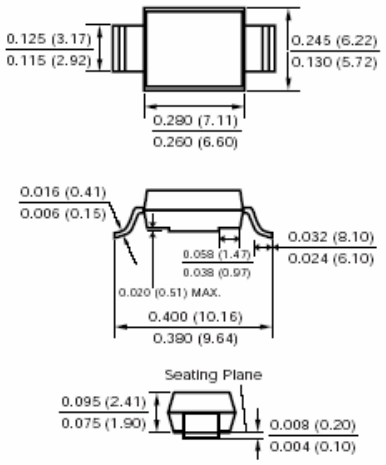
TRANSIENT VOLTAGE SUPPRESSOR

SMCJ5.0 THRU SMCJ170

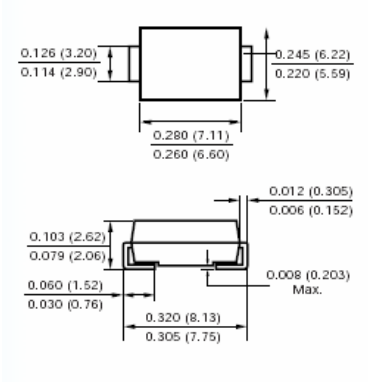
VOLTAGE RANGE **5.0 to 170 Volts**
POWER **1500 Watts**

FEATURES

- Glass passivated chip junction
- 1500W surge capacity @ 10/1000 µSec wave form
- Fast response, typically less then 1 pSec
- Low Zener impedence
- Excellent clamping capability
- Available in either "J" lead (SMCJ) of
- "G" lead (SMCG)
- High temperature soldering guaranteed: 250^{O}C/ seconds at terminals



DO-215AB
(SMC-G)



DO-214AB
(SMC)

MECHANICAL DATA

- Case: transfer molded plastic
- Epoxy: UL94V – 0 rate flame retardant
- Polarity: Color band denotes cathode end, except on bipolar parts which have no band
- Terminals: solderable per MIL-STD-202E method 208C
- Weight: 0.007 ounce, 0.21 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25^{O}C ambient temperature unless otherwise specified

	SYMBOLS		UNIT
Peak Power Dissipation 10/1000µS waveform (Note 1,2)	P_{PPM}	1500	Watts
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method) (Note 2)	I_{FSM}	200	Amps
Operating Junction Temperature Range	T_J	(-55 to +150)	^{O}C
Storage Temperature Range	T_{STG}	(-55 to +150)	^{O}C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated to T_A = 25 ^{O}C per Fig. 2.
2. Mounted on copper pad area 0.2" x 0.2" x 0.0.0011" (5mm x 5mm x .03mm) at each terminal
3. 8.3ns single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minute, maximum.
4. For bipolar devices add a C to the part number, i.e. SMCJ5.0C or SMCJ5.0CA
5. Electrical characteristics apply in both directions for bipolar devices

