	8.19	7.41	6.85	6.35	5.82
560	141-5835	8.05	7.63	7.33	7.07	6.70

450 Volt d.c.	Ripple (mA)	Dimensions		Mfrs. List No.	Order Code
		H	Dia.		
68	0.67	30	22	450HXC68M22X30	141-5836
470	2.97	50	35	450HXC470M35X50	141-5838

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	500+
68	141-5836	3.17	2.88	2.60	2.30	1.97
470	141-5838	11.96	11.06	10.44	9.93	9.20

VXG Series

105°C - Long Life



- Snap-in aluminium electrolytic capacitors
- High ripple current endurance
- Small can size

Tolerance ±20% Operating temperature -25°C to +105°C
Leakage current (max) 3√CV Ripple current measured at 105°C @ 100kHz

200 Volt d.c.		Dimensions			Mfrs. List No.		Order Code
µF	Ripple (mA)	H	Dia.	Pitch			
270	1.09	25	22	10	200VXG270MEFCMN22X25		128-1827
470	1.54	30	25	10	200VXG470MEFCMN25X30		128-1828
1000	2.06	35	30	10	200VXG1000MEFCMN30X35		128-1825
2200	3.14	50	35	10	200VXG2200MEFCMN35X50		128-1826

200 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	500+
270	128-1827	2.11	1.90	1.77	1.65	1.53
470	128-1828	3.54	3.18	2.93	2.76	2.57
1000	128-1825	6.66	5.99	5.53	5.17	4.84
2200	128-1826	12.81	11.55	10.66	9.95	9.31

400 Volt d.c.		Dimensions			Mfrs. List No.		Order Code
µF	Ripple (mA)	H	Dia.	Pitch			
220	1.12	35	25	10	400VXG220MEFCMN25X35		128-1829
470	1.78	40	35	10	400VXG470MEFCMN35X40		128-1830
560	1.98	45	35	10	400VXG560MEFCMN35X45		128-1831

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	500+
220	128-1829	5.22	4.70	4.34	4.05	3.79
470	128-1830	11.28	10.18	9.38	8.77	8.21
560	128-1831	12.20	11.00	10.15	9.49	8.87

450 Volt d.c.		Dimensions			Mfrs. List No.		Order Code
µF	Ripple (mA)	H	Dia.	Pitch			
150	0.9	25	30	10	450VXG150MEFCMN30X25		128-1832
220	1.1	30	30	10	450VXG220MEFCMN30X30		128-1833

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	200+	500+
150	128-1832	5.30	4.77	4.41	4.13	3.87
220	128-1833	7.44	6.71	6.18	5.77	5.41

VXR Series – Long Life 105°C



● Load Life : 105°C 7000hours
 Tolerance ± 20% Operating temperature -25°C to +105°C

200 Volt d.c.		Dimensions			Mfrs. List No.		Order Code
µF	H	Dia.	Pitch				
330	25	25	10	200VXR330MSN25X25		171-2596	

200 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
330	171-2596	3.82	3.54	3.24	2.99	2.39

450 Volt d.c.		Dimensions			Mfrs. List No.		Order Code
µF	H	Dia.	Pitch				
100	30	30	10	450VXR100MSN30X30		171-2598	
220	40	35	10	450VXR220MSN35X40		171-2599	
330	50	35	10	450VXR330MSN35X50		171-2600	

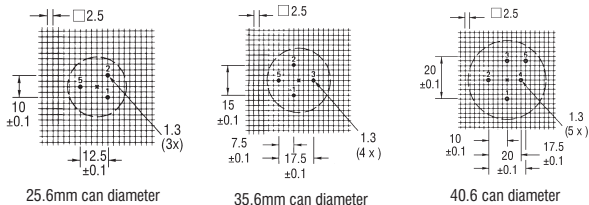
450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
100	171-2598	7.07	6.55	6.00	5.54	4.43
220	171-2599	13.55	12.56	11.50	10.61	8.49
330	171-2600	18.70	17.33	15.86	14.64	11.72

Aluminium Electrolytic - Snap In - Vishay

051/053 PEC-PW Series – 85°C High Capacitance



- Long life, high capacitance aluminium electrolytic
- PCB Mounting
- Low ESR and ESL
- Printed wire terminals marked 1 for positive and 5 for negative



Operating temperature -40 to +85 °C
 Tolerance ±20%
 Basic specification IEC60384, long life grade
 PCB footprint to DIN 45910-T192
 Climatic category (IEC68) 40/085/56
 DC leakage current 0.006CV + 4µA
 Useful life @ 85°C 12000/12000 hrs

16 Volt d.c.		Dimensions		Mfrs. List No.		Order Code
µF	Ripple (A) @ 100Hz 85°C	H	Dia.			
10000	4	40	25	MAL205155103E3		116-6598
22000	5.5	40	35	MAL205155223E3		116-6599

40 Volt d.c.		Dimensions		Mfrs. List No.		Order Code
µF	Ripple (A) @ 100Hz 85°C	H	Dia.			
4700	3.8	40	25	MAL205157472E3		116-6565
10000	5.2	40	35	MAL205157103E3		116-6567
22000	5.5	50	40	MAL205157223E3		116-6600
47000	10.4	100	40	MAL205157473E3		116-6601

63 Volts d.c.		Dimensions		Mfrs. List No.		Order Code
µF	Ripple (A) @ 100Hz 85°C	H	Dia.			
2200	2.5	30	25	MAL205158222E3		116-6568
10000	5.4	50	35	MAL205158103E3		116-6569
22000	10	100	40	MAL205158223E3		116-6570

400 Volt d.c.		Dimensions		Mfrs. List No.		Order Code
µF	Ripple (A) @ 100Hz 85°C	H	Dia.			
100	0.73	40	25	MAL205356101E3		116-6605
220	1.28	40	35	MAL205356221E3		116-6606
470	2.12	50	40	MAL205356471E3		116-6607
1000	4.05	100	40	MAL205356102E3		116-6609

16 Volt d.c.		Price Each		
µF	Order Code	1+	50+	100+
10000	116-6598	4.64	3.09	2.77
22000	116-6599	7.63	5.04	4.53

40 Volt d.c.		Price Each		
µF	Order Code	1+	50+	100+
4700	116-6565	7.42	--	--
10000	116-6567	8.48	5.54	5.00
22000	116-6600	11.15	7.36	6.58
47000	116-6601	14.61	10.00	9.73

63 Volt d.c.		Price Each		
µF	Order Code	1+	50+	100+
2200	116-6568	6.30	4.15	3.70
10000	116-6569	14.06	9.20	8.26
22000	116-6570	19.70	18.74	17.76

400 Volt d.c.		Price Each		
µF	Order Code	1+	50+	100+
100	116-6605	5.68	3.74	3.37
220	116-6606	9.55	6.31	5.69
470	116-6607	15.97	10.55	9.43
1000	116-6609	27.61	18.23	16.39

056/057 PSM-SI Series – 85°C (PCB Mounting Snap-In)



- General purpose snap-in electrolytic
- Operating Temperature -40°C to +85°C
- Useful Life @ 85°C 12000 hrs
- Tolerance ±20%
- Climatic category (IEC) 40/085/56
- Long life grade IEC 60384-4
- Lead pitch=10, Mounting hole dia.=2.0

Volt d.c.	µF	Ripple (A) 100Hz @ 85°C	ESR max mΩ @ 20°C	Dimensions		Mfrs. List No.	Order Code
				H	Dia.		
16	6800	2.54	57	30	22	MAL205655682E3	116-5493
16	10000	3.02	47	30	25	MAL205655103E3	116-5568
16	16000	4	34	40	25	MAL205654153E3	116-5494
16	22000	4.51	33	40	30	MAL205655223E3	116-5569
16	47000	5.34	34	50	35	MAL205655473E3	116-5570
25	4700	2.37	65	30	22	MAL205656472E3	116-5571
25	6800	2.81	54	30	25	MAL205656682E3	116-5572
25	10000	3.73	39	40	25	MAL205646103E3	116-5573
25	15000	4.73	30	40	30	MAL205656153E3	116-5575
25	22000	4.96	36	50	30	MAL205646223E3	116-5497
25	33000	4.98	39	50	35	MAL205656333E3	116-5576
40	3300	2.09	67	30	22	MAL205657332E3	116-5577
40	4700	2.28	82	30	25	MAL205657472E3	116-5578
40	6800	3.06	58	40	25	MAL205647682E3	116-5498
40	10000	4.2	38	40	30	MAL205657103E3	116-5579
40	15000	4.45	41	50	30	MAL205647153E3	116-5499
40	22000	4.86	40	50	35	MAL205657223E3	116-5580
63	1500	1.87	105	30	22	MAL205658152E3	116-5581
63	2200	2.32	79	30	25	MAL205658222E3	116-5582
63	3300	3.14	55	40	25	MAL205648332E3	116-5583
63	4700	3.67	50	40	30	MAL205658472E3	116-5584
63	6800	4.75	42	50	30	MAL205648682E3	116-5580
63	10000	5.26	35	50	35	MAL205658103E3	116-5503
100	1000	1.27	265	30	25	MAL205659102E3	116-5585
100	2200	2.27	130	40	30	MAL205659222E3	116-5587
100	4700	3.59	75	50	35	MAL205659472E3	116-5505
200	220	1	650	30	22	MAL20575221E3	116-5588
200	330	1.36	430	30	25	MAL205752331E3	116-5589
200	470	1.8	310	40	25	MAL205742471E3	116-5590
250	680	2.6	240	50	35	MAL205743681E3	116-5506
250	1000	3.12	160	50	35	MAL205753102E3	116-5507
385	68	0.63	2100	30	22	MAL205758689E3	116-5591
385	220	1.57	650	40	30	MAL205758221E3	116-5593
385	470	2.76	340	50	35	MAL205758471E3	116-5594
400	68	0.63	2100	30	22	MAL205756689E3	116-5595
400	470	2.76	340	50	35	MAL205756471E3	116-5597
450	68	0.33	3900	30	22	MAL205757689E3	116-5599
450	100	0.46	2600	35	25	MAL205737101E3	116-5508
450	330	1.26	700	50	35	MAL205757331E3	116-5600



