

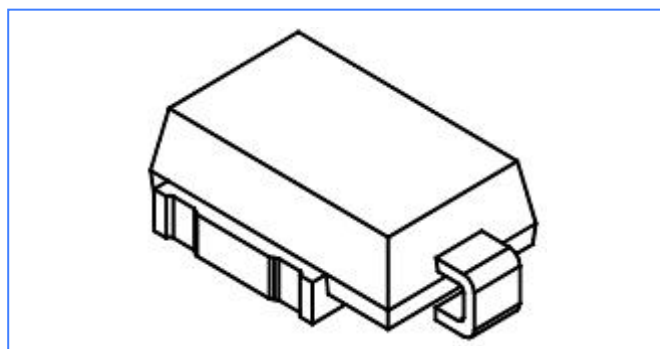
## SM8S Series

### Features

- Optimal Design of Passivation Anisotropic Rectifier Technology
- $T_J = 175^\circ\text{C}$  capability suitable for high reliability and automotive requirement
- 6600 W peak pulse power capability with a 10/1000 $\mu\text{s}$  waveform, repetitive rate (duty cycle):0.01 %
- Meet ISO 7637-2 5a/5b and ISO 16750 load dump test (varied by test condition)
- Low leakage
- Uni-directional polarity
- Low forward voltage drop
- Excellent clamping capability
- Very fast response time
- AEC-Q101 qualified
- RoHS compliant

### Mechanical Data

- Case: DO-218AB
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Heatsink is anode



DO-218AB

### Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu\text{s}$ waveform <sup>1</sup>	$P_{PP}$	6600	Watts
Peak power dissipation with a 10/10,000 $\mu\text{s}$ waveform	$P_{PP}$	5200	W
Peak pulse current with a 10/1000 $\mu\text{s}$ waveform	$I_{pp}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 25^\circ\text{C}$ <sup>1</sup>	$P_D$	8	W
Peak forward surge current 8.3 ms single half sine-	$I_{FSM}$	700	A
Operating junction and storage temperature range	$T_J T_{STG}$	-55 to +175	$^\circ\text{C}$

Note:

1. Non-repetitive current pulse per Fig.2 and derated above  $T_A = 25^\circ\text{C}$  per Fig.1

### Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Bi)	Part Number (Uni)	Reverse Stand off Voltage $V_R$ (Volts)	Breakdown Voltage $V_{BR}$ (Volts)@ $I_T$		Test Current $I_T$ (mA)	Maximum Reverse Leakage $I_R@V_R$ ( $\mu\text{A}$ )	Maximum $I_R@V_{RWM}$ $T_J=175$ ( $\mu\text{A}$ )	Maximum Peak Pulse Current $I_{pp}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{pp}$ (V)
			Min .V	Max .V					
SM8S18CA	SM8S18A	18	20.00	22.10	5	10	150	226.0	29.2
SM8S22CA	SM8S22A	22	24.40	26.90	5	10	150	186.0	35.5
SM8S24CA	SM8S24A	24	26.70	29.50	5	10	150	170.0	38.9
SM8S26CA	SM8S26A	26	28.90	31.90	5	10	150	157.0	42.1
SM8S28CA	SM8S28A	28	31.10	34.40	5	10	150	145.0	45.4
SM8S33CA	SM8S33A	33	36.70	40.60	5	10	150	124.0	53.3
SM8S36CA	SM8S36A	36	40.00	44.20	5	10	150	114.0	58.1