RATINGS AND CHARACTERISTIC CURVES SMCJ5.0 THRU SMCJ170

For Bipolar devices add a "C" to the part number, i. e. SMCJ5.0C or SMCJ5.0CA

Device		Device Marking Code		Standoff Voltage	Breakdown Voltage (V_{BR})		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse leakage @ V_{RWM}
				V_{RWM}	Min	Max	I_T	V_C	I_{PP}	I_R
		Uni	Bi	Volts	Volts		mA	Volts	Amps	µAmps
SMCJ5.0	SMBG5.0	GDD	BDD	5.0	6.4	7.3	10	9.6	163	800
SMCJ5.0A	SMBG5.0A	GDE	BDE	5.0	6.4	7.0	10	9.2	163	800
SMCJ6.0	SMBG6.0	GDF	BDF	6.0	6.67	8.15	10	11.4	145.7	800
SMCJ6.0A	SMBG6.0A	GDG	BDG	6.0	6.67	7.37	10	10.3	145.7	800
SMCJ6.5	SMBG6.5	GDH	BDH	6.5	7.22	8.82	10	12.3	134	500
SMCJ6.5A	SMBG6.5A	GDK	BDK	6.5	7.22	7.98	10	11.2	134	500
SMCJ7.0	SMBG7.0	GDL	BDL	7.0	7.78	9.51	10	13.3	125	200
SMCJ7.0A	SMBG7.0A	GDM	BDM	7.0	7.78	8.6	10	12	125	200
SMCJ7.5	SMBG7.5	GDN	BDN	7.5	8.33	10.2	1	14.3	116.3	100
SMCJ7.5A	SMBG7.5A	GDP	BDP	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0	SMBG8.0	GDQ	BDQ	8.0	8.89	10.9	1	15	110.3	50
SMCJ8.0A	SMBG8.0A	GDR	BDR	8.0	8.89	9.83	1	13.6	110.3	50
SMCJ8.5	SMBG8.5	GDS	BDS	8.5	9.44	11.5	1	15.9	104.2	20
SMCJ8.5A	SMBG8.5A	GDT	BDT	8.5	9.44	10.4	1	14.4	104.2	20
SMCJ9.0	SMBG9.0	GDU	BDU	9.0	10	12.2	1	16.9	97.4	10
SMCJ9.0A	SMBG9.0A	GDV	BDV	9.0	10	11.1	1	15.4	97.4	10
SMCJ10	SMBG10	GDW	BDW	10	11.1	13.6	1	18.8	88.3	5
SMCJ10A	SMBG10A	GDX	BDX	10	11.1	12.3	1	17	88.3	5
SMCJ11	SMBG11	GDY	BDY	11	12.2	14.9	1	20.1	82.5	5
SMCJ11A	SMBG11A	GDZ	BDZ	11	12.2	13.5	1	18.2	82.5	5
SMCJ12	SMBG12	GED	BED	12	13.3	16.3	1	22	75.4	5
SMCJ12A	SMBG12A	GEE	BEE	12	13.3	14.7	1	19.9	75.4	5
SMCJ13	SMBG13	GEF	BEF	13	14.4	17.6	1	23.8	69.8	5
SMCJ13A	SMBG13A	GEG	BEG	13	14.4	15.9	1	21.5	69.8	5
SMCJ14	SMBG14	GEH	BEH	14	15.6	19.1	1	25.8	64.7	5
SMCJ14A	SMBG14A	GEK	BEK	14	15.6	17.2	1	23.2	64.7	5
SMCJ15	SMBG15	GEL	BEL	15	19.7	20.4	1	26.9	61.5	5
SMCJ15A	SMBG15A	GEM	BEM	15	16.7	18.5	1	24.4	61.5	5
SMCJ16	SMBG16	GEN	BEN	16	17.8	21.8	1	28.8	57.7	5
SMCJ16A	SMBG16A	GEP	BEP	16	17.8	19.7	1	26	57.5	5
SMCJ17	SMBG17	GEQ	BEQ	17	18.9	23.1	1	30.5	54.4	5
SMCJ17A	SMBG17A	GER	BER	17	18.9	20.9	1	27.6	54.4	5
SMCJ18	SMBG18	GES	BES	18	20	24.4	1	32.2	51.4	5
SMCJ18A	SMBG18A	GET	BET	18	20	22.1	1	29.2	51.4	5
SMCJ20	SMBG20	GEU	BEU	20	22.2	27.1	1	35.8	46.3	5
SMCJ20A	SMBG20A	GEV	BEV	20	22.2	24.5	1	32.4	46.3	5
SMCJ22	SMBG22	GEW	BEW	22	24.4	29.8	1	39.4	42.3	5
SMCJ22A	SMBG22A	GEX	BEX	22	24.4	26.9	1	35.5	42.3	5
SMCJ24	SMBG24	GEY	BEY	24	26.7	32.6	1	43	38.6	5
SMCJ24A	SMBG24A	GEZ	BEZ	24	26.7	29.5	1	38.9	38.6	5
SMCJ26	SMBG26	GFD	BFD	26	28.9	35.3	1	46.6	35.7	5
SMCJ26A	SMBG26A	GFE	BFE	26	28.9	31.9	1	42.1	35.7	5
SMCJ28	SMBG28	GFF	BFF	28	31.1	38	1	50.1	33.1	5
SMCJ28A	SMBG28A	GFG	BFG	28	31.1	34.4	1	45.4	33.1	5
SMCJ30	SMBG30	GFH	BFH	30	33.3	40.7	1	53.5	31	5
SMCJ30A	SMBG30A	GFK	BFK	30	33.3	36.8	1	48.4	31	5
SMCJ33	SMBG33	GFL	BFL	33	36.7	44.9	1	59	28.2	5
SMCJ33A	SMBG33A	GFM	BFM	33	36.7	40.6	1	53.3	28.2	5
SMCJ36	SMBG36	GFN	BFN	36	40	48.9	1	64.3	25.9	5
SMCJ36A	SMBG36A	GFP	BFP	36	40	44.2	1	58.1	25.9	5
SMCJ40	SMBG40	GFQ	BFQ	40	44.4	54.3	1	71.4	23.3	5
SMCJ40A	SMBG40A	GFR	BFR	40	44.4	49.1	1	64.5	23.3	5
SMCJ43	SMBG43	GFS	BFS	43	47.8	58.4	1	76.7	21.7	5
SMCJ43A	SMBG43A	GFT	BFT	43	47.8	52.8	1	69.4	21.7	5
SMCJ45	SMBG45	GFU	BFU	45	50	61.1	1	80.3	20.6	5
SMCJ45A	SMBG45A	GFV	BFV	45	50	55.3	1	72.7	20.6	5
SMCJ48	SMBG48	GFW	BFW	48	53.3	65.2	1	85.5	19.4	5
SMCJ48A	SMBG48A	GFX	BFX	48	53.3	58.9	1	77.4	19.4	5

