

**SURFACE MOUNT  
UNIDIRECTIONAL AND BIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS**

STAND-OFF VOLTAGE - **5.0** to **170** Volts  
POWER DISSIPATION - **1500** WATTS

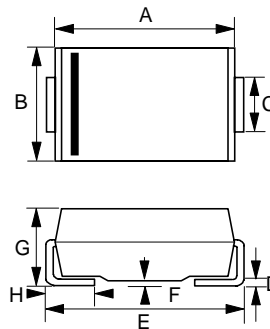
**FEATURES**

- Rating to 200V VBR
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min

**MECHANICAL DATA**

- Case : Molded plastic
- Polarity : by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- Weight : 0.007 ounces, 0.21 gram

**SMC**



SMC		
DIM.	MIN.	MAX.
A	6.60	7.11
B	5.59	6.22
C	2.92	3.18
D	0.15	0.31
E	7.75	8.13
F	0.05	0.20
G	2.01	2.62
H	0.76	1.52

All Dimensions in millimeter

Datasheet Directory

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT TA = 25°C, TP = 1ms (Note 1,2)	PPK	Minimum 1500	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD)	IFSM	200	AMPS.
Steady State Power Dissipation at TL = 75°C	PM(AV)	5.0	WATTS
Maximum Instantaneous forward voltage at 100A for unidirectional devices only (Note 3)	VF	SEE NOTE 4	Volts
Operating Temperature Range	TJ	-55 to +150	°C
Storage Temperature Range	TSTG	-55 to +175	°C

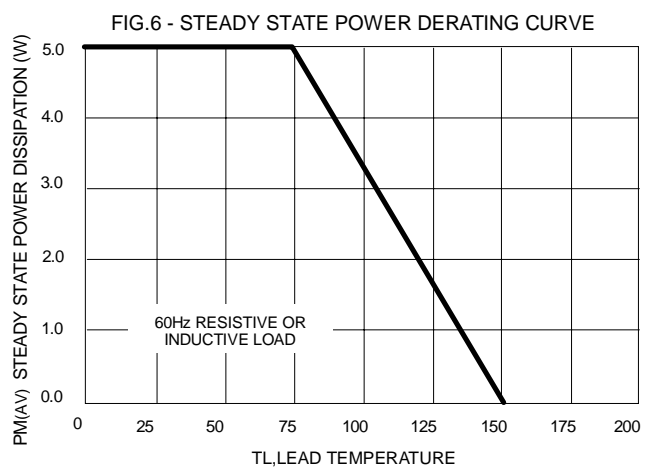
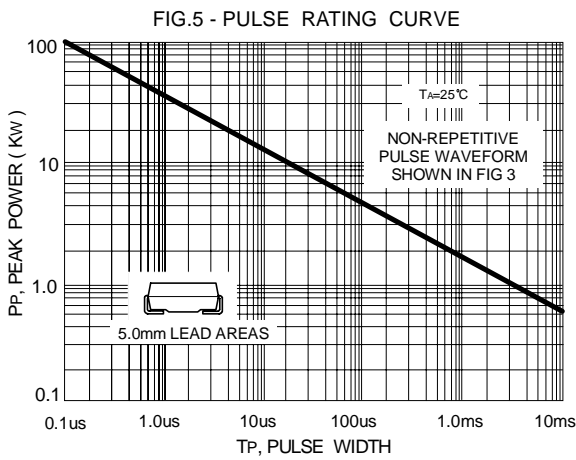
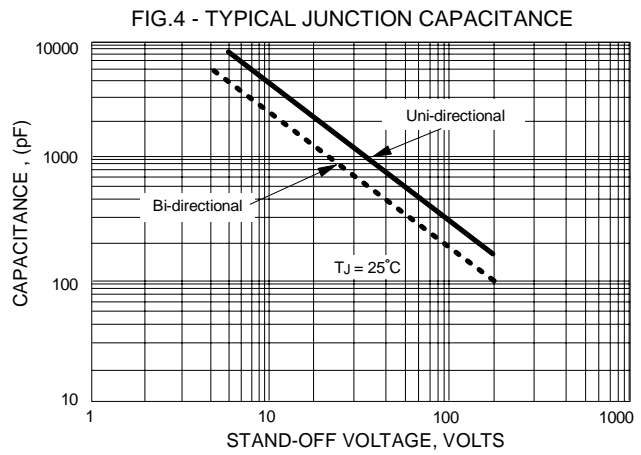
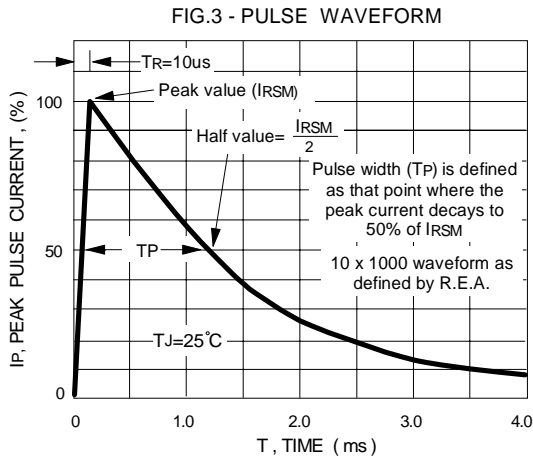
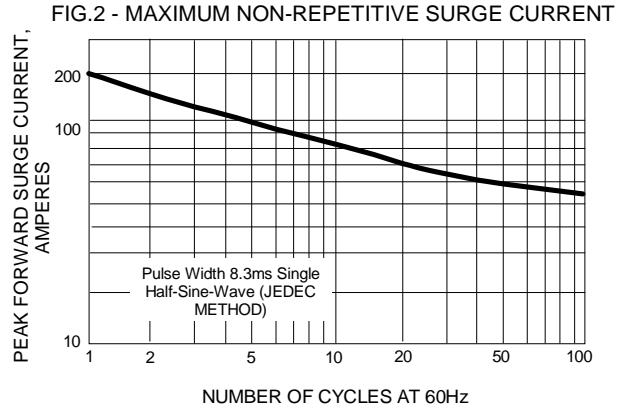
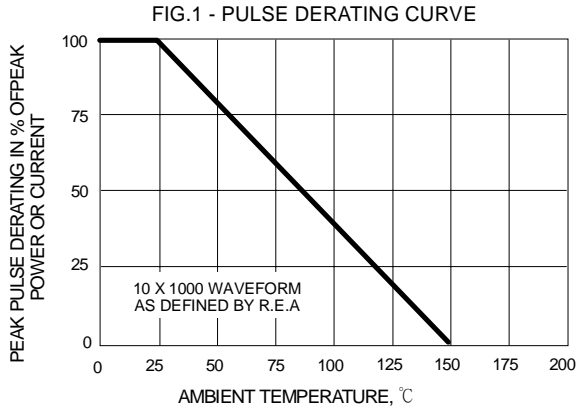
NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above TA= 25°C per fig.1.