Aluminium Electrolytic - Snap In - Vishay - continued

056/057 PSM-SI Series – 85°C (PCB Mounting Snap-In) - continued

208457

		Price Each			
Volt d.c.	µF	Order Code	1+	50+	100+
16	6800	116-5493	2.84	2.09	1.90
16	10000	116-5568	5.26	3.44	3.19
16	15000	116-5494	5.65	3.94	3.53
16	22000	116-5569	6.84	4.50	4.11
16	47000	116-5570	12.20	7.50	6.69
25	4700	116-5571	5.78	--	--
25	6800	116-5572	3.73	2.44	2.25
25	10000	116-5573	7.34	4.81	4.40
25	15000	116-5575	6.14	4.49	4.21
25	22000	116-5497	6.99	4.86	4.33
25	33000	116-5576	13.49	9.35	8.83
40	3300	116-5577	3.93	2.60	2.38
40	4700	116-5578	5.10	3.38	3.09
40	6800	116-5498	4.50	--	--
40	10000	116-5579	5.85	5.26	5.25
40	15000	116-5499	9.76	6.76	6.04
40	22000	116-5580	13.40	--	--
63	1500	116-5581	4.89	--	--
63	2200	116-5582	6.05	3.98	3.67
63	3300	116-5583	4.58	3.01	2.74
63	4700	116-5584	5.66	3.71	3.40
63	6800	116-5500	9.93	6.91	6.15
63	10000	116-5503	10.76	7.27	6.21
100	1000	116-5585	4.87	--	--
100	2200	116-5587	6.29	--	--
100	4700	116-5505	11.34	--	--
200	220	116-5588	4.46	3.05	2.75
200	330	116-5589	5.13	3.55	3.14
200	470	116-5590	5.65	3.88	3.46
250	680	116-5506	5.92	4.39	3.96
250	1000	116-5507	11.26	7.85	6.93
385	68	116-5591	2.53	1.76	1.61
385	220	116-5593	8.10	5.51	5.10
385	470	116-5594	9.07	6.22	5.55
400	68	116-5595	4.71	3.22	2.85
400	470	116-5597	13.02	8.94	8.01
450	68	116-5599	3.54	2.56	2.32
450	100	116-5508	5.50	4.07	3.67
450	330	116-5600	11.75	8.05	7.20

Passive Components

7

Capacitors

058/059 PLL-SI Series – 105°C Long Life PCB Mounting Snap-In



- High performance snap-in aluminium electrolytic
- Low ESR high ripple current capability
- Useful life up to 10,000 hrs at 105°C

Lead pitch = 10, Mounting hole dia = 2.0

Operating temperature Tolerance	-40°C to +105°C ±20%	Useful life @ 105°C	5000 hrs ≤50V 10000 hrs ≥63V
Climatic category (IEC68)	40/105/56	Long life grade	IEC60384-4, CECC30300
DC leakage current	0.006CV+4µA		

Volt d.c.	µF	Ripple (A) @ 100Hz 105°C	ESR max. mΩ @ 20°C	Impedance mΩ @ 20°C	Dimensions H Dia.	Mfrs. List No.	Order Code
16	10000	3.66	40	30	40 25	MAL205845103E3	116-5509
16	33000	6.23	25	21	50 35	MAL205855333E3	116-5289
25	4700	2.6	62	42	30 25	MAL205856472E3	116-5441
25	10000	4.37	35	25	40 30	MAL205856103E3	116-5291
25	22000	6.07	27	21	50 35	MAL205856223E3	116-5292
40	3300	2.43	71	45	30 25	MAL205857332E3	116-5442
40	4700	2.96	59	40	30 30	MAL205857472E3	116-5293
40	6800	3.94	42	29	40 30	MAL205857682E3	116-5294
40	10000	4.18	49	29	40 35	MAL205857103E3	116-5295
63	2200	2.27	101	70	30 30	MAL205858222E3	116-5296
63	3300	3.07	70	50	40 30	MAL205858332E3	116-5297
63	4700	3.07	60	50	40 35	MAL205858472E3	116-5298
63	6800	4.58	46	35	50 35	MAL205858682E3	116-5299
100	330	0.92	370	250	25 22	MAL205859331E3	116-5443
100	3300	3.84	64	50	50 35	MAL205859332E3	116-5302
385	47	0.41	2710	2100	30 22	MAL205958479E3	116-5445
400	47	0.3	4260	3490	30 22	MAL205956479E3	116-5447
400	68	0.41	2950	2420	30 25	MAL205956689E3	116-5448
400	100	0.55	2020	1660	40 25	MAL205946101E3	116-5449
400	150	0.78	1350	1110	50 25	MAL205946151E3	116-5450
400	220	0.94	930	760	50 30	MAL205946221E3	116-5451
400	330	1.25	620	510	50 35	MAL205956331E3	116-5452

219634

Volt d.c.	µF	Order Code	1+	50+	100+
16	10000	116-5509	6.05	4.05	3.60
16	33000	116-5289	7.32	5.14	4.68
25	4700	116-5441	3.89	2.57	2.35
25	10000	116-5291	5.15	3.57	3.06
25	22000	116-5292	7.97	5.21	4.68
40	3300	116-5442	4.04	3.87	3.67
40	4700	116-5293	6.48	4.25	3.81
40	6800	116-5294	7.87	5.14	4.62
40	10000	116-5295	6.50	4.24	3.80
63	2200	116-5296	6.32	4.14	3.69
63	3300	116-5297	8.20	--	--
63	4700	116-5298	6.83	4.46	4.05
63	6800	116-5299	10.49	6.74	5.83
100	330	116-5443	3.93	2.60	2.34
100	3300	116-5302	12.99	8.51	7.66
385	47	116-5445	4.69	3.10	2.80
400	47	116-5447	3.69	2.47	2.23
400	68	116-5448	4.45	2.91	2.68
400	100	116-5449	5.79	3.84	3.47
400	150	116-5450	8.28	5.50	4.98
400	220	116-5451	8.35	5.53	5.02
400	330	116-5452	11.98	7.95	7.17

157 PUM-SI Series – 85°C (PCB Mounting Miniature Snap-In)



- General purpose, industrial and audio/video systems
- Standard and switched mode power supplies
- Energy storage in pulse systems

Lead pitch = 10, Mounting hole dia = 2.0

Operating Temperature Tolerance	-25°C to +85°C to ±20%	Useful life @ 85°C Climatic category (IEC)	2500 hrs 25/085/56
---------------------------------	------------------------	--	--------------------

200 Volt d.c. µF	Ripple (A) 120Hz @ 85°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
330	1.36	260	30 22	MAL215752331E3	116-5655
470	1.68	190	35 22	MAL215732471E3	116-5656
680	2.18	170	40 25	MAL215742681E3	116-5657
1000	2.66	120	40 30	MAL215752102E3	116-5658
2200	3.68	260	60 35	MAL215752222E3	116-5660

200 Volt d.c. µF	Order Code	1+	10+	50+	100+	250+
330	116-5655	5.89	4.48	3.52	3.20	2.84
470	116-5656	7.91	6.02	4.73	4.30	3.82
680	116-5657	6.42	4.88	3.84	3.48	3.10
1000	116-5658	12.98	9.87	7.76	7.04	6.26
2200	116-5660	26.27	19.97	15.69	14.26	12.67

250 Volt d.c. µF	Ripple (A) 120Hz @ 85°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
220	1.23	340	30 22	MAL215753221E3	116-5661
470	1.87	180	35 25	MAL215733471E3	116-5663
1000	2.88	110	45 30	MAL215733102E3	116-5666
1500	3.49	90	50 35	MAL215753152E3	116-5667

250 Volt d.c. µF	Order Code	1+	10+	50+	100+	250+
220	116-5661	3.05	2.89	2.75	2.62	2.52
470	116-5663	8.67	6.59	5.18	4.71	4.18
1000	116-5666	11.51	8.75	6.87	6.25	5.54
1500	116-5667	20.15	15.32	12.03	10.94	9.72

400 Volt d.c. µF	Ripple (A) 120Hz @ 85°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
100	0.84	930	30 22	MAL215756101E3	116-5668
150	1.13	700	35 22	MAL215736151E3	116-5669
220	1.54	520	40 25	MAL215746221E3	116-5670
330	1.97	320	40 30	MAL215756331E3	116-5671
470	2.4	240	50 30	MAL215746471E3	116-5672
680	2.79	190	50 35	MAL215756681E3	116-5673

400 Volt d.c. µF	Order Code	1+	10+	50+	100+	250+
100	116-5668	5.60	4.25	3.34	3.04	2.69
150	116-5669	3.29	2.86	2.48	1.95	1.86
220	116-5670	8.55	6.50	5.10	4.64	4.13
330	116-5671	9.04	6.87	5.40	4.90	4.36
470	116-5672	15.48	11.76	9.24	8.39	7.46
680	116-5673	12.10	11.49	10.92	10.40	9.85

450 Volt d.c. µF	Ripple (A) 120Hz @ 85°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
100	1	840	35 22	MAL215737101E3	116-5675
150	1.35	570	40 25	MAL215747151E3	116-5676
220	1.73	400	50 25	MAL215747221E3	116-5678
330	2.19	280	50 30	MAL215747331E3	116-5679

