

# SMCJ SERIES

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS



### FEATURES

- \* For surface mount application
- \* Built-in strain relief
- \* Excellent clamping capability
- \* Low profile package
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_R$  less than  $1\mu A$  above 10V
- \* High temperature soldering guaranteed:  $260^\circ C / 10$  seconds at terminals

### MECHANICAL DATA

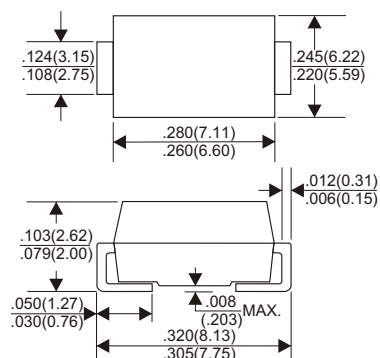
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end except Bidirectional
- \* Mounting position: Any
- \* Weight: 0.21 grams

### VOLTAGE RANGE

5.0 to 170 Volts

1500 Watts Peak Power

#### DO-214AB



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating  $25^\circ C$  ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ C$ , $T_P=1ms$ (NOTE 1)	$P_{PK}$	Minimum 1500	Watts
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	100	Amps
Maximum Instantaneous Forward Voltage at 35.0A for Unidirectional only	$V_F$	3.5	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

#### NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ C$  per Fig. 2.
2. Mounted on Copper Pad area of  $8.0mm^2$  (.013mm Thick) to each terminal.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

### DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types SMCJ5.0 thru SMCJ170.
2. Electrical characteristics apply in both directions.

