SMCJ SERIES

Surface Mount Transient Voltage Suppressor

Voltage Range
5.0 to 170 Volts
1500 Watts Peak Power

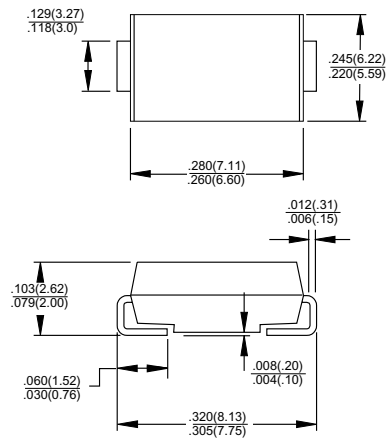
Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Excellent clamping capability
- ✧ Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- ✧ Typical I_R less than 1 A above 10V
- ✧ High temperature soldering guaranteed: 250°C / 10 seconds at terminals
- ✧ Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- ✧ 1500 watts peak pulse power capability with a 10 X 1000 us waveform by 0.01% duty cycle

Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Solder plated
- ✧ Polarity: Indicated by cathode band
- ✧ Standard packaging: 16mm tape (EIA STD RS-481)
- ✧ Weight: 0.21gram

SMC/DO-214AB



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at T_A=25°C, Tp=1ms (Note 1)	P_{PK}	Minimum 1500	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3) - Unidirectional Only	I_{FSM}	100	Amps
Maximum Instantaneous Forward Voltage at 100.0A for Unidirectional Only (Note 4)	V_F	3.5 / 5.0	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

Notes: 1. Non-repetitive Current Pulse Per Fig. 3 and Derated above T_A=25°C Per Fig. 2.
2. Mounted on 8.0mm^2 (.013mm Thick) Copper Pads to Each Terminal.
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.
4. V_F=3.5V on SMCJ5.0 thru SMCJ90 Devices and V_F=5.0V on SMCJ100 thru SMCJ170 Devices.

Devices for Bipolar Applications
1. For Bidirectional Use C or CA Suffix for Types SMCJ5.0 through Types SMCJ170.
2. Electrical Characteristics Apply in Both Directions.

RATINGS AND CHARACTERISTIC CURVES (SMCJ SERIES)

