Surface Mount Transient Voltage Suppressors

SM8Z Series 14 To 43 V 6600W

Description

The SM8Z series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Working Voltage: 14 to 43 V

Peak Pulse Power: 6600 W

DO-218AB

Features

- Glass passivated chip
- 6600 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- T J = 175 °C capability suitable for high reliability and automotive requirement
- Meets ISO7637-2 surge specification (varied by test condition)Meet AEC-Q101 requirement
- Low leakage
- Uni-directional polarity
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application

Mechanical Data

- Case: DO-218AB
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Heatsink is anode

Primary Characteristics

V_{RWM}	14V to 43V
P_{PPM} (10/1000μs)	6600W
P_{PPM} (10/10000μs)	5200W
P_D	8W
I_{FSM}	700A
$T_{J\ max.}$	175°C
Package	DO-218AB

Maximum Ratings and Thermal Characteristics (T A =25 ℃ unless otherwise noted)

Parameter		Symbol	Value	Units
Peak Pulse Power Dissipation	**with 10/1000μs waveform**	P_{PPM}	6600	W
	with 10/10000μs waveform		5200	
Power Dissipation on Infinite Heat Sink at T_L=25°C (Fig.1)		P_D	8	W
Peak Pulse Current with a 10/1000μs waveform		I_{PP}	See Next Table	A
Peak forward surge current 8.3 ms single half sine Wave		I_{FSM}	700	A
Operating junction and storage temperature range		T_J , T_{STG}	－55 to +175	° C
Typical thermal resistance, junction to case		$R_{\theta JC}$	0.90	° C /Watt

Note:(1)Non-repetitive current pulse per Fig.2 and derated above T A = 25 °C per Fig.1

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Electrical Characteristics (@ 25℃ Unless Otherwise Specified)

Part Number	Stand-Off Voltage V_{MW} (V)	Breakdown Voltage V_{BR} (V)		Test Current I_T (mA)	Maximum Reverse Leakage I_R @V_{RWM} (uA)	Maximum I_R @V_{RWM} T_J =175 (uA)	Maximum Reverse Surge Current I_{PP} (A)(1)	Maximum Clamping Voltage V_C @I_{PP} (V)
		MIN.	MAX.					
SM8Z14A	14	15.60	17.20	5.0	10	150	284.0	23.2
SM8Z15A	15	16.70	18.50	5.0	10	150	270.0	24.4
SM8Z16A	16	17.80	19.70	5.0	10	150	254.0	26.0
SM8Z17A	17	18.90	20.90	5.0	10	150	239.0	27.6
SM8Z18A	18	20.00	22.10	5.0	10	150	226.0	29.2
SM8Z20A	20	22.20	24.50	5.0	10	150	204.0	32.4
SM8Z22A	22	24.40	26.90	5.0	10	150	186.0	35.5
SM8Z24A	24	26.70	29.50	5.0	10	150	170.0	38.9
SM8Z26A	26	28.90	31.90	5.0	10	150	157.0	42.1
SM8Z28A	28	31.10	34.40	5.0	10	150	145.0	45.4
SM8Z30A	30	33.30	36.80	5.0	10	150	136.0	48.4
SM8Z33A	33	36.70	40.60	5.0	10	150	124.0	53.3
SM8Z36A	36	40.00	44.20	5.0	10	150	114.0	58.1
SM8Z40A	40	44.40	49.10	5.0	10	150	102.0	64.5
SM8Z43A	43	47.80	52.80	5.0	10	150	95.1	69.4

