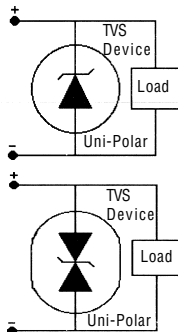


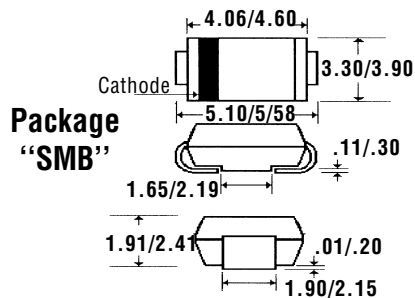
# 5.0V to 170V SMD TRANSIENT VOLTAGE SUPPRESSORS

**SMBJ5.0...170**

## Description



## Mechanical Dimensions



## Features

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

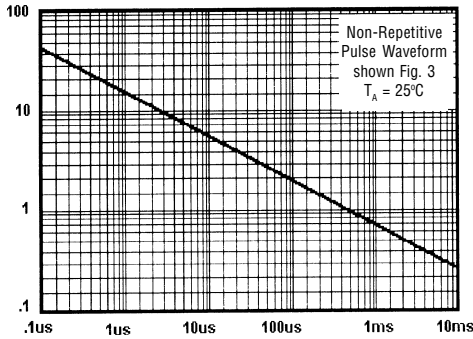
Electrical Characteristics @ 25°C.	SMBJ5.0...170	Units
<b>Maximum Ratings</b>		
Peak Power Dissipation... $P_{PK}$ $T_p = 1mS$ (Note 5)	600 Min.	Watts
Steady State Power Dissipation... $P_D$ @ $T_T = 75^\circ C$ (Note 2)	5	Watts
Non-Repetitive Peak Forward Surge Current... $I_{FSM}$ @ Rated Load Conditions, 8.3 mS, ½ Sine Wave, Single Phase (Note 3)	100	Amps
Weight... $G_{RM}$	0.12	Grams
Soldering Requirements (Time & Temp)... $S_T$ @ 250°C	10 Sec.	Min. to Solder
Operating & Storage Temperature Range... $T_J, T_{STRG}$	-65 to 175	°C

- NOTES:**
1. For Bi-Directional Applications, Use C or CA. Electrical Characteristics Apply in Both Directions.
  2. Mounted on 8mm Copper Pads to Each Terminal.
  3. 8.3 mS, ½ Sine Wave, Single Phase Duty Cycle, @ 4 Pulses Per Minute Maximum.
  4.  $V_{BR}$  Measured After It Applies for 300  $\mu S$ .  $I_T =$  Square Wave Pulse or Equivalent.
  5. Non-Repetitive Current Pulse. Per Fig. 3 and Derated Above  $T_A = 25^\circ C$  per Fig. 2.

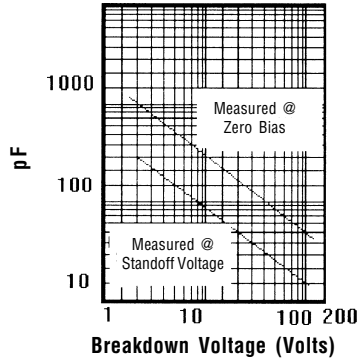
# 5.0V to 170V SMD TRANSIENT VOLTAGE SUPPRESSORS

