

# SM8S10CAT thru SM8S43CAT

# 6600Watts

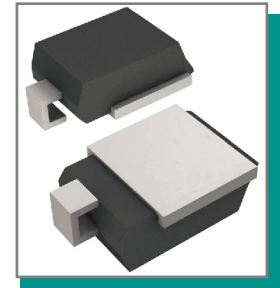
## Automotive Transient Voltage Suppressors

PROSEMI offered AEC-Q101 compliant TVS diodes are specially designed to protect sensitive electronic devices from lightning and other transient voltage.



### Features

- 6600 watts Peak Pulse Power (10/1000µs)
- Available in Bi-directional polarity
- PN junction is passivated and protected by high temperature resistant insulating adhesive
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge specification (varied by test condition)



**DO-218AB**

### Mechanical Characteristics

- JEDEC DO-218AB package
- Molding compound flammability rating: UL 94V-0
- Matt tinned lead
- Solderability according to J-STD-002 and JESD 22-B102

### Applications

- Designed to protect sensitive electronics from: Inductive Load
- Switching
- Automotive Load Dump

### Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power (tp =10/1000µs)	P <sub>PPM</sub>	6600	Watts
Peak Pulse Power (tp =10/10000µs)	P <sub>PPM</sub>	5200	Watts
Peak pulse current (10/1000µs)	I <sub>PPM</sub>	See Electrical Characteristics	A
Power dissipation on infinite heat sink T <sub>A</sub> = 25 °C (Fig1)	P <sub>D</sub>	8	W
Operating junction temperature range	T <sub>J</sub>	-55 to + 175	°C
Storage temperature range	T <sub>STG</sub>	-55 to + 175	°C

**Note:** The non-repetitive current pulse derating temperature is above TA=25 ° C.

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### Electrical Characteristics

Part Number	Reverse Standoff Voltage $V_{RWM}$ (Volts)	Breakdown Voltage $V_{BR}$ (Volts) $@I_T$		Test Current $I_T$ (mA)	Maximum Clamping Voltage $V_C@I_{PP}$ (Volts)	Maximum Peak Pulse Current $I_{pp}$ (Amps)	Maximum Reverse Leakage $I_R@V_{RWM}$ ( $\mu$ A)
		MIN	MAX				
SM8S10CAT	10	11.1	12.3	5	17.0	388	10
SM8S11CAT	11	12.2	13.5	5	18.2	363	10
SM8S12CAT	12	13.3	14.7	5	19.9	332	10
SM8S13CAT	13	14.4	15.9	5	21.5	307	10
SM8S14CAT	14	15.6	17.2	5	23.2	284	10
SM8S15CAT	15	16.7	18.5	5	24.4	270	10
SM8S16CAT	16	17.8	19.7	5	26.0	254	10
SM8S17CAT	17	18.9	20.9	5	27.6	239	10
SM8S18CAT	18	20.0	22.1	5	29.2	226	10
SM8S20CAT	20	22.2	24.5	5	32.4	204	10
SM8S22CAT	22	24.4	26.9	5	35.5	186	10
SM8S24CAT	24	26.7	29.5	5	38.9	170	10
SM8S26CAT	26	28.9	31.9	5	42.1	157	10
SM8S28CAT	28	31.1	34.4	5	45.4	145	10
SM8S30CAT	30	33.3	36.8	5	48.4	136	10
SM8S33CAT	33	36.7	40.6	5	53.3	124	10
SM8S36CAT	36	40.0	44.2	5	58.1	114	10
SM8S40CAT	40	44.4	49.1	5	64.5	102	10
SM8S43CAT	43	47.8	52.8	5	69.4	95.1	10

**Note:** The relationship between  $V_{BR}$  and junction temperature is calculated by the formula:  
 $V_{BR}$  at  $T_J = V_{BR}$  at  $25^\circ C \times (1 + \alpha \times T_J - 25)$