## RATING AND CHARACTERISTIC CURVES (SMCJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

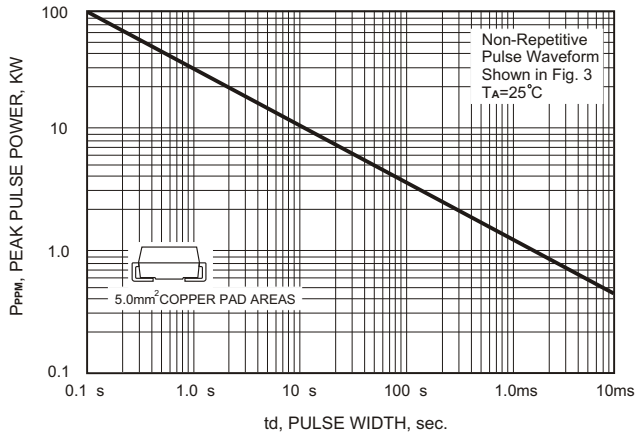


FIG.2-PULSE DERATING CURVE



FIG.3-PULSE WAVE FORM

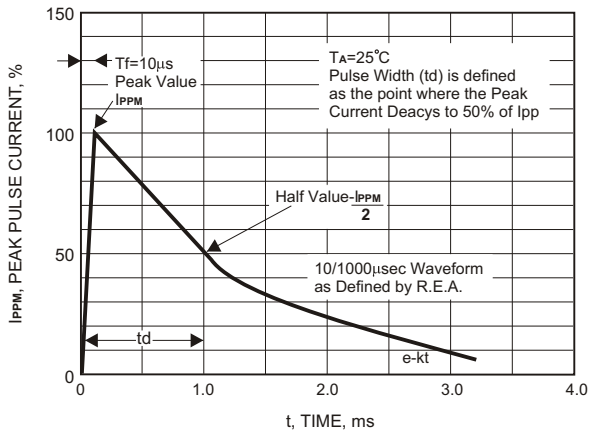


FIG.4-TYPICAL JUNCTION CAPACITANCE

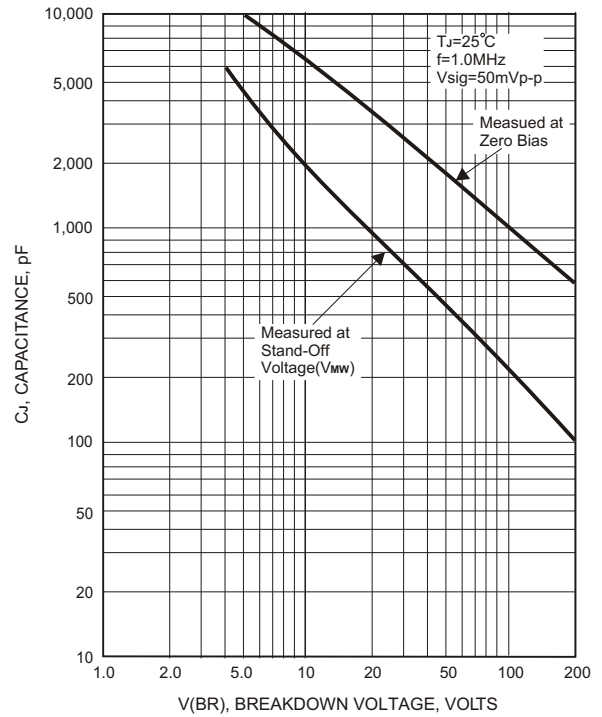


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



# 1500 Watt Surface Mount TVS

PART NUMBER ADD C FOR BI- DIRECTIONAL	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ VRWM IR(μA)	MARKING CODE	
								UNI	BI
SMCJ5.0(C)	5.0	6.40	7.55	10	9.6	156.2	1000	GDD	BDD
SMCJ5.0(C)A	5.0	6.40	7.25	10	9.2	163.0	1000	GDE	BDE
SMCJ6.0(C)	6.0	6.67	8.45	10	11.4	131.6	1000	GDF	BDF
SMCJ6.0(C)A	6.0	6.67	7.67	10	10.3	145.6	1000	GDG	BDG
SMCJ6.5(C)	6.5	7.22	9.14	10	12.3	122.0	500	GDH	BDH
SMCJ6.5(C)A	6.5	7.22	8.30	10	11.2	133.9	500	GDK	BDK
SMCJ7.0(C)	7.0	7.78	9.86	10	13.3	112.8	200	GDL	BDL
SMCJ7.0(C)A	7.0	7.78	8.95	10	12.0	125.0	200	GDM	BDM
SMCJ7.5(C)	7.5	8.33	10.67	1	14.3	104.9	100	GDN	BDN
SMCJ5.0(C)A	7.5	8.33	9.58	1	12.9	116.3	100	GDP	BDP
SMCJ8.0(C)	8.0	8.89	11.30	1	15.0	100.0	50	GDQ	BDQ
SMCJ8.0(C)A	8.0	8.89	10.23	1	13.6	110.3	50	GDR	BDR
SMCJ8.5(C)	8.5	9.44	11.92	1	15.9	94.3	25	GDS	BDS
SMCJ8.5(C)A	8.5	9.44	10.82	1	14.4	104.2	20	GDT	BDT
SMCJ9.0(C)	9.0	10.0	12.60	1	16.9	88.7	10	GDU	BDU
SMCJ9.0(C)A	9.0	10.0	11.50	1	15.4	97.4	10	GDV	BDV
SMCJ10(C)	10	11.1	14.10	1	18.8	79.8	5	GDW	BDW
SMCJ10(C)A	10	11.1	12.80	1	17.0	88.2	5	GDX	BDX
SMCJ11(C)	11	12.2	15.40	1	20.1	74.6	5	GDY	BDY
SMCJ11(C)A	11	12.2	14.00	1	18.2	82.4	5	GDZ	BDZ
SMCJ12(C)	12	13.3	16.90	1	22.0	68.2	5	GED	BED
SMCJ12(C)A	12	13.3	15.30	1	19.9	75.3	5	GEE	BEE
SMCJ13(C)	13	14.4	18.20	1	23.8	63.0	5	GEF	BEF
SMCJ13(C)A	13	14.4	16.50	1	21.5	69.7	5	GEG	BEG
SMCJ14(C)	14	15.6	19.80	1	25.8	58.1	5	GEH	BEH
SMCJ14(C)A	14	15.6	17.90	1	23.2	64.7	5	GEK	BEK
SMCJ15(C)	15	16.7	21.10	1	26.9	55.8	5	GEL	BEL
SMCJ15(C)A	15	16.7	19.20	1	24.4	61.5	5	GEM	BEM
SMCJ16(C)	16	17.8	22.60	1	28.8	52.1	5	GEN	BEN
SMCJ16(C)A	16	17.8	20.50	1	26.0	57.7	5	GEP	BEP
SMCJ17(C)	17	18.9	23.90	1	30.5	49.2	5	GEQ	BEQ
SMCJ17(C)A	17	18.9	21.70	1	27.6	53.3	5	GER	BER
SMCJ18(C)	18	20.0	25.30	1	32.2	46.6	5	GES	BES
SMCJ18(C)A	18	20.0	23.30	1	29.2	51.4	5	GET	BET
SMCJ20(C)	20	22.2	28.10	1	35.8	41.9	5	GEU	BEU
SMCJ20(C)A	20	22.2	25.50	1	32.4	46.3	5	GEV	BEV
SMCJ22(C)	22	24.4	30.90	1	39.4	38.1	5	GEW	BEW
SMCJ22(C)A	22	24.4	28.00	1	35.5	42.2	5	GEX	BEX
SMCJ24(C)	24	26.7	33.80	1	43.0	34.9	5	GEY	BEY
SMCJ24(C)A	24	26.7	30.70	1	38.9	38.6	5	GEZ	BEZ
SMCJ26(C)	26	28.9	36.60	1	46.6	32.2	5	GFD	BFD
SMCJ26(C)A	26	28.9	33.20	1	42.1	35.6	5	GFE	BFE
SMCJ28(C)	28	31.1	39.40	1	50.0	30.0	5	GFF	BFF
SMCJ28(C)A	28	31.1	35.80	1	45.4	33.0	5	GFG	BFG
SMCJ30(C)	30	33.3	42.20	1	53.5	28.0	5	GFH	BFH
SMCJ30(C)A	30	33.3	38.30	1	48.4	31.0	5	GFK	BFK
SMCJ33(C)	33	36.7	46.50	1	59.0	25.2	5	GFL	BFL
SMBJ33(C)A	33	36.7	42.20	1	53.3	28.1	5	GFM	BFM
SMCJ36(C)	36	40.0	50.70	1	64.3	23.3	5	GFN	BFN
SMCJ36(C)A	36	40.0	46.00	1	58.1	25.8	5	GFP	BFP
SMCJ40(C)	40	44.4	56.30	1	71.4	21.0	5	GFQ	BFQ
SMCJ40(C)A	40	44.4	51.10	1	64.5	23.2	5	GFR	BFR
SMCJ43(C)	43	47.8	60.50	1	76.7	19.6	5	GFS	BFS
SMCJ43(C)A	43	47.8	54.90	1	69.4	21.6	5	GFT	BFT
SMCJ45(C)	45	50.0	63.30	1	80.3	18.7	5	GFU	BFU
SMCJ45(C)A	45	50.0	57.50	1	72.7	20.6	5	GFV	BFV
SMCJ48(C)	48	53.3	67.50	1	85.5	17.5	5	GFW	BFW
SMCJ48(C)A	48	53.3	61.30	1	77.4	19.4	5	GFX	BFX
SMCJ51(C)	51	56.7	71.80	1	91.1	16.5	5	GFY	BFY
SMCJ51(C)A	51	56.7	65.20	1	82.4	18.2	5	GFZ	BFZ
SMCJ54(C)	54	60.0	76.00	1	96.3	15.6	5	GGD	BGD
SMCJ54(C)A	54	60.0	69.00	1	87.1	17.2	5	GGE	BGE
SMCJ58(C)	58	64.4	81.60	1	103	14.6	5	GGF	BGF
SMCJ58(C)A	58	64.4	74.10	1	93.6	16.0	5	GGG	BGG