NOTE: Surge current waveform is defined at 10/1000uS waveform

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

Figure 1 – Power Derating Curve

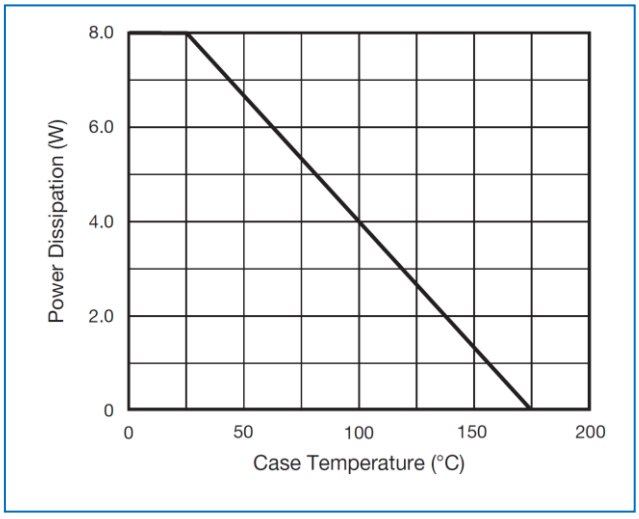

Figure 2 - Load Dump Power Characteristics (10 ms Exponential Waveform)

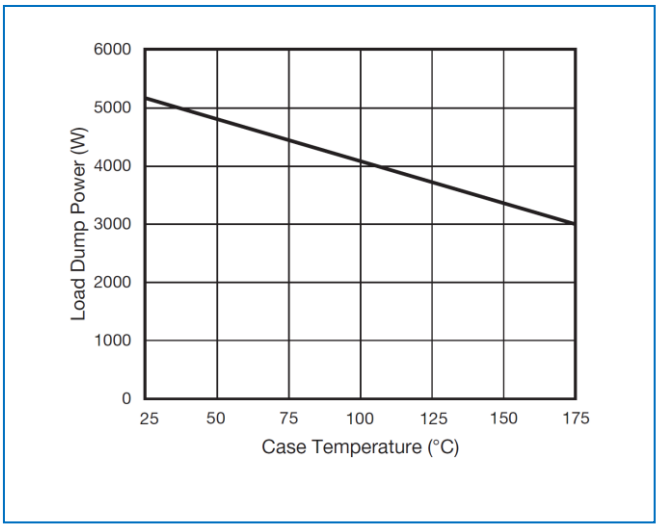

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Figure 3 - Pulse Waveform

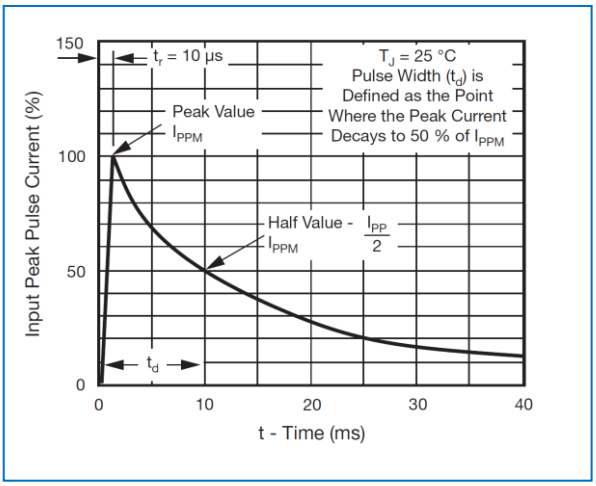
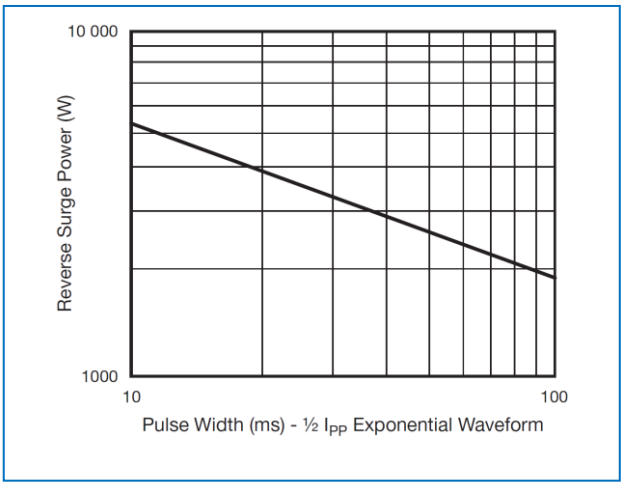


Figure 4 – Reverse Power Capability



Package Outline Dimensions Unit: inches (millimeters)