

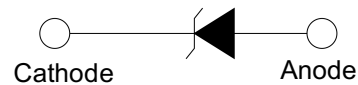
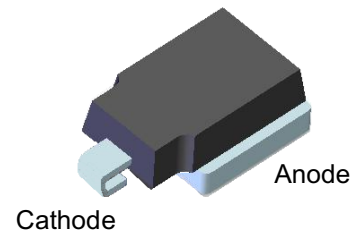


## Surface Mount Transient Voltage Suppressors

### Features

- Peak power dissipation 6600W @10 x 1000 us Pulse
- Glass passivated junction.
- Excellent clamping capability.
- High surge capability
- Low leakage current
- Low forward voltage drop
- Available in uni-directional polarity only
- $T_J = 175^{\circ}\text{C}$  capability suitable for high reliability and automotive requirement
- Meets ISO7637-2 surge specification (varied by test condition)
- Halogen free and RoHS compliant
- Lead-free finish

### SOD-BLOCK



### Mechanical Characteristics

- CASE: SOD-BLOCK Molded Plastic over glass passivated junction
- Polarity: Heatsink is Anode
- Terminal: Solder plated

### Maximum Ratings and Characteristics @ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform	$P_{PPM}$	6600	W
Peak Pulse Power Dissipation on 10/10000 us Waveform	$P_{PPM}$	5200	W
Power Dissipation on Infinite Heat Sink at $T_C = 25^{\circ}\text{C}$ (Fig. 1)	$P_D$	8.0	W
Peak Pulse Current of on 10/1000us Waveform	$I_{PPM}$	See next table	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 1.)	$I_{FSM}$	700	A
Operating Junction Temperature Range	$T_J$	-55 to 175	$^{\circ}\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to 175	$^{\circ}\text{C}$

Notes:

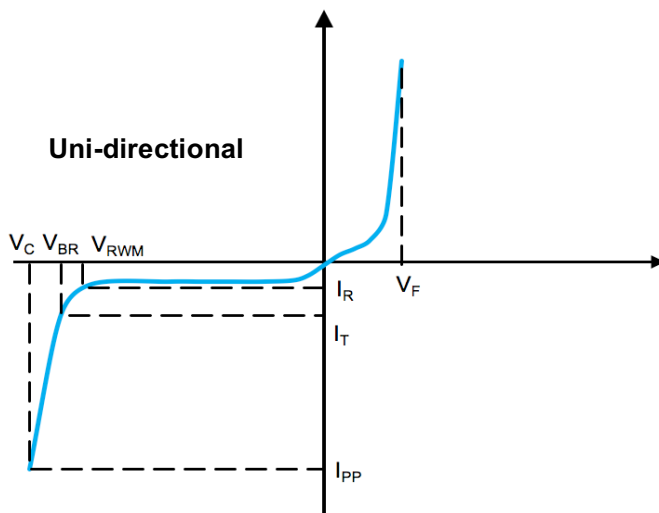
1. Non-repetitive current pulse derated above  $T_A=25^{\circ}\text{C}$

## Electrical Specification @ Tamb 25°C

Device Type	Reverse Stand-Off Voltage	Breakdown Voltage Min. @ $I_T$	Breakdown Voltage Max. @ $I_T$	Test Current	Maximum Reverse Leakage @ $V_{RMW}$	Maximum Reverse Leakage @ $V_{RMW}$ $T_J=175^\circ\text{C}$	Maximum Clamping Voltage @ $I_{PP}$	Maximum Peak Pulse Current @10/1000us Waveform
(Uni)	$V_{RMW}(V)$	$V_{BR\ MIN}(V)$	$V_{BR\ MAX}(V)$	$I_T\ (mA)$	$I_R(\mu A)$	$I_R(\mu A)$	$V_C(V)$	$I_{PP}(A)$
SM8S10A	10.0	11.1	12.3	5	15	250	17.0	388
SM8S11A	11.0	12.2	13.5	5	10	150	18.2	363
SM8S12A	12.0	13.3	14.7	5	10	150	19.9	332
SM8S13A	13.0	14.4	15.9	5	10	150	21.5	307
SM8S14A	14.0	15.6	17.2	5	10	150	23.2	284
SM8S15A	15.0	16.7	18.5	5	10	150	24.4	270
SM8S16A	16.0	17.8	20.5	5	10	150	26.0	254
SM8S17A	17.0	18.9	20.9	5	10	150	27.6	239
SM8S18A	18.0	20.0	22.1	5	10	150	29.2	226
SM8S20A	20.0	22.2	24.5	5	10	150	32.4	204
SM8S22A	22.0	24.4	26.9	5	10	150	35.5	186
SM8S24A	24.0	26.7	29.5	5	10	150	38.9	170
SM8S26A	26.0	28.9	31.9	5	10	150	42.1	157
SM8S28A	28.0	31.1	34.4	5	10	150	45.4	145
SM8S30A	30.0	33.3	36.8	5	10	150	48.4	136
SM8S33A	33.0	36.7	40.6	5	10	150	53.3	124
SM8S36A	36.0	40.0	44.2	5	10	150	58.1	114
SM8S40A	40.0	44.4	49.1	5	10	150	64.5	102
SM8S43A	43.0	47.8	52.8	5	10	150	69.4	95.1

※ For all types maximum  $V_F = 1.8\text{ V}$  at  $I_F = 100\text{ A}$  measured on 8.3 ms single half-sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

