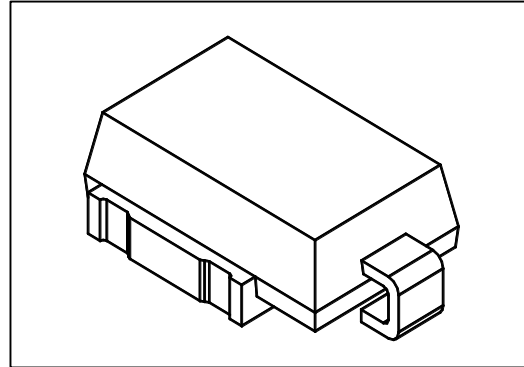


**Working Voltage: 10 to 43 V**  
**Peak Pulse Power: 3600 W**

## Surface Mount Transient Voltage Suppressors

### Features

- Optimized glass passivated chip
- $T_J = 175\text{ }^\circ\text{C}$  capability suitable for high reliability and automotive requirement
- 3600 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)
- AEC-Q101 qualified
- Low leakage current
- Low forward voltage drop
- Uni-directional polarity
- Excellent clamping capability
- Very fast response time
- RoHS compliant



DO-218AB

### Mechanical Data

- Case: DO-218AB
- Molding compound: UL94V-0 flammability
- Polarity: Heatsink is anode

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

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu\text{s}$ waveform <sup>(1)</sup>	$P_{PP}$	3600	W
Peak power dissipation with a 10/10,000 $\mu\text{s}$ waveform	$P_{PP}$	2800	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 $T_L = 25\text{ }^\circ\text{C}$	$P_D$	5.0	W
Peak forward surge current 8.3 ms single half sine-wave	$I_{FSM}$	500	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  $T_A = 25\text{ }^\circ\text{C}$  per Fig.1