208502

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
100	116-5675	5.02	3.83	3.01	2.74	2.42
150	116-5676	7.88	6.00	4.71	4.29	3.80
220	116-5678	10.25	7.80	6.12	5.57	4.95
330	116-5679	16.11	12.25	9.62	8.75	7.77

159 PUL-SI Series – 105°C (PCB Mounting Snap-In)



- Miniature snap-in
- General purpose, industrial and audio/video systems
- Smoothing and filtering
- Standard and switched mode power supplies
- Energy storage in pulse systems

Lead pitch = 10, Mounting hole dia. = 2.0

Operating temperature Tolerance		-25°C to +105°C ±20%	Useful life @ 85°C Climatic category		3000 hrs 25/105/56
200 Volt d.c.	Ripple (A) 120Hz @ 105°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
330	1.08	450	30 22	MAL215952331E3	116-6635
470	1.37	320	40 22	MAL215932471E3	116-6636
680	1.82	230	45 25	MAL215942681E3	116-6637
1000	2.23	170	45 30	MAL215942102E3	116-6638
1500	2.56	130	45 35	MAL215952152E3	116-6639

200 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
330	116-6635	5.29	4.01	3.16	2.87	2.56
470	116-6636	5.47	4.16	3.27	2.97	2.63
680	116-6637	5.19	4.50	3.71	3.28	3.21
1000	116-6638	12.05	9.42	7.41	6.73	5.97
1500	116-6639	8.81	8.36	7.95	7.52	7.16

250 Volt d.c.		Ripple (A) 120Hz @ 105°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
220	0.9	540	30 22	MAL215943221E3	116-6640	
470	1.58	270	40 25	MAL215933471E3	116-6642	
680	1.93	210	40 30	MAL215943681E3	116-6643	
1000	2.22	170	40 35	MAL215953102E3	116-6644	

250 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
220	116-6640	6.18	4.70	3.69	3.35	2.99
470	116-6642	8.85	6.73	5.28	4.81	4.27
680	116-6643	8.16	6.20	4.87	4.43	3.94
1000	116-6644	13.81	10.49	8.25	7.49	6.67

400 Volt d.c.		Ripple (A) 120Hz @ 105°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
100	0.69	990	35 22	MAL215946101E3	116-6646	
150	0.86	820	40 22	MAL215936151E3	116-6647	
220	1.15	460	45 25	MAL215946221E3	116-6648	
330	1.47	320	45 30	MAL215966331E3	116-6649	
470	1.72	240	45 35	MAL215956471E3	116-6650	

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
100	116-6646	6.20	5.41	4.33	3.93	3.49
150	116-6647	7.86	6.01	4.72	4.29	3.82
220	116-6648	9.79	7.65	6.02	5.47	4.86
330	116-6649	12.92	9.83	7.71	7.01	6.23
470	116-6650	18.83	14.33	11.25	10.22	9.09

450 Volt d.c.		Ripple (A) 120Hz @ 105°C	ESR (mΩ) 100Hz	Dimensions H Dia.	Mfrs. List No.	Order Code
68	0.56	1280	30 22	MAL215947689E3	116-6651	
100	0.74	870	40 22	MAL215937101E3	116-6652	
150	0.95	590	40 25	MAL215947151E3	116-6653	
220	1.21	420	40 30	MAL215947221E3	116-6654	
470	1.72	220	50 35	MAL215957471E3	116-6656	

208528

450 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
68	116-6651	4.88	3.71	2.91	2.65	2.36
100	116-6652	8.32	6.32	4.97	4.52	4.01
150	116-6653	9.78	7.44	5.85	5.30	4.72
220	116-6654	7.58	7.18	6.82	6.48	6.11
470	116-6656	22.79	17.33	13.60	12.38	10.98

198 PHR-SI Series — 85°C (PCB Mounting Snap-In)



- High performance snap-in electrolytic
- High ripple current capability
- Charge and discharge proof
- Motor control and industrial systems
- Smoothing and filtering
- Standard and switched mode power supplies
- Energy storage in pulse systems

Lead pitch = 10
Mounting hole dia = 2.0

Operating temperature Tolerance		-25°C to +85°C ±20%	Useful life @ 85°C Climatic category		15000 hrs 25/085/56
400 Volt d.c.	Ripple (A) @ 100Hz 85°C	ESR (mΩ) @ 100Hz 20°C	Dimensions H Dia.	Mfrs. List No.	Order Code
100	0.96	2389	30 22	2222 198 56101	116-5362
150	1.21	1592	35 25	2222 198 36151	116-5363
220	1.59	1086	45 25	2222 198 36221	116-5364
330	2.03	724	45 30	2222 198 36331	116-5365
470	2.51	508	45 35	2222 198 36471	116-5366

450 Volt d.c.		Ripple (A) @ 100Hz 85°C	ESR (mΩ) @ 100Hz 20°C	Dimensions H Dia.	Mfrs. List No.	Order Code
68	0.82	3513	30 22	2222 198 57689	116-5369	
150	1.36	1592	40 25	2222 198 47151	116-5371	
330	2.22	724	50 30	2222 198 47331	116-5373	
470	2.73	508	50 35	2222 198 57471	116-5374	
680	3.3	351	60 35	2222 198 57681	116-5375	

208588

400 Volt d.c.		Price Each				
µF	Order Code	1+	10+	50+	100+	250+
100	116-5362	6.65	6.07	4.89	4.45	3.95
150	116-5363	6.03	--	--	--	--
220	116-5364	10.02	9.17	7.57	6.89	6.12
330	116-5365	7.05	6.53	6.07	5.34	5.12
470	116-5366	12.58	11.65	10.11	9.30	8.35

Aluminium Electrolytic - Solder Tag

052 PED-PW Series – Long Life



- Long life 85°C
 - Solder tags 10mm pitch
 - Marked with 1 for positive and 5 for negative
- Operating temperature Tolerance: -40°C to +85°C
Useful life @ 85°C: 15000 hrs
Power factor: 10% to +30%
Climatic category (IEC68): 0.38 max
Long life grade: 40/085/56
DC leakage current: IEC 384-4, DIN 41240 0.006CV + 4µA

Operating temperature Tolerance		-40°C to +85°C	Useful life @ 85°C		15000 hrs 10% to +30% 40/085/56
250 Volt d.c.	Ripple (A) @ 20kHz 70°C	ESR (mΩ) 100kHz 85°C	Dimensions H Dia.	Mfrs. List No.	Order Code
25	4700	3.7	3.7	46.3 30.6	MAL205016472E3 116-6572
25	10000	5	5	56.3 35.6	MAL205016103E3 116-6574
40	2200	2.7	2.7	46.3 25.6	MAL205017222E3 116-6576
40	4700	3.8	3.8	46.3 35.6	MAL205017472E3 116-6579
40	6800	4.7	4.7	56.3 35.6	MAL205017682E3 116-6581
40	10000	4.9	4.9	56.3 40.6	MAL205017103E3 116-6582
40	15000	6.6	6.6	76.3 40.6	MAL205017153E3 116-6583
40	22000	9	9	100 40	MAL205017223E3 116-6611
63	1000	1.8	1.8	36.3 25.6	MAL205018102E3 116-6584
63	1500	2.5	2.5	46.3 25.6	MAL205018152E3 116-6585
63	2200	3.1	3.1	46.3 30.6	MAL205018222E3 116-6586
63	3300	3.6	3.6	46.3 35.6	MAL205018332E3 116-6587
63	4700	4.4	4.4	50 35	MAL205018472E3 116-6588
63	10000	6.2	6.2	76.3 40.6	MAL205018103E3 116-6590
100	470	1.4	1.4	36.3 25.6	MAL205019471E3 116-6592
100	1000	2.5	2.5	46.3 30.6	MAL205019102E3 116-6593
100	2200	3.9	3.9	56.3 35.6	MAL205019222E3 116-6594

219641

250 Volt d.c.		Price Each			
µF	Order Code	1+	50+	100+	250+
25	116-6572	7.76	5.07	4.56	
25	116-6574	9.87	6.45	5.82	
40	116-6576	7.53	4.89	4.48	
40	116-6579	5.16	3.66	3.36	
40	116-6581	7.86	5.16	4.63	
40	116-6582	13.40	8.79	7.91	
40	116-6583	12.68	8.31	7.49	
40	116-6611	16.43	10.86	9.76	
63	116-6584	5.93	3.88	3.52	
63	116-6585	3.98	2.60	2.35	
63	116-6586	7.57	4.96	4.46	
63	116-6587	7.54	4.94	4.41	
63	116-6588	11.01	7.20	6.52	
63	116-6590	15.93	10.41	9.40	
100	116-6592	3.36	2.35	2.15	
100	116-6593	7.32	4.77	4.33	
100	116-6594	12.42	8.15	7.32	

Over half a million products available online



Aluminium Electrolytic - Screw Terminal

101/102 PHR-ST Series – Computer Grade



- Long life grade
- Low ESR and high ripple current capabilities
- Polarized aluminium electrolytic capacitors, non-solid electrolyte

Operating temperature: -40°C to +85°C
 Tolerance: ±20%
 Climatic category (IEC68): 40/085/86
 DC leakage current: 0.006CV + 4µA
 Useful life @ 85°C: 10000hrs
 Long life grade: IEC 60 384-4/EN130300