FIG.1- PEAK PULSE POWER RATING CURVE

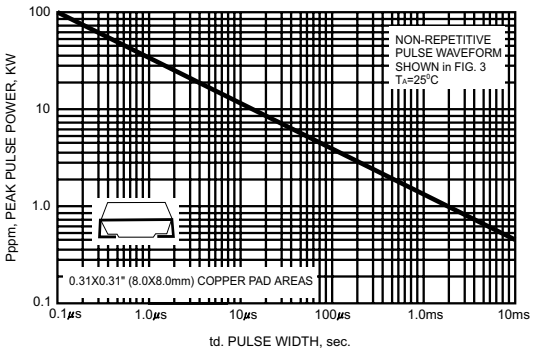


FIG.2- PULSE DERATING CURVE

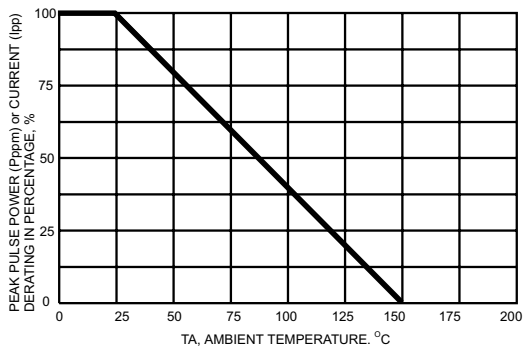


FIG.3- PULSE WAVEFORM

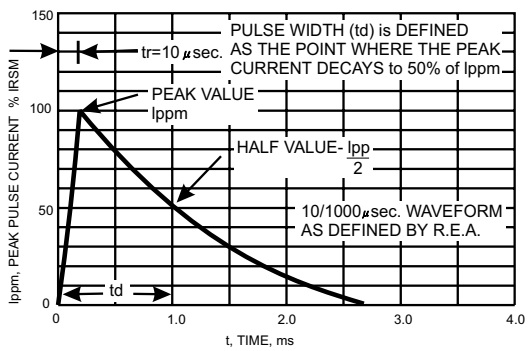


FIG.4- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

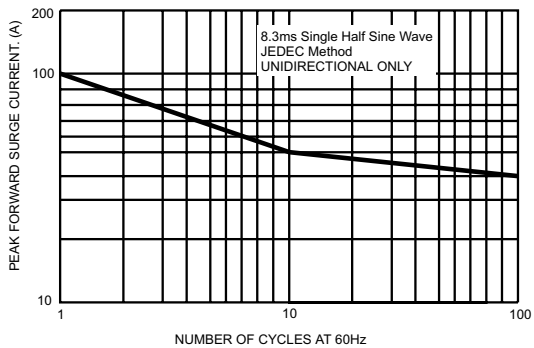


FIG.5- TYPICAL JUNCTION CAPACITANCE BIDIRECTIONAL

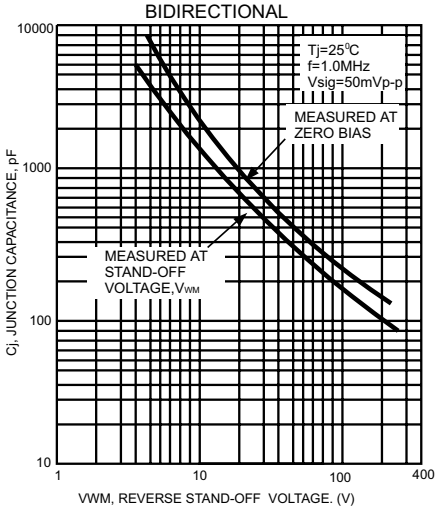
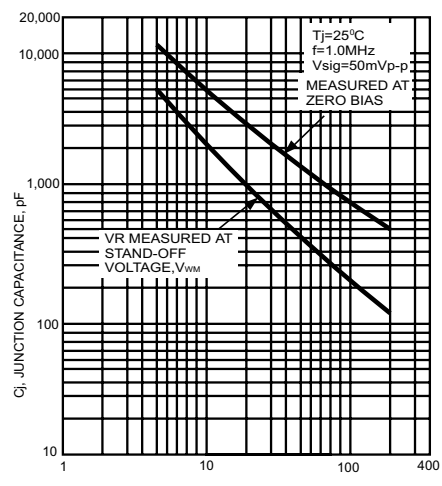


