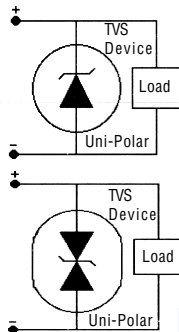


# 5.0V to 170V SMD TRANSIENT VOLTAGE SUPPRESSORS

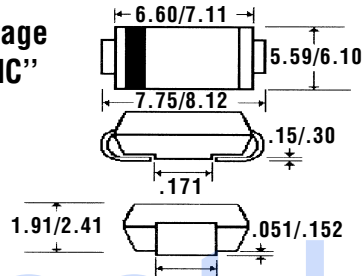
**SMCJ5.0...170**

## Description



## Mechanical Dimensions

Package  
"SMC"



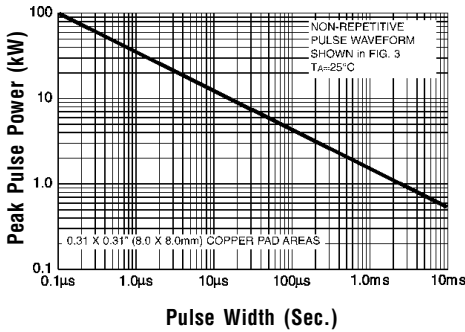
## Features

- 1500 WATT PEAK POWER PROTECTION
- EXCELLENT CLAMPING CAPABILITY
- FAST RESPONSE TIME
- TYPICAL  $I_R < 1\mu A$  ABOVE 10V
- GLASS PASSIVATED CHIP CONSTRUCTION
- MEETS UL SPECIFICATION 94V-0

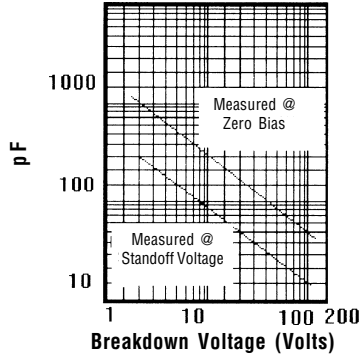
Electrical Characteristics @ 25°C.	SMCJ5.0...170	Units
<b>Maximum Ratings</b>		
Peak Power Dissipation... $P_{PK}$ $T_p = 1mS$ (Note 5)	1500 Min.	Watts
Steady State Power Dissipation... $P_D$ @ $T_T = 75^\circ C$ (Note 2)	5	Watts
Non-Repetitive Peak Forward Surge Current... $I_{FSM}$ @ Rated Load Conditions, 8.3 mS, 1/2 Sine Wave, Single Phase (Note 3)	100	Amps
Weight... $G_{RM}$	0.20	Grams
Soldering Requirements (Time & Temp)... $S_T$ @ 250°C	11 Sec.	Min. to Solder
Operating & Storage Temperature Range... $T_J, T_{STRG}$	-65 to 175	°C

- NOTES:**
- For Bi-Directional Applications, Use C or CA. Electrical Characteristics Apply in Both Directions.
  - Mounted on 8mm Copper Pads to Each Terminal.
  - 8.3 mS, 1/2 Sine Wave, Single Phase Duty Cycle, @ 4 Pulses Per Minute Maximum.
  - $V_{BR}$  Measured After It Applies for 300 uS.  $I_T =$  Square Wave Pulse or Equivalent.
  - Non-Repetitive Current Pulse. Per Fig. 3 and Derated Above  $T_A = 25^\circ C$  per Fig. 2.

