

Surface Mount Transient Voltage Suppressors

Reverse Voltage 10 - 43 Volts
Peak Pulse Power - 3600 W

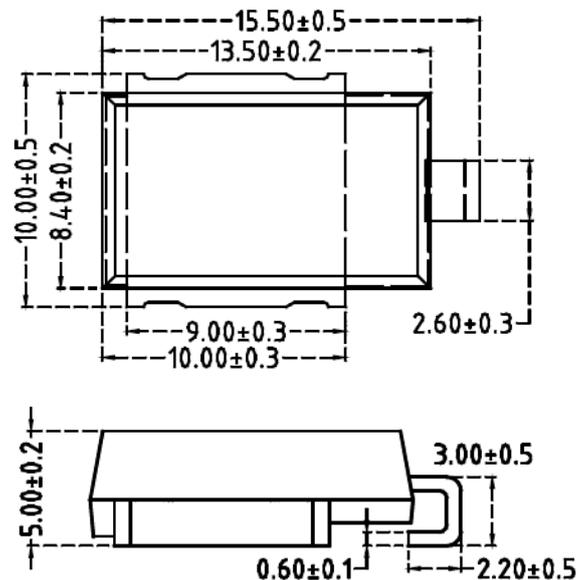
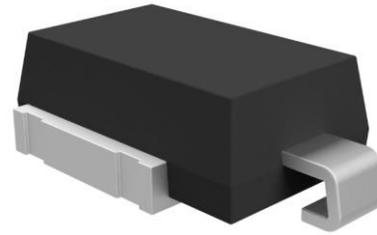
Features

- 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 us 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
- AEC-Q101 qualified

Mechanical Data

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

DO-218



Dimensions in millimeters

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave ,60Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Characteristics	Symbol	SM5Z Series	Unit
Peak power dissipation with a 10/1000μs waveform ⁽¹⁾	PPP	3600	W
Peak power dissipation with a 10/10,000μs waveform	PPP	2800	W
Peak pulse current with a 10/1000μs waveform ⁽¹⁾	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at T _L = 25°C	P _D	5.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I _{FSM}	500	A
Operating Temperature Range	T _J	-55 to +175	°C
Storage Temperature Range	T _{STG}	-55 to +175	°C

NOTE:1.Non-repetitive current pulse per Fig.2 and derated above T_A= 25 °C per Fig.1

Rating and Characteristic Curves

SM5Z Series



Part Number (Uni)	Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Maximum I_R @ V_{RWM} $T_J=175$ (μA)	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 10/1000uS 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