RATINGS AND CHARACTERISTIC CURVES SMCJ5.0 THRU SMCJ170

For Bipolar devices add a "C" to the part number, i. e. SMCJ5.0C or SMCJ5.0CA

Device		Device Marking Code		Standoff Voltage	Breakdown Voltage (V_{BR})		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse leakage @ V_{RWM}
				V_{RWM}	Min	Max	I_T	V_C	I_{PP}	I_R
		Uni	Uni	Volts	Volts		mA	Volts	Amps	µAmps
SMCJ51	SMBG51	GFY	BFY	51	56.7	69.3	1	91.1	18.2	5
SMCJ51A	SMBG51A	GFZ	BFZ	51	56.7	62.7	1	82.4	18.2	5
SMCJ54	SMBG54	GGD	BGD	54	60	73.3	1	96.3	17.3	5
SMCJ54A	SMBG54A	GGE	BGE	54	60	66.3	1	87.1	17.3	5
SMCJ58	SMBG58	GGF	BGF	58	64.4	78.7	1	103	16.1	5
SMCJ58A	SMBG58A	GGG	BGG	58	64.4	71.2	1	93.6	16.1	5
SMCJ60	SMBG60	GGH	BGH	60	66.7	81.5	1	107	15.5	5
SMCJ60A	SMBG60A	GGK	BGK	60	66.7	73.7	1	96.8	15.5	5
SMCJ64	SMBG64	GGL	BGL	64	71.1	86.9	1	114	14.6	5
SMCJ64A	SMBG64A	GGM	BGM	64	71.1	78.6	1	103	14.6	5
SMCJ70	SMBG70	GGN	BGN	70	77.8	95.1	1	125	13.3	5
SMCJ70A	SMBG70A	GGP	BGP	70	77.8	86	1	113	13.3	5
SMCJ75	SMBG75	GGQ	BGQ	75	83.3	102	1	134	12.4	5
SMCJ75A	SMBG75A	GGR	BGR	75	83.3	92.1	1	121	12.4	5
SMCJ78	SMBG78	GGS	BGS	79	86.7	103	1	139	11.9	5
SMCJ78A	SMBG78A	GGT	BGT	79	86.7	95.8	1	126	11.9	5
SMCJ85	SMBG85	GGU	BGU	85	94.4	115	1	151	11	5
SMCJ85A	SMBG85A	GGV	BGV	85	94.4	104	1	137	11	5
SMCJ90	SMBG90	GGW	BGW	90	100	122	1	160	10.3	5
SMCJ90A	SMBG90A	GGX	BGX	90	100	111	1	146	10.3	5
SMCJ100	SMBG100	GGY	BGY	100	111	136	1	179	9.3	5
SMCJ100A	SMBG100A	GGZ	BGZ	100	111	123	1	162	9.3	5
SMCJ110	SMBG110	GHD	BHD	110	122	149	1	196	8.5	5
SMCJ110A	SMBG110A	GHE	BHE	110	122	135	1	177	8.5	5
SMCJ120	SMBG120	GHF	BHF	120	133	163	1	214	7.8	5
SMCJ120A	SMBG120A	GHG	BHG	120	133	147	1	193	7.8	5
SMCJ130	SMBG130	GHH	BHH	130	144	176	1	230	7.2	5
SMCJ130A	SMBG130A	GHK	BHK	130	144	159	1	209	7.2	5
SMCJ150	SMBG150	GHL	BHL	150	167	204	1	268	6.2	5
SMCJ150A	SMBG150A	GHM	BHM	150	167	185	1	243	6.2	5
SMCJ160	SMBG160	GHN	BHN	160	178	218	1	277	5.8	5
SMCJ160A	SMBG160A	GHP	BHP	160	178	197	1	259	5.8	5
SMCJ170	SMBG170	GHQ	BHQ	170	189	231	1	304	5.5	5
SMCJ170A	SMBG170A	GHR	BHR	170	189	209	1	275	5.5	5

Notes

1. **For bidirectional parts with V_{RWM} of 10V or less, the I_R limit is doubled.**

