

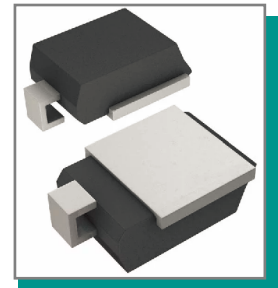
# Automotive Load Dump Protection

## V<sub>rw</sub>m 10-43V

## P<sub>ppm</sub> 6600 Watts

### 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

<b>Absolute Maximum Rating</b>			
<b>Rating</b>	<b>Symbol</b>	<b>Value</b>	<b>Units</b>
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

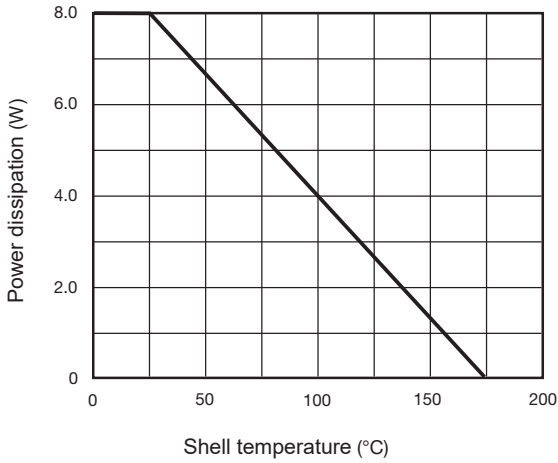
**Note:** The non-repetitive current pulse derating temperature is above T<sub>A</sub>=25 ° C.

## Electrical Characteristics

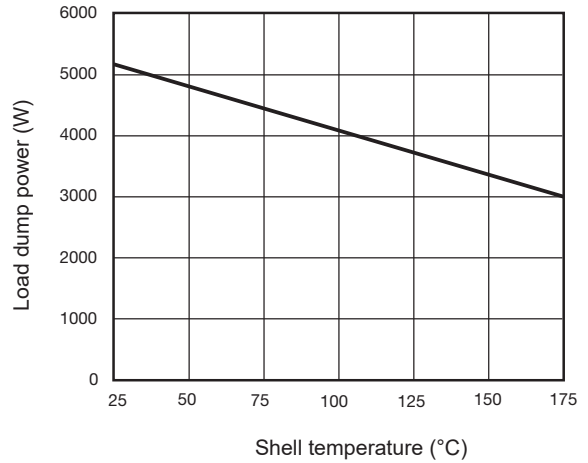
Part Number	Reverse Standoff Voltage V <sub>RWM</sub> (Volts)	Breakdown Voltage V <sub>BR</sub> (Volts)@I <sub>T</sub>		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage V <sub>c</sub> @I <sub>PP</sub> (Volts)	Maximum Peak Pulse Current I <sub>pp</sub> (Amps)	Maximum Reverse Leakage I <sub>R</sub> @V <sub>RWM</sub> (µA)
		MIN	MAX				
SM8S10CA	10	11.1	12.3	5	17.0	388	10
SM8S11CA	11	12.2	13.5	5	18.2	363	10
SM8S12CA	12	13.3	14.7	5	19.9	332	10
SM8S13CA	13	14.4	15.9	5	21.5	307	10
SM8S14CA	14	15.6	17.2	5	23.2	284	10
SM8S15CA	15	16.7	18.5	5	24.4	270	10
SM8S16CA	16	17.8	19.7	5	26.0	254	10
SM8S17CA	17	18.9	20.9	5	27.6	239	10
SM8S18CA	18	20.0	22.1	5	29.2	226	10
SM8S20CA	20	22.2	24.5	5	32.4	204	10
SM8S22CA	22	24.4	26.9	5	35.5	186	10
SM8S24CA	24	26.7	29.5	5	38.9	170	10
SM8S26CA	26	28.9	31.9	5	42.1	157	10
SM8S28CA	28	31.1	34.4	5	45.4	145	10
SM8S30CA	30	33.3	36.8	5	48.4	136	10
SM8S33CA	33	36.7	40.6	5	53.3	124	10
SM8S36CA	36	40.0	44.2	5	58.1	114	10
SM8S40CA	40	44.4	49.1	5	64.5	102	10
SM8S43CA	43	47.8	52.8	5	69.4	95.1	10

**Note:** The relationship between VBR and junction temperature is calculated by the formula:  
VBR at T<sub>J</sub>=VBR at 25 ° C x (1+α T x (T<sub>J</sub> - 25))

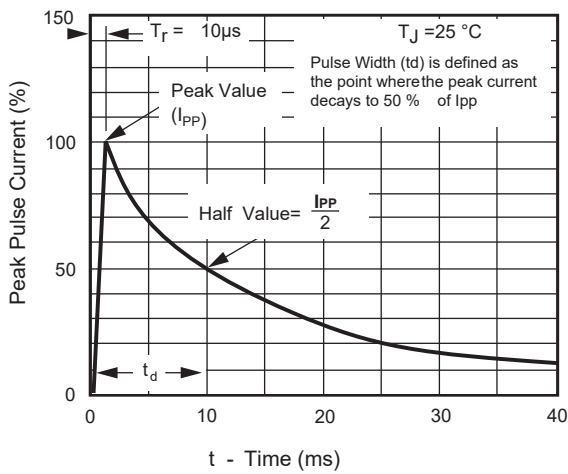
### Typical Characteristics



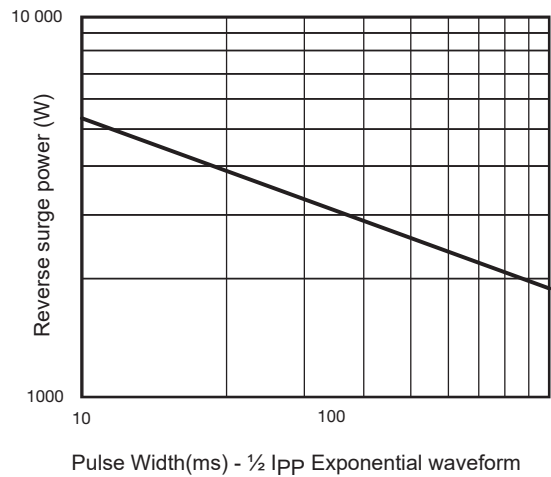
**Fig. 1 - Power Derating Curve**



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



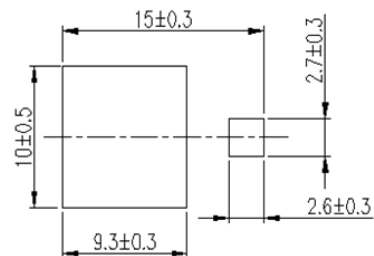
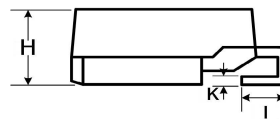
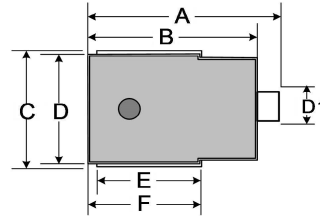
**Fig. 3 - Pulse Waveform**



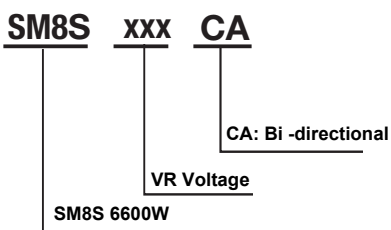
**Fig. 4 - Reverse power tolerance**

### 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



### Part Numbering System



### Package Information

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