2. Thermal Resistance junction to Lead

3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).

4. VF= 3.5V on SMCJ5.0 thru SMCJ90A devices and VF= 5.0V on SMCJ100 thru SMCJ170A devices.

REV. 2, 01-Dec-2000, KSIC02



Device Uni-directional	Device Bi-directional	Device Marking code		Working Peak Reverse Voltage	Breakdown voltage VBR Volts			Maximum Reverse Voltage at I <sub>RSM</sub> (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at V <sub>VRWM</sub>
		(UNI)	(BI)		V <sub>VRWM</sub> (Volts)	Min.	Max.			
SMCJ5.0	SMCJ5.0C	GDD	BDD	5.0	6.40	7.55	10	9.6	156.3	1000
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.23	10	9.2	163.0	1000
SMCJ6.0	SMCJ6.0C	GDF	BDF	6.0	6.67	8.45	10	11.4	131.6	1000
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.67	10	10.3	145.6	1000
SMCJ6.5	SMCJ6.5C	GDH	BDH	6.5	7.22	9.14	10	12.3	122.0	500
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	8.30	10	11.2	133.9	500
SMCJ7.0	SMCJ7.0C	GDL	BDL	7.0	7.78	9.86	10	13.3	112.8	200
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.95	10	12.0	125.0	200
SMCJ7.5	SMCJ7.5C	GDN	BDN	7.5	8.33	10.8	1.0	14.3	104.9	100
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.58	1.0	12.9	116.3	100
SMCJ8.0	SMCJ8.0C	GDQ	BDQ	8.0	8.89	11.3	1.0	15.0	100.0	50.0
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	10.20	1.0	13.6	110.3	50.0
SMCJ8.5	SMCJ8.5C	GDS	BDS	8.5	9.44	11.9	1.0	15.9	95.3	20.0
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.8	1.0	14.4	104.2	20.0
SMCJ9.0	SMCJ9.0C	GDU	BDU	9.0	10.0	12.8	1.0	16.9	88.7	10.0
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.0	11.5	1.0	15.4	97.4	10.0
SMCJ10	SMCJ10C	GDW	BDW	10	11.1	14.1	1.0	18.8	79.8	5.0
SMCJ10A	SMCJ10CA	GDX	BDX	10	11.1	12.8	1.0	17.0	88.2	5.0
SMCJ11	SMCJ11C	GDY	BDY	11	12.2	15.4	1.0	20.1	74.6	5.0
SMCJ11A	SMCJ11CA	GDZ	BDZ	11	12.2	14.4	1.0	18.2	82.4	5.0
SMCJ12	SMCJ12C	GED	BED	12	13.3	16.9	1.0	22.0	68.2	5.0
SMCJ12A	SMCJ12CA	GEE	BEE	12	13.3	15.3	1.0	19.9	75.3	5.0
SMCJ13	SMCJ13C	GEF	BEF	13	14.4	18.2	1.0	23.8	63.0	5.0
SMCJ13A	SMCJ13CA	GEG	BEG	13	14.4	16.5	1.0	21.5	69.7	5.0
SMCJ14	SMCJ14C	GEH	BEH	14	15.6	19.8	1.0	25.8	58.1	5.0
SMCJ14A	SMCJ14CA	GEK	BEK	14	15.6	17.9	1.0	23.2	64.7	5.0
SMCJ15	SMCJ15C	GEL	BEL	15	16.7	21.1	1.0	26.9	55.8	5.0
SMCJ15A	SMCJ15CA	GEM	BEM	15	16.7	19.2	1.0	24.4	61.5	5.0
SMCJ16	SMCJ16C	GEN	BEN	16	17.8	22.6	1.0	28.8	52.1	5.0
SMCJ16A	SMCJ16CA	GEP	BEP	16	17.8	20.5	1.0	26.0	57.7	5.0
SMCJ17	SMCJ17C	GEQ	BEQ	17	18.9	23.9	1.0	30.5	49.2	5.0
SMCJ17A	SMCJ17CA	GER	BER	17	18.9	21.7	1.0	27.6	53.3	5.0
SMCJ18	SMCJ18C	GES	BES	18	20.0	25.3	1.0	32.2	46.6	5.0
SMCJ18A	SMCJ18CA	GET	BET	18	20.0	23.3	1.0	29.2	51.4	5.0
SMCJ20	SMCJ20C	GEU	BEU	20	22.2	28.1	1.0	35.8	41.9	5.0
SMCJ20A	SMCJ20CA	GEV	BEV	20	22.2	25.5	1.0	32.4	46.3	5.0
SMCJ22	SMCJ22C	GEW	BEW	22	24.4	30.9	1.0	39.4	38.1	5.0
SMCJ22A	SMCJ22CA	GEX	BEX	22	24.4	28.0	1.0	35.5	42.2	5.0
SMCJ24	SMCJ24C	GEY	BEY	24	26.7	33.8	1.0	43.0	34.9	5.0
SMCJ24A	SMCJ24CA	GEZ	BEZ	24	26.7	30.7	1.0	38.9	38.6	5.0
SMCJ26	SMCJ26C	GFD	BFD	26	28.9	36.8	1.0	46.6	32.2	5.0
SMCJ26A	SMCJ26CA	GFE	BFE	26	28.9	32.2	1.0	42.1	35.6	5.0
SMCJ28	SMCJ28C	GFF	BFF	28	31.1	39.4	1.0	50.0	30.0	5.0
SMCJ28A	SMCJ28CA	GFG	BFG	28	31.1	35.8	1.0	45.4	33.0	5.0
SMCJ30	SMCJ30C	GFH	BFH	30	33.3	42.4	1.0	53.5	28.0	5.0
SMCJ30A	SMCJ30CA	GFK	BFK	30	33.3	38.3	1.0	48.4	31.0	5.0
SMCJ33	SMCJ33C	GFL	BFL	33	36.7	46.9	1.0	59.0	25.4	5.0
SMCJ33A	SMCJ33CA	GFM	BFM	33	36.7	42.2	1.0	53.3	28.1	5.0