µF	Ripple (A) @ 20Hz 85°C	ESR max. mΩ @ 20°C 100kHz	Dia.	Length	Case	Mfrs. List No.	Order Code
25 Volt d.c.							
33000	23	19	35	80	ST	222210116333	882-0660
68000	13	15	50	80	ST	222210116683	882-0678
100000	11	12	50	105	ST	222210116104	882-0686
40 Volt d.c.							
10000	23	31	35	60	ST	222210117103	882-0694
15000	17	22	35	80	ST	222210127153	882-0708
22000	17	20	35	80	ST	222210117223	882-0716
33000	10	13	50	80	ST	222210127333	882-0724
47000	10	12	50	80	ST	222210117473	882-0740
100000	6	7	65	105	ST	222210117104	882-0759
150000	6	7	76	105	ST	222210117154	882-0767
220000	5	5	76	146	ST	222210127224	882-0775
63 Volt d.c.							
4700	25	42	35	60	ST	222210118472	882-0783
6800	25	38	35	60	ST	222210118682	882-0791
10000	19	27	35	80	ST	222210118103	882-0805
15000	14	19	50	80	ST	222210128153	882-0813
15000	11	16	35	105	ST	222210118153	882-0821
33000	12	14	50	105	ST	222210118333	882-0830
47000	8	10	65	105	ST	222210118473	882-0848
68000	6	7	76	105	ST	222210118683	882-0856
100000	5	5	76	146	ST	222210128104	882-0864
100 Volt d.c.							
2200	29	50	35	60	ST	222210119222	882-0872
3300	27	42	35	60	ST	222210119332	882-0880
4700	20	32	35	80	ST	222210119472	882-0899
6800	15	23	35	105	ST	222210119682	882-0910
10000	15	21	50	80	ST	222210119103	882-0929
15000	12	16	50	105	ST	222210119153	882-0937
22000	8	11	65	105	ST	222210119223	882-0945
200 Volt d.c.							
1500	67	100	50	80	ST	22221022152	882-0953
1500	74	106	35	100	ST	222210212152	882-0961
4700	74	37	65	105	ST	222210222472	882-0970
4700	26	37	65	105	STB	222210262472	882-0988
6800	18	25	65	105	ST	222210212682	882-0996
10000	13	18	76	105	ST	222210212103	882-1003
250 Volt d.c.							
1000	82	128	35	80	ST	222210213102	882-1011

Price Each

µF	Order Code	1+	10+	50+	100+
25 Volt d.c.					
33000	882-0660	13.64	10.94	8.93	8.24
68000	882-0678	36.42	30.77	24.17	21.98
100000	882-0686	45.75	34.78	27.32	24.84
40 Volt d.c.					
10000	882-0694	18.35	15.50	12.17	11.07
15000	882-0708	22.21	16.89	13.26	12.05
22000	882-0716	24.80	21.51	16.88	15.34
33000	882-0724	29.33	--	--	--
47000	882-0740	35.10	28.52	22.39	20.36
100000	882-0759	60.82	48.26	37.90	34.46
150000	882-0767	89.43	70.83	55.64	50.58
220000	882-0775	89.56	71.92	58.66	53.97
63 Volt d.c.					
4700	882-0783	18.09	15.25	11.98	10.89
6800	882-0791	20.64	17.68	13.89	12.63
10000	882-0805	22.11	17.16	13.47	12.24
15000	882-0813	26.57	20.21	15.87	14.43
15000	882-0821	27.57	22.86	17.95	16.33
33000	882-0830	45.15	35.31	27.73	25.20
47000	882-0848	52.13	39.64	31.13	28.30
68000	882-0856	76.48	61.53	48.32	43.92
100000	882-0864	106.75	--	--	--
100 Volt d.c.					
2200	882-0872	19.04	16.40	12.88	11.71
3300	882-0880	21.47	18.51	14.54	13.23
4700	882-0899	23.85	19.23	15.11	13.73
6800	882-0910	20.48	15.57	12.22	11.12
10000	882-0929	35.14	--	--	--
15000	882-0937	42.39	--	--	--
22000	882-0945	61.94	49.97	39.24	35.66

µF	Order Code	1+	10+	50+	100+
200 Volt d.c.					
1500	882-0953	11.53	10.63	9.94	9.23
1500	882-0961	16.19	12.31	9.67	8.79
4700	882-0970	42.60	32.39	25.43	23.12
4700	882-0988	33.47	25.45	19.99	18.16
6800	882-0996	34.32	25.06	20.59	18.53
10000	882-1003	83.81	63.84	50.14	45.58
250 Volt d.c.					
1000	882-1011	21.89	16.65	13.07	11.90

106 PED-ST Series – Computer Grade



- Long life grade
 - Charge and discharge proof
 - High resistance to shock and vibration
 - Extremely low ESR and ESL allowing very high ripple current load
- Application includes:** Smoothing and filtering; Energy storage in pulse systems.

Operating temperature: -40°C to +85°C
 Tolerance: ±30%
 Climatic category (IEC68): 40/085/56
 Useful life @ 85°C: 20000hrs
 Long life grade: IEC 60384-4/EN130300

µF	Ripple (A) @ 20Hz 85°C	ESR max. mΩ @ 20°C 100kHz	Dia.	Length	Mfrs. List No.	Order Code
25 Volt d.c.						
10000	22	32	35	80	222210616103	882-1054
22000	15	11	50	80	222210616223	882-1062
40 Volt d.c.						
15000	17	12	50	80	222210617153	882-1097
22000	13	10	50	105	222210617223	882-1100
33000	9	7	65	105	222210617333	882-1119
47000	7	5	65	105	222210617473	882-1127
63 Volt d.c.						
4700	24	13	35	80	222210618472	882-1135
10000	13	8	50	80	222210618103	882-1151
15000	10	7	50	105	222210618153	882-1160
33000	7	5	65	105	222210618333	882-1178
100 Volt d.c.						
1000	96	48	35	60	222210619102	882-1186
1500	59	27	35	60	222210619152	882-1194
2200	42	20	35	80	222210619222	882-1208
3300	29	15	35	105	222210619332	882-1216
4700	22	12	50	80	222210619472	882-1224
6800	16	9	50	105	222210619682	882-1232
10000	11	7	65	105	222210619103	882-1240
15000	10	6	65	105	222210619153	882-1259

387005

µF	Order Code	1+	10+	50+	100+
25 Volt d.c.					
10000	882-1054	22.98	18.16	15.34	13.69
22000	882-1062	30.93	24.44	20.65	18.40
40 Volt d.c.					
15000	882-1097	32.66	25.80	21.80	19.43
22000	882-1100	31.46	--	--	--
33000	882-1119	39.77	31.42	26.55	23.66
47000	882-1127	80.16	63.35	53.52	47.71
63 Volt d.c.					
4700	882-1135	26.87	21.68	18.33	16.34
10000	882-1151	30.71	24.27	20.51	18.27
15000	882-1160	38.28	30.25	25.55	22.78
33000	882-1178	55.85	53.11	48.38	43.12
100 Volt d.c.					
1000	882-1186	10.74	8.50	7.18	6.40
1500	882-1194	16.04	12.68	10.71	9.56
2200	882-1208	13.44	10.62	8.97	8.00
3300	882-1216	20.18	16.64	14.38	13.00
4700	882-1224	32.78	25.91	21.88	19.50
6800	882-1232	23.86	18.86	15.93	14.20
10000	882-1240	55.18	43.61	36.84	32.83
15000	882-1259	80.70	62.95	53.88	47.47

B41456/43456 Series - 12000 hrs @ 85°C



- High performance long life

Operating temperature: -40°C to +85°C
 Tolerance: ±20%
 Useful life @ 85°C: 12000 hrs
 Climatic category: 40/085/56
 25/085/56 (450V)



µF	Ripple		ESR max(mΩ)	Dimensions		Mfrs. List No.	Order Code
	Current (A)	Impedance (mΩ) @10kHz, 20°C		H	Dia.		
16 Volt d.c.							
22000	7.1	23	28	55.7	35.7	B41456B4229M	470-4617
47000	11	13	16	80.7	35.7	B41456B4479M	470-4629
100000	14	8.2	10	80.7	51.6	B41456B4100M	470-4630
25 Volt d.c.							
68000	13	9.3	12	80.7	51.6	B41456B5689M	470-4654
470000	31	4.8	6	220.7	76.9	B41456B5470M	470-4666
40 Volt d.c.							
10000	6.3	34	37	55.7	35.7	B41456B7109M	470-4678
22000	9.6	18	20	80.7	35.7	B41456B7229M	470-4680
47000	13	10	12	80.7	51.6	B41456B7479M	387-8090
100000	19	7	8.2	105.7	64.3	B41456B7100M	470-4708
220000	25	5.4	6.5	143.2	76.9	B41456B7220M	470-4710
63 Volt d.c.							
4700	4.9	58	60	55.7	35.7	B41456B8478M	470-4721
10000	7.7	30	31	80.7	35.7	B41456B8109M	470-4733
22000	11	16	16	80.7	51.6	B41456B8229M	387-8107
68000	20	7.8	7.9	105.7	76.9	B41456B8689M	387-8119
150000	31	5.7	5.8	220.7	76.9	B41456B8150M	470-4769
100 Volt d.c.							
2200	4.3	70	80	55.7	35.7	B41456B9228M	387-8120
4700	6.7	35	40	80.7	35.7	B41456B9478M	387-8132
10000	10	18	22	80.7	51.6	B41456B9109M	387-8144
22000	17	11	13	105.7	64.3	B41456B9229M	470-4800
47000	24	7.1	8.5	143.2	76.9	B41456B9479M	387-8156
350 Volt d.c.							
8200	20	20	20	143.2	76.9	B43456A4828M	470-4824
400 Volt d.c.							
1500	13*	93	110	80.7	51.6	B43456A9158M	387-8168
3300	20*	44	49	105.7	64.3	B43456A9338M	470-4836
4700	29*	32	34	105.7	76.9	B43456A9478M	387-8170
6800	33*	24	24	143.2	76.9	B43456A9688M	387-8181
10000	48*	16	16	144.5	91	B43456A9109M	470-4848
450 Volt d.c.							
1000	9.6*	190	220	80.7	51.6	B43456A5108M	387-8200
1500	12*	130	150	105.7	51.6	B43456A5158M	470-4861
2200	15*	85	100	105.7	64.3	B43456A5228M	387-8211
5600	31*	35	38	143.2	76.9	B43456A5568M	387-8235
12000	51*	18	18	221	91	B43456A5129M	470-4897