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		MIN. @IT	MAX. @IT					UNI	BI
See Note 1									
SMCJ60(C)	60	66.7	84.5	1	107	14.0	5	GGH	BGH
SMCJ60(C)A	60	66.7	76.7	1	96.8	15.5	5	GGK	BGK
SMCJ64(C)	64	71.1	90.1	1	114	13.2	5	GGL	BGL
SMCJ64(C)A	64	71.1	81.8	1	103	14.6	5	GGM	BGM
SMCJ70(C)	70	77.8	98.6	1	125	12.0	5	GGN	BGN
SMCJ70(C)A	70	77.8	89.5	1	113	13.3	5	GGP	BGP
SMCJ75(C)	75	83.3	105.7	1	134	11.2	5	GGQ	BGQ
SMCJ75(C)A	75	83.3	95.8	1	121	12.4	5	GGR	BGR
SMCJ78(C)	78	86.7	109.8	1	139	10.8	5	GGS	BGS
SMCJ78(C)A	78	86.7	99.7	1	126	11.4	5	GGT	BGT
SMCJ85(C)	85	94.4	119.2	1	151	9.9	5	GGU	BGU
SMCJ85(C)A	85	94.4	108.2	1	137	10.4	5	GGV	BGV
SMCJ90(C)	90	100	126.5	1	160	9.4	5	GGW	BGW
SMCJ90(C)A	90	100	115.5	1	146	10.3	5	GGX	BGX
SMCJ100(C)	100	111	141.0	1	179	8.4	5	GGY	BGY
SMCJ100(C)A	100	111	128.0	1	162	9.3	5	GGZ	BGZ
SMCJ110(C)	110	122	154.5	1	196	7.7	5	GHD	BHD
SMCJ110(C)A	110	122	140.5	1	177	8.4	5	GHE	BHE
SMCJ120(C)	120	133	169.0	1	214	7.0	5	GHF	BHF
SMCJ120(C)A	120	133	153.0	1	193	7.9	5	GHG	BHG
SMCJ130(C)	130	144	182.5	1	231	6.5	5	GHH	BHH
SMCJ130(C)A	130	144	165.5	1	209	7.2	5	GHK	BHK
SMCJ150(C)	150	167	211.5	1	268	5.6	5	GHL	BHL
SMCJ150(C)A	150	167	192.5	1	243	6.2	5	GHM	BHM
SMCJ160(C)	160	178	226.0	1	287	5.2	5	GHN	BHN
SMCJ160(C)A	160	178	205.0	1	259	5.8	5	GHP	BHP
SMCJ170(C)	160	189	239.5	1	304	4.9	5	GHQ	BHQ
SMCJ170(C)A	170	189	217.5	1	275	5.5	5	GHR	BHR