

**Reverse Voltage: 5.0 to 120 V**  
**Peak Pulse Power: 1000 W**

## Surface Mount Transient Voltage Suppressors

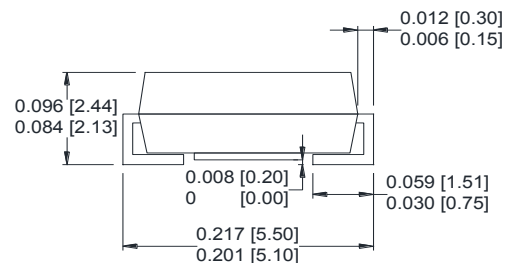
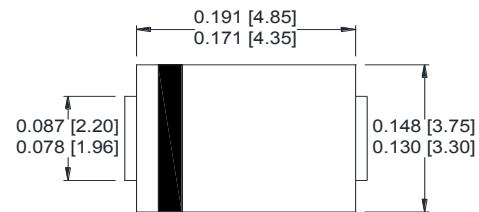
### Features

- 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 25 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)**

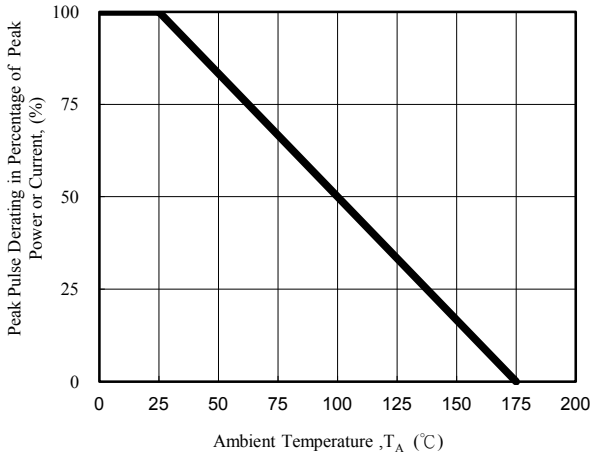


Fig. 1 - Pulse Derating Curve

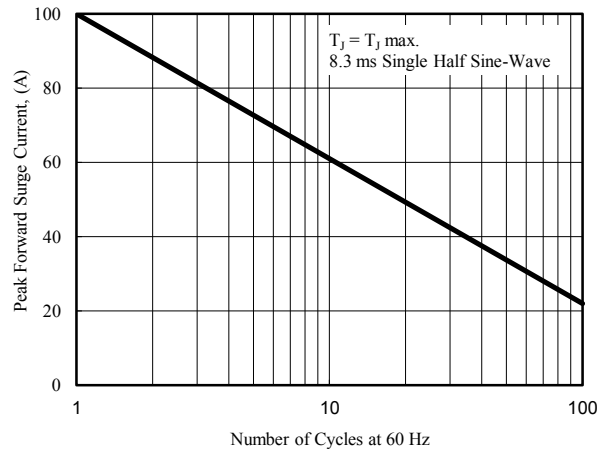


Fig. 2 - Maximum Non-Repetitive Surge Current

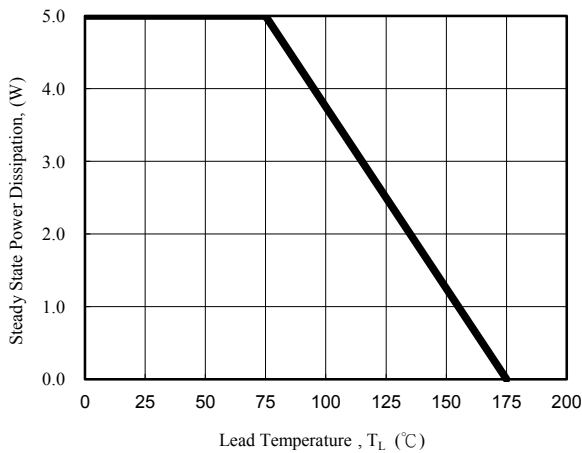


Fig. 3 - Steady State Power Derating Curve

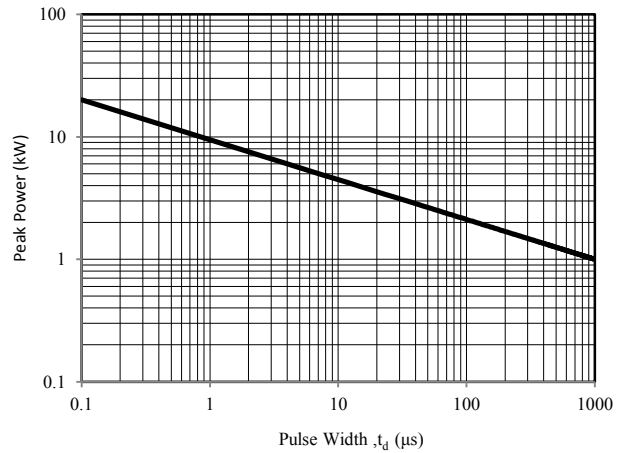


Fig. 4 - Peak Pulse Power Rating Curve

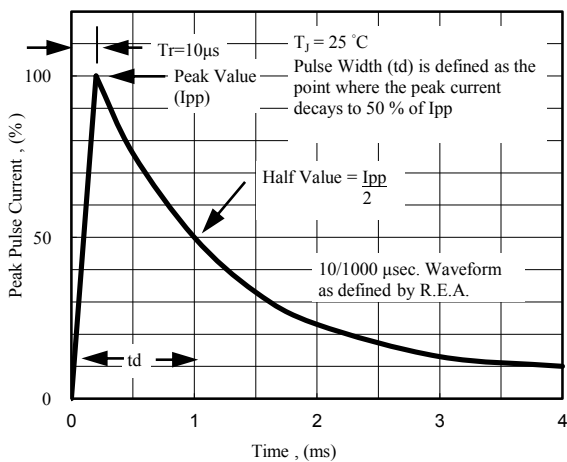


Fig. 5 - Pulse Waveform

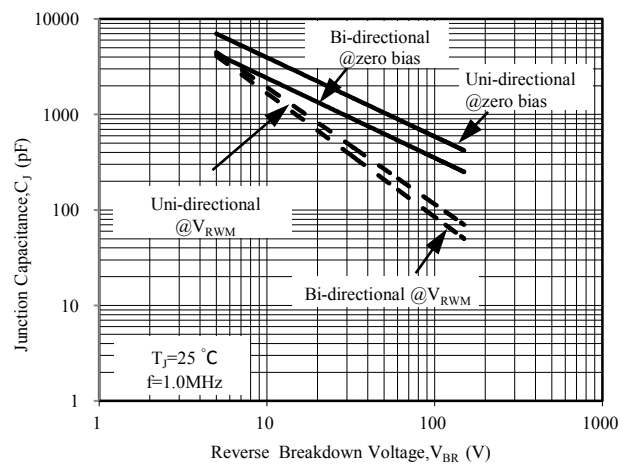


Fig. 6 - Typical Junction Capacitance

## 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 $I_R$ @ $V_{RWM}$ (uA)	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)				
SMB10J5.0A	SMB10J5.0CA	AKE	AAE	6.40	7.00	10	800	5.0	108.70	9.2
SMB10J6.0A	SMB10J6.0CA	AKG	AAG	6.67	7.37	10	800	6.0	97.09	10.3
SMB10J6.5A	SMB10J6.5CA	AKK	AAK	7.22	7.98	10	500	6.5	89.29	11.2
SMB10J7.0A	SMB10J7.0CA	AKM	AAM	7.78	8.60	10	200	7.0	83.33	12.0
SMB10J7.5A	SMB10J7.5CA	AKP	AAP	8.33	9.21	1	100	7.5	77.52	12.9