234198

Price Each

µF	Order Code	1+	10+	50+	100+	250+
16 Volt d.c.						
22000	470-4617	8.90	--	--	--	--
47000	470-4629	9.60	--	--	--	--
100000	470-4630	19.19	16.31	15.50	14.86	14.23
25 Volt d.c.						
68000	470-4654	14.42	12.26	11.88	11.47	11.29
470000	470-4666	69.14	64.51	60.05	58.21	53.64
40 Volt d.c.						
10000	470-4678	8.69	7.38	7.02	6.60	6.20
22000	470-4680	12.29	10.44	9.92	9.34	8.76
47000	387-8090	18.30	--	--	--	--
100000	470-4708	37.11	--	--	--	--
220000	470-4710	81.08	73.29	69.63	67.23	55.79
63 Volt d.c.						
4700	470-4721	7.52	6.69	6.22	5.93	5.64
10000	470-4733	10.44	--	--	--	--
22000	387-8107	18.91	16.08	15.76	15.43	13.24
68000	387-8119	48.53	43.68	41.46	40.02	39.39
150000	470-4769	82.17	75.59	72.67	69.51	66.73
100 Volt d.c.						
2200	387-8120	7.72	6.77	6.10	5.81	5.53
4700	387-8132	10.56	--	--	--	--
10000	387-8144	18.73	15.93	14.83	14.13	13.42
22000	470-4800	33.73	30.27	29.08	27.90	27.63
47000	387-8156	66.05	--	--	--	--
350 Volt d.c.						
8200	470-4824	73.34	68.54	65.11	63.01	60.92
400 Volt d.c.						
1500	387-8168	25.86	--	--	--	--
3300	470-4836	62.64	58.98	54.70	52.08	50.43
4700	387-8170	69.74	--	--	--	--
6800	387-8181	105.89	93.58	83.79	76.92	72.01
10000	470-4848	135.10	--	--	--	--
450 Volt d.c.						
1000	387-8200	23.51	21.76	18.99	18.27	17.55
1500	470-4861	33.44	--	--	--	--
2200	387-8211	47.39	--	--	--	--
5600	387-8235	115.57	103.52	93.19	85.51	79.00
12000	470-4897	193.39	--	--	--	--

PEH200 Series



- PEH 200 series has a polarized, all-welded design, heavy duty screw terminals, extended cathode construction, safety vent and plastic insulation
- The sealing systems designed for electrolyte leakage free operation and a very low gas-diffusion rate of electrolyte
- Mechanical contact between the winding and the aluminium case allows excellent heat transfer from the winding hot spot to the ambient, which means cooler operation and very high current ratings

Operating Temperature -40°C to +85°C

µF	Voltage	Dimensions		Lead Pitch	Tolerance	Mfrs. List No.	Order Code
		H	Dia				
25 Volt							
15000	25V	51	35	13	± 20%	PEH200HA5150MU2	167-9503
47000	25V	75	50	22	± 20%	PEH200HH5470MU2	167-9504
220000	25V	105	75	32	± 20%	PEH200HT6220MU2	167-9505
40 Volt							
6800	40V	51	35	13	± 20%	PEH200KA4680MU2	167-9506
10000	40V	60	35	13	± 20%	PEH200KB5100MB2	167-9507
10000	40V	60	35	13	± 20%	PEH200KB5100MU2	167-9509
15000	40V	75	35	13	± 20%	PEH200KC5150MB2	167-9511
22000	40V	95	35	13	± 20%	PEH200KD5220MB2	167-9512
47000	40V	95	50	22	± 20%	PEH200KJ5470MB2	167-9513
100000	40V	105	65	28.5	± 20%	PEH200KO6100MU2	167-9515
63 Volt							
4700	63V	51	35	13	± 20%	PEH200MA4470MU2	167-9476
22000	63V	95	50	22	± 20%	PEH200MJ5220MB2	167-9477
47000	63V	105	65	28.5	± 20%	PEH200MO5470MB2	167-9479
4700	63V	51	35	13	± 20%	PEH200MA4470MB2	167-9516
10000	63V	95	35	13	± 20%	PEH200MD5100MB2	167-9517
22000	63V	95	50	22	± 20%	PEH200MJ5220MU2	167-9519
100 Volt							
10000	100V	95	50	22	± 20%	PEH200PJ5100MU2	167-9482
22000	100V	105	65	28.5	± 20%	PEH200PO5220MU2	167-9483
6800	100V	75	50	22	± 20%	PEH200PH4680MU2	167-9523
15000	100V	105	50	22	± 20%	PEH200PK5150MU2	167-9524
47000	100V	145	75	32	± 20%	PEH200PV5470MU2	167-9525
250 Volt							
4700	250V	105	65	28.5	± 20%	PEH200SO4470MU2	167-9484
10000	250V	145	75	32	± 20%	PEH200SV5100MU2	167-9485
15000	250V	220	75	32	± 20%	PEH200SX5150MU2	167-9486
350 Volt							
1000	350V	75	50	22	± 20%	PEH200UH4100MU2	167-9526
2200	350V	105	65	28.5	± 20%	PEH200UO4220MU2	167-9527
385 Volt							
2200	385V	105	65	28.5	± 20%	PEH200XO4220MU2	167-9487
6800	385V	220	75	32	± 20%	PEH200XX4680MU2	167-9488
400 Volt							
1000	400V	95	50	22	± 20%	PEH200VJ4100MU2	167-9528
450 Volt							
220	450V	75	35	13	± 20%	PEH200YC3220MU2	167-9529
470	450V	75	50	22	± 20%	PEH200YH3470MB2	167-9530
1000	450V	105	50	22	± 20%	PEH200YK4100MB2	167-9531
1000	450V	105	50	22	± 20%	PEH200YK4100MU2	167-9489
2200	450V	105	75	32	± 20%	PEH200YT4220MU2	167-9490
4700	450V	220	75	32	± 20%	PEH200YX4470MU2	167-9492
6000	450V	220	75	32	+30%, -10%	PEH200YX460BQU2	167-9493
500 Volt							
3300	500V	220	75	32	± 20%	PEH200ZX4330MB2	167-9494
470	500V	75	50	22	± 20%	PEH200ZH3470MU2	167-9534

527558

Order Multiple=1		Price Each					
µF	Order Code	1+	10+	25+	50+	100+	
25 Volt							
15000	167-9503	8.88	7.90	5.95	5.00	4.12	
47000	167-9504	14.92	13.49	10.86	9.56	8.37	
220000	167-9505	47.52	43.26	34.79	27.83	26.62	
40 Volt							
6800	167-9506	8.91	7.93	5.96	5.01	4.13	
10000	167-9507	7.84	--	--	--	--	
10000	167-9509	7.84	--	--	--	--	
15000	167-9511	12.00	10.73	8.33	7.27	6.26	
22000	167-9512	13.86	12.40	9.63	8.40	7.23	
47000	167-9513	22.05	21.08	16.91	14.12	12.94	
100000	167-9515	35.06	--	--	--	--	
63 Volt							
4700	167-9476	8.17	--	--	--	--	
22000	167-9477	17.97	15.98	12.00	9.57	8.09	
47000	167-9479	36.70	32.57	24.51	19.43	16.42	
4700	167-9516	7.27	6.48	4.94	4.18	3.47	
10000	167-9517	13.19	11.74	8.84	7.73	6.55	
22000	167-9519	19.02	18.20	14.64	12.20	11.18	



Aluminium Electrolytic - Screw Terminal - continued

PEH200 Series - continued

Order Multiple=1		Price Each				
µF	Order Code	1+	10+	25+	50+	100+
100 Volt						
10000	167-9482	19.57	17.42	13.84	11.03	9.86
22000	167-9483	35.57	--	--	--	--
6800	167-9523	16.60	14.78	11.09	8.84	7.49
15000	167-9524	30.00	--	--	--	--
47000	167-9525	71.35	--	--	--	--
250 Volt						
4700	167-9484	36.06	32.12	24.18	21.09	16.75
10000	167-9485	66.95	59.76	45.02	39.98	32.94
15000	167-9486	82.41	73.45	55.26	47.97	40.91
350 Volt						
1000	167-9526	18.03	16.01	12.05	9.59	8.10
2200	167-9527	35.59	31.67	23.85	21.09	16.39
385 Volt						
2200	167-9487	32.80	--	--	--	--
6800	167-9488	77.63	68.93	51.90	44.42	37.41
400 Volt						
1000	167-9528	19.00	18.19	14.62	12.20	11.18
450 Volt						
220	167-9529	13.81	12.38	9.62	8.38	7.21
470	167-9530	18.40	16.31	13.28	10.81	9.79
1000	167-9531	28.53	25.37	19.12	16.90	13.12
1000	167-9489	27.90	24.85	18.73	15.44	13.10
2200	167-9490	56.44	--	--	--	--
4700	167-9492	85.95	76.50	57.64	53.61	44.07
6000	167-9493	109.69	97.54	73.49	64.36	55.17
500 Volt						
3300	167-9494	87.48	77.79	58.50	45.95	37.90
470	167-9534	21.94	20.97	16.86	14.07	12.90

B41560 Series - 105°C



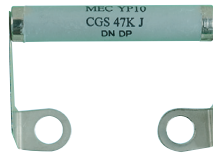
- High performance long life
- Temperature rating 105°C
- Compact size, high capacitance per unit volume
- High ripple current capability