**Ratings and Characteristics Curves ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

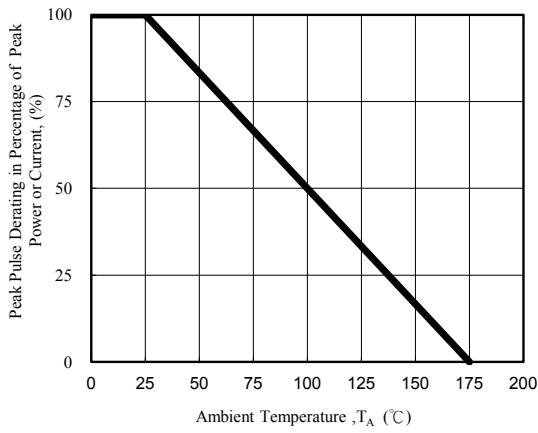


Fig. 1 - Pulse Derating Curve

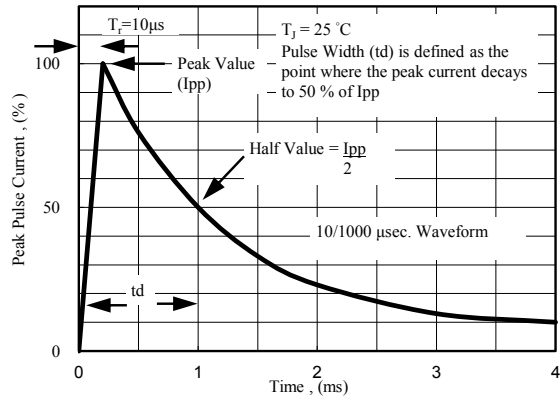


Fig. 2 - Pulse Waveform

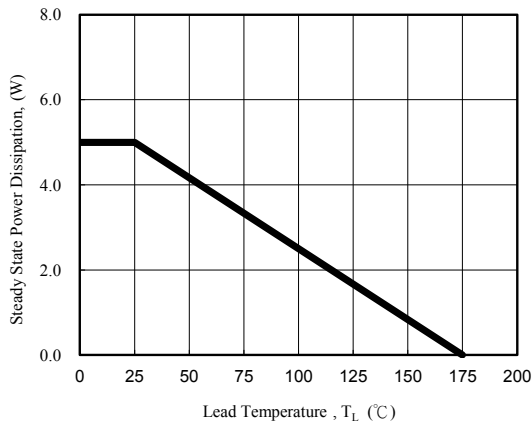


Fig. 3 - Steady State Power Derating Curve

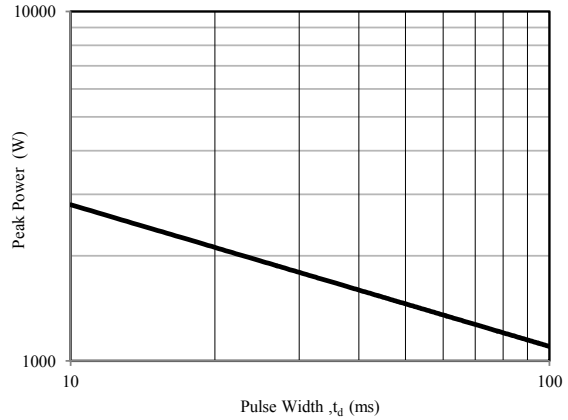
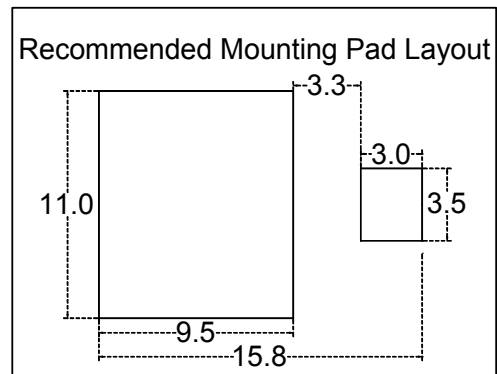
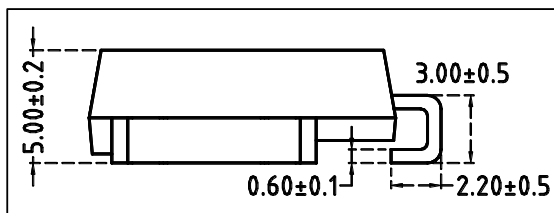
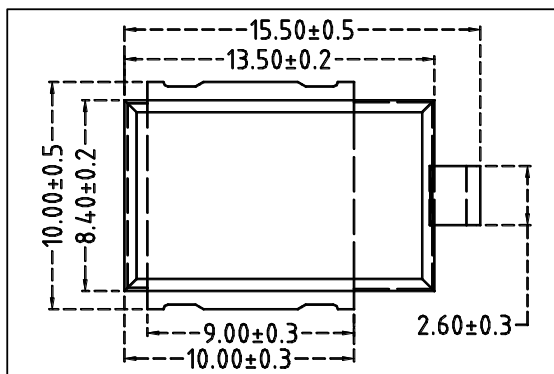