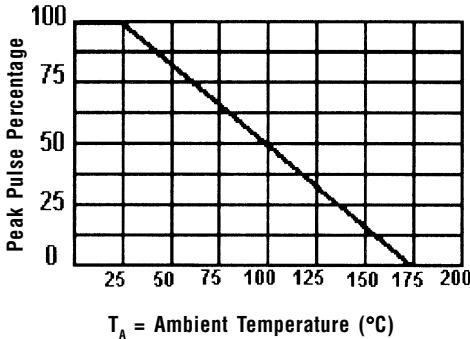
**Fig. 1 Pulse Rating Curve**



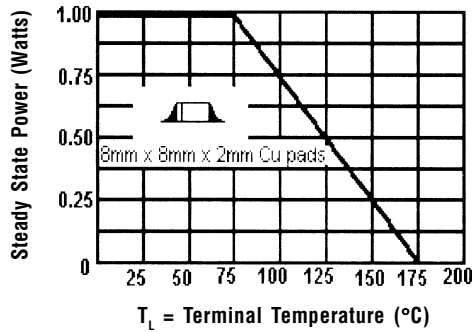
**Fig. 4 Typical Junction Capacitance**



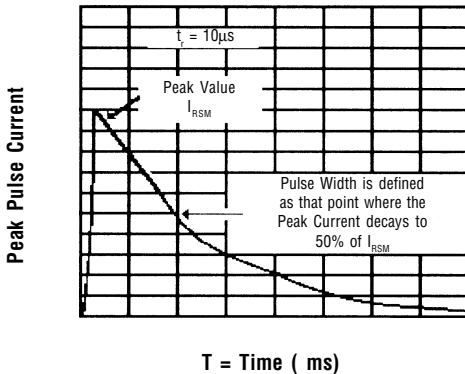
**Fig. 2 Pulse Derating Curve**



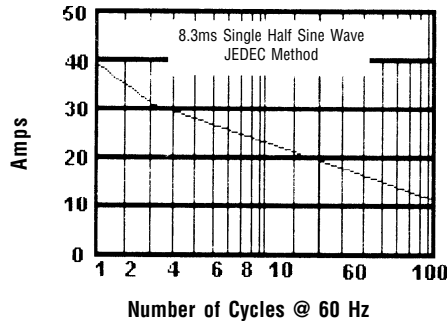
**Fig. 5 Steady State Power Derating**



**Fig. 3 Pulse Waveform**



**Fig. 6 Maximum Non-Repetitive Surge Current**



Ratings at 25 Deg. C ambient temperature unless otherwise specified.

Single Phase Half Wave, 60 HZ Resistive or Inductive Load.

For Capacitive Load, Derate Current by 20%.

# 5.0V to 170V SMD TRANSIENT VOLTAGE SUPPRESSORS

**SMCJ5.0...170**

DEVICE	Breakdown Voltage			Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Leakage @ $V_{RWM}$ $I_R$ ( $\mu$ A)	Peak Pulse Current $I_{PP}$ (A) (Note 2)	Maximum Clamping Voltage @ $I_{PP}$ $V_C$ (V)	Maximum Temperature Coefficient of $V_{BR}$ % / $^{\circ}$ C	Case Marking
	$V_{BR}$ Volts (Note 1)		@ $I_T$ (mA)						
	Min.	Max.							
SMCJ5.0	6.40	7.55	10.00	5.00	1000	156.2	9.60	0.061	GDD
SMCJ5.0A	6.40	7.25	10.00	5.00	1000	163.0	9.20	0.061	GDE
SMCJ6.0	6.67	8.45	10.00	6.00	1000	131.6	11.40	0.065	GDF
SMCJ6.0A	6.67	7.67	10.00	6.00	1000	145.6	10.30	0.065	GDG
SMCJ6.5	7.22	9.14	10.00	6.50	500	122.0	12.30	0.068	GDH
SMCJ6.5A	7.22	8.30	10.00	6.50	500	133.9	11.20	0.068	GDK
SMCJ7.0	7.78	9.86	10.00	7.00	200	112.8	13.30	0.073	GDL
SMCJ7.0A	7.78	8.95	10.00	7.00	200	125.0	12.00	0.073	GDM
SMCJ7.5	8.33	10.67	1.00	7.50	100	104.9	14.30	0.075	GDN
SMCJ7.5A	8.33	9.58	1.00	7.50	100	116.3	12.90	0.075	GDP
SMCJ8.0	8.89	11.30	1.00	8.00	50.00	100.0	15.00	0.076	GDQ
SMCJ8.0A	8.89	10.20	1.00	8.00	50.00	110.3	13.60	0.078	GDR
SMCJ8.5	9.44	11.90	1.00	8.50	20.00	95.3	15.90	0.081	GDS
SMCJ8.5A	9.44	10.80	1.00	8.50	20.00	104.2	14.40	0.081	GDT
SMCJ9.0	10.00	12.60	1.00	9.00	10.00	88.7	16.90	0.084	GDU
SMCJ9.0A	10.00	11.50	1.00	9.00	10.00	97.4	15.40	0.084	GDV
SMCJ10	11.10	11.50	1.00	10.00	5.00	79.8	18.80	0.086	GDW
SMCJ10A	11.10	13.50	1.00	10.00	5.00	88.2	17.00	0.086	GDX
SMCJ11	12.20	15.40	1.00	11.00	5.00	74.6	20.10	0.088	GDY
SMCJ11A	12.20	14.00	1.00	11.00	5.00	82.4	18.20	0.088	GDZ
SMCJ12	13.30	16.90	1.00	12.00	5.00	68.2	22.00	0.090	GED
SMCJ12A	13.30	15.30	1.00	12.00	5.00	75.3	19.90	0.090	GEE
SMCJ13	14.40	18.20	1.00	13.00	5.00	63.0	23.80	0.092	GEF
SMCJ13A	14.40	16.50	1.00	13.00	5.00	69.7	21.50	0.092	GEG
SMCJ14	15.60	19.80	1.00	14.00	5.00	58.1	25.80	0.094	GEH
SMCJ14A	15.60	17.90	1.00	14.00	5.00	64.7	23.20	0.094	GEK
SMCJ15	16.70	21.10	1.00	15.00	5.00	55.8	26.90	0.096	GEL
SMCJ15A	16.70	19.20	1.00	15.00	5.00	61.5	24.40	0.096	GEM
SMCJ16	17.80	22.60	1.00	16.00	5.00	52.1	28.80	0.097	GEN
SMCJ16A	17.80	20.50	1.00	16.00	5.00	57.7	26.00	0.097	GEP
SMCJ17	18.90	23.90	1.00	17.00	5.00	49.2	30.50	0.098	GEQ
SMCJ17A	18.90	21.70	1.00	17.00	5.00	53.3	27.60	0.098	GER
SMCJ18	20.00	25.30	1.00	18.00	5.00	46.6	32.20	0.099	GES
SMCJ18A	20.00	25.30	1.00	18.00	5.00	51.4	29.20	0.099	GET
SMCJ20	22.20	28.10	1.00	20.00	5.00	41.9	35.80	0.100	GEU
SMCJ20A	22.20	25.50	1.00	20.00	5.00	46.3	32.40	0.100	GEV
SMCJ22	24.40	30.90	1.00	22.00	5.00	38.1	39.40	0.101	GEW
SMCJ22A	24.40	28.00	1.00	22.00	5.00	42.2	35.50	0.101	GEX
SMCJ24	26.70	33.80	1.00	24.00	5.00	34.9	43.00	0.101	GEY
SMCJ24A	26.70	30.70	1.00	24.00	5.00	38.6	38.90	0.101	GEZ
SMCJ26	28.90	36.60	1.00	26.00	5.00	32.2	46.60	0.102	GFD
SMCJ26A	28.90	33.20	1.00	26.00	5.00	35.6	42.10	0.102	GFE

