

**Working Voltage: 10 to 78 V**  
**Peak Pulse Power: 1500 W**

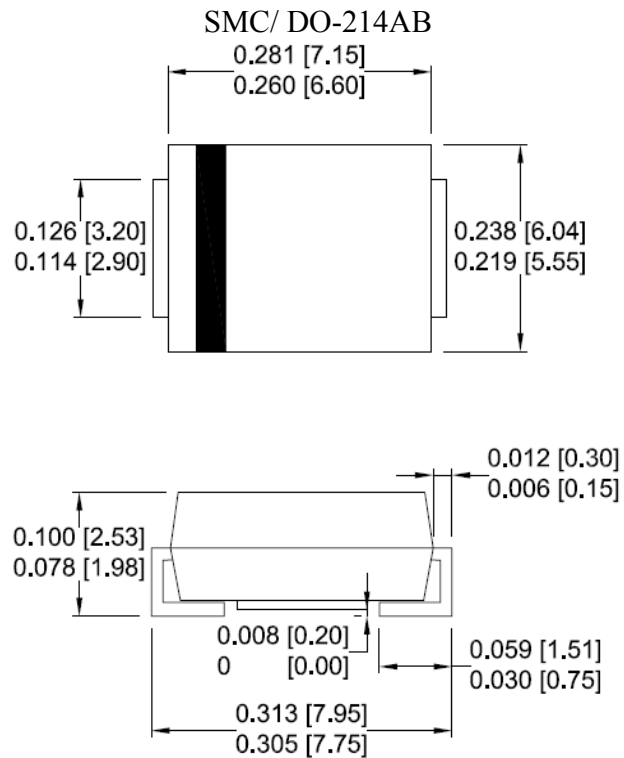
## Surface Mount Transient Voltage Suppressors

### Features

- Glass passivated chip
- 1500 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



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>	$P_{PP}$	1500	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 $T_L = 75^\circ\text{C}$	$P_D$	6.5	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	200	A
Maximum instantaneous forward voltage at 100 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  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$