FIG.6- TYPICAL JUNCTION CAPACITANCE



ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device Type Modified "J" Bend Lead	Device Marking Code	Breakdown Voltage V(BR) (Volts) (Note 1) (MIN / MAX)	Test Current at I_T(mA)	Stand-off voltage V_{WM}(Volts)	Maximum Reverse Leakage at V_{WM} (Note 3) I_D(uA)	Maximum Peak Pulse Surge Current I_{PPM} (Note 2) (Amps)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
SMCJ5.0	GDD	6.40 / 7.3	10.0	5.0	1000	164.0	9.6
SMCJ5.0A	GDE	6.40 / 7.0	10.0	5.0	1000	171.0	9.2
SMCJ6.0	GDF	6.67 / 8.15	10.0	6.0	1000	138.0	11.4
SMCJ6.0A	GDG	6.67 / 7.37	10.0	6.0	1000	152.0	10.3
SMCJ6.5	GDH	7.22 / 8.82	10.0	6.5	500	128.0	12.3
SMCJ6.5A	GDK	7.22 / 7.98	10.0	6.5	500	140.0	11.2
SMCJ7.0	GDL	7.78 / 9.51	10.0	7.0	200	118.0	13.3
SMCJ7.0A	GDM	7.78 / 8.60	10.0	7.0	200	131.0	12.0
SMCJ7.5	GDN	8.33 / 10.3	1.0	7.5	100	110.0	14.3
SMCJ7.5A	GDP	8.33 / 9.21	1.0	7.5	100	122.0	12.9
SMCJ8.0	GDQ	8.89 / 10.9	1.0	8.0	50	105.0	15.0
SMCJ8.0A	GDR	8.89 / 9.83	1.0	8.0	50	115.0	13.6
SMCJ8.5	GDS	9.44 / 11.5	1.0	8.5	20	99.0	15.9
SMCJ8.5A	GDT	9.44 / 10.4	1.0	8.5	20	109.0	14.4
SMCJ9.0	GDU	10.0 / 12.2	1.0	9.0	10	93.0	16.9
SMCJ9.0A	GDV	10.0 / 11.1	1.0	9.0	10	102.0	15.4
SMCJ10	GDW	11.1 / 13.6	1.0	10.0	5.0	83.0	18.8
SMCJ10A	GDX	11.1 / 12.3	1.0	10.0	5.0	92.0	17.0
SMCJ11	GDY	12.2 / 14.9	1.0	11.0	5.0	78.0	20.1
SMCJ11A	GDZ	12.2 / 13.5	1.0	11.0	5.0	86.0	18.2
SMCJ12	GED	13.3 / 16.3	1.0	12.0	5.0	71.0	22.0
SMCJ12A	GEE	13.3 / 14.7	1.0	12.0	5.0	79.0	19.9
SMCJ13	GEF	14.4 / 17.6	1.0	13.0	5.0	66.0	23.8
SMCJ13A	GEG	14.4 / 15.9	1.0	13.0	5.0	73.0	21.5
SMCJ14	GEH	15.6 / 19.1	1.0	14.0	5.0	61.0	25.8
SMCJ14A	GEK	15.6 / 17.2	1.0	14.0	5.0	67.0	23.2
SMCJ15	GEL	16.7 / 20.4	1.0	15.0	5.0	58.0	26.9
SMCJ15A	GEM	16.7 / 18.5	1.0	15.0	5.0	64.0	24.4
SMCJ16	GEN	17.8 / 21.8	1.0	16.0	5.0	54.0	28.8
SMCJ16A	GEP	17.8 / 19.7	1.0	16.0	5.0	60.0	26.0
SMCJ17	GEQ	18.9 / 23.1	1.0	17.0	5.0	51.0	30.5
SMCJ17A	GER	18.9 / 20.9	1.0	17.0	5.0	57.0	27.6
SMCJ18	GES	20.0 / 24.4	1.0	18.0	5.0	48.0	32.2
SMCJ18A	GET	20.0 / 22.1	1.0	18.0	5.0	53.0	29.2
SMCJ20	GEU	22.2 / 27.1	1.0	20.0	5.0	43.0	35.8
SMCJ20A	GEV	22.2 /24.5	1.0	20.0	5.0	48.0	32.4
SMCJ22	GEW	24.4 / 29.8	1.0	22.0	5.0	39.0	39.4
SMCJ22A	GEX	24.4 / 26.9	1.0	22.0	5.0	44.0	35.5
SMCJ24	GEY	26.7 / 32.6	1.0	24.0	5.0	36.0	43.0
SMCJ24A	GEZ	26.7 / 29.5	1.0	24.0	5.0	40.0	38.9
SMCJ26	GFD	28.9 / 35.3	1.0	26.0	5.0	33.0	46.6
SMCJ26A	GFE	28.9 / 31.9	1.0	26.0	5.0	37.0	42.1
SMCJ28	GFF	31.1 / 38.0	1.0	28.0	5.0	31.0	50.0
SMCJ28A	GFG	31.1 / 34.4	1.0	28.0	5.0	34.0	45.4
SMCJ30	GFH	33.3 / 40.7	1.0	30.0	5.0	29.0	53.5
SMCJ30A	GFK	33.3 / 36.8	1.0	30.0	5.0	32.0	48.4
SMCJ33	GFL	36.7 / 44.9	1.0	33.0	5.0	26.0	59.0
SMCJ33A	GFM	36.7 / 40.6	1.0	33.0	5.0	29.0	53.3
SMCJ36	GFN	40.0 / 48.9	1.0	36.0	5.0	24.0	64.3
SMCJ36A	GFP	40.0 / 44.2	1.0	36.0	5.0	27.0	58.1
SMCJ40	GFQ	44.4 / 54.3	1.0	40.0	5.0	22.0	71.4
SMCJ40A	GFR	44.4 / 49.1	1.0	40.0	5.0	24.0	64.5
SMCJ43	GFS	47.8 / 58.4	1.0	43.0	5.0	20.0	76.7
SMCJ43A	GFT	47.8 / 52.8	1.0	43.0	5.0	22.0	69.4

ELECTRICAL CHARACTERISTICS (T_A=25^{O}C unless otherwise noted)

