

**Working Voltage: 10 to 60 V**  
**Peak Pulse Power: 5000 W**

## Surface Mount Transient Voltage Suppressors

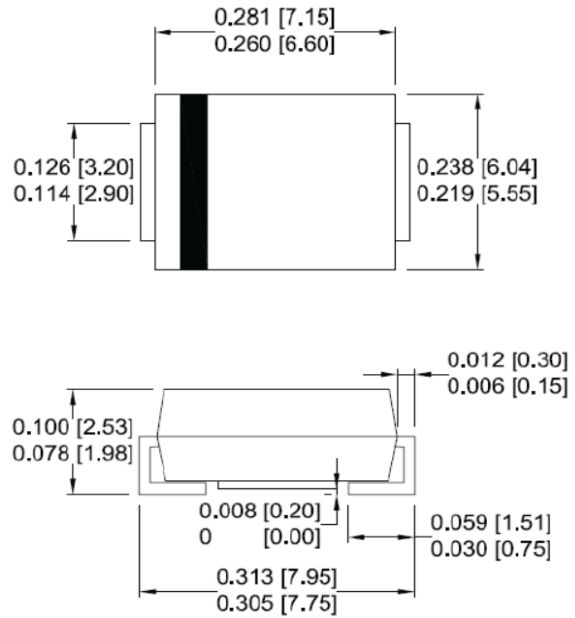
### Features

- Optimized glass passivated chip
- $T_j = 150\text{ }^\circ\text{C}$  capability suitable for high reliability and automotive requirement
- 5000 W peak pulse power capability with a 10/1000  $\mu\text{s}$  waveform, repetitive rate (duty cycle):0.01 %
- Meet ISO 7637-2 load dump test (varied by test condition)
- 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

SMC/ DO-214AB



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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu\text{s}$ waveform <sup>(1)</sup>	$P_{PP}$	5000	W
Peak pulse current with a 10/1000 $\mu\text{s}$ waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 50\text{ }^\circ\text{C}$	$P_D$	6.5	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	300	A
Maximum instantaneous forward voltage at 100A for unidirectional only	$V_F$	3.5	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  $T_A = 25\text{ }^\circ\text{C}$  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)**

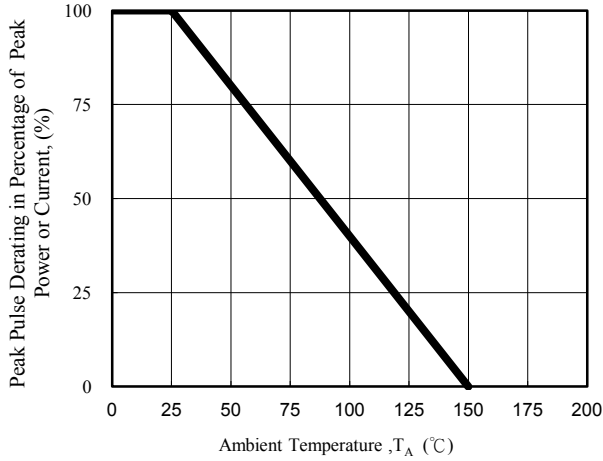


Fig. 1 - Pulse Derating Curve

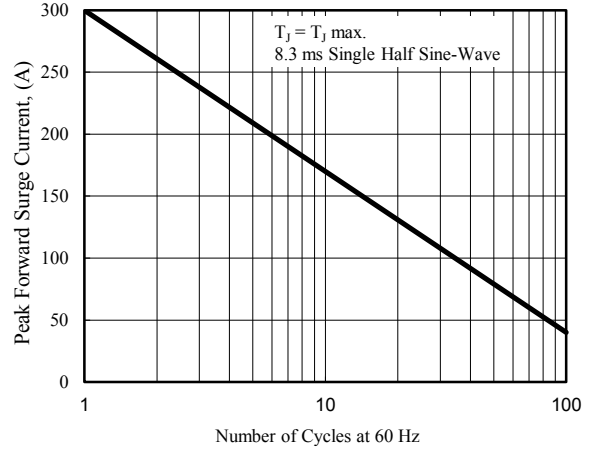


Fig. 2 - Maximum Non-Repetitive Surge Current

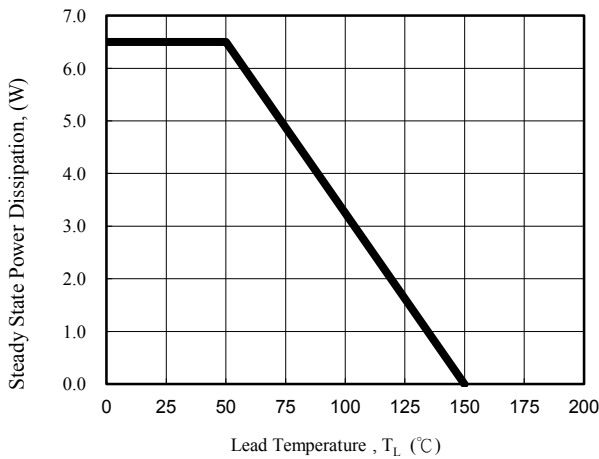


Fig. 3 - Steady State Power Derating Curve

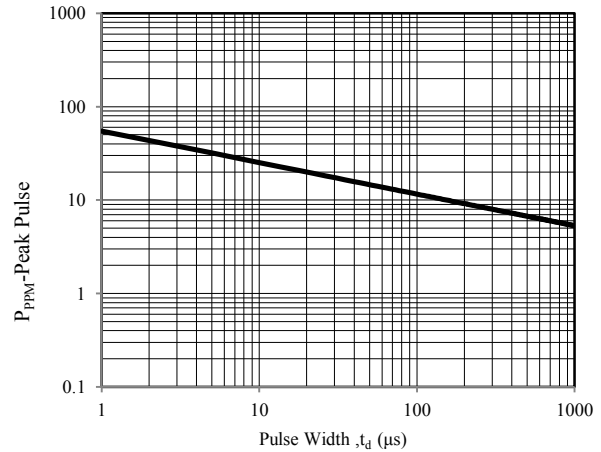


Fig. 4 - Peak Pulse Power Rating Curve

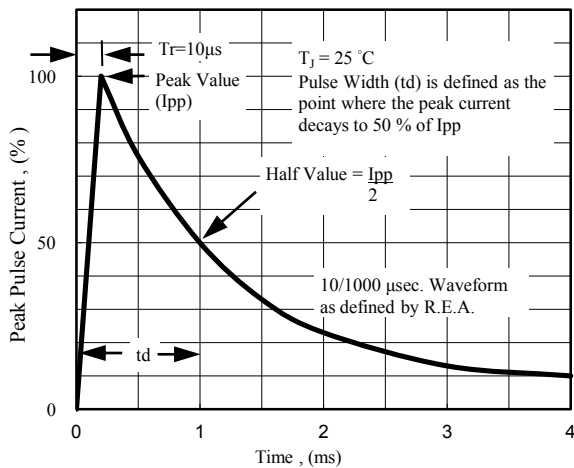


Fig. 5 - Pulse Waveform

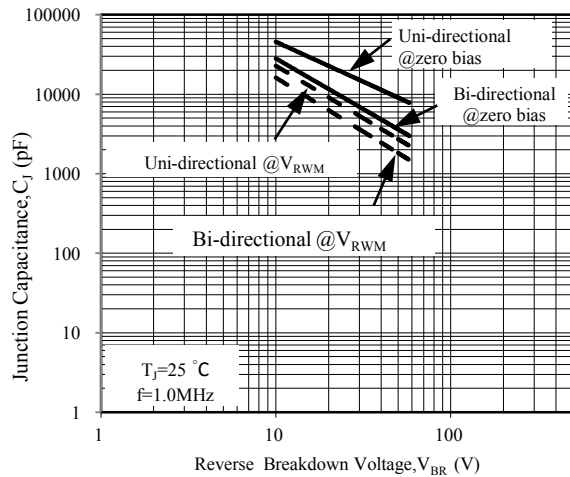


Fig. 6 - Typical Junction Capacitance

## 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)				
TP5.0SMDJ10A	TP5.0SMDJ10CA	5SAE	5DAE	11.10	12.30	1	5	10.0	294.12	17.0
TP5.0SMDJ11A	TP5.0SMDJ11CA	5SAF	5DAF	12.20	13.50	1	2	11.0	275.0	18.2
TP5.0SMDJ12A	TP5.0SMDJ12CA	5SAG	5DAG	13.30	14.70	1	2	12.0	252.0	19.9
TP5.0SMDJ13A	TP5.0SMDJ13CA	5SAK	5DAK	14.40	15.90	1	2	13.0	233.0	21.5
TP5.0SMDJ14A	TP5.0SMDJ14CA	5SAM	5DAM	15.60	17.20	1	2	14.0	216.0	23.2
TP5.0SMDJ15A	TP5.0SMDJ15CA	5SAP	5DAP	16.70	18.50	1	2	15.0	205.0	24.4
TP5.0SMDJ16A	TP5.0SMDJ16CA	5SAR	5DAR	17.80	19.70	1	2	16.0	193.0	26.0
TP5.0SMDJ17A	TP5.0SMDJ17CA	5SAT	5DAT	18.90	20.90	1	2	17.0	181.0	27.6
TP5.0SMDJ18A	TP5.0SMDJ18CA	5SAV	5DAV	20.00	22.10	1	2	18.0	172.0	29.2
TP5.0SMDJ19A	TP5.0SMDJ19CA	5SAX	5DAX	21.10	23.30	1	2	19.0	162.4	30.8