SMB10J8.0A	SMB10J8.0CA	AKR	AAR	8.89	9.83	1	50	8.0	73.53	13.6
SMB10J8.5A	SMB10J8.5CA	AKT	AAT	9.44	10.40	1	10	8.5	69.44	14.4
SMB10J9.0A	SMB10J9.0CA	AKV	AAV	10.00	11.10	1	5.0	9.0	64.94	15.4
SMB10J10A	SMB10J10CA	AKX	AAZ	11.10	12.30	1	5.0	10.0	58.82	17.0
SMB10J11A	SMB10J11CA	AKZ	AAZ	12.20	13.50	1	5.0	11.0	54.95	18.2
SMB10J12A	SMB10J12CA	ALE	ABE	13.30	14.70	1	5.0	12.0	50.25	19.9
SMB10J13A	SMB10J13CA	ALG	ABG	14.40	15.90	1	1.0	13.0	46.51	21.5
SMB10J14A	SMB10J14CA	ALK	ABK	15.60	17.20	1	1.0	14.0	43.10	23.2
SMB10J15A	SMB10J15CA	ALM	ABM	16.70	18.50	1	1.0	15.0	40.98	24.4
SMB10J16A	SMB10J16CA	ALP	ABP	17.80	19.70	1	1.0	16.0	38.46	26.0
SMB10J17A	SMB10J17CA	ALR	ABR	18.90	20.90	1	1.0	17.0	36.23	27.6
SMB10J18A	SMB10J18CA	ALT	ABT	20.00	22.10	1	1.0	18.0	34.25	29.2
SMB10J19A	SMB10J19CA	ALB	ABB	21.10	23.30	1	1.0	19.0	32.49	30.8
SMB10J20A	SMB10J20CA	ALV	ABV	22.20	24.50	1	1.0	20.0	30.86	32.4
SMB10J22A	SMB10J22CA	ALX	ABX	24.40	26.90	1	1.0	22.0	28.17	35.5
SMB10J24A	SMB10J24CA	ALZ	ABZ	26.70	29.50	1	1.0	24.0	25.71	38.9
SMB10J26A	SMB10J26CA	AME	ACE	28.90	31.90	1	1.0	26.0	23.75	42.1
SMB10J28A	SMB10J28CA	AMG	ACG	31.10	34.40	1	1.0	28.0	22.03	45.4
SMB10J30A	SMB10J30CA	AMK	ACK	33.30	36.80	1	1.0	30.0	20.66	48.4
SMB10J33A	SMB10J33CA	AMM	ACM	36.70	40.60	1	1.0	33.0	18.76	53.3
