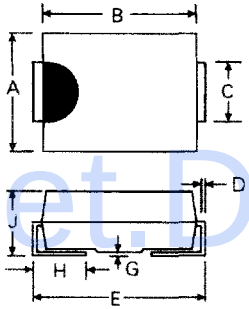
SMCJ5.0A/CA - SMCJ170A/CA

1500W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

Features

- 1500W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0



SMC		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Mechanical Data

- Case: Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202 Method 208
- Polarity: Cathode Band or Cathode Notch
- Marking:
  Unidirectional - Device Code and Cathode Band
  Bidirectional - Device Code Only
- Weight: 0.21 grams (approx)

Maximum Ratings

@ T_A = 25°C unless otherwise specified

Characteristics	Symbol	Value	Unit
Peak Power Dissipation t_p = 1.0ms (Non repetitive current pulse, per Figure 1 and derated above T_A = 25°C per Figure 4) (See Note 1)	P_{PK}	1500	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (See Notes 1, 2, & 3)	I_{FSM}	200	A
Instantaneous Forward Voltage @ I_{PP} = 35A (See Notes 1, 2, & 3)	V_F	3.5	V
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Notes:
1. Mounted on 5.0 mm^2 copper land areas
2. Measured with 8.3 ms single half sine-wave. Duty cycle = 4 pulses per minute maximum
3. Unidirectional units only. V_F(max) = 3.5 V @ I_P = 35 A (8.3 ms half sine-wave)