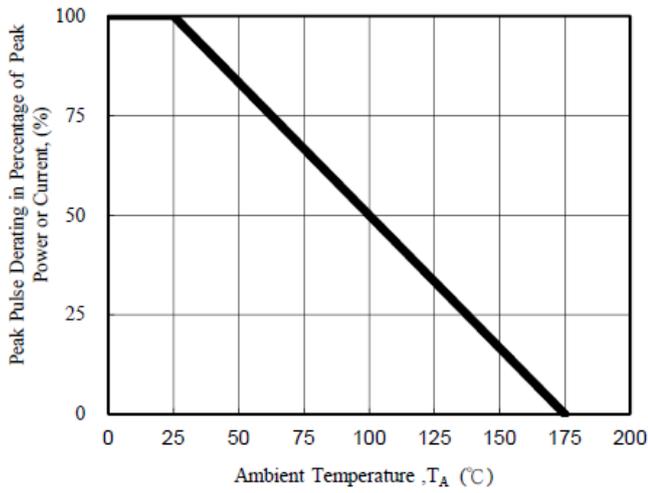


Fig. 1 - Pulse Derating Curve

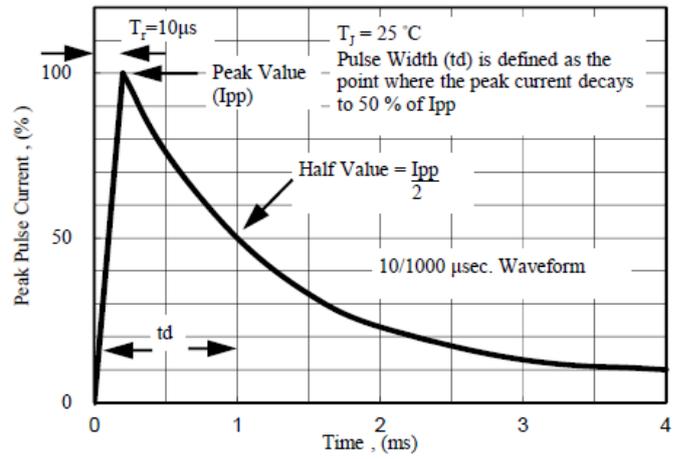


Fig. 2 - Pulse Waveform

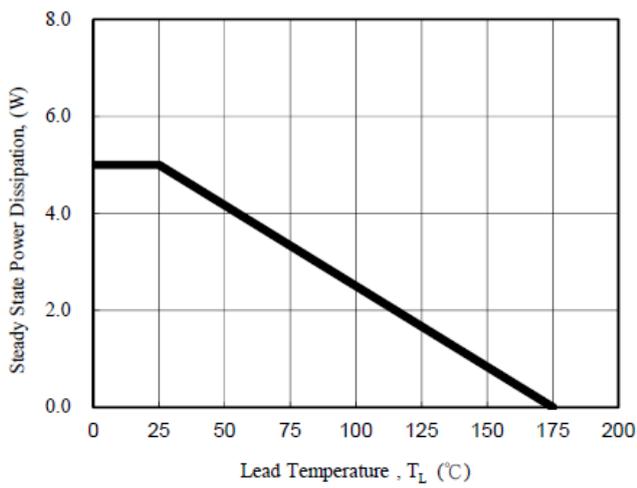


Fig. 3 - Steady State Power Derating Curve

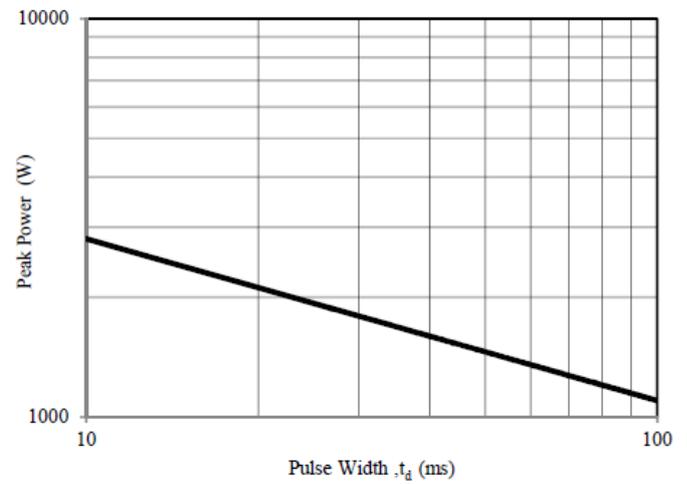
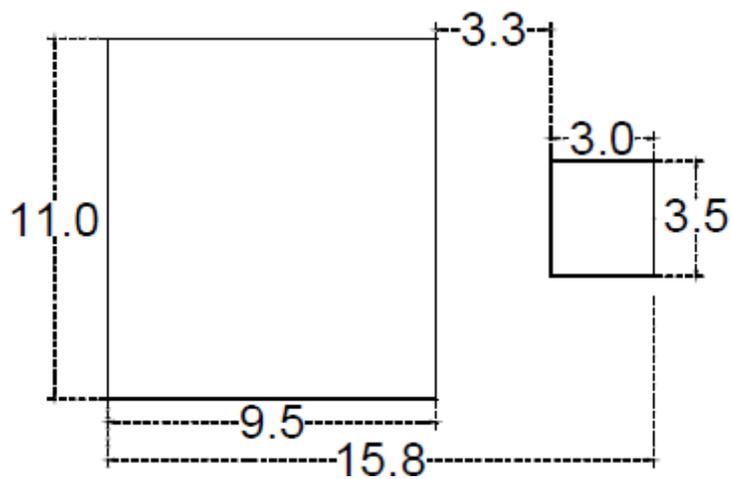


Fig. 4 - Peak Pulse Power Rating Curve

The curve above is for reference only.



Unit: mm



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