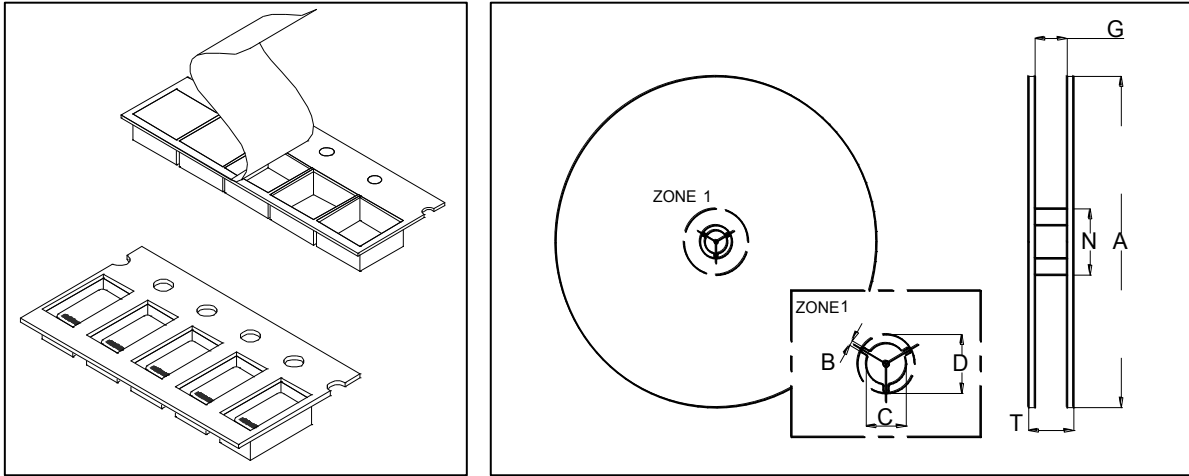
Fig. 4 - Peak Pulse Power Rating Curve

**Package Outline Dimensions (millimeters)**





### Surface Mount Tape and Reel Packaging



### Dimensions in Millimeters (inches)

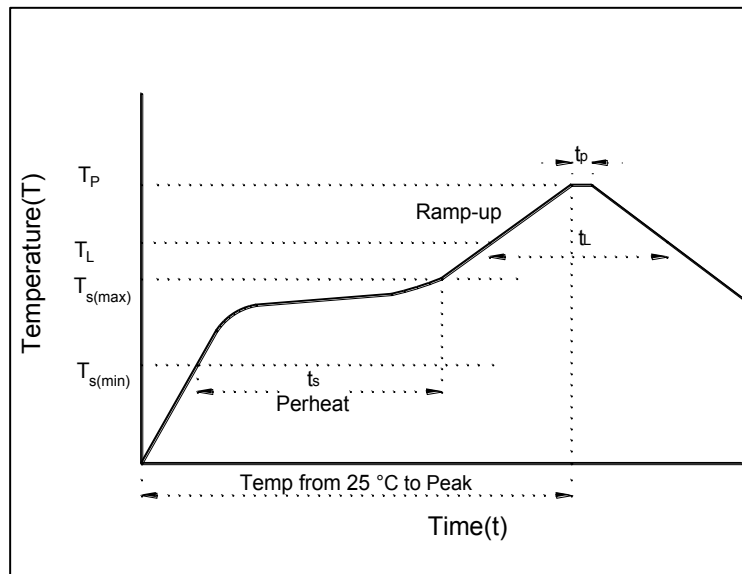
TAPE SIZE	A MAX.	B MIN.	C	D MIN.	N MIN.	G MAX.	T MAX.
24 mm (0.945)	330 ± 2.0 (13.0 ± 0.079) 178 ± 2.0 (7.0 ± 0.079)	1.5 (0.059)	13.5 ± 0.50 (0.53 ± 0.02)	20.2 (0.795)	50 (1.97)	26.4 (1.039)	30.4 (1.197)

### Recommended Soldering Parameters

IR-Reflow Condition			
Pre Heat	Temp. min	150	°C
	Temp. max	200	°C
	Time(min to max)	60-180	sec
Ramp up rate (150-200°C)		<3	°C/sec

Reflow	Liquidus Temp.	>220	°C
	Peak Temp.	245	°C
	Time(Liq. to Peak)	60-150	sec
Ramp up rate (220-200°C)		<3	°C/sec
Time within actual peak temp.		10-30	sec

Ramp down Rate	<5	°C/sec
Time(25°C to Peak temp.)	<6	min
Do not exceed	280	°C





Electrical Characteristics( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

Part Number (Uni)	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	Maximum $I_R$ @ $V_{RWM}$ $T_J=175$ ( $\mu\text{A}$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}$ (A) <sup>(1)</sup>	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
	Min (V)	Max (V)	$I_T$ (mA)					
SM5S10A	11.1	12.3	5.0	15	250	10	212	17.0
SM5S11A	12.2	13.5	5.0	10	150	11	198	18.2
SM5S12A	13.3	14.7	5.0	10	150	12	181	19.9
SM5S13A	14.4	15.9	5.0	10	150	13	167	21.5
SM5S14A	15.6	17.2	5.0	10	150	14	155	23.2
SM5S15A	16.7	18.5	5.0	10	150	15	148	24.4
SM5S16A	17.8	19.7	5.0	10	150	16	138	26.0
SM5S17A	18.9	20.9	5.0	10	150	17	130	27.6
SM5S18A	20.0	22.1	5.0	10	150	18	123	29.2
SM5S20A	22.2	24.5	5.0	10	150	20	111	32.4
SM5S22A	24.4	26.9	5.0	10	150	22	101	35.5
SM5S24A	26.7	29.5	5.0	10	150	24	93	38.9
SM5S26A	28.9	31.9	5.0	10	150	26	86	42.1
SM5S28A	31.1	34.4	5.0	10	150	28	79	45.4
SM5S30A	33.3	36.8	5.0	10	150	30	74	48.4
SM5S33A	36.7	40.6	5.0	10	150	33	68	53.3
SM5S36A	40.0	44.2	5.0	10	150	36	62	58.1
SM5S40A	44.4	49.1	5.0	10	150	40	56	64.5
SM5S43A	47.8	52.8	5.0	10	150	43	52	69.4

NOTE:

1. Surge current waveform is defined at 10/1000 $\mu\text{s}$  waveform

2. For all types maximum  $V_F = 2.0$  V at  $I_F = 100$  A measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

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