



Lightning Surge Protection
Surface Mount Transient Voltage Suppressors
Reverse Stand-Off Voltage : 10 to 43 V
Peak Pulse Power: 4600 W
SM6Z Series

1. Features

- Optimized glass passivated chip
- $T_J = 175\text{ }^\circ\text{C}$ capability suitable for high reliability and automotive requirement
- 4600 W peak pulse power capability with a 10/1000 μs 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
- Excellent clamping capability
- Very fast response time
- RoHS compliant

2. Mechanical Data

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

3. Maximum Ratings and Thermal Characteristics(25°C)

Parameter	Symbol	Value	Units
Peak power dissipation with a 10/1000 μs waveform ⁽¹⁾	P_{PP}	4600	W
Peak power dissipation with a 10/10,000 μs waveform ⁽¹⁾	P_{PP}	3600	W
Peak pulse current with a 10/1000 μs waveform ⁽¹⁾	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75\text{ }^\circ\text{C}$	P_D	6.0	W
Peak forward surge current, 8.3 ms single half sine-wave	I_{FSM}	600	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

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4. Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Breakdown Voltage V _{BR} @I _T			Maximum Reverse Leakage I _R @V _{RWM} (uA)	Maximum I _R @V _{RWM} T _J =175 (uA)	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)	IT (mA)					
SM6Z10A	11.1	12.3	5.0	15	250	10	271	17.0
SM6Z11A	12.2	13.5	5.0	10	150	11	253	18.2
SM6Z12A	13.3	14.7	5.0	10	150	12	231	19.9
SM6Z13A	14.4	15.9	5.0	10	150	13	214	21.5
SM6Z14A	15.6	17.2	5.0	10	150	14	198	23.2
SM6Z15A	16.7	18.5	5.0	10	150	15	189	24.4
SM6Z16A	17.8	19.7	5.0	10	150	16	177	26.0
SM6Z17A	18.9	20.9	5.0	10	150	17	167	27.6
SM6Z18A	20.0	22.1	5.0	10	150	18	158	29.2
SM6Z20A	22.2	24.5	5.0	10	150	20	142	32.4
SM6Z22A	24.4	26.9	5.0	10	150	22	130	35.5
SM6Z24A	26.7	29.5	5.0	10	150	24	118	38.9
SM6Z26A	28.9	31.9	5.0	10	150	26	109	42.1
SM6Z28A	31.1	34.4	5.0	10	150	28	101	45.4
SM6Z30A	33.3	36.8	5.0	10	150	30	95	48.4
SM6Z33A	36.7	40.6	5.0	10	150	33	86	53.3
SM6Z36A	40.0	44.2	5.0	10	150	36	79	58.1
SM6Z40A	44.4	49.1	5.0	10	150	40	71	64.5
SM6Z43A	47.8	52.8	5.0	10	150	43	66	69.4

Note:

1. Surge current waveform is defined at 10/1000uS waveform
2. For all types maximum V_F = 1.9 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



5. Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

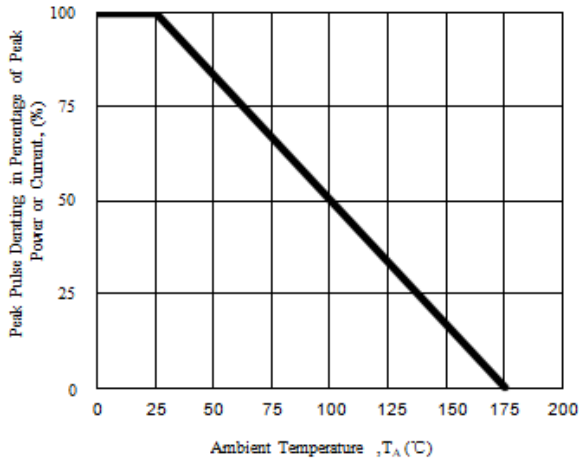


Fig. 1 - Pulse Derating Curve

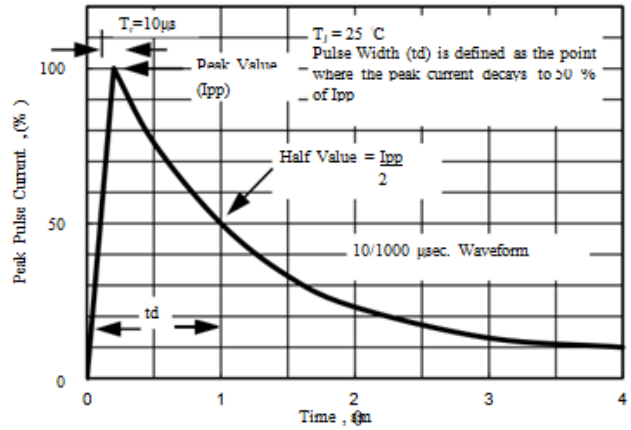


Fig. 2 - Pulse Waveform

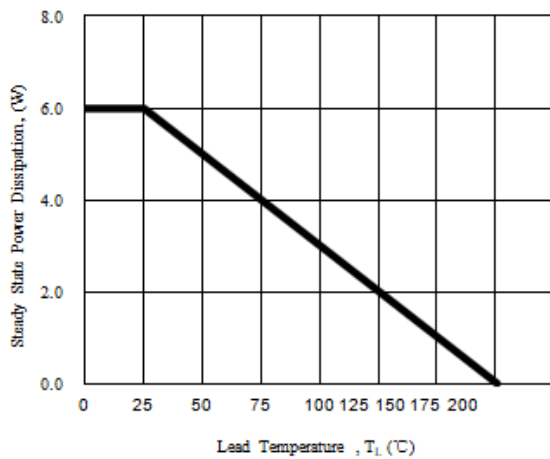


Fig. 3 - Steady State Power Derating Curve

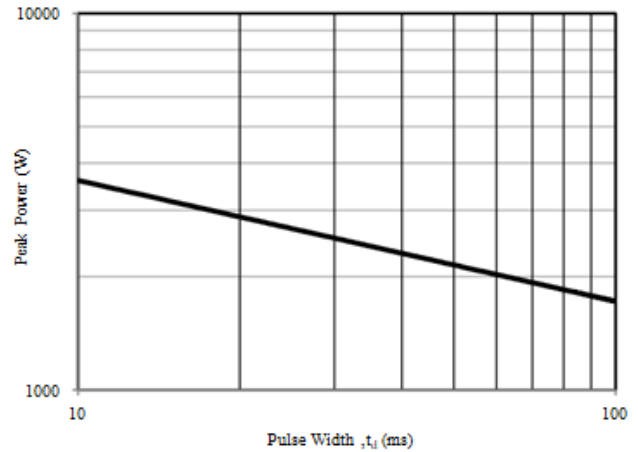
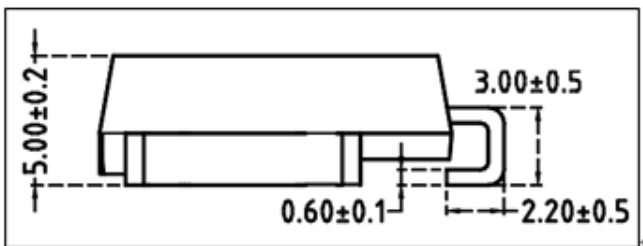
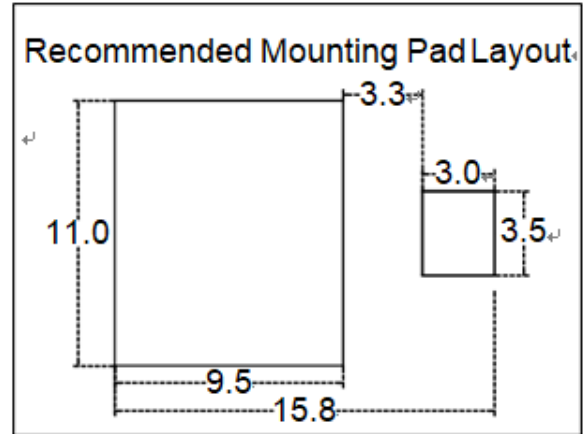
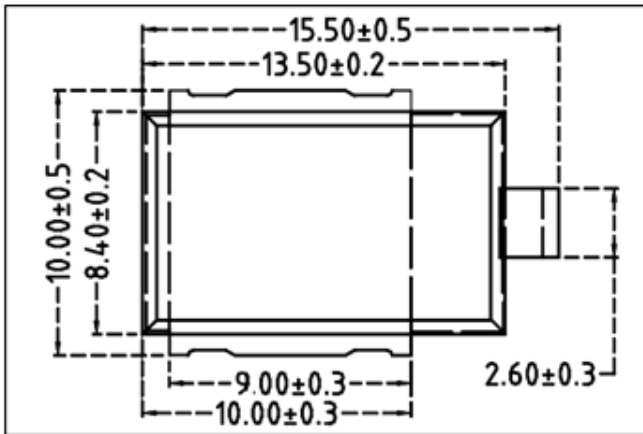


Fig. 4 - Peak Pulse Power Rating Curve



6. Package Outline Dimensions (millimeters)



Preliminary