TP5.0SMDJ20A	TP5.0SMDJ20CA	5SAZ	5DAZ	22.20	24.50	1	2	20.0	155.0	32.4
TP5.0SMDJ22A	TP5.0SMDJ22CA	5SBE	5DBE	24.40	26.90	1	2	22.0	141.0	35.5
TP5.0SMDJ24A	TP5.0SMDJ24CA	5SBF	5DBF	26.70	29.50	1	2	24.0	129.0	38.9
TP5.0SMDJ26A	TP5.0SMDJ26CA	5SBG	5DBG	28.90	31.90	1	2	26.0	119.0	42.1
TP5.0SMDJ28A	TP5.0SMDJ28CA	5SBK	5DBK	31.10	34.40	1	2	28.0	110.0	45.4
TP5.0SMDJ30A	TP5.0SMDJ30CA	5SBM	5DBM	33.30	36.80	1	2	30.0	103.0	48.4
TP5.0SMDJ33A	TP5.0SMDJ33CA	5SBP	5DBP	36.70	40.60	1	2	33.0	93.9	53.3
TP5.0SMDJ36A	TP5.0SMDJ36CA	5SBR	5DBR	40.00	44.20	1	2	36.0	86.1	58.1
TP5.0SMDJ40A	TP5.0SMDJ40CA	5SBT	5DBT	44.40	49.10	1	2	40.0	77.6	64.5
TP5.0SMDJ43A	TP5.0SMDJ43CA	5SBV	5DBV	47.80	52.80	1	2	43.0	72.1	69.4
TP5.0SMDJ45A	TP5.0SMDJ45CA	5SBX	5DBX	50.00	55.30	1	2	45.0	68.8	72.7
TP5.0SMDJ48A	TP5.0SMDJ48CA	5SBZ	5DBZ	53.30	58.90	1	2	48.0	64.7	77.4
TP5.0SMDJ51A	TP5.0SMDJ51CA	5SCE	5DCE	56.70	62.70	1	2	51.0	60.7	82.4
TP5.0SMDJ54A	TP5.0SMDJ54CA	5SCF	5DCF	60.00	66.30	1	2	54.0	57.5	87.1
TP5.0SMDJ58A	TP5.0SMDJ58CA	5SCG	5DCG	64.40	71.20	1	2	58.0	53.5	93.6
TP5.0SMDJ60A	TP5.0SMDJ60CA	5SCK	5DCK	66.70	73.70	1	2	60.0	51.7	96.8

**Note:**

2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having V<sub>R</sub> of 10 volts, the I<sub>R</sub> limit is double