Operating temperature	-40°C to +105°C	Useful life @ 105°C	3000 hrs				
Tolerance	±20%	Climatic category	40/105/56				
µF	Ripple Current (A)	Impedance (mΩ) @10kHz, 20°C	ESR max(mΩ) @ 100Hz	Dimensions		Mfrs. List No.	Order Code
40 Volt d.c.							
47000	14	10	12	105.7	51.6	B41560A7479M	470-4903
63 Volt d.c.							
10000	8.1	33	30	105.7	35.7	B41560A8109M	470-4939
22000	12	16	16	105.7	51.6	B41560A8229M	470-4940
47000	17	9.4	10	105.7	64.3	B41560A8479M	470-4952
100000	23	6.6	6.6	143.2	76.9	B41560A8100M	470-4964
100 Volt d.c.							
4700	7.5	39	35	105.7	35.7	B41560A9478M	470-4988
10000	11	18	17	105.7	51.6	B41560A9109M	470-4990
22000	17	11	10	105.7	76.9	B41560A9229M	470-5002

Price Each						
µF	Order Code	1+	10+	50+	100+	250+
40 Volt d.c.						
47000	470-4903	20.93	19.45	18.42	17.82	17.46
63 Volt d.c.						
10000	470-4939	19.17	17.68	16.67	16.06	15.74
22000	470-4940	17.94	15.25	14.49	13.63	12.78
47000	470-4952	28.84	26.92	25.56	24.81	24.31
100000	470-4964	57.57	--	--	--	--
100 Volt d.c.						
4700	470-4988	16.51	14.04	13.34	12.55	11.76
10000	470-4990	20.18	--	--	--	--
22000	470-5002	37.21	34.28	31.89	30.99	30.38

10 Watt - YP Series Capacitor Discharge Resistors



- Flameproof silicone coating
- Stainless steel mounting terminals
- Power rating 10W continuous @ 70°C
- Tolerance of ±5%
- Maximum voltage of 825V dc or ac RMS
- Operating temperature -55°C to +105°C

Used on capacitors with 31.8mm pitch terminals.

Mfrs List No YP10xxxJ where xxx is the resistance value

Resistance (KΩ)	Mfrs. List No.	Order Code	1+	10+	50+	100+	250+
2	YP102K0J	360-9431	4.91	4.56	4.23	3.92	3.67
10	YP1010KJ	360-9443	4.91	4.56	4.23	3.92	3.67
18	YP1018KJ	360-9455	4.91	4.56	4.23	3.92	3.67
27	YP1027KJ	360-9467	2.87	2.66	2.48	2.30	2.15
47	YP1047KJ	360-9479	4.91	4.56	4.23	3.92	3.67

Aluminium Electrolytic - Double Layer - Panasonic

Wet type double layer electrolytic construction featuring a very high capacitance, in a small case size. Excellent charge/discharge characteristics and very low leakage current give superior performance to nickel cadmium batteries in memory retention circuits for CMOS and other circuitry where memory back-up is required.

208423

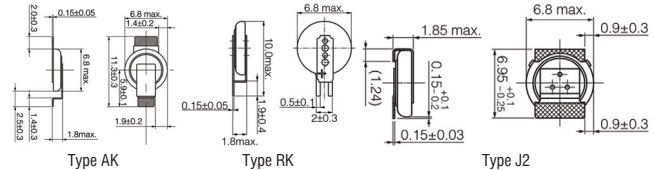
EN Series - Gold 3.3 Volt d.c.



- Surface mount memory back-up capacitors
- Applications include memory cards, mobile phones, palmtop computers, digital cameras



Operating temperature -10°C to +60°C
Working voltage 3.3V d.c. Capacitance 0.2F



Farads	Dimensions			Mfrs. List No.	Order Code
	H	Dia	W		
0.2	1.8	6.8	1.8	EECENOF204A	969-6598
0.2	1.8	6.8	1.8	EECENOF204AK	130-5070
0.2	10	6.8	1.8	EECENOF204RK	130-5071
0.2	1.85	6.8	1.85	EECENOF204J2	175-1935

451873

Mfrs. List No.	Order Code	Price Each			
		1+	50+	100+	500+
EECENOF204A	SMD 969-6598	2.04	1.48	1.11	0.97
EECENOF204AK	SMD 130-5070	2.55	2.37	2.14	1.66
EECENOF204RK	SMD 130-5071	2.49	2.30	2.07	1.61
EECENOF204J2	NEW SMD 175-1935	1.83	1.33	1.00	0.85

EP Series - Gold



- Electric Double Layer Capacitors
- Recommended Applications: Mobile phones, PDAs & RTC backup



Operating temperature -10°C to +60°C
Capacitance 0.033F
Capacitance Tolerance +80%, -20%

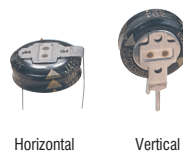
H=1.5, W=3.8, D=5.3mm

Farads	Voltage	Mfrs. List No.	Order Code
0.033	3.3	EECEPOF333A	175-1937

544801

Mfrs. List No.	Order Code	Price Each			
		1+	50+	100+	500+
EECEPOE333A	SMD 175-1936	1.67	1.53	1.37	1.22
EECEPOF333A	SMD 175-1937	2.05	1.86	1.67	1.49

SD Series — Gold 5.5 Volt d.c.



- 30% smaller than SG series
- Ideally suited for use in CMOS memory back-up
- Longer life than a secondary battery
- Vertical or horizontal mounting

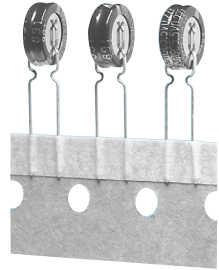
Operating temperature -25°C to +70°C
Working voltage 5.5V d.c.
Tolerance @ 20°C -20% to +80%

Farads	Dimensions			Lead Pitch	Mftrs. List No.	Order Code
	H	Dia.	Lead Size			
0.022	11.5	10.5	3 x 0.8	5	EECS0HD223V	130-5055
0.022	5.5	10.5	3 x 0.8	10	EECS0HD223H	130-5054
0.047	11.5	10.5	3 x 0.8	5	EECS0HD473V	130-5057
0.047	5.5	10.5	3 x 0.8	10	EECS0HD473H	130-5056
0.1	11.5	10.5	3 x 0.8	5	EECS0HD104V	969-2665
0.1	5.5	10.5	3 x 0.8	10	EECS0HD104H	969-2673
0.22	11.5	10.5	3 x 0.8	5	EECS0HD224V	969-2681
0.22	6	10.5	3 x 0.8	10	EECS0HD224H	969-2690
0.33	11.5	10.5	3 x 0.8	5	EECS0HD334V	130-5058
0.33	11.5	10.5	3 x 0.8	10	EECS0HD334H	175-1930

451875

Farads	Mounting	Order Code	Price Each				
			1+	10+	50+	100+	250+
0.022	Vertical	130-5055	1.61	0.98	0.73	0.53	0.51
0.022	Horizontal	130-5054	0.98	0.92	0.83	0.63	0.59
0.047	Vertical	130-5057	1.73	1.01	0.76	0.54	0.51
0.047	Horizontal	130-5056	1.04	0.97	0.87	0.68	0.63
0.1	Vertical	969-2665	1.24	1.05	0.78	0.57	0.56
0.1	Horizontal	969-2673	1.24	1.05	0.78	0.56	0.54
0.22	Vertical	969-2681	1.40	1.09	0.81	0.62	0.60
0.22	Horizontal	969-2690	1.35	1.09	0.81	0.67	0.65
0.33	Vertical	130-5058	1.72	1.11	0.94	0.75	0.74
0.33	Horizontal	NEW 175-1930	2.16	1.40	1.18	0.92	0.89

SE Series
5.5 Volt d.c.



- Electric double layer capacitors
 - Memory back-up for video and audio equipment, cameras, telephones, printers, data terminals and intelligent remote controls
 - Automatic insertion available
- Operating temperature -25°C to +70°C
Working voltage 5.5V d.c.
Tolerance @ 20°C -20% to +80%

Farads	Dimensions			Lead Pitch	Mftrs. List No.	Order Code
	H	Dia.	Lead Size			
0.1	13	10.5	18 x 0.55	5	EECE0H104	130-5068
0.22	13	10.5	18 x 0.55	5	EECE0H224	130-5069

Farads	Order Code	Price Each				
		1+	10+	50+	100+	250+
0.1	130-5068	1.23	1.13	1.02	0.80	0.74
0.22	130-5069	1.39	1.30	1.18	0.89	0.85

452180

SG Series – Gold Capacitor
5.5 Volt d.c.