**SMBJ5.0...170**

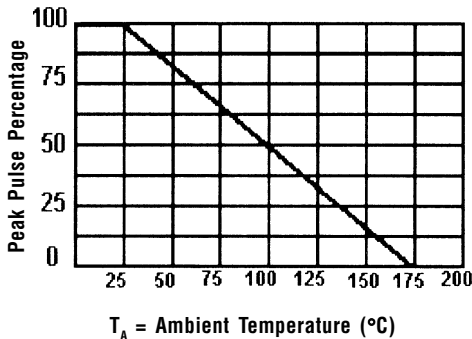
**Fig. 1 Pulse Rating Curve**



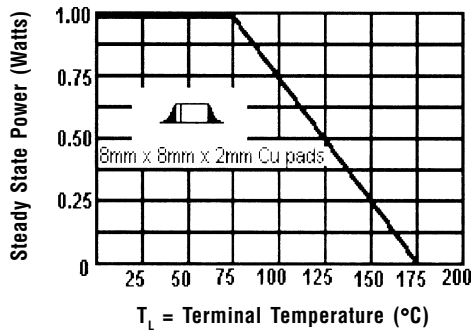
**Fig. 4 Typical Junction Capacitance**



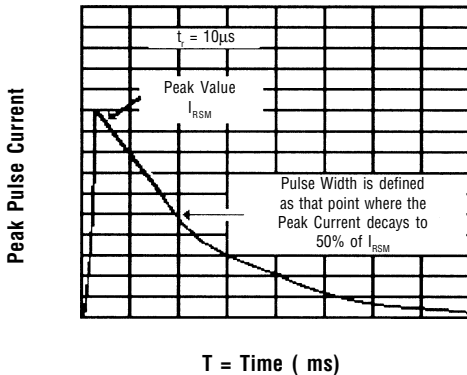
**Fig. 2 Pulse Derating Curve**



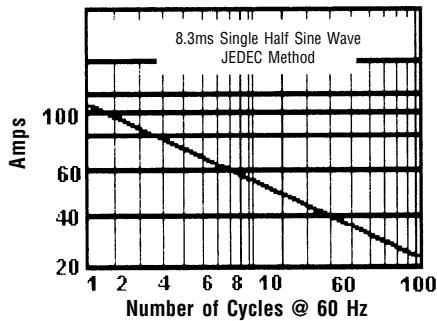
**Fig. 5 Steady State Power Derating**



**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

**SMBJ5.0...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.							
SMBJ5.0	6.40	7.55	10.00	5.00	800	62.50	9.60	0.061	KD
SMBJ5.0A	6.40	7.25	10.00	5.00	800	65.20	9.20	0.061	KE
SMBJ6.0	6.67	8.45	10.00	6.00	800	52.60	11.40	0.065	KF
SMBJ6.0A	6.67	7.67	10.00	6.00	800	58.30	10.30	0.065	KG
SMBJ6.5	7.22	9.14	10.00	6.50	500	48.70	12.30	0.068	KH
SMBJ6.5A	7.22	8.30	10.00	6.50	500	53.60	11.20	0.068	KK
SMBJ7.0	7.78	9.86	10.00	7.00	200	45.10	13.30	0.073	KL
SMBJ7.0A	7.78	8.95	10.00	7.00	200	50.00	12.00	0.073	KM
SMBJ7.5	8.33	10.67	1.00	7.50	100	42.00	14.30	0.075	KN
SMBJ7.5A	8.33	9.58	1.00	7.50	100	46.50	12.90	0.075	KP
SMBJ8.0	8.89	11.30	1.00	8.00	50.00	40.00	15.00	0.076	KQ
SMBJ8.0A	8.89	10.20	1.00	8.00	50.00	44.10	13.60	0.078	KR
SMBJ8.5	9.44	11.90	1.00	8.50	20.00	37.70	15.90	0.081	KS
SMBJ8.5A	9.44	10.80	1.00	8.50	20.00	41.70	14.40	0.081	KT
SMBJ9.0	10.00	12.60	1.00	9.00	10.00	35.50	16.90	0.084	KU
SMBJ9.0A	10.00	11.50	1.00	9.00	10.00	39.00	15.40	0.084	KV
SMBJ10	11.10	11.50	1.00	10.00	5.00	31.90	18.80	0.086	KW