Rating & Characteristic Curves

Figure 1- Pulse Derating Curve

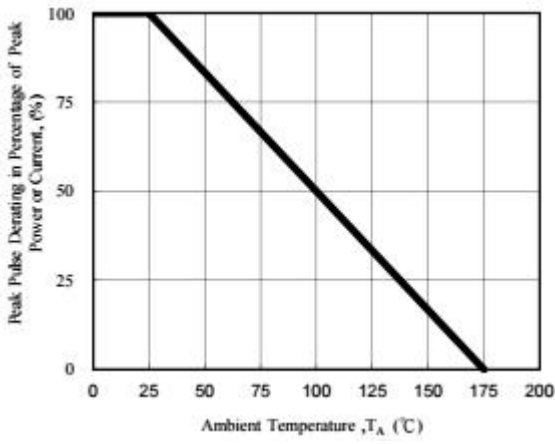


Figure 2- Pulse Waveform

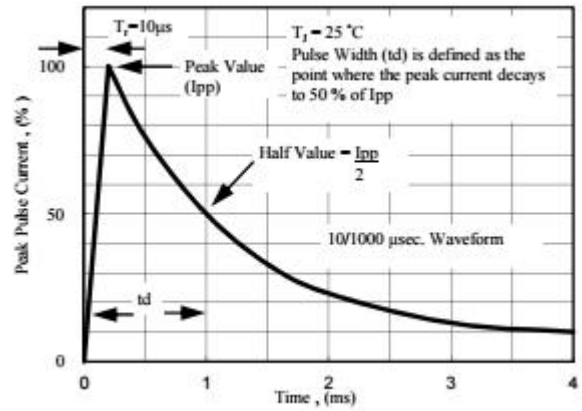


Figure 3- Steady State Power Derating Curve

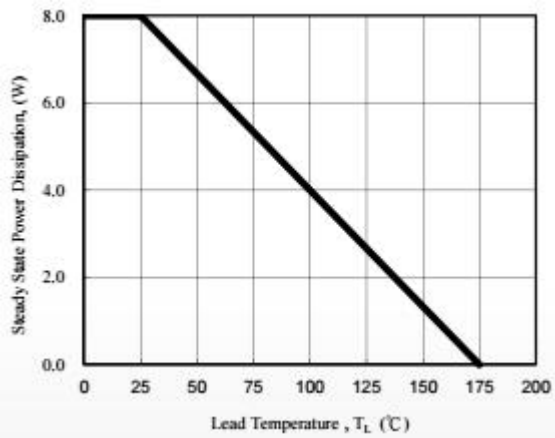
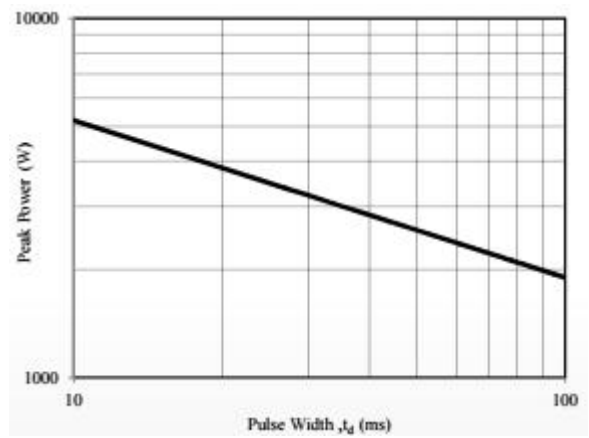
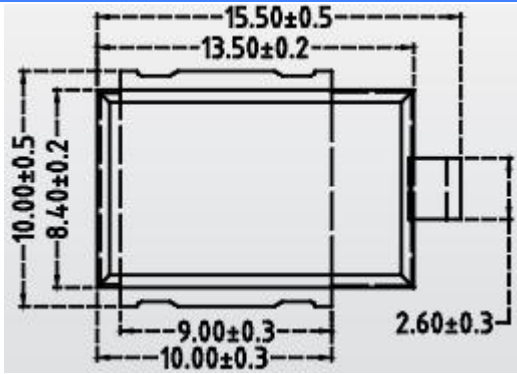


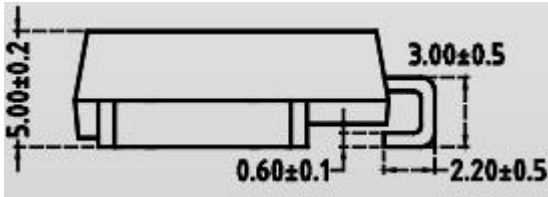
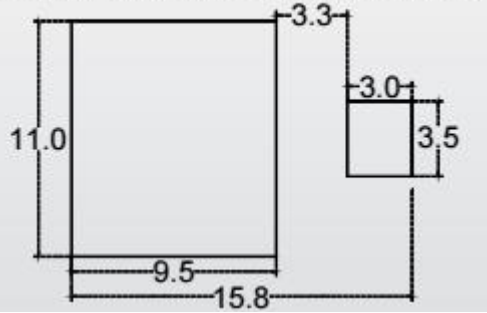
Figure 4- Peak Pulse Power Rating Curve



**PACKAGE OUTLINE DIMENSIONS in inches (millimeters)**



Recommended Mounting Pad Layout



**Disclaimer**

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

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