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

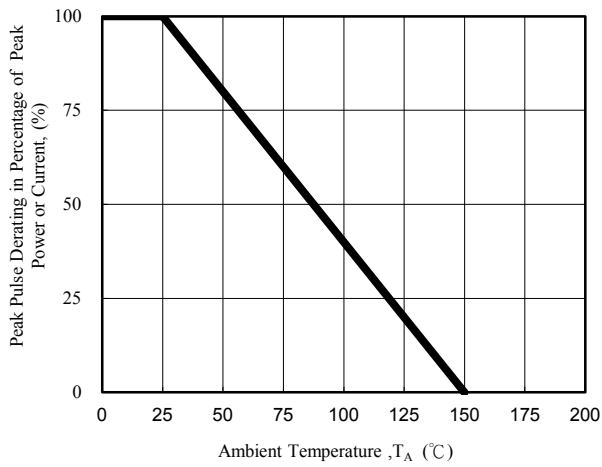


Fig. 1 - Pulse Derating Curve

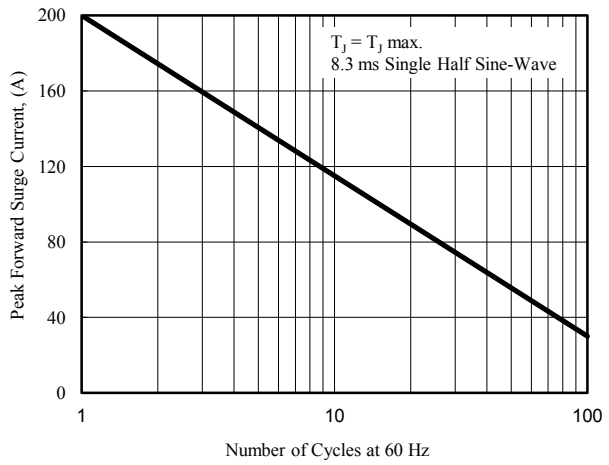


Fig. 2 - Maximum Non-Repetitive Surge Current

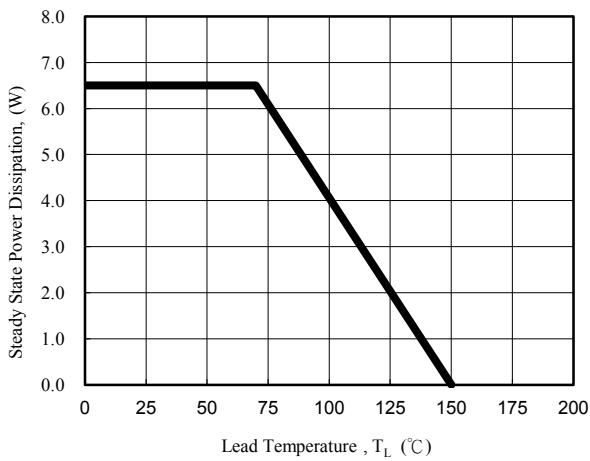


Fig. 3 - Steady State Power Derating Curve

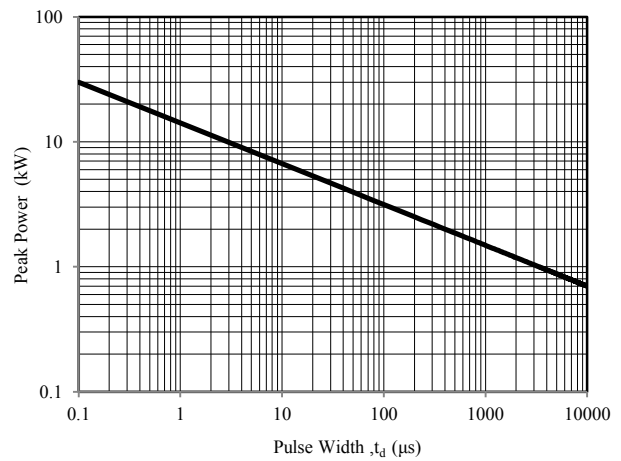


Fig. 4 - Peak Pulse Power Rating Curve

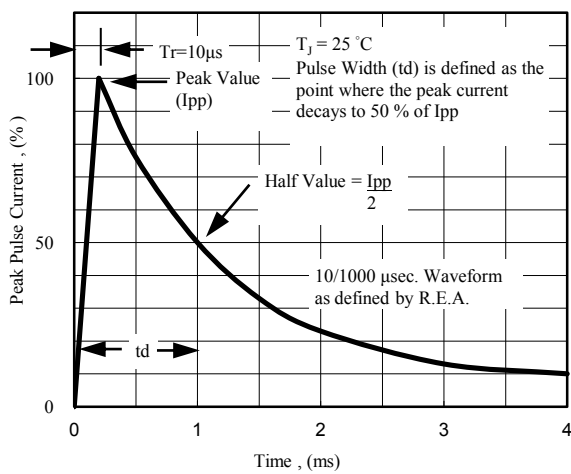


Fig. 5 - Pulse Waveform

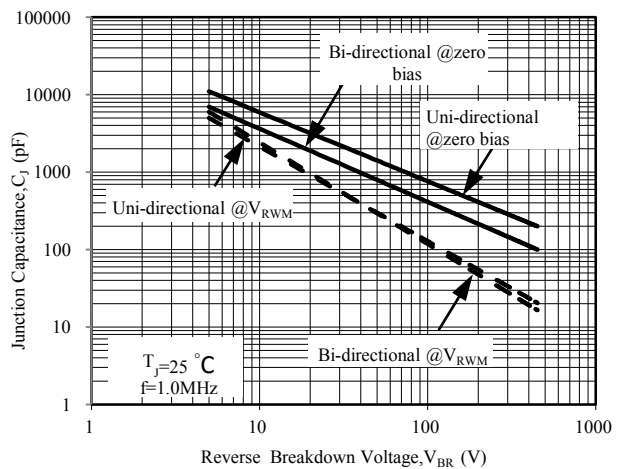


Fig. 6 - Typical Junction Capacitance

**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)				
TPSMCJ10A	TPSMCJ10CA	GDXA	BDXA	11.10	12.30	1	5	10.0	88.24	17.0
TPSMCJ11A	TPSMCJ11CA	GDZA	BDZA	12.20	13.50	1	1	11.0	82.42	18.2
TPSMCJ12A	TPSMCJ12CA	GEEA	BEEA	13.30	14.70	1	1	12.0	75.38	19.9
TPSMCJ13A	TPSMCJ13CA	GEGA	BEGA	14.40	15.90	1	1	13.0	69.77	21.5
TPSMCJ14A	TPSMCJ14CA	GEKA	BEKA	15.60	17.20	1	1	14.0	64.66	23.2
TPSMCJ15A	TPSMCJ15CA	GEMA	BEMA	16.70	18.50	1	1	15.0	61.48	24.4
TPSMCJ16A	TPSMCJ16CA	GEPA	BEPA	17.80	19.70	1	1	16.0	57.69	26.0
TPSMCJ17A	TPSMCJ17CA	GERA	BERA	18.90	20.90	1	1	17.0	54.35	27.6
TPSMCJ18A	TPSMCJ18CA	GETA	BETA	20.00	22.10	1	1	18.0	51.37	29.2
TPSMCJ19A	TPSMCJ19CA	GEBA	BEBA	21.10	23.30	1	1	19.0	48.73	30.8
TPSMCJ20A	TPSMCJ20CA	GEVA	BEVA	22.20	24.50	1	1	20.0	46.30	32.4