SMBJ10A	11.10	13.50	1.00	10.00	5.00	35.30	17.00	0.086	KX
SMBJ11	12.20	15.40	1.00	11.00	5.00	29.90	20.10	0.088	KY
SMBJ11A	12.20	14.00	1.00	11.00	5.00	33.00	18.20	0.088	KZ
SMBJ12	13.30	16.90	1.00	12.00	5.00	27.30	22.00	0.090	LD
SMBJ12A	13.30	15.30	1.00	12.00	5.00	30.20	19.90	0.090	LE
SMBJ13	14.40	18.20	1.00	13.00	5.00	25.20	23.80	0.092	LF
SMBJ13A	14.40	16.50	1.00	13.00	5.00	27.90	21.50	0.092	LG
SMBJ14	15.60	19.80	1.00	14.00	5.00	23.30	25.80	0.094	LH
SMBJ14A	15.60	17.90	1.00	14.00	5.00	25.80	23.20	0.094	LJ
SMBJ15	16.70	21.10	1.00	15.00	5.00	22.30	26.90	0.096	LK
SMBJ15A	16.70	19.20	1.00	15.00	5.00	24.00	24.40	0.096	LM
SMBJ16	17.80	22.60	1.00	16.00	5.00	20.80	28.80	0.097	LN
SMBJ16A	17.80	20.50	1.00	16.00	5.00	23.10	26.00	0.097	LP
SMBJ17	18.90	23.90	1.00	17.00	5.00	19.70	30.50	0.098	LQ
SMBJ17A	18.90	21.70	1.00	17.00	5.00	21.70	27.60	0.098	LR
SMBJ18	20.00	25.30	1.00	18.00	5.00	18.60	32.20	0.099	LS
SMBJ18A	20.00	25.30	1.00	18.00	5.00	20.50	29.20	0.099	LT
SMBJ20	22.20	28.10	1.00	20.00	5.00	16.70	35.80	0.100	LU
SMBJ20A	22.20	25.50	1.00	20.00	5.00	18.50	32.40	0.100	LV
SMBJ22	24.40	30.90	1.00	22.00	5.00	15.20	39.40	0.101	LW
SMBJ22A	24.40	28.00	1.00	22.00	5.00	16.90	35.50	0.101	LX
SMBJ24	26.70	33.80	1.00	24.00	5.00	14.00	43.00	0.101	LY
SMBJ24A	26.70	30.70	1.00	24.00	5.00	15.40	38.90	0.101	LZ
SMBJ26	28.90	36.60	1.00	26.00	5.00	12.40	46.60	0.102	MD
SMBJ26A	28.90	33.20	1.00	26.00	5.00	14.20	42.10	0.102	ME