## I-V Curve Characteristics



# SM8SXXA Series

- P<sub>PPM</sub>** Peak Pulse Power Dissipation - Max power dissipation
- V<sub>RWM</sub>** Reverse Stand-off Voltage - Maximum voltage that can be applied to TVS without operation
- V<sub>BR</sub>** Breakdown Voltage – Maximum voltage that flows through the TVS at a specified current (I<sub>T</sub>)
- V<sub>C</sub>** Clamping Voltage – Peak voltage measured across the TVS at a specified I<sub>PPM</sub> (peak impulse current)
- I<sub>R</sub>** Reverse Leakage Current – Current measured at V<sub>R</sub>
- V<sub>F</sub>** Forward Voltage Drop for Uni-directional

## Ratings and Characteristic Curves (T<sub>A</sub>=25°C unless otherwise noted)

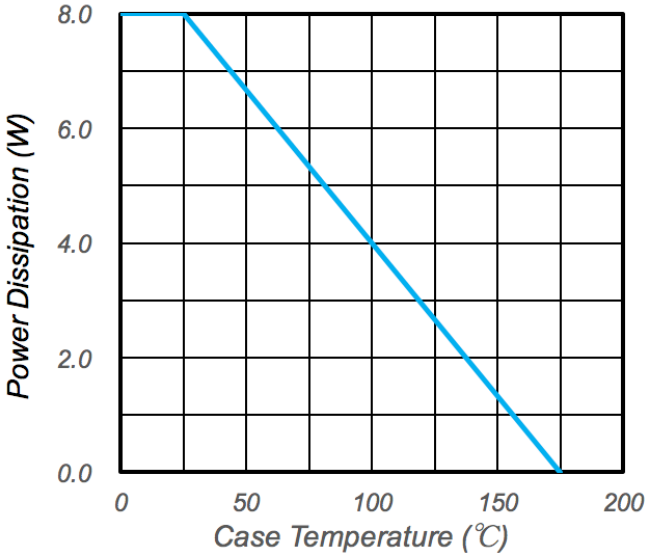


Fig.1 - Pulse Derating Curve

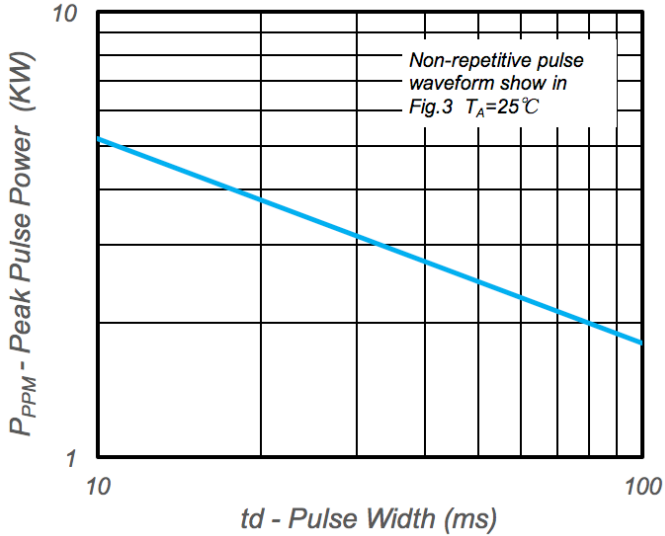


Fig.2 - Peak Pulse Power Rating

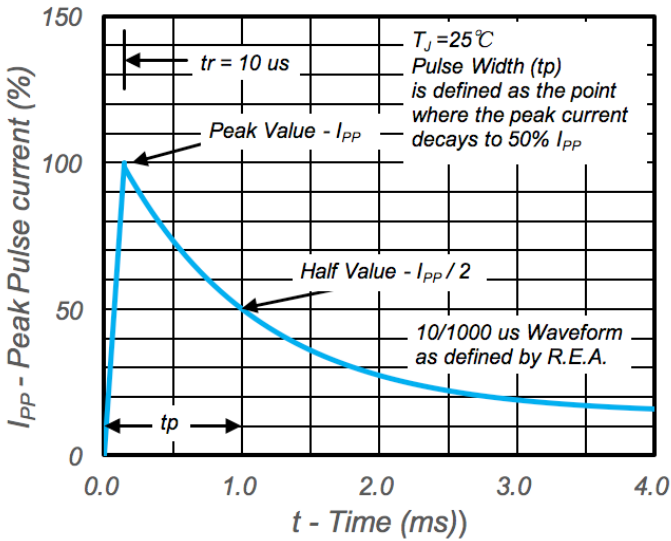


Fig.3 - Pulse Waveform

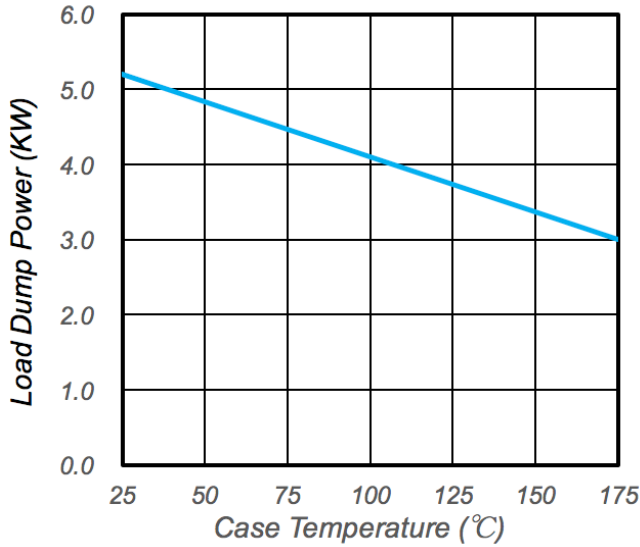


Fig.4 - Load Dump Power Characteristics (10ms Exponential Waveform)

## Package Outline Dimensions and Pad Layouts

### SMD-BLOCK