Device Uni-directional	Device Bi-directional	Device Marking code		Working Peak Reverse Voltage VRWM(Volts)	Breakdown voltage VBR Volts			Maximum Reverse Voltage at IRSM (Clamping Voltage) VRSM(VOLTS)	Maximum Reverse Surge Current IRSM(Amps)	Maximum Reverse Leakage at VRWM IR (uA)
		(UND)	(BI)		Min.	Max.	@IT( mA)			
SMCJ36	SMCJ36C	GFN	BFN	36	40.0	50.7	1.0	64.3	23.3	5.0
SMCJ36A	SMCJ36CA	GFP	BFP	36	40.0	46.0	1.0	58.1	25.8	5.0
SMCJ40	SMCJ40C	GFQ	BFQ	40	44.4	56.3	1.0	71.4	21.0	5.0
SMCJ40A	SMCJ40CA	GFR	BFR	40	44.4	51.1	1.0	64.5	23.3	5.0
SMCJ43	SMCJ43C	GFS	BFS	43	47.8	60.5	1.0	76.7	19.6	5.0
SMCJ43A	SMCJ43CA	GFT	BFT	43	47.8	54.9	1.0	69.4	21.6	5.0
SMCJ45	SMCJ45C	GFU	BFU	45	50.0	63.3	1.0	80.3	18.7	5.0
SMCJ45A	SMCJ45CA	GFV	BFV	45	50.0	57.5	1.0	72.7	20.6	5.0
SMCJ48	SMCJ48C	GFW	BFW	48	53.3	67.5	1.0	85.5	17.5	5.0
SMCJ48A	SMCJ48CA	GFX	BFX	48	53.3	61.3	1.0	77.4	19.4	5.0
SMCJ51	SMCJ51C	GFY	BFY	51	56.7	71.8	1.0	91.1	16.5	5.0
SMCJ51A	SMCJ51CA	GFZ	BFZ	51	56.7	65.2	1.0	82.4	18.2	5.0
SMCJ54	SMCJ54C	GGD	BGD	54	60.0	76.0	1.0	96.3	15.6	5.0
SMCJ54A	SMCJ54CA	GGE	BGE	54	60.0	69.0	1.0	87.1	17.2	5.0
SMCJ58	SMCJ58C	GGF	BGF	58	64.4	81.6	1.0	103	14.6	5.0
SMCJ58A	SMCJ58CA	GGG	BGG	58	64.4	74.6	1.0	93.6	16.0	5.0
SMCJ60	SMCJ60C	GGH	BGH	60	66.7	84.5	1.0	107	14.0	5.0
SMCJ60A	SMCJ60CA	GGK	BGK	60	66.7	76.7	1.0	96.8	15.5	5.0
SMCJ64	SMCJ64C	GGL	BGL	64	71.1	90.1	1.0	114	13.2	5.0
SMCJ64A	SMCJ64CA	GGM	BGM	64	71.1	81.8	1.0	103	14.6	5.0
SMCJ70	SMCJ70C	GGN	BGN	70	77.8	98.6	1.0	125	12.0	5.0
SMCJ70A	SMCJ70CA	GGP	BGP	70	77.8	89.5	1.0	113	13.3	5.0
SMCJ75	SMCJ75C	GGQ	BGQ	75	83.3	106	1.0	134	11.2	5.0
SMCJ75A	SMCJ75CA	GGR	BGR	75	83.3	95.8	1.0	121	12.4	5.0
SMCJ78	SMCJ78C	GGS	BGS	78	86.7	110	1.0	139	10.8	5.0
SMCJ78A	SMCJ78CA	GGT	BGT	78	86.7	99.7	1.0	126	11.4	5.0
SMCJ85	SMCJ85C	GGU	BGU	85	94.4	119.2	1.0	151	9.9	5.0
SMCJ85A	SMCJ85CA	GGV	BGV	85	94.4	108.2	1.0	137	10.4	5.0
SMCJ90	SMCJ90C	GGW	BGW	90	100	126.5	1.0	160	9.4	5.0
SMCJ90A	SMCJ90CA	GGX	BGX	90	100	115.5	1.0	146	10.3	5.0
SMCJ100	SMCJ100C	GGY	BGY	100	111	141.0	1.0	179	8.4	5.0
SMCJ100A	SMCJ100CA	GGZ	BGZ	100	111	128.0	1.0	162	9.3	5.0
SMCJ110	SMCJ110C	GHD	BHD	110	122	154.0	1.0	196	7.7	5.0
SMCJ110A	SMCJ110CA	GHE	BHE	110	122	140.0	1.0	177	8.4	5.0
SMCJ120	SMCJ120C	GHF	BHF	120	133	169.0	1.0	214	7.0	5.0
SMCJ120A	SMCJ120CA	GHG	BHG	120	133	153.0	1.0	193	7.9	5.0
SMCJ130	SMCJ130C	GHH	BHH	130	144	182.0	1.0	231	6.5	5.0
SMCJ130A	SMCJ130CA	GHK	BHK	130	144	165.0	1.0	209	7.2	5.0
SMCJ150	SMCJ150C	GHL	BHL	150	167	211.5	1.0	268	5.6	5.0
SMCJ150A	SMCJ150CA	GHM	BHM	150	167	192.0	1.0	243	6.2	5.0
SMCJ160	SMCJ160C	GHN	BHN	160	178	226.0	1.0	287	5.2	5.0
SMCJ160A	SMCJ160CA	GHP	BHP	160	178	205.0	1.0	259	5.8	5.0
SMCJ170	SMCJ170C	GHQ	BHQ	170	189	239.5	1.0	304	4.9	5.0
SMCJ170A	SMCJ170CA	GHR	BHR	170	189	217.5	1.0	275	5.5	5.0

**NOTE :**

- 1) Suffix 'A ' denotes 5% tolerance device, no suffix denotes 10 % tolerance device.
- 2) Add suffix 'C 'or' CA ' after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .
- 4) For Uni-directional devices VF max=3.5v at if=35 A ,0.5 sine wave of 8.3 msec .pulse width.