- Ideally suited for use in CMOS memory back-up
 - Can also be used for real time clock backup
 - Vertical or horizontal mounting
- Operating temperature -25°C to +70°C
Working voltage 5.5V d.c.
Tolerance @ 20°C 20% to +80%

Farads	Dimensions			Lead Pitch	Mftrs. List No.	Order Code
	H	Dia.	Lead Size			
0.47	20	19	1 x 0.2	5	EECS5R5V474	969-6717
0.47	6	19	1 x 0.2	20	EECS5R5H474	969-6725
1	20	19	1 x 0.2	5	EECS5R5V105	969-7489
1	6	19	1 x 0.2	20	EECS5R5H105	969-7497
1.5	20	19	1 x 0.2	5	EECS5R5V155	969-6733
1.5	6	19	1 x 0.2	20	EECS5R5H155	969-6741

208479

Farads	Mounting	Order Code	Price Each		
			1+	10+	50+
0.47	Vertical	969-6717	3.94	2.92	2.19
0.47	Horizontal	969-6725	2.79	2.53	2.19
1	Vertical	969-7489	3.02	2.56	2.27
1	Horizontal	969-7497	3.02	2.56	2.27
1.5	Vertical	969-6733	4.73	3.48	2.61
1.5	Horizontal	969-6741	3.40	2.90	2.61

RF/RG Series - Gold Capacitors
Stacked Coin Type



- Ideally suited for use in CMOS memory back-up
 - 2000h endurance
 - Radial, vertical or horizontal case styles
- Operating temperature -25°C to +85°C Tolerance @ 20°C +80%, -20%

Farads	Voltage d.c.	Dimensions		Lead Size	Lead Pitch	Mftrs. List No.	Order Code
		H	Dia.				
0.1	5.5	9.5	13.5	6 x 1.2	5	EECRF0H104	180-0773
0.22	3.6	11.5	10.5	3 x 1.7	5	EECRG0V224V	180-0770
0.22	3.6	6	10.5	3 x 0.2	10	EECRG0V224H	180-0771
0.68	3.6	9.5	21.5	6 x 1.2	5	EECRF0V684	155-0075
0.68	5.5	9.5	21.5	6 x 1.2	5	EECRF0H684	155-0076
1	3.6	5	21	5 x 1	5	EECRG0V105H	155-0077
1	3.6	6	19	3.5 x 1	20	EECRG0V105V	155-0078

527083

Farads	Mounting	Order Code	Price Each				
			1+	10+	50+	100+	250+
0.1	Radial	NEW 180-0773	3.96	3.48	3.00	2.40	2.00
0.22	Vertical	NEW 180-0770	1.89	1.66	1.43	1.14	0.95
0.22	Horizontal	NEW 180-0771	1.89	1.66	1.43	1.14	0.95
0.68	Radial	155-0075	2.87	2.79	2.72	2.64	2.58
0.68	Radial	155-0076	3.16	2.80	2.61	2.40	2.34
1	Horizontal	155-0077	4.87	4.32	3.91	3.20	2.75
1	Vertical	155-0078	3.64	3.23	2.93	2.39	2.05

NF & F Series – Gold
5.5 Volt d.c.



- Ideally suited for use in CMOS memory back-up
 - Large capacitance for long time back-up
 - Low profile horizontal mounting
- Operating temperature NF Series -25°C to +70°C
Operating temperature F Series -25°C to +80°C
Working voltage 5.5V d.c.
Tolerance @ 20°C -20% to +80%

Farads	Dimensions		Lead Size	Lead Pitch	Mftrs. List No.	Order Code
	H	Dia.				
NF Series						
0.047	7.5	13.5	6 x 1.2	5	EECF5R5U473	175-1932
0.1	7.5	13.5	6 x 1.2	5	EECF5R5U104	969-2703
0.22	7.5	13.5	6 x 1.2	5	EECF5R5U224	130-5064
0.47	8	21.5	6 x 1.2	5	EECF5R5U474	969-2711
1	8	21.5	6 x 1.2	5	EECF5R5U105	969-2720
1.5	8	21.5	6 x 1.2	5	EECF5R5U155	130-5065
F Series						
0.033	9.5	13.5	6 x 1.2	5	EECF5R5H333	175-1933
0.04	9.5	13.5	6 x 1.2	5	EECF5R5H473	175-1934
0.1	7.5	13.5	6 x 1.2	5	EECF5R5H104	130-5059
0.47	8	21.5	6 x 1.2	5	EECF5R5H474	130-5060
0.68	8	21.5	6 x 1.2	5	EECF5R5H684	130-5061
1	8	21.5	6 x 1.2	5	EECF5R5H105	130-5063

451876

Farads	Order Code	Price Each				
		1+	10+	50+	100+	250+
NF Series						
0.047	NEW 175-1932	1.86	1.51	0.93	0.82	0.81
0.1	969-2703	2.07	1.35	1.01	0.72	0.71
0.22	130-5064	4.38	4.08	3.68	2.86	2.69
0.47	969-2711	4.34	3.32	2.49	1.76	1.72
1	969-2720	4.97	3.32	2.48	2.01	1.96
1.5	130-5065	6.15	3.80	2.85	2.22	2.15
F Series						
0.033	NEW 175-1933	3.00	2.74	1.73	1.33	1.27
0.04	NEW 175-1934	3.00	2.74	1.73	1.33	1.27
0.1	130-5059	3.33	2.34	1.76	1.31	1.28
0.47	130-5060	6.35	5.51	4.13	2.80	2.72
0.68	130-5061	7.15	5.69	4.26	3.03	2.95
1	130-5063	8.13	5.87	4.40	3.29	3.21

Over 100 latest technologies added online everyday

See our pick of the hottest products and latest technologies in 'What's New?' at www.farnell.co.uk

FREE Re-reeling service

Only buy what you need and improve assembly efficiency. Look for the **RL** logo or find out more: www.farnell.co.uk / 08447 11 11 11



Aluminium Electrolytic - Double Layer - Panasonic - continued

HW Series - Gold



- Miniature radial leaded memory back-up capacitors
- High capacitance rating - up to 50 Farads
- Low internal resistance

- Longer life than secondary batteries
- Applications include solar battery circuits, quick charge motor drives, UPS power supplies

Operating temperature -25°C to +70°C (70 F = 2.1 V d.c.) Tolerance @ 20°C -20% to +40%
Working voltage 2.3V d.c.

Farads	Max. Internal Res. (Ω) @ 1kHz	Dimensions		Lead Dia.	Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.				
1	1	22	8	0.7	3.5	EECHW0D105	130-5073
3.3	0.3	23	12.5	0.8	5	EECHW0D335	130-5075
4.7	0.3	23	12.5	0.8	5	EECHW0D475	969-6679
10	0.1	35	12.5	0.8	5	EECHW0D106	969-6695
22	0.1	35	18	0.8	7.5	EECHW0D226	119-8519
30	0.1	35	18	0.8	7.5	EECHW0D306	130-5076
50	0.3	40	18	0.8	7.5	EECHW0D506	969-6709
70	0.1	50	18	0.8	7.5	EECHW0D706	130-5077

451874

Farads	Order Code	Price Each				
		1+	10+	50+	100+	250+
1	130-5073	2.80	2.58	2.34	1.82	1.73
3.3	130-5075	2.79	1.86	1.60	1.56	1.52
4.7	969-6679	2.90	2.62	2.31	1.82	1.65
10	969-6695	3.73	2.49	2.14	2.08	2.03
22	119-8519	5.72	4.44	4.09	3.97	3.87
30	130-5076	7.46	4.97	4.11	3.99	3.89
50	969-6709	6.68	5.62	4.60	4.48	4.35
70	130-5077	13.63	9.10	6.76	6.54	6.41

HZ Series - Gold



- High withstand voltage
- Low internal resistance
- Longer life than secondary batteries

Operating temperature -25°C to +60°C Tolerance @ 20°C +40%, -20%
Working voltage 2.5V dc

Farads	Max. Internal Res. (Ω) @ 1kHz	Dimensions		Lead Pitch	Mfrs. List No.	Order Code
		H	Dia.			
3.3	0.3	20	8	3.5	EECHZ0E335	167-3325
4.7	0.3	20	10	5	EECHZ0E475	167-3322
10	0.2	30	10	5	EECHZ0E106	167-3323

527433

Farads	Order Code	Price Each				
		1+	10+	50+	100+	250+
3.3	167-3325	2.30	2.21	2.09	1.90	1.74
4.7	167-3322	3.13	2.96	2.84	2.59	2.49
10	167-3323	3.13	2.96	2.84	2.59	2.49

Aluminium Electrolytic - Double Layer - Vishay

196 Series - Double Layer Capacitors



- Polarised capacitor with high charge density, alternative product to rechargeable backup batteries
- Unlimited charge and discharge cycle numbers
- Maintenance-free, no periodic replacement or service necessary

Category temperature range: Standard -25°C to +70°C High Voltage -25°C to +85°C
High Temperature Vertical -25°C to +70°C
Tolerance on C_R at 20°C -20% to +80%

Farads	Dimensions (mm)		Lead Pitch	Mfrs. List No.	Order Code
	H	Dia.			
Standard - 5.5V					
0.047	7	13	5	MAL2 196 12473 E3	169-5322
0.1	7	13	5	MAL2 196 12104 E3	169-5323
0.22	7	13	5	MAL2 196 12224 E3	169-5324
0.33	7	13	5	MAL2 196 12334 E3	169-5325
0.47	7.5	21	5	MAL2 196 12474 E3	169-5326
1	7.5	21	5	MAL2 196 12105 E3	169-5327
High Temperature - 5.5V					
0.047	9	13	5	MAL2 196 22473 E3	169-5328
0.47	9	21	5	MAL2 196 22474 E3	169-5330
0.68	9	21	5	MAL2 196 22684 E3	169-5331
Vertical - 5.5V					
0.047	13	11.5	5	MAL2 196 32473 E3	169-5333
0.1	13	11.5	5	MAL2 196 32104 E3	169-5334
0.22	13	11.5	5	MAL2 196 32224 E3	169-5335
0.33	13	11.5	5	MAL2 196 32334 E3	169-5336

Farads	Dimensions (mm)		Lead Pitch	Mfrs. List No.	Order Code
	H	Dia.			
High Voltage - 6.3V					
0.047	9	13	5	MAL2 196 13473 E3	169-5337
0.1	9	13	5	MAL2 196 13104 E3	169-5338
0.47	9	21	5	MAL2 196 13474 E3	169-5339
0.68	9	21	5	MAL2 196 13684 E3	169-5340