Device Type Modified "J" Bend Lead	Device Marking Code	Breakdown Voltage $V_{(BR)}$ (Volts) (Note 1) (MIN / MAX)	Test Current at I_T(mA)	Stand-off voltage V_{WM}(Volts)	Maximum Reverse Leakage at V_{WM} (Note 3) I_D(uA)	Maximum Peak Pulse Surge Current I_{PPM} (Note 2) (Amps)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
SMCJ45	GFU	50.0 / 61.1	1.0	45.0	5.0	19.0	80.3
SMCJ45A	GFV	50.0 / 55.3	1.0	45.0	5.0	21.0	72.7
SMCJ48	GFW	53.3 / 65.1	1.0	48.0	5.0	18.0	85.5
SMCJ48A	GFX	53.3 / 58.9	1.0	48.0	5.0	20.0	77.4
SMCJ51	GFY	56.7 / 69.3	1.0	51.0	5.0	17.0	91.1
SMCJ51A	GFZ	56.7 / 62.7	1.0	51.0	5.0	19.0	82.4
SMCJ54	GGD	60.0 / 73.3	1.0	54.0	5.0	16.0	96.3
SMCJ54A	GGE	60.0 / 66.3	1.0	54.0	5.0	18.0	87.1
SMCJ58	GGF	64.4 / 78.7	1.0	58.0	5.0	15.0	103.0
SMCJ58A	GGG	64.4 / 71.2	1.0	58.0	5.0	16.0	93.6
SMCJ60	GGH	66.7 / 81.5	1.0	60.0	5.0	14.0	107.0
SMCJ60A	GGK	66.7 / 73.7	1.0	60.0	5.0	16.0	96.8
SMCJ64	GGL	71.1 / 86.9	1.0	64.0	5.0	13.8	114.0
SMCJ64A	GGM	71.1 / 78.6	1.0	64.0	5.0	15.0	103.0
SMCJ70	GGN	77.8 / 95.1	1.0	70.0	5.0	12.6	125.0
SMCJ70A	GGP	77.8 / 86.0	1.0	70.0	5.0	13.9	113.0
SMCJ75	GGQ	83.3 / 102	1.0	75.0	5.0	11.7	134.0
SMCJ75A	GGR	83.3 / 92.1	1.0	75.0	5.0	13.0	121.0
MSJC78	GGS	86.7 / 106	1.0	78.0	5.0	11.3	139.0
SMCJ78A	GGT	86.7 / 95.8	1.0	78.0	5.0	12.5	126.0
SMCJ85	GGU	94.4 / 115	1.0	85.0	5.0	10.4	151.0
SMCJ85A	GGV	94.4 / 104	1.0	85.0	5.0	11.5	137.0
SMCJ90	GGW	100 / 122	1.0	90.0	5.0	9.8	160.0
SMCJ90A	GGX	100 / 111	1.0	90.0	5.0	10.7	146.0
SMCJ100	GGY	111 / 136	1.0	100.0	5.0	8.8	179.0
SMCJ100A	GGZ	111 / 123	1.0	100.0	5.0	9.7	162.0
SMCJ110	GHD	122 / 149	1.0	110.0	5.0	8.0	196.0
SMCJ110A	GHE	122 / 135	1.0	110.0	5.0	8.9	177.0
SMCJ120	GHF	133 / 163	1.0	120.0	5.0	7.3	214.0
SMCJ120A	GHG	133 / 147	1.0	120.0	5.0	8.1	193.0
SMCJ130	GHH	144 / 176	1.0	130.0	5.0	6.8	231.0
SMCJ130A	GHK	144 / 159	1.0	130.0	5.0	7.5	209.0
SMCJ150	GHL	167 / 204	1.0	150.0	5.0	5.8	268.0
SMCJ150A	GHM	167 / 185	1.0	150.0	5.0	6.4	243.0
SMCJ160	GHN	178 / 218	1.0	160.0	5.0	5.4	287.0
SMCJ160A	GHP	178 / 197	1.0	160.0	5.0	6.0	259.0
SMCJ170	GHQ	189 / 231	1.0	170.0	5.0	5.1	304.0
SMCJ170A	GHR	189 / 209	1.0	170.0	5.0	5.7	275.0

Notes:

1. $V_{(BR)}$ measured after I_T applied for 300us, I_T=Square wave pulse or equivalent.

2. Surge current waveform per Fig. 3 and derate per Figure 2.

3. For bidirectional types having V_{WM} of 10 Volts and less, the I_D limit is doubled

4. all terms and symbols are consistent with ANSI/IEEE C62.35