# 5.0V to 170V GPP TRANSIENT VOLTAGE SUPPRESSORS

**SMBJ5.0...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 $V_{BR}$ % / °C	Case Marking
	$V_{BR}$ Volts (Note 1)		@ $I_T$ (mA)						
	Min.	Max.							
SMBJ28	31.10	39.40	1.00	28.00	5.00	12.00	50.10	0.104	MF
SMBJ28A	31.10	35.80	1.00	28.00	5.00	13.20	45.40	0.104	MG
SMBJ30	33.30	42.20	1.00	30.00	5.00	11.20	53.50	0.104	MH
SMBJ30A	33.30	38.30	1.00	30.00	5.00	12.40	48.40	0.104	MK
SMBJ33	36.70	46.50	1.00	33.00	5.00	10.20	59.00	0.104	ML
SMBJ33A	36.70	42.20	1.00	33.00	5.00	11.30	53.30	0.104	MM
SMBJ36	40.00	50.70	1.00	36.00	5.00	9.30	64.30	0.104	MN
SMBJ36A	40.00	46.00	1.00	36.00	5.00	10.30	58.10	0.104	MP
SMBJ40	44.40	56.30	1.00	40.00	5.00	8.40	71.40	0.104	MQ
SMBJ40A	44.40	51.10	1.00	40.00	5.00	9.30	64.50	0.104	MR
SMBJ43	47.80	60.50	1.00	43.00	5.00	7.80	76.70	0.104	MS
SMBJ43A	47.80	54.90	1.00	43.00	5.00	8.60	69.40	0.104	MT
SMBJ45	50.00	63.30	1.00	45.00	5.00	7.50	80.30	0.104	MU
SMBJ45A	50.00	57.50	1.00	45.00	5.00	8.30	72.70	0.104	MV
SMBJ48	53.30	67.50	1.00	48.00	5.00	7.00	85.50	0.104	MW
SMBJ48A	53.30	61.30	1.00	48.00	5.00	7.70	77.40	0.104	MX
SMBJ51	56.70	71.80	1.00	51.00	5.00	6.60	91.10	0.104	MY
SMBJ51A	56.70	65.20	1.00	51.00	5.00	7.30	82.40	0.104	MZ
SMBJ54	60.00	76.00	1.00	54.00	5.00	6.20	96.30	0.104	ND
SMBJ54A	60.00	69.00	1.00	54.00	5.00	6.90	87.10	0.104	NE
SMBJ58	64.40	81.60	1.00	58.00	5.00	5.80	103.00	0.104	NF
SMBJ58A	64.40	74.10	1.00	58.00	5.00	6.40	93.60	0.104	NG
SMBJ60	66.70	84.50	1.00	60.00	5.00	5.60	107.00	0.104	NH
SMBJ60A	66.70	76.70	1.00	60.00	5.00	6.20	96.80	0.104	NK
SMBJ64	71.10	90.10	1.00	64.00	5.00	5.30	114.00	0.104	NL
SMBJ64A	71.10	81.80	1.00	64.00	5.00	5.80	103.00	0.104	NM
SMBJ70	77.80	98.60	1.00	70.00	5.00	4.80	125.00	0.104	NN
SMBJ70A	77.80	89.50	1.00	70.00	5.00	5.30	113.00	0.104	NP
SMBJ75	83.30	105.70	1.00	75.00	5.00	4.50	134.00	0.104	NQ
SMBJ75A	83.30	95.80	1.00	75.00	5.00	4.90	121.00	0.104	NR
SMBJ78	86.70	109.90	1.00	78.00	5.00	4.30	139.00	0.104	NS
SMBJ78A	86.70	99.70	1.00	78.00	5.00	4.70	126.00	0.104	NT
SMBJ85	94.40	119.20	1.00	85.00	5.00	3.90	151.00	0.104	NU
SMBJ85A	94.40	108.20	1.00	85.00	5.00	4.40	137.00	0.104	NV
SMBJ90	100.00	126.50	1.00	90.00	5.00	3.80	160.00	0.104	NW
SMBJ90A	100.00	115.50	1.00	90.00	5.00	4.10	146.00	0.104	NX
SMBJ100	111.00	141.00	1.00	100.00	5.00	3.40	179.00	0.104	NY
SMBJ100A	111.00	128.00	1.00	100.00	5.00	3.70	162.00	0.104	NZ
SMBJ110	122.00	154.50	1.00	110.00	5.00	3.00	196.00	0.104	PD
SMBJ110A	122.00	140.50	1.00	110.00	5.00	3.40	177.00	0.104	PE
SMBJ120	133.00	169.00	1.00	120.00	5.00	2.80	214.00	0.104	PF
SMBJ120A	133.00	153.00	1.00	120.00	5.00	3.10	193.00	0.104	PG
SMBJ130	144.00	182.50	1.00	130.00	5.00	2.60	231.00	0.104	PH
SMBJ130A	144.00	165.50	1.00	130.00	5.00	2.90	209.00	0.104	PK
SMBJ150	167.00	211.50	1.00	150.00	5.00	2.20	268.00	0.104	PL
SMBJ150A	167.00	192.50	1.00	150.00	5.00	2.50	243.00	0.104	PM
SMBJ160	178.00	226.00	1.00	160.00	5.00	2.10	287.00	0.104	PN
SMBJ160A	178.00	205.00	1.00	160.00	5.00	2.30	259.00	0.104	PP
SMBJ170	189.00	239.50	1.00	170.00	5.00	2.00	304.00	0.104	PQ
SMBJ170A	189.00	217.50	1.00	170.00	5.00	2.00	275.00	0.104	PR