# 5.0V to 170V GPP TRANSIENT VOLTAGE SUPPRESSORS

**SMCJ5.0 . . . 170**

DEVICE	Breakdown Voltage			Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Leakage @ $V_{RWM}$ $I_R$ ( $\mu$ A)	Peak Pulse Current $I_{PP}$ (A) (Note 2)	Maximum Clamping Voltage @ $I_{PP}$ $V_C$ (V)	Maximum Temperature Coefficient of $V_{BR}$ % / $^{\circ}$ C	Case Marking
	$V_{BR}$ Volts (Note 1)		@ $I_T$ (mA)						
	Min.	Max.							
SMCJ28	31.10	39.40	1.00	28.00	5.00	30.0	50.10	0.104	GFF
SMCJ28A	31.10	35.80	1.00	28.00	5.00	33.0	45.40	0.104	GFG
SMCJ30	33.30	42.20	1.00	30.00	5.00	28.0	53.50	0.104	GFH
SMCJ30A	33.30	38.30	1.00	30.00	5.00	31.0	48.40	0.104	GFK
SMCJ33	36.70	46.50	1.00	33.00	5.00	25.2	59.00	0.104	GFL
SMCJ33A	36.70	42.20	1.00	33.00	5.00	28.1	53.30	0.104	GFM
SMCJ36	40.00	50.70	1.00	36.00	5.00	23.3	64.30	0.104	GFN
SMCJ36A	40.00	46.00	1.00	36.00	5.00	25.8	58.10	0.104	GFP
SMCJ40	44.40	56.30	1.00	40.00	5.00	21.0	71.40	0.104	GFQ
SMCJ40A	44.40	51.10	1.00	40.00	5.00	23.2	64.50	0.104	GFR
SMCJ43	47.80	60.50	1.00	43.00	5.00	19.6	76.70	0.104	GFS
SMCJ43A	47.80	54.90	1.00	43.00	5.00	21.6	69.40	0.104	GFT
SMCJ45	50.00	63.30	1.00	45.00	5.00	18.7	80.30	0.104	GFU
SMCJ45A	50.00	57.50	1.00	45.00	5.00	20.6	72.70	0.104	GFV
SMCJ48	53.30	67.50	1.00	48.00	5.00	17.5	85.50	0.104	GFW
SMCJ48A	53.30	61.30	1.00	48.00	5.00	19.4	77.40	0.104	GFX
SMCJ51	56.70	71.80	1.00	51.00	5.00	18.5	91.10	0.104	GFY
SMCJ51A	56.70	65.20	1.00	51.00	5.00	18.2	82.40	0.104	GFZ
SMCJ54	60.00	76.00	1.00	54.00	5.00	15.6	96.30	0.104	GGD
SMCJ54A	60.00	69.00	1.00	54.00	5.00	17.2	87.10	0.104	GGE
SMCJ58	64.40	81.60	1.00	58.00	5.00	14.6	103.00	0.104	GGF
SMCJ58A	64.40	74.10	1.00	58.00	5.00	16.0	93.60	0.104	GGG
SMCJ60	66.70	84.50	1.00	60.00	5.00	14.0	107.00	0.104	GGH
SMCJ60A	66.70	76.70	1.00	60.00	5.00	15.5	96.80	0.104	GGK
SMCJ64	71.10	90.10	1.00	64.00	5.00	13.2	114.00	0.104	GGL
SMCJ64A	71.10	81.80	1.00	64.00	5.00	14.6	103.00	0.104	GGM
SMCJ70	77.80	98.60	1.00	70.00	5.00	12.0	125.00	0.104	GGN
SMCJ70A	77.80	89.50	1.00	70.00	5.00	13.3	113.00	0.104	GGP
SMCJ75	83.30	105.70	1.00	75.00	5.00	11.2	134.00	0.104	GGQ
SMCJ75A	83.30	95.80	1.00	75.00	5.00	12.4	121.00	0.104	GGR
SMCJ78	86.70	109.90	1.00	78.00	5.00	10.8	139.00	0.104	GGS
SMCJ78A	86.70	99.70	1.00	78.00	5.00	11.4	126.00	0.104	GGT
SMCJ85	94.40	119.20	1.00	85.00	5.00	9.9	151.00	0.104	GGU
SMCJ85A	94.40	108.20	1.00	85.00	5.00	10.4	137.00	0.104	GGV
SMCJ90	100.00	126.50	1.00	90.00	5.00	9.4	160.00	0.104	GGW
SMCJ90A	100.00	115.50	1.00	90.00	5.00	10.3	146.00	0.104	GGX
SMCJ100	111.00	141.00	1.00	100.00	5.00	8.4	179.00	0.104	GGY
SMCJ100A	111.00	128.00	1.00	100.00	5.00	9.3	162.00	0.104	GGZ
SMCJ110	122.00	154.50	1.00	110.00	5.00	7.7	196.00	0.104	GHD
SMCJ110A	122.00	140.50	1.00	110.00	5.00	8.4	177.00	0.104	GHE
SMCJ120	133.00	169.00	1.00	120.00	5.00	7.0	214.00	0.104	GHF
SMCJ120A	133.00	153.00	1.00	120.00	5.00	7.9	193.00	0.104	GHG
SMCJ130	144.00	182.50	1.00	130.00	5.00	6.5	231.00	0.104	GHH
SMCJ130A	144.00	165.50	1.00	130.00	5.00	7.2	209.00	0.104	GHK
SMCJ150	167.00	211.50	1.00	150.00	5.00	5.6	268.00	0.104	GHL
SMCJ150A	167.00	192.50	1.00	150.00	5.00	6.2	243.00	0.104	GHM
SMCJ160	178.00	226.00	1.00	160.00	5.00	5.2	287.00	0.104	GHN
SMCJ160A	178.00	205.00	1.00	160.00	5.00	5.8	259.00	0.104	GHP
SMCJ170	189.00	239.50	1.00	170.00	5.00	4.9	304.00	0.104	GHQ
SMCJ170A	189.00	217.50	1.00	170.00	5.00	5.5	275.00	0.104	GHR