TPSMCJ22A	TPSMCJ22CA	GEZA	BEXA	24.40	26.90	1	1	22.0	42.25	35.5
TPSMCJ24A	TPSMCJ24CA	GEZA	BEZA	26.70	29.50	1	1	24.0	38.56	38.9
TPSMCJ26A	TPSMCJ26CA	GFEA	BFEA	28.90	31.90	1	1	26.0	35.63	42.1
TPSMCJ28A	TPSMCJ28CA	GFGA	BFGA	31.10	34.40	1	1	28.0	33.04	45.4
TPSMCJ30A	TPSMCJ30CA	GFKA	BFKA	33.30	36.80	1	1	30.0	30.99	48.4
TPSMCJ33A	TPSMCJ33CA	GFMA	BFMA	36.70	40.60	1	1	33.0	28.14	53.3
TPSMCJ36A	TPSMCJ36CA	GFPA	BFPA	40.00	44.20	1	1	36.0	25.82	58.1
TPSMCJ40A	TPSMCJ40CA	GFRA	BFRA	44.40	49.10	1	1	40.0	23.26	64.5
TPSMCJ43A	TPSMCJ43CA	GFTA	BFTA	47.80	52.80	1	1	43.0	21.61	69.4
TPSMCJ45A	TPSMCJ45CA	GFVA	BFVA	50.00	55.30	1	1	45.0	20.63	72.7
TPSMCJ48A	TPSMCJ48CA	GFXA	BFXA	53.30	58.90	1	1	48.0	19.38	77.4
TPSMCJ51A	TPSMCJ51CA	GFZA	BFZA	56.70	62.70	1	1	51.0	18.20	82.4
TPSMCJ54A	TPSMCJ54CA	GGEA	BGEA	60.00	66.30	1	1	54.0	17.22	87.1
TPSMCJ58A	TPSMCJ58CA	GGGA	BGGA	64.40	71.20	1	1	58.0	16.03	93.6
TPSMCJ60A	TPSMCJ60CA	GGKA	BGKA	66.70	73.70	1	1	60.0	15.50	96.8
TPSMCJ64A	TPSMCJ64CA	GGMA	BGMA	71.10	78.60	1	1	64.0	14.56	103.0
TPSMCJ70A	TPSMCJ70CA	GGPA	BGPA	77.80	86.00	1	1	70.0	13.27	113.0
TPSMCJ75A	TPSMCJ75CA	GGRA	BGRA	83.30	92.10	1	1	75.0	12.40	121.0
TPSMCJ78A	TPSMCJ78CA	GGTA	BGTA	86.70	95.80	1	1	78.0	11.90	126.0

**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