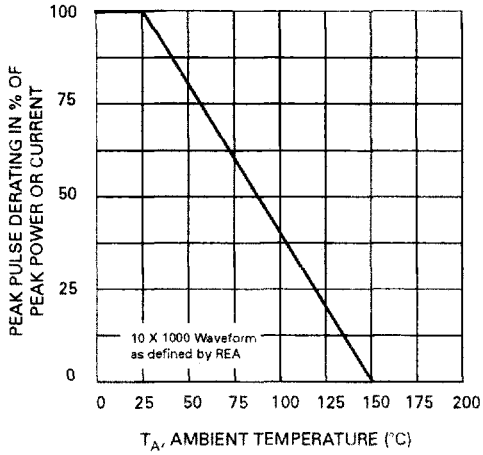


Fig. 1 Pulse Derating Curve

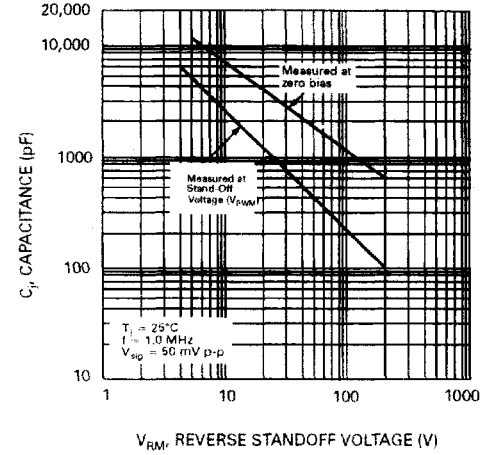


Fig. 2 Typical Junction Capacitance

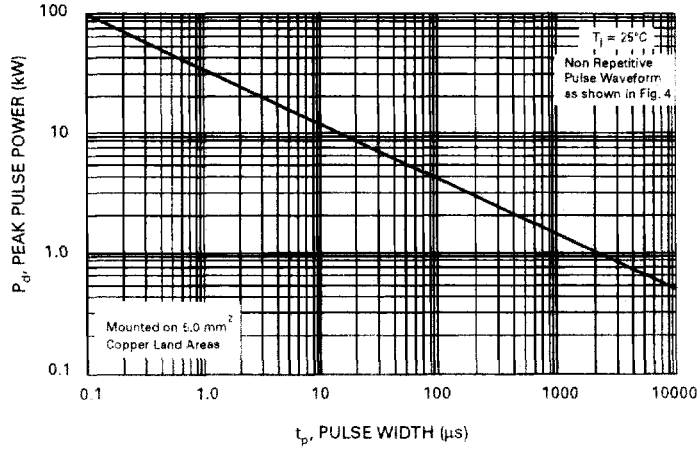


Fig. 3 Pulse Rating Curve

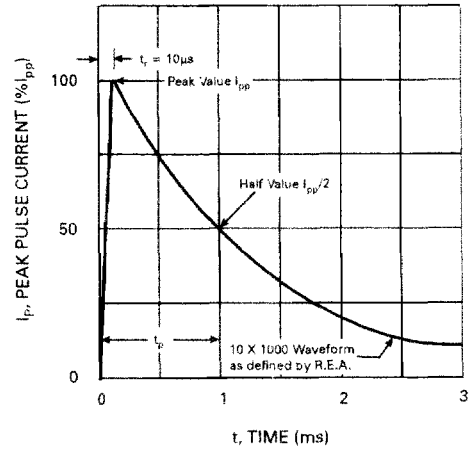


Fig. 4 Pulse Waveform

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Part Number add C For BiDirectional	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Max. Reverse Leakage @ V_R I_R	Max. Clamping Voltage@ I_{pp}	Max. Peak Pulse Current Ipp	Marking Code	
See Note 1	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	UNI-/BI- (µA)	V_C (V)	(A)	BI-	UNI-
SMCJ5.0(C)	5.0	6.40	7.55	10	1000/2000	9.6	156.2	BDD	GDD
SMCJ5.0(C)A	5.0	6.40	7.25	10	1000/2000	9.2	163.0	BDE	GDE
SMCJ6.0(C)	6.0	6.67	8.45	10	1000/2000	11.4	131.6	BDF	GDF
SMCJ6.0(C)A	6.0	6.67	7.67	10	1000/2000	10.3	145.6	BDG	GDG
SMCJ6.5(C)	6.5	7.22	9.14	10	500/1000	12.3	122.0	BDH	GDH
SMCJ6.5(C)A	6.5	7.22	8.30	10	500/1000	11.2	133.9	BDK	GDK
SMCJ7.0(C)	7.0	7.78	9.86	10	200/400	13.3	112.8	BDL	GDL
SMCJ7.0(C)A	7.0	7.78	8.95	10	200/400	12.0	125.0	BDM	GDM
SMCJ7.5(C)	7.5	8.33	10.80	1	100/200	14.3	104.9	BDN	GDN
SMCJ7.5(C)A	7.5	8.33	9.58	1	100/200	12.9	116.3	BDP	GDP
SMCJ8.0(C)	8.0	8.89	11.30	1	50/100	15.0	100.0	BDQ	GDQ
SMCJ8.0(C)A	8.0	8.89	10.23	1	50/100	13.6	110.3	BDR	GDR
SMCJ8.5(C)	8.5	9.44	11.92	1	25/50	15.9	94.3	BDS	GDS
SMCJ8.5(C)A	8.5	9.44	10.82	1	20/40	14.4	104.2	BDT	GDT
SMCJ9.0(C)	9.0	10.00	12.80	1	10/20	16.9	88.7	BDU	GDU
SMCJ9.0(C)A	9.0	10.00	11.50	1	10/20	15.4	97.4	BDV	GDV
SMCJ10(C)	10.0	11.10	14.10	1	5/10	18.8	79.8	BDW	GDW
SMCJ10(C)A	10.0	11.10	12.80	1	5/10	17.0	88.2	BDX	GDX
SMCJ11(C)	11.0	12.20	15.40	1	5	20.1	74.6	BDY	GDY
SMCJ11(C)A	11.0	12.20	14.40	1	5	18.2	82.4	BDZ	GDZ
SMCJ12(C)	12.0	13.30	16.90	1	5	22.0	68.2	BED	GED
SMCJ12(C)A	12.0	13.30	15.30	1	5	19.9	75.3	BEE	GEE
SMCJ13(C)	13.0	14.40	18.20	1	5	23.8	63.0	BEF	GEF
SMCJ13(C)A	13.0	14.40	16.50	1	5	21.5	69.7	BEG	GEG
SMCJ14(C)	14.0	15.60	19.80	1	5	25.8	58.1	BEH	GEH
SMCJ14(C)A	14.0	15.60	17.90	1	5	23.2	64.7	BEK	GEK
SMCJ15(C)	15.0	16.70	21.10	1	5	26.9	55.8	BEL	GEL
SMCJ15(C)A	15.0	16.70	19.20	1	5	24.4	61.5	BEM	GEM
SMCJ16(C)	16.0	17.80	22.60	1	5	28.8	52.1	BEN	GEN
SMCJ16(C)A	16.0	17.80	20.50	1	5	26.0	57.7	BEP	GEP
SMCJ17(C)	17.0	18.90	23.90	1	5	30.5	49.2	BEQ	GEQ
SMCJ17(C)A	17.0	18.90	21.70	1	5	27.6	53.3	BER	GER
SMCJ18(C)	18.0	20.00	25.30	1	5	32.2	46.6	BES	GES
SMCJ18(C)A	18.0	20.00	23.30	1	5	29.2	51.4	BET	GET
SMCJ20(C)	20.0	22.20	28.10	1	5	35.8	41.9	BEU	GEU
SMCJ20(C)A	20.0	22.20	25.50	1	5	32.4	46.3	BEV	GEV
SMCJ22(C)	22.0	24.40	30.90	1	5	39.4	38.1	BEW	GEW
SMCJ22(C)A	22.0	24.40	28.00	1	5	35.5	42.2	BEX	GEX
SMCJ24(C)	24.0	26.70	33.80	1	5	43.0	34.9	BEY	GEY
SMCJ24(C)A	24.0	26.70	30.70	1	5	38.9	38.6	BEZ	GEZ
SMCJ26(C)	26.0	28.90	36.80	1	5	46.6	32.2	BFD	GFD
SMCJ26(C)A	26.0	28.90	33.20	1	5	42.1	35.6	BFE	GFE
SMCJ28(C)	28.0	31.10	39.40	1	5	50.0	30.0	BFF	GFF
SMCJ28(C)A	28.0	31.10	35.80	1	5	45.4	33.0	BFG	GFG
SMCJ30(C)	30.0	33.30	42.40	1	5	53.5	28.0	BFH	GFH
SMCJ30(C)A	30.0	33.30	38.30	1	5	48.4	31.0	BFK	GFK

Notes: 1. Suffix C denotes Bi-directional device, suffix A denotes 5% tolerance device, no suffix denotes 10% tolerance device.
2. V_{BR} measured with I_T current pulse = 300 µs.

Part Number add C For BiDirectional	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T		Test Current	Max. Reverse Leakage @ V_R I_R	Max. Clamping Voltage@ I_{pp}	Max. Peak Pulse Current Ipp	Marking Code	
See Note 1	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	UNI-/BI- (μA)	V_C (V)	(A)	BI-	UNI-
SMCJ33(C)	33.0	36.70	46.90	1	5	59.0	25.2	BFL	GFL
SMCJ33(C)A	33.0	36.70	42.20	1	5	53.3	28.1	BFM	GFM
SMCJ36(C)	36.0	40.00	50.70	1	5	64.3	23.3	BFN	GFN
SMCJ36(C)A	36.0	40.00	46.00	1	5	58.1	25.8	BFP	GFP
SMCJ40(C)	40.0	44.40	56.30	1	5	71.4	21.0	BFQ	GFQ
SMCJ40(C)A	40.0	44.40	51.10	1	5	64.5	23.2	BFR	GFR
SMCJ43(C)	43.0	47.80	60.50	1	5	76.7	19.6	BFS	GFS
SMCJ43(C)A	43.0	47.80	54.90	1	5	69.4	21.6	BFT	GFT
SMCJ45(C)	45.0	50.00	63.30	1	5	80.3	18.7	BFU	GFU
SMCJ45(C)A	45.0	50.00	57.50	1	5	72.7	20.6	BFV	GFV
SMCJ48(C)	48.0	53.30	67.50	1	5	85.5	17.5	BFW	GFW
SMCJ48(C)A	48.0	53.30	61.30	1	5	77.4	19.4	BFX	GFX
SMCJ51(C)	51.0	56.70	71.80	1	5	91.1	16.5	BFY	GFY
SMCJ51(C)A	51.0	56.70	65.20	1	5	82.4	18.2	BFZ	GFZ
SMCJ54(C)	54.0	60.00	76.00	1	5	96.3	15.6	BGD	GGD
SMCJ54(C)A	54.0	60.00	69.00	1	5	87.1	17.2	BGE	GGE
SMCJ58(C)	58.0	64.40	81.60	1	5	103.0	14.6	BGF	GGF
SMCJ58(C)A	58.0	64.40	74.60	1	5	93.6	16.0	BGG	GGG
SMCJ60(C)	60.0	66.70	84.50	1	5	107.0	14.0	BGH	GGH
SMCJ60(C)A	60.0	66.70	76.70	1	5	96.8	15.5	BGK	GGK
SMCJ64(C)	64.0	71.10	90.10	1	5	114.0	13.2	BGL	GGL
SMCJ64(C)A	64.0	71.10	81.80	1	5	103.0	14.6	BGM	GGM
SMCJ70(C)	70.0	77.80	98.60	1	5	125.0	12.0	BGN	GGN
SMCJ70(C)A	70.0	77.80	89.50	1	5	113.0	13.3	BGP	GGP
SMCJ75(C)	75.0	83.30	106.00	1	5	134.0	11.2	BGQ	GGQ
SMCJ75(C)A	75.0	83.30	95.80	1	5	121.0	12.4	BGR	GGR
SMCJ78(C)	78.0	86.70	110.00	1	5	139.0	10.8	BGS	GGS
SMCJ78(C)A	78.0	86.70	99.70	1	5	126.0	11.4	BGT	GGT
SMCJ85(C)	85.0	94.40	119.20	1	5	151.0	9.9	BGU	GGU
SMCJ85(C)A	85.0	94.40	108.20	1	5	137.0	10.4	BGV	GGV
SMCJ90(C)	90.0	100.00	126.50	1	5	160.0	9.4	BGW	GGW
SMCJ90(C)A	90.0	100.00	115.50	1	5	146.0	10.3	BGX	GGX
SMCJ100(C)	100.0	111.00	141.00	1	5	179.0	8.4	BGY	GGY
SMCJ100(C)A	100.0	111.00	128.00	1	5	162.0	9.3	BGZ	GGZ
SMCJ110(C)	110.0	122.00	154.50	1	5	196.0	7.7	BHD	GHD
SMCJ110(C)A	110.0	122.00	140.50	1	5	177.0	8.4	BHE	GHE
SMCJ120(C)	120.0	133.00	169.00	1	5	214.0	7.0	BHF	GHF
SMCJ120(C)A	120.0	133.00	153.00	1	5	193.0	7.9	BHG	GHG
SMCJ130(C)	130.0	144.00	182.50	1	5	231.0	6.5	BHH	GHH
SMCJ130(C)A	130.0	144.00	165.50	1	5	209.0	7.2	BHK	GHK
SMCJ150(C)	150.0	167.00	211.50	1	5	268.0	5.6	BHL	GHL
SMCJ150(C)A	150.0	167.00	192.50	1	5	243. 0	6.2	BHM	GHM
SMCJ160(C)	160.0	178.00	226.00	1	5	287. 0	5.2	BHN	GHN
SMCJ160(C)A	160.0	178.00	205.00	1	5	259. 0	5.8	BHP	GHP
SMCJ170(C)	170.0	189.00	239.50	1	5	304.0	4.9	BHQ	GHQ
SMCJ170(C)A	170.0	189.00	217.50	1	5	275.0	5.5	BHR	GHR