530649

Capacitance	Order Code	Price Each				
		1+	10+	50+	100+	250+
Standard - 5.5V						
0.047	169-5322	4.05	3.10	2.09	1.74	1.50
0.1	169-5323	3.10	2.83	2.03	1.70	1.46
0.22	169-5324	4.43	3.40	2.28	1.89	1.62
0.33	169-5325	4.77	3.63	2.43	2.02	1.75
0.47	169-5326	10.56	8.05	5.41	4.49	3.87
1	169-5327	10.51	7.99	5.37	4.44	3.96

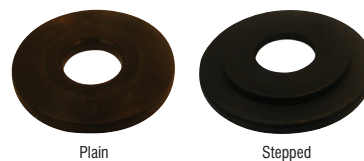
High Temperature - 5.5V						
0.047	169-5328	3.46	3.17	2.96	2.81	2.60
0.47	169-5330	13.99	10.69	7.19	5.96	5.15
0.68	169-5331	14.73	11.20	7.54	6.25	5.40

Vertical - 5.5V						
0.047	169-5333	2.76	2.53	1.81	1.51	1.30
0.1	169-5334	3.79	2.87	1.93	1.60	1.38
0.22	169-5335	3.98	3.03	2.03	1.70	1.51
0.33	169-5336	4.29	3.25	2.18	1.81	1.61

High Voltage - 6.3V						
0.047	169-5337	5.01	4.59	3.33	2.77	2.38
0.1	169-5338	6.90	5.23	3.52	2.91	2.59
0.47	169-5339	13.99	10.69	7.19	5.96	5.15
0.68	169-5340	8.08	7.39	6.92	6.54	6.06

Aluminium Electrolytic - Accessories

Cap Fastners M8 / M12



Plain

Stepped

604501

	Order Code	Price Each		
		1+	10+	50+
Plain poly washer M8	179-3856	0.220	0.177	0.146
Stepped poly washer M8	179-3857	0.220	0.177	0.146
Plain poly washer M12	179-3859	0.270	0.220	0.177
Stepped poly washer M12	179-3861	0.270	0.220	0.177

Price Per Pack			
M5 Screws & Washers (PK20)	179-3862	3.400	2.710 2.270

Nylon Cap Nuts M8 / M12



	Dimensions table PYR (mm)				Fits cap. diameter
	H	W	D	Pitch	
PYR 5008	15	40	21	22	50-65
PYR 7511	15	50	21	32	75-90

604486

	Order Code	Price Each		
		2+	10+	50+
M8	179-3845	0.52	0.42	0.35
M12	179-3847	0.52	0.42	0.35
M12	179-3848	0.57	0.46	0.39
M12	179-3849	0.57	0.46	0.39

element14 | www.element-14.com

The solutions are out there, you just haven't registered yet

Voltage Balancing Resistors

PYR Series



- For voltage balancing and/or discharge of electrolytic capacitors
- Fits capacitor diameters 50-90 mm
- Easy to mount
- Temperature Range: -55 to +105°C



Dimensions table PYR (mm)

	H	W	D	Pitch	Fits cap. diameter
PYR 5008	15	40	21	22	50-65
PYR 7511	15	50	21	32	75-90

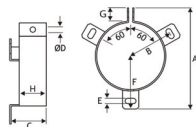
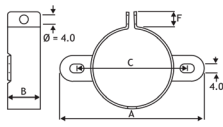
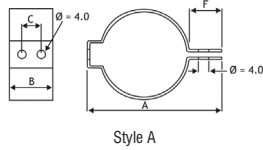
604484

Resistance Mftrs.

Price Each

(KΩ)	List No.	Order Code	1+	10+	50+
47	PYR5008-47	179-3840	2.54	2.03	1.69
10	PYR7511-10	179-3841	2.77	2.22	1.85
18	PYR7511-18	179-3842	2.77	2.22	1.85
27	PYR7511-27	179-3843	2.77	2.22	1.85
47	PYR7511-47	179-3844	2.77	2.22	1.85

Vertical Metal Cap Clamps



TYPE	CAN DIA	Mftrs.							
		A	B	C	D	E	F	G	H
Horizontal Mounting (Style A)									
H1	25	40	22.3	12.8	—	—	10	—	—
H2	35	52	22.3	12.8	—	—	10	—	—
Vertical Mounting (Style B)									
V2	25	49	19	37	—	—	10	—	—
V3	35	58	19	45	—	—	9	—	—
V4	40	65	19	52.4	—	—	9.5	—	—
Vertical Mounting (Style C)									
V10	65	90	40	30	5	4.5	—	10	20
V11	76	103	45	30	5	4.5	—	10	20
PYC6042	50	78	32.5	30	5.5	4.5	39	12	19
PYC6043	65	90.5	38	36	5.5	4.5	44	12	25
PYC6044	75	100.5	43	36	5.5	4.5	49	12	25
PYC6045	90	115.5	50.5	36	5.5	4.5	56.5	12	25

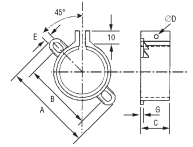
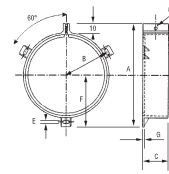
604497

Order Code	Mftr. List No.	Price Each		
		1+	10+	50+
306-484	H1	0.51	0.48	0.44
306-496	H2	0.62	0.57	0.52
306-514	V2	0.59	0.52	0.48
306-526	V3	0.67	0.62	0.56
306-551	V4	0.99	0.85	0.75
179-3850	V10	1.45	1.15	0.96
179-3851	V11	1.70	1.35	1.13
179-3852	PYC6042	0.98	0.79	0.66
179-3853	PYC6043	1.15	0.93	0.77
179-3854	PYC6044	1.70	1.35	1.13
179-3855	PYC6045	1.93	1.55	1.29

Plastic Mounting Clamps



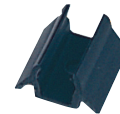
- Nylon mounting clamps for can type electrolytic capacitors.
- Fully insulated two or three lug mounting.
- Available with or without flange



* The diameter is approximate as it is possible for the clip to expand or compress slightly to allow for small variations in can size.

208468

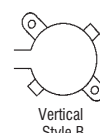
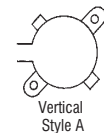
Can Dia.*	Mounting	Order Code	Price Each			
			5+	50+	100+	500+
With flange						
25	2 lug	653-470	0.280	0.270	0.250	0.197
30	2 lug	388-5379	0.300	0.290	0.270	0.260
35	2 lug	653-482	0.340	0.330	0.290	0.260
40	2 lug	653-494	0.370	0.360	0.350	0.280
45	2 lug	653-500	0.400	0.390	0.370	0.300
50	3 lug	653-512	0.430	0.420	0.410	0.340
63.5	3 lug	653-524	0.450	0.440	0.430	0.360
76	3 lug	653-536	0.480	0.470	0.460	0.390
Without flange						
25	2 lug	388-5290	0.290	0.280	0.270	0.260
30	2 lug	388-5306	0.330	0.310	0.290	0.280
35	2 lug	388-5318	0.360	0.350	0.340	0.300
40	2 lug	388-5320	0.410	0.400	0.390	0.340
50	3 lug	388-5343	0.450	0.440	0.420	0.390
63.5	3 lug	388-5355	0.470	0.460	0.440	0.420
76	3 lug	388-5367	0.500	0.490	0.470	0.440



Horizontal Metal Clamps

Vertical Metal Clamps

Plastic Clips



Vertical Style A

Vertical Style B

Vertical Style C

*The diameter is approximate as it is possible for the clip to expand or compress slightly to allow for small variations in can size

227216

Dia.*	H	FC (Style)	Order Code	Price Each				
				1+	50+	100+	500+	1K+
Horizontal Metal Clamps								
25	22	13	306-484	0.510	0.480	0.440	0.420	0.400
35	22	13	306-496	0.620	0.570	0.520	0.490	0.460
Vertical Metal Clamps								
25	19	35 (C)	306-514	0.590	0.520	0.480	0.450	0.420
35	18	54 (A)	118-7275	1.490	1.430	1.350	1.220	1.190
35	19	48 (C)	306-526	0.670	0.620	0.560	0.540	0.490
40	14	57 (A)	118-7276	1.880	1.800	1.700	1.530	1.290
51	26	65 (B)	306-551	0.990	0.850	0.750	0.690	0.620

Mtg. Hole Dia.	Price Each					
	1+	100+	1K+			
5-6.3	7.54	2.5	146-091	0.149	0.113	0.091
12.5	13.1	2.5	146-094	0.155	0.114	0.112
18	17.07	3.7	146-096	0.290	0.220	0.153

FREE technical support

Our trained engineers are here to help!

08447 11 11 22



techsales@farnell.co.uk

Live technical chat at www.farnell.co.uk

element14 | www.element-14.com

Technical portal and online community for Design Engineers - log on, research, refine and design today!

the solutions are out there you just haven't registered yet...



RoadTest the newest products in the market!

Join the **RoadTest** group and be in with a chance to trial exclusive new products for **free**. Plus, read other reviews and gain assistance from engineers with experience of designing with the hottest new products on the market.

www.element-14.com/roadtest

View the latest news, design support and hot new technologies for a range of applications

TECHNOLOGY FIRST

Take part in discussions and view the related technical content and products online on **element14**.

www.element-14.com/techfirst

Want to get expert answers to your design questions?



Join specialised discussion groups on **element14**, post your questions and get technical advice from our dedicated industry experts.

www.element-14.com

FREE EAGLE software

EAGLE™ software from **Cadsoft** has continuously satisfied electronic design engineers for over 20 years.

Visit our **Cadsoft** group on **element14** and download the award winning software for **FREE!**

www.element-14.com/cadsoft_eagle



Register on element14 for the very latest in electronic design

element14

Technology portal and e-community for design engineers

www.element-14.com