

**Breakdown Voltage: 13 to 200 V**  
**Peak Pulse Power: 600 W**

## Surface Mount Transient Voltage Suppressors

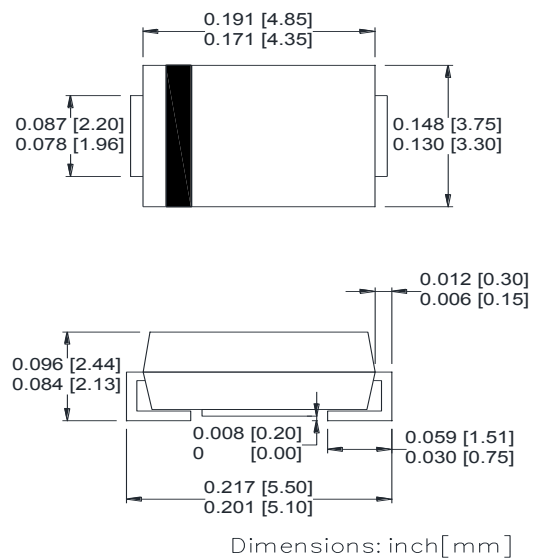
### Features

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- High reliability application and automotive grade AEC Q101 qualified
- 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



### 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>	$P_{PP}$	600	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	$V_F$	3.5	V
Operating junction and storage temperature range ( $V_{BR} \leq 47\text{V}$ )	$T_J, T_{STG}$	- 55 to +175	$^\circ\text{C}$
Operating junction and storage temperature range ( $V_{BR} > 47\text{V}$ )		- 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