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### Typical Characteristics

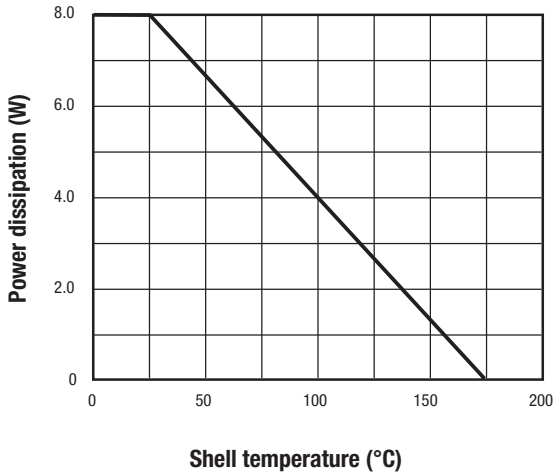


Fig. 1 - Power Derating Curve

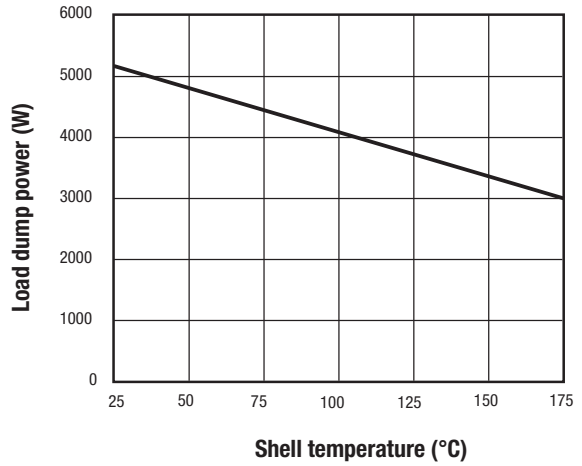


Fig. 2 - Load dump power Curve (10ms exponential wave)

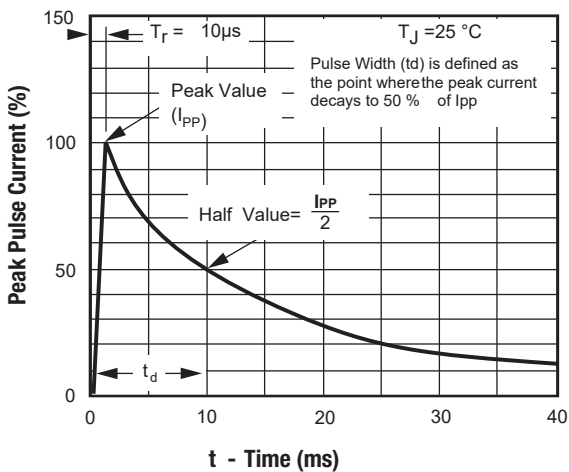


Fig. 3 - Pulse Waveform

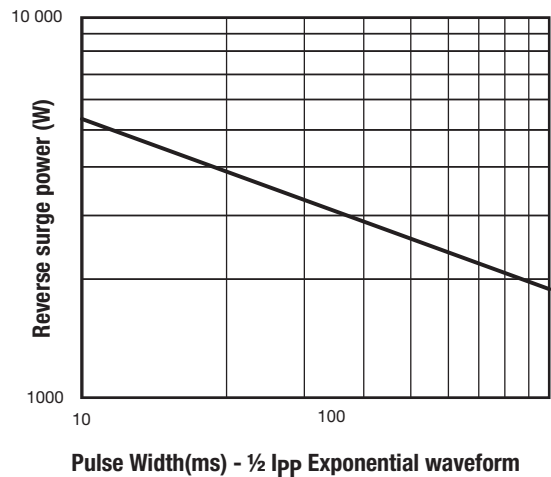


Fig. 4 - Reverse power tolerance

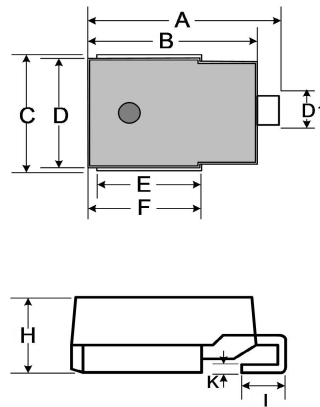
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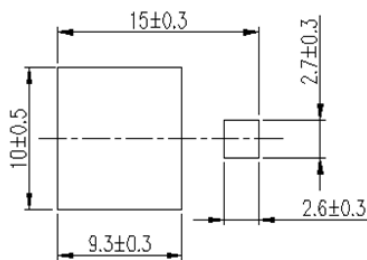
## Automotive Transient Voltage Suppressors

### Outline Drawing – (DO-218AB)

Ref. (mm)	Millimeters	
	Min.	Max.
A	15.0	16.0
B	13.3	13.7
C	9.7	10.3
D	8.3	8.7
D1	2.4	3.0
E	8.9	9.5
F	9.9	10.5
H	4.7	5.0
I	2.0	2.6
K	0.5	0.7



### Pad Layout



### Package Information

Out line	Reel (pcs)	Per carton (pcs)	Packing Option
Taping	750	3000	box