RATINGS AND CHARACTERISTIC CURVES SMCJ5.0 THRU SMCJ170

Fig. 1 - Peak Pulse Power Rating

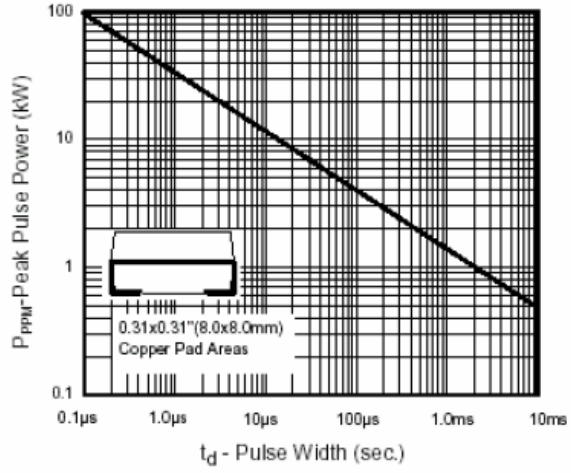


Fig.2 - Pulse Derating Curve

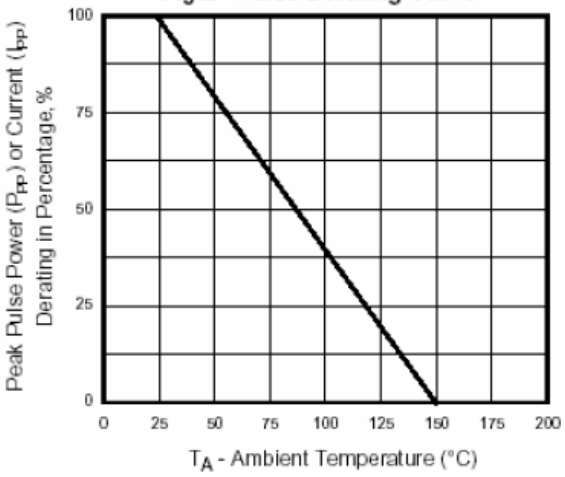


Fig.3 - Pulse Waveform

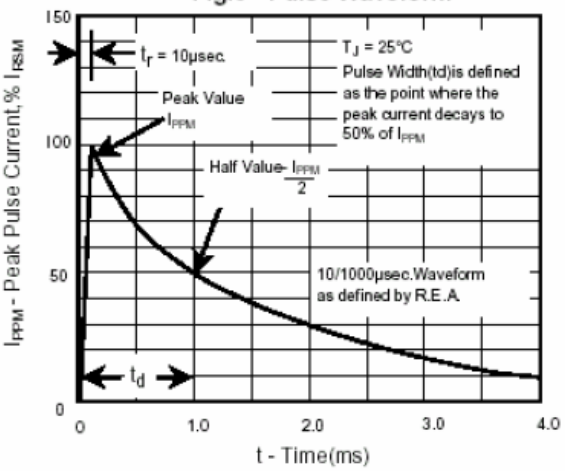


Fig.4 - Typical Junction Capacitance
Uni-Directional

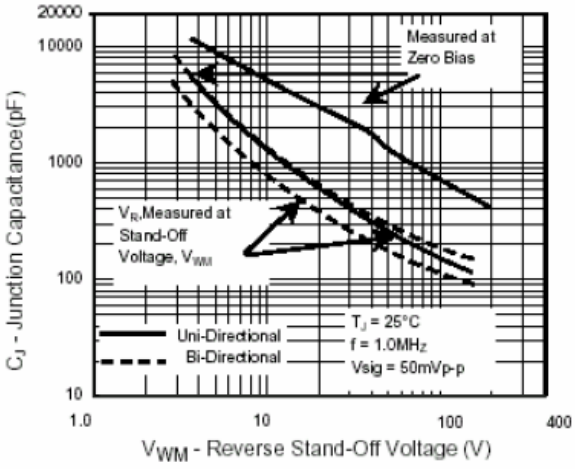


Fig. 5 - Typ.Transient Thermal Impedance

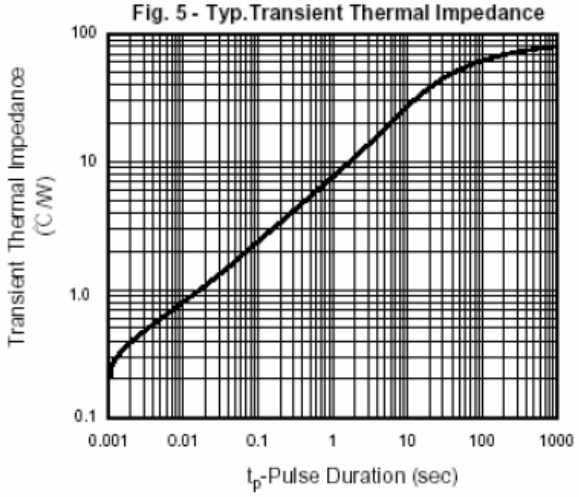


Fig.6 - Maximum Non-Repetitive Forward
Surge Current Uni-Directional Use Only