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

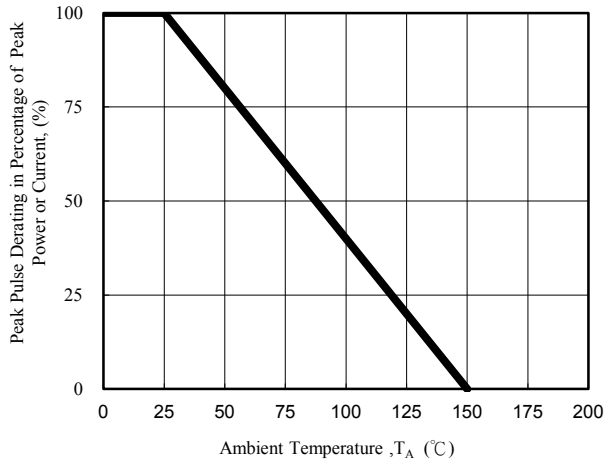


Fig. 1 - Pulse Derating Curve

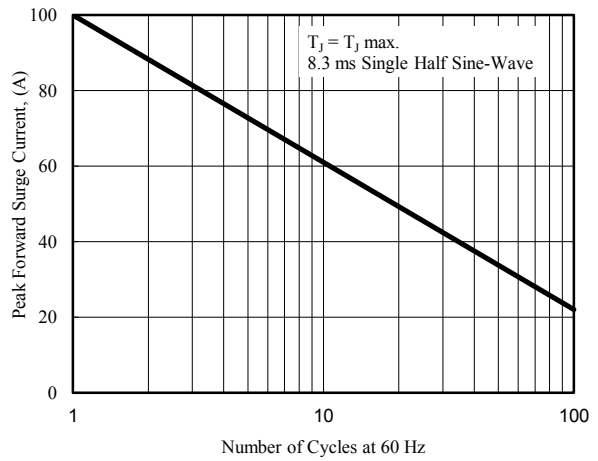


Fig. 2 - Maximum Non-Repetitive Surge Current

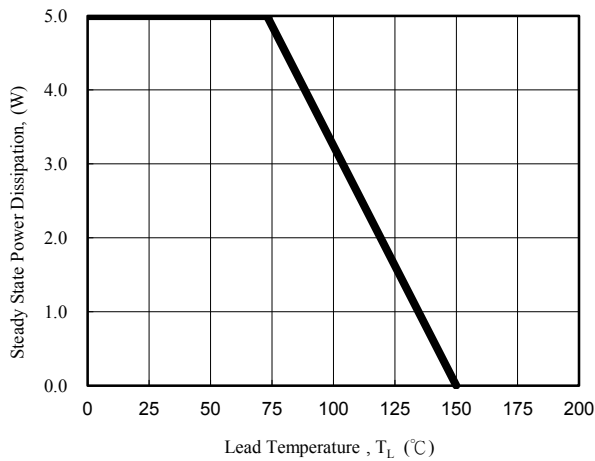


Fig. 3 - Steady State Power Derating Curve

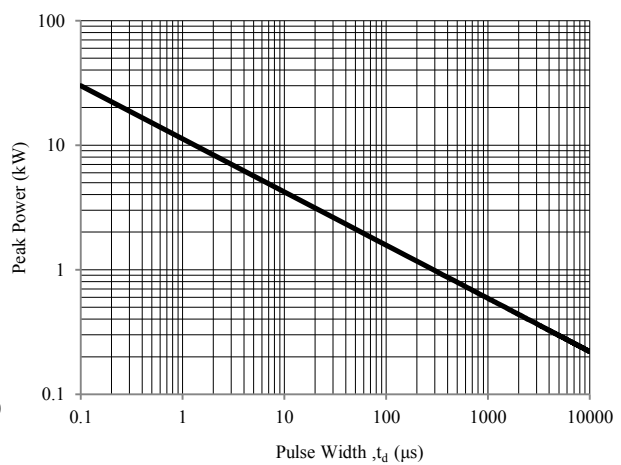


Fig. 4 - Peak Pulse Power Rating Curve

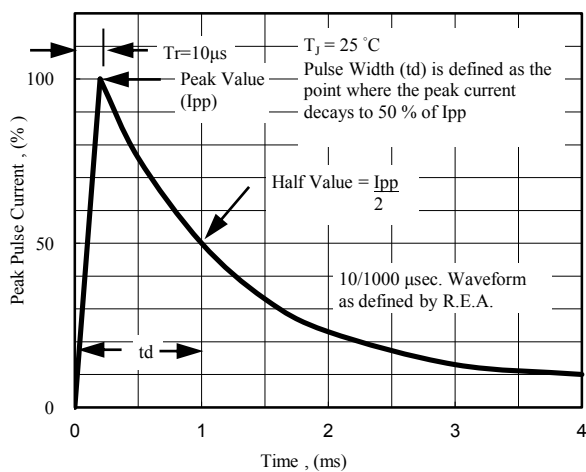


Fig. 5 - Pulse Waveform

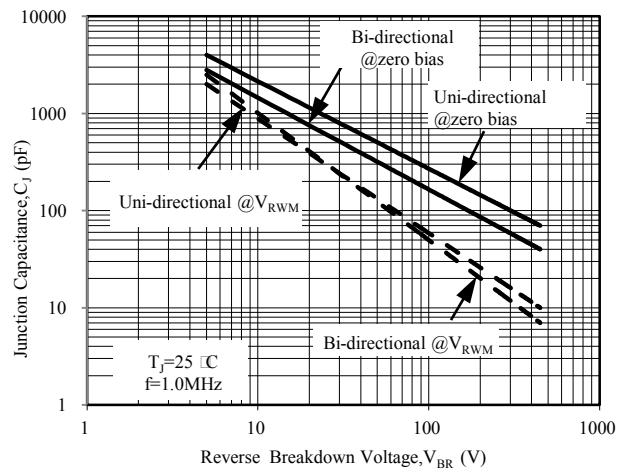


Fig. 6 - Typical Junction Capacitance

**Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)**

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V <sub>BR</sub> @I <sub>T</sub>			Maximum Reverse Leakage I <sub>R</sub> @V <sub>RWM</sub> (uA)	Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Surge Current I <sub>PP</sub> (A)	Maximum Clamping Voltage V <sub>C</sub> @I <sub>PP</sub> (V)
		Uni	Bi	Min (V)	Max (V)	I <sub>T</sub> (mA)				
TPSMB13A	TPSMB13CA	13AA	13CA	12.35	13.65	1	1	11.1	32.97	18.2
TPSMB15A	TPSMB15CA	15AA	15CA	14.25	15.75	1	1	12.8	28.30	21.2
TPSMB16A	TPSMB16CA	16AA	16CA	15.20	16.80	1	1	13.6	26.67	22.5
TPSMB18A	TPSMB18CA	18AA	18CA	17.10	18.90	1	1	15.3	23.81	25.2
TPSMB20A	TPSMB20CA	20AA	20CA	19.00	21.00	1	1	17.1	21.66	27.7
TPSMB22A	TPSMB22CA	22AA	22CA	20.90	23.10	1	1	18.8	19.61	30.6
TPSMB24A	TPSMB24CA	24AA	24CA	22.80	25.20	1	1	20.5	18.07	33.2
TPSMB27A	TPSMB27CA	27AA	27CA	25.65	28.35	1	1	23.1	16.00	37.5
