

**Breakdown Voltage: 6.8 to 75 V**  
**Peak Pulse Power: 1000 W**

## Surface Mount Transient Voltage Suppressors

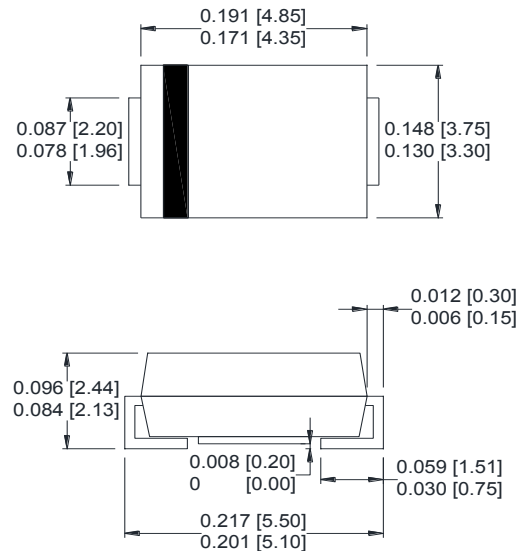
### Features

- Glass passivated chip
- 1000 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

### Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

SMB/ DO-214AA



Dimensions: inch[mm]

### Maximum Ratings( $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	1000	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	5.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	100	A
Maximum instantaneous forward voltage at 50 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/5.0	V
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to +150	$^\circ\text{C}$

**Note:**

(1)Non-repetitive current pulse per Fig.5 and derated above  $T_A = 25^\circ\text{C}$  per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3) $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 50\text{V}$ .

**Ratings and Characteristics Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

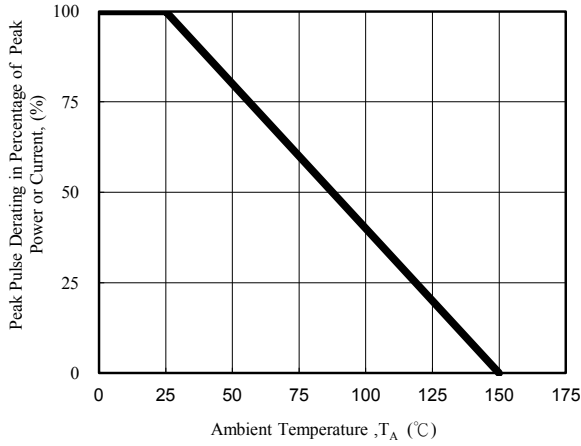


Fig. 1 - Pulse Derating Curve

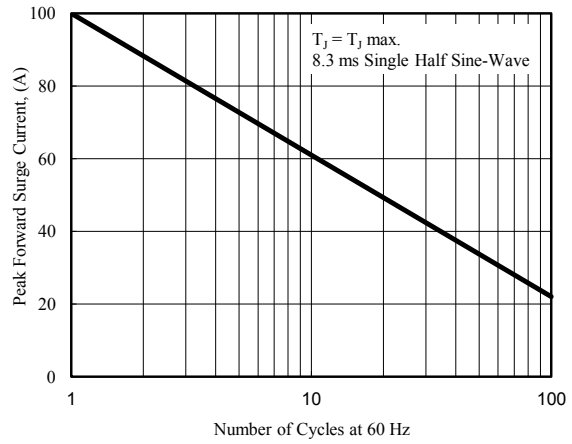


Fig. 2 - Maximum Non-Repetitive Surge Current

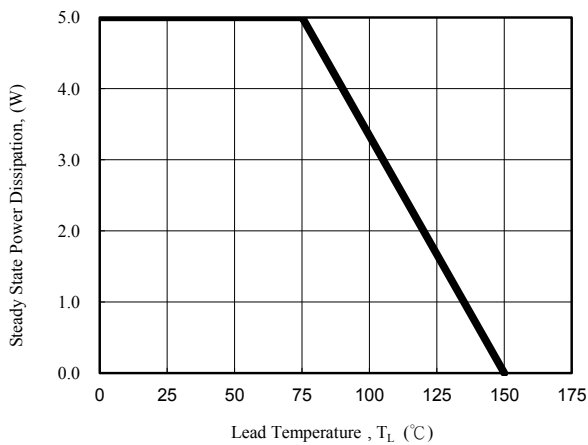


Fig. 3 - Steady State Power Derating Curve

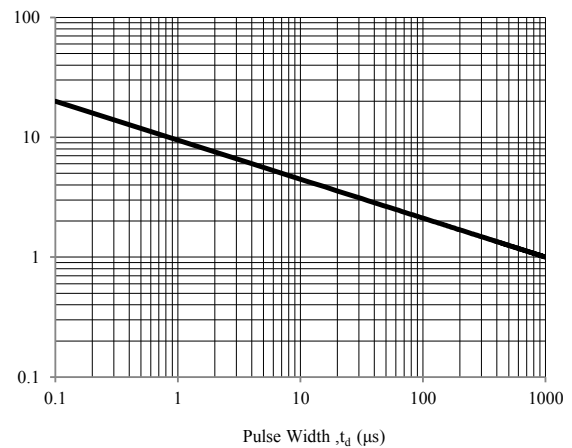


Fig. 4 - Peak Pulse Power Rating Curve

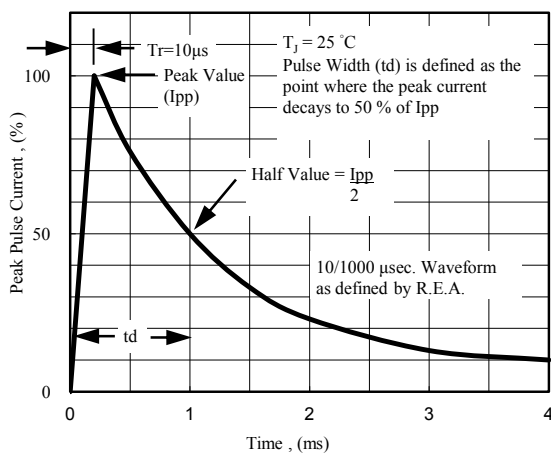


Fig. 5 - Pulse Waveform

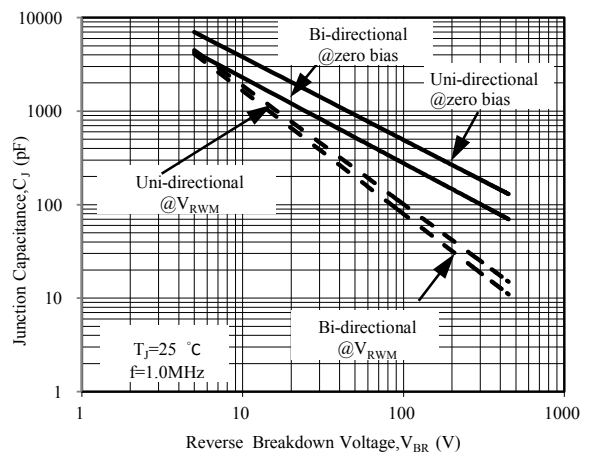


Fig. 6 - Typical Junction Capacitance

## Electrical Characteristics( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage $V_C@I_{PP}$ (V)
		Uni	Bi	Min (V)	Max (V)	$I_T$ (mA)				
1.0SMB6.8A	1.0SMB6.8CA	A10A	N10A	6.46	7.14	10	900	5.8	95.2	10.5
1.0SMB7.5A	1.0SMB7.5CA	A10B	N10B	7.13	7.88	10	400	6.4	88.5	11.3
1.0SMB8.2A	1.0SMB8.2CA	A10C	N10C	7.79	8.61	10	180	7.0	82.6	12.1
1.0SMB9.1A	1.0SMB9.1CA	A10D	N10D	8.65	9.56	1	45	7.8	74.6	13.4
1.0SMB10A	1.0SMB10CA	A10E	N10E	9.50	10.50	1	8	8.6	69.0	14.5
1.0SMB11A	1.0SMB11CA	A10F	N10F	10.45	11.55	1	4	9.4	64.1	15.6
1.0SMB12A	1.0SMB12CA	A10G	N10G	11.40	12.60	1	1	10.2	59.9	16.7
1.0SMB13A	1.0SMB13CA	A10H	N10H	12.35	13.65	1	1	11.1	54.9	18.2
1.0SMB15A	1.0SMB15CA	A10I	N10I	14.25	15.75	1	1	12.8	47.2	21.2
1.0SMB16A	1.0SMB16CA	A10J	N10J	15.20	16.80	1	1	13.6	44.4	22.5
1.0SMB18A	1.0SMB18CA	A10K	N10K	17.10	18.90	1	1	15.3	39.7	25.2
1.0SMB20A	1.0SMB20CA	A10L	N10L	19.00	21.00	1	1	17.1	36.1	27.7
1.0SMB22A	1.0SMB22CA	A10M	N10M	20.90	23.10	1	1	18.8	32.7	30.6
1.0SMB24A	1.0SMB24CA	A10N	N10N	22.80	25.20	1	1	20.5	30.1	33.2
1.0SMB27A	1.0SMB27CA	A10O	N10O	25.65	28.35	1	1	23.1	26.7	37.5
1.0SMB30A	1.0SMB30CA	A10P	N10P	28.50	31.50	1	1	25.6	24.2	41.4
1.0SMB33A	1.0SMB33CA	A10Q	N10Q	31.35	34.65	1	1	28.2	21.9	45.7
1.0SMB36A	1.0SMB36CA	A10R	N10R	34.20	37.80	1	1	30.8	20.0	49.9
1.0SMB39A	1.0SMB39CA	A10S	N10S	37.05	40.95	1	1	33.3	18.6	53.9
1.0SMB43A	1.0SMB43CA	A10T	N10T	40.85	45.15	1	1	36.8	16.9	59.3
1.0SMB47A	1.0SMB47CA	A10U	N10U	44.65	49.35	1	1	40.2	15.4	64.8
1.0SMB51A	1.0SMB51CA	A10V	N10V	48.45	53.55	1	1	43.6	14.3	70.1
1.0SMB56A	1.0SMB56CA	A10W	N10W	53.20	58.80	1	1	47.8	13.0	77.0
1.0SMB62A	1.0SMB62CA	A10X	N10X	58.90	65.10	1	1	53.0	11.8	85.0
1.0SMB68A	1.0SMB62CA	A10Y	N10Y	64.60	71.40	1	1	58.1	10.9	92.0
1.0SMB75A	1.0SMB75CA	A10Z	N10Z	71.25	78.75	1	1	64.1	9.7	103.0

**Note:**

1. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
2. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double