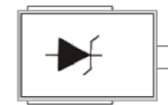
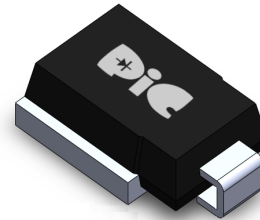


## Surface Mount Transient Voltage Suppressors Working Voltage:10 to 43V Peak Pulse Power:3600W

### 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)
- 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)

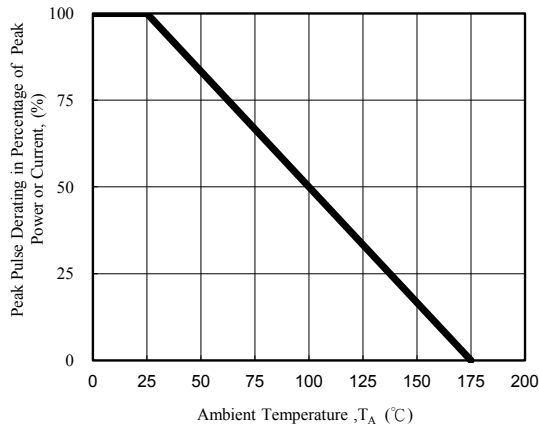


Fig. 1 - Pulse Derating Curve

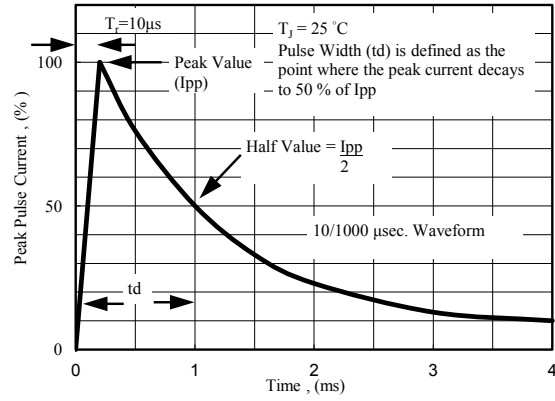


Fig. 2 - Pulse Waveform

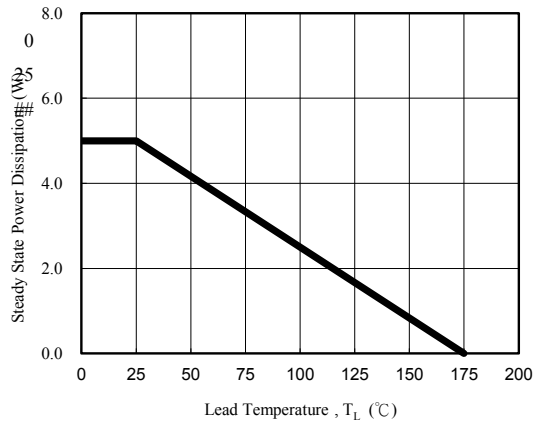


Fig. 3 - Steady State Power Derating Curve

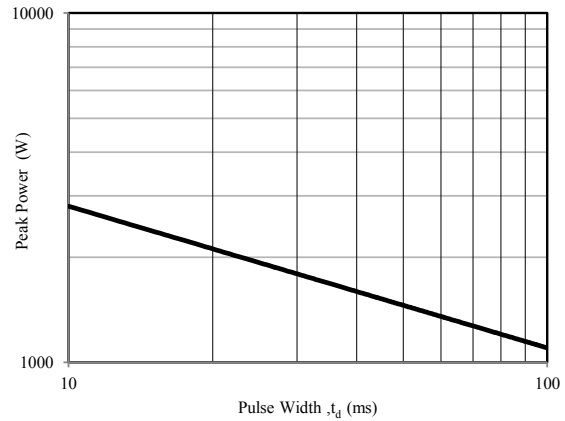
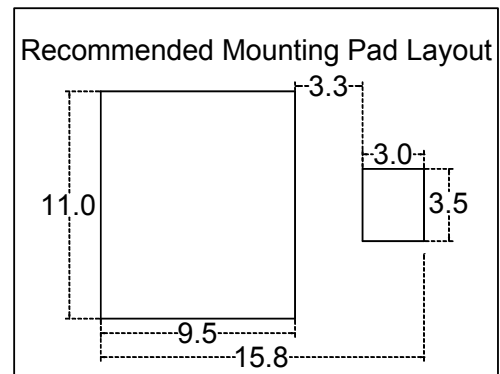
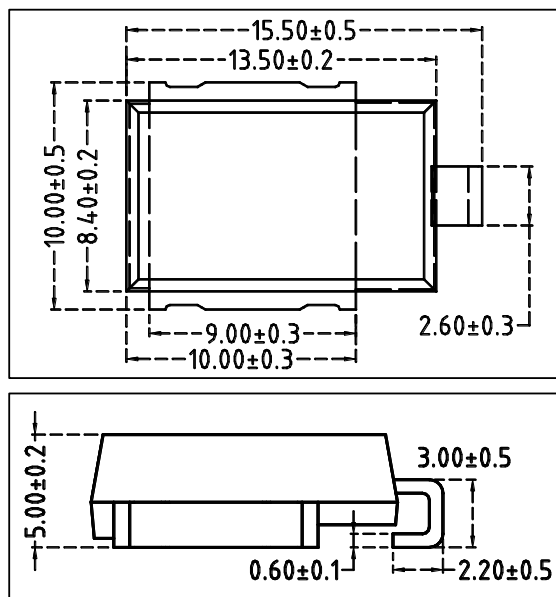
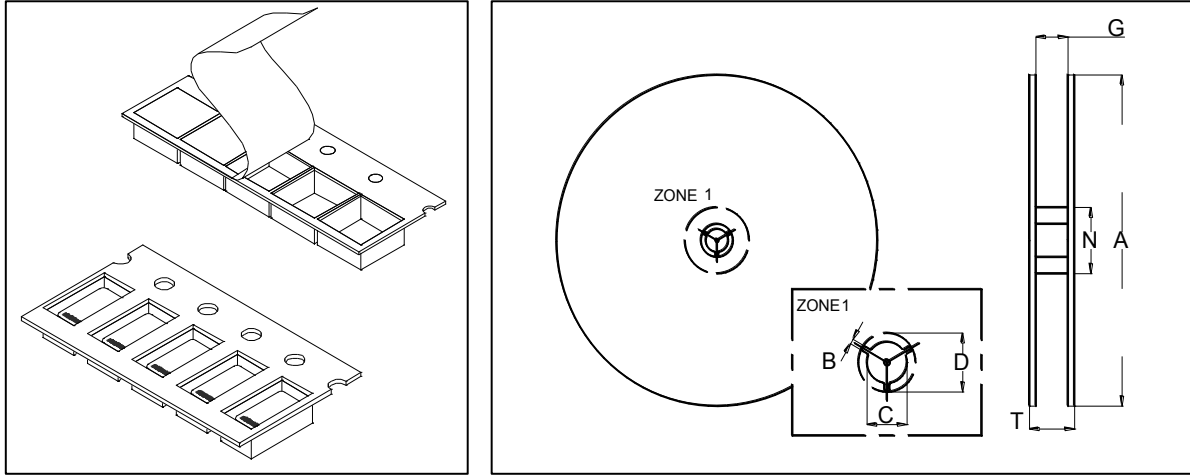


Fig. 4 - Peak Pulse Power Rating Curve

### 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)

## Ordering Information

Part Number	Description	Quantity
SM5Z10A~SM5Z43A	DO-218AB / TR	750 pcs



# SM5Z10A THRU SM5Z43A

**Surface Mount Transient Voltage Suppressors Working Voltage:10 to 43V  
Peak Pulse Power:3600W**

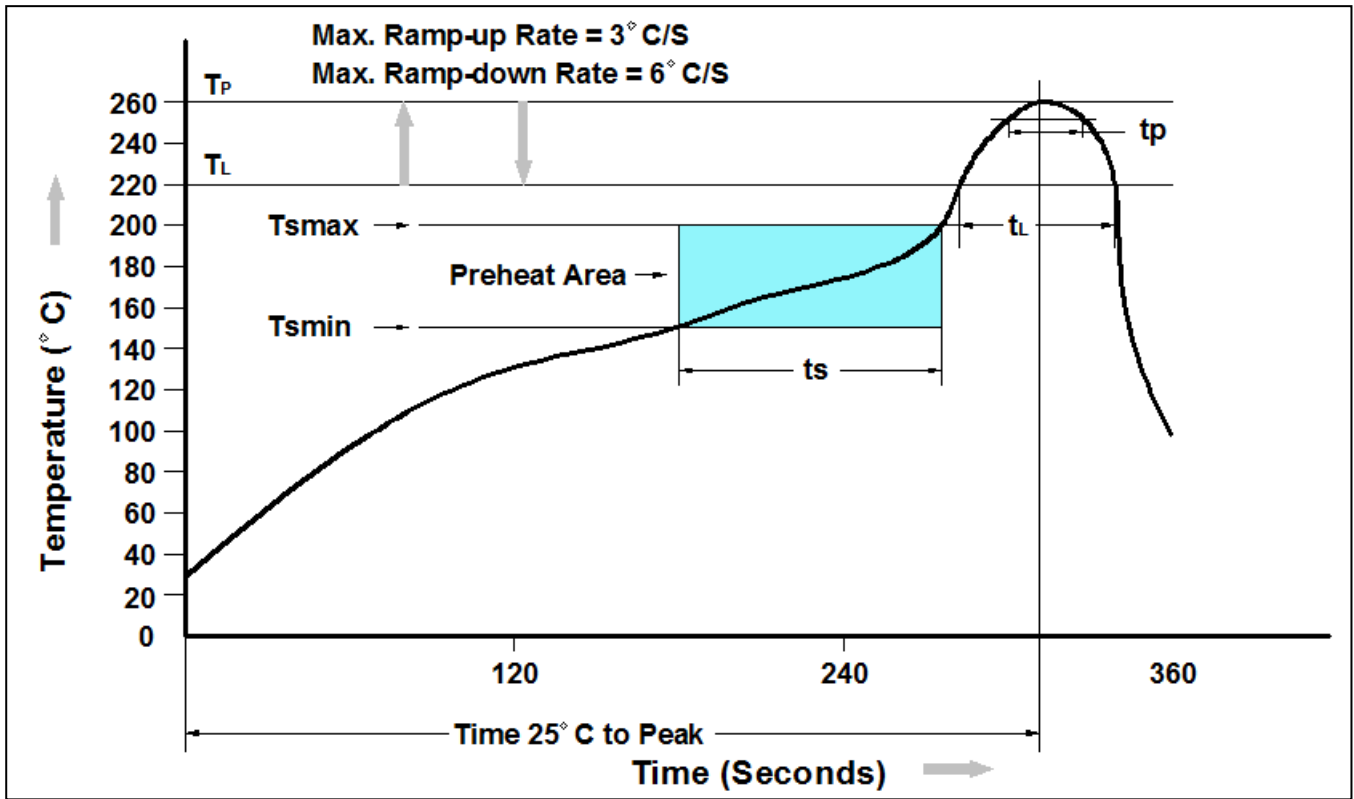
## Electrical Characteristics( $T_A=25^\circ\text{C}$ unless otherwise noted)

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) (1)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
	Min (V)	Max (V)	$I_T$ (mA)					
SM5Z10A	11.1	12.3	5.0	15	250	10	212	17.0
SM5Z11A	12.2	13.5	5.0	10	150	11	198	18.2
SM5Z12A	13.3	14.7	5.0	10	150	12	181	19.9
SM5Z13A	14.4	15.9	5.0	10	150	13	167	21.5
SM5Z14A	15.6	17.2	5.0	10	150	14	155	23.2
SM5Z15A	16.7	18.5	5.0	10	150	15	148	24.4
SM5Z16A	17.8	19.7	5.0	10	150	16	138	26.0
SM5Z17A	18.9	20.9	5.0	10	150	17	130	27.6
SM5Z18A	20.0	22.1	5.0	10	150	18	123	29.2
SM5Z20A	22.2	24.5	5.0	10	150	20	111	32.4
SM5Z22A	24.4	26.9	5.0	10	150	22	101	35.5
SM5Z24A	26.7	29.5	5.0	10	150	24	93	38.9
SM5Z26A	28.9	31.9	5.0	10	150	26	86	42.1
SM5Z28A	31.1	34.4	5.0	10	150	28	79	45.4
SM5Z30A	33.3	36.8	5.0	10	150	30	74	48.4
SM5Z33A	36.7	40.6	5.0	10	150	33	68	53.3
SM5Z36A	40.0	44.2	5.0	10	150	36	62	58.1
SM5Z40A	44.4	49.1	5.0	10	150	40	56	64.5
SM5Z43A	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

**Recommand IR Reflow Soldering Thermal Profile**



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T <sub>smin</sub> )	150°C
Temperature Max. (T <sub>smax</sub> )	200°C
Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</sub> )	60-120 seconds
Average Ramp-up Rate (t <sub>L</sub> to t <sub>P</sub> )	3°C/second max.
Liquidous Temperature (T <sub>L</sub> )	217°C
Time (t <sub>L</sub> ) Maintained Above (T <sub>L</sub> )	60 – 150 seconds
Peak Temperature	260°C +0°C / -5°C
Time (t <sub>P</sub> ) within 5°C of actual Peak Temperature	30 seconds
Ramp-down Rate (T <sub>P</sub> to T <sub>L</sub> )	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



# SM5Z10A THRU SM5Z43A

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**Surface Mount Transient Voltage  
Suppressors Working Voltage:10 to 43V  
Peak Pulse Power:3600W**

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