TPSMB30A	TPSMB30CA	30AA	30CA	28.50	31.50	1	1	25.6	14.49	41.4
TPSMB33A	TPSMB33CA	33AA	33CA	31.35	34.65	1	1	28.2	13.13	45.7
TPSMB36A	TPSMB36CA	36AA	36CA	34.20	37.80	1	1	30.8	12.02	49.9
TPSMB39A	TPSMB39CA	39AA	39CA	37.05	40.95	1	1	33.3	11.13	53.9
TPSMB43A	TPSMB43CA	43AA	43CA	40.85	45.15	1	1	36.8	10.12	59.3
TPSMB47A	TPSMB47CA	47AA	47CA	44.65	49.35	1	1	40.2	9.26	64.8
TPSMB51A	TPSMB51CA	51AA	51CA	48.45	53.55	1	1	43.6	8.56	70.1
TPSMB56A	TPSMB56CA	56AA	56CA	53.20	58.80	1	1	47.8	7.79	77.0
TPSMB62A	TPSMB62CA	62AA	62CA	58.90	65.10	1	1	53.0	7.06	85.0
TPSMB68A	TPSMB68CA	68AA	68CA	64.60	71.40	1	1	58.1	6.52	92.0
TPSMB75A	TPSMB75CA	75AA	75CA	71.25	78.75	1	1	64.1	5.83	103.0
TPSMB82A	TPSMB82CA	82AA	82CA	77.90	86.10	1	1	70.1	5.31	113.0
TPSMB91A	TPSMB91CA	91AA	91CA	86.45	95.55	1	1	77.8	4.80	125.0
TPSMB100A	TPSMB100CA	100AA	100CA	95.00	105.00	1	1	85.5	4.38	137.0
TPSMB110A	TPSMB110CA	110AA	110CA	104.50	115.50	1	1	94.0	3.95	152.0
TPSMB120A	TPSMB120CA	120AA	120CA	114.00	126.00	1	1	102.0	3.64	165.0
TPSMB130A	TPSMB130CA	130AA	130CA	123.50	136.50	1	1	111.0	3.35	179.0
TPSMB150A	TPSMB150CA	150AA	150CA	142.50	157.50	1	1	128.0	2.90	207.0
TPSMB160A	TPSMB160CA	160AA	160CA	152.00	168.00	1	1	136.0	2.74	219.0
TPSMB170A	TPSMB170CA	170AA	170CA	161.50	178.50	1	1	145.0	2.56	234.0
TPSMB180A	TPSMB180CA	180AA	180CA	171.00	189.00	1	1	154.0	2.44	246.0
TPSMB200A	TPSMB200CA	200AA	200CA	190.00	210.00	1	1	171.0	2.19	274.0

**Note:**

1. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices