SMBJ 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 A above 10V
* High temperature soldering guaranteed: 260°C / 10 seconds at terminals

MECHANICAL DATA

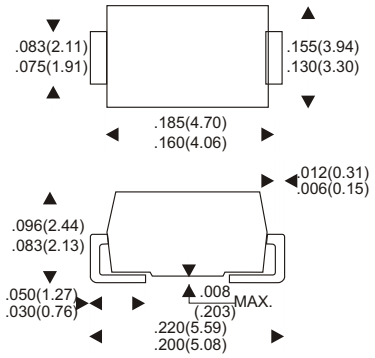
* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Lead: Solderable per MIL-STD-202, method 208 guranteed
* Polarity: Color band denotes cathode end except Bidirectional
* Mounting position: Any
* Weight: 0.093 grams

VOLTAGE RANGE

5.0 to 188 Volts

600 Watts Peak Power

DO-214AA(SMB)



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature uniess otherwies 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°C, T_P=1ms(NOTE 1)	P_{PK}	Minimum 600	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 Instantenous 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	°C

NOTES:
1. Non-repetitive current pulse per Fig. 3 and derated above T_A=25°C per Fig. 2.
2. Mounted on Copper Pad area of 5.0mm²(.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 SMBJ5.0 thru SMBJ170.
2. Electrical characteristics apply in both directions.

ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

DEVICE TYPE	Breakdown Voltage @ I_T (1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ I_{PPM}
	V_{BR} (V)		I_T	V_{WM}	I_R	I_{PPM}	V_C
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)
SMBJ5.0A(CA)	6.40	7.07	10	5.0	800	65.2	9.2
SMBJ6.0A(CA)	6.67	7.37	10	6.0	800	58.3	10.3
SMBJ6.5A(CA)	7.22	7.98	10	6.5	500	53.6	11.2
SMBJ7.0A(CA)	7.78	8.6	10	7.0	200	50.0	12.0
SMBJ7.5A(CA)	8.33	9.21	1.0	7.5	100	46.5	12.9
SMBJ8.0A(CA)	8.89	9.83	1.0	8.0	50	44.1	13.6
SMBJ8.5A(CA)	9.44	10.4	1.0	8.5	20	41.7	14.4
SMBJ9.0A(CA)	10.0	11.1	1.0	9.0	10	39.0	15.4
SMBJ10A(CA)	11.1	12.3	1.0	10	5.0	35.3	17.0
SMBJ11A(CA)	12.2	13.5	1.0	11	5.0	33.0	18.2
SMBJ12A(CA)	13.3	14.7	1.0	12	5.0	30.2	19.9
SMBJ13A(CA)	14.4	15.9	1.0	13	1.0	27.9	21.5
SMBJ14A(CA)	15.6	17.2	1.0	14	1.0	25.9	23.2
SMBJ15A(CA)	16.7	18.5	1.0	15	1.0	24.6	24.4
SMBJ16A(CA)	17.8	19.7	1.0	16	1.0	23.1	26.0
SMBJ17A(CA)	18.9	20.9	1.0	17	1.0	21.7	27.6
SMBJ18A(CA)	20.0	22.1	1.0	18	1.0	20.5	29.2
SMBJ20A(CA)	22.2	24.5	1.0	20	1.0	18.5	32.4
SMBJ22A(CA)	24.4	26.9	1.0	22	1.0	16.9	35.5
SMBJ24A(CA)	26.7	29.5	1.0	24	1.0	15.4	38.9
SMBJ26A(CA)	28.9	31.9	1.0	26	1.0	14.3	42.1
SMBJ28A(CA)	31.1	34.4	1.0	28	1.0	13.2	45.4
SMBJ30A(CA)	33.3	36.8	1.0	30	1.0	12.4	48.4
SMBJ33A(CA)	36.7	40.6	1.0	33	1.0	11.3	53.3
SMBJ36A(CA)	40.0	44.2	1.0	36	1.0	10.3	58.1
SMBJ40A(CA)	44.4	49.1	1.0	40	1.0	9.3	64.5
SMBJ43A(CA)	47.8	52.8	1.0	43	1.0	8.6	69.4
SMBJ45A(CA)	50.0	55.3	1.0	45	1.0	8.3	72.7
SMBJ48A(CA)	53.3	58.9	1.0	48	1.0	7.8	77.4
SMBJ51A(CA)	56.7	62.7	1.0	51	1.0	7.3	82.4
SMBJ54A(CA)	60.0	66.3	1.0	54	1.0	6.9	87.1
SMBJ58A(CA)	64.4	71.2	1.0	58	1.0	6.4	93.6
SMBJ60A(CA)	66.7	73.7	1.0	60	1.0	6.2	96.8
SMBJ64A(CA)	71.1	78.6	1.0	64	1.0	5.8	103
SMBJ70A(CA)	77.8	86	1.0	70	1.0	5.3	113
SMBJ75A(CA)	83.3	92.1	1.0	75	1.0	5.0	121
SMBJ78A(CA)	86.7	95.8	1.0	78	1.0	4.8	126
SMBJ85A(CA)	94.4	104	1.0	85	1.0	4.4	137
SMBJ90A(CA)	100	111	1.0	90	1.0	4.1	146
SMBJ100A(CA)	111	123	1.0	100	1.0	3.7	162
SMBJ110A(CA)	122	135	1.0	110	1.0	3.4	177
SMBJ120A(CA)	133	147	1.0	120	1.0	3.1	193
SMBJ130A(CA)	144	159	1.0	130	1.0	2.9	209
SMBJ150A(CA)	167	185	1.0	150	1.0	2.5	243
SMBJ160A(CA)	178	197	1.0	160	1.0	2.3	259
SMBJ170A(CA)	189	209	1.0	170	1.0	2.2	275
SMBJ188A(CA)	209	231	1 0	188	1 0	2.0	328

Notes

(1) Pulse test: $t_p \leq$ 50 ms

(2) Surge current waveform per fig. 3 and derate per fig. 2

(3) For bi-directional types having V_{WM} of 10 V and less, the I_D limit is doubled

(4) All terms and symbols are consistent with ANSI/IEEE C62.35

(5) For the bi-directional SMBJ5.0CA, the maximum V_{BR} is 7.25 V

(6) V_F = 3.5 V max. at I_F = 50 A (uni-directional only)

(+) Underwriters laboratory recognition for the classification of protectors (QVGQ2) under the UL standard for safety 497B and file number E136766 for both uni-directional and bi-directional devices

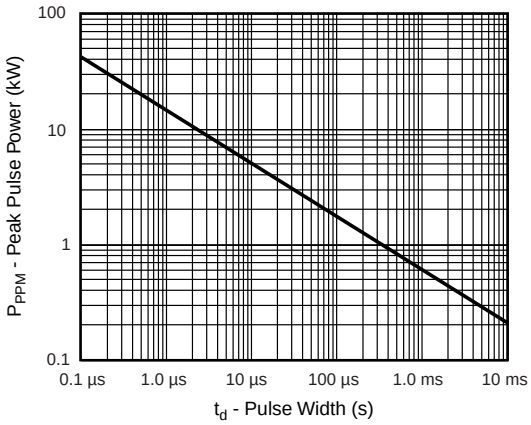


Fig. 1 - Peak Pulse Power Rating Curve

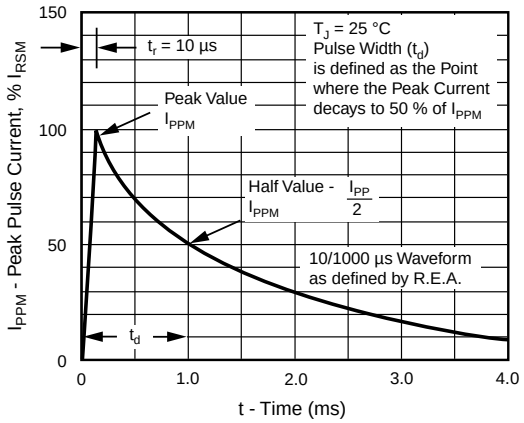


Fig. 3 - Pulse Waveform

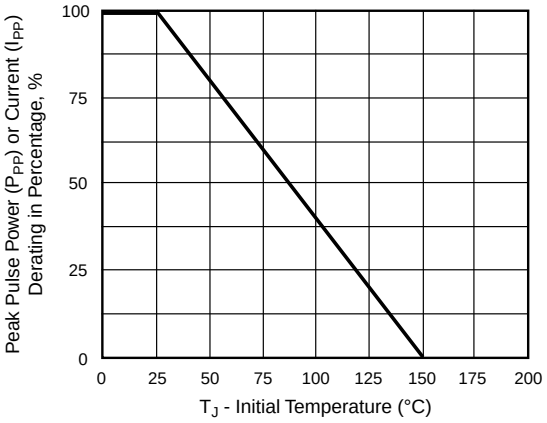


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

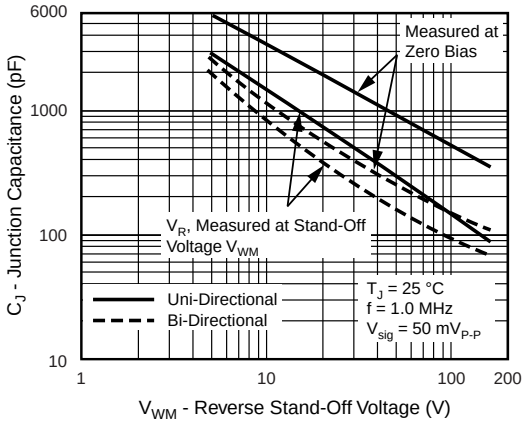


Fig. 4 - Typical Junction Capacitance

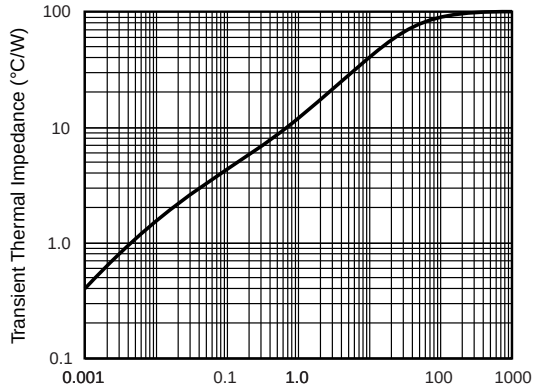


Fig. 5 - Typical Transient Thermal Impedance

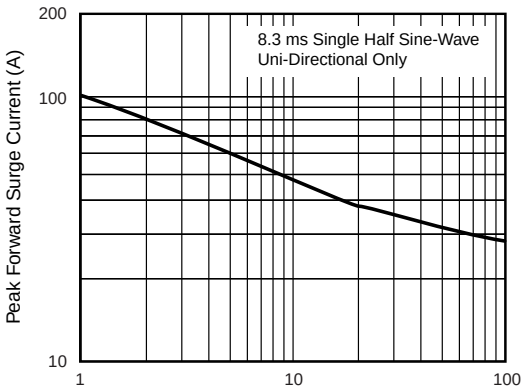


Fig. 6 - Maximum Non-Repetitive Peak Forward Surge Current

Attention:

The graph is for reference only, can't be the basis for judgment.

Any and all information described or contained herein are subject to change without notice due to product/technology improvement.