SMB10J36A	SMB10J36CA	AMP	ACP	40.00	44.20	1	1.0	36.0	17.21	58.1
SMB10J40A	SMB10J40CA	AMR	ACR	44.40	49.10	1	1.0	40.0	15.50	64.5
SMB10J43A	SMB10J43CA	AMT	ACT	47.80	52.80	1	1.0	43.0	14.41	69.4
SMB10J45A	SMB10J45CA	AMV	ACV	50.00	55.30	1	1.0	45.0	13.76	72.7
SMB10J48A	SMB10J48CA	AMX	ACX	53.30	58.90	1	1.0	48.0	12.92	77.4
SMB10J51A	SMB10J51CA	AMZ	ACZ	56.70	62.70	1	1.0	51.0	12.14	82.4
SMB10J54A	SMB10J54CA	ANE	ADE	60.00	66.30	1	1.0	54.0	11.48	87.1
SMB10J58A	SMB10J58CA	ANG	ADG	64.40	71.20	1	1.0	58.0	10.68	93.6
SMB10J60A	SMB10J60CA	ANK	ADK	66.70	73.70	1	1.0	60.0	10.33	96.8
SMB10J64A	SMB10J64CA	ANM	ADM	71.10	78.60	1	1.0	64.0	9.71	103.0
SMB10J70A	SMB10J70CA	ANP	ADP	77.80	86.00	1	1.0	70.0	8.85	113.0
SMB10J75A	SMB10J75CA	ANR	ADR	83.30	92.10	1	1.0	75.0	8.26	121.0
SMB10J78A	SMB10J78CA	ANT	ADT	86.70	95.80	1	1.0	78.0	7.94	126.0
SMB10J80A	SMB10J80CA	ANB	ADB	88.80	97.60	1	1.0	80.0	7.72	129.6
SMB10J85A	SMB10J85CA	ANV	ADV	94.40	104.00	1	1.0	85.0	7.30	137.0
SMB10J90A	SMB10J90CA	ANX	ADX	100.00	111.00	1	1.0	90.0	6.85	146.0
SMB10J100A	SMB10J100CA	ANZ	ADZ	111.00	123.00	1	1.0	100.0	6.17	162.0
SMB10J110A	SMB10J110CA	APE	AEE	122.00	135.00	1	1.0	110.0	5.65	177.0
SMB10J120A	SMB10J120CA	APG	AEG	133.00	147.00	1	1.0	120.0	5.18	193.0

### Note:

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double