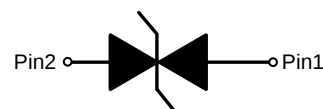


Surface Mount Transient Voltage Suppressors

FEATURES

- Chip produced by chemical method
- Junction passivated by high temperature resistant insulating adhesive
- $T_J = 175\text{ }^{\circ}\text{C}$ capability suitable for high reliability and automotive requirement
- Low leakage current
- High surge capability
- Meets ISO16750-2 surge specification (varied by test condition)
- LF maximum peak of $245\text{ }^{\circ}\text{C}$

DO-218AB



Circuit diagram

Order information

TYPICAL APPLICATIONS

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

Device	Marking	Package	Shipping
SM8S66J33B	SM6S 33CA	DO-218AB	750

MAXIMUM RATINGS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with 10/1000 μs waveform	P_{PPM}	6600	W
with 10/10 000 μs waveform		5200	
Power dissipation on infinite heatsink at $T_C = 25\text{ }^{\circ}\text{C}$ (fig. 1)	P_D	8.0	W
Peak pulse current with 10/1000 μs waveform	$I_{PPM}^{(1)}$	See next table	A
Peak forward surge current 8.3 ms single half sine-wave	$I_{FSM}^{(2)}$	700	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$

Note

⁽¹⁾ Non-repetitive current pulse derated above $T_A = 25\text{ }^{\circ}\text{C}$

⁽²⁾ I_{FSM} only for uni-directional production

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)										
DEVICE TYPE	BREAKDOWN VOLTAGE V_{BR} (V)			TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA)	MAXIMUM REVERSE LEAKAGE AT V_{WM} $T_J = 175\text{ }^{\circ}\text{C}$ I_D (μA)	MAX. PEAK PULSE CURRENT AT 10/1000 μs WAVEFORM (A)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)	TYPICAL TEMP. COEFFICIENT OF V_{BR} αT ($\%/^{\circ}\text{C}$)
	MIN.	NOM.	MAX.							
SM8S66J33B	36.7	38.7	40.6	5.0	33.0	10	150	124	53.3	0.091

Notes

- For all uni-directional types maximum $V_F = 1.8\text{ V}$ at $I_F = 100\text{ A}$ measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(1) To calculate V_{BR} vs. junction temperature, use the following formula: V_{BR} at $T_J = V_{BR}$ at $25\text{ }^{\circ}\text{C} \times (1 + \alpha T \times (T_J - 25))$

THERMAL CHARACTERISTICS ($T_C = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.90	$^{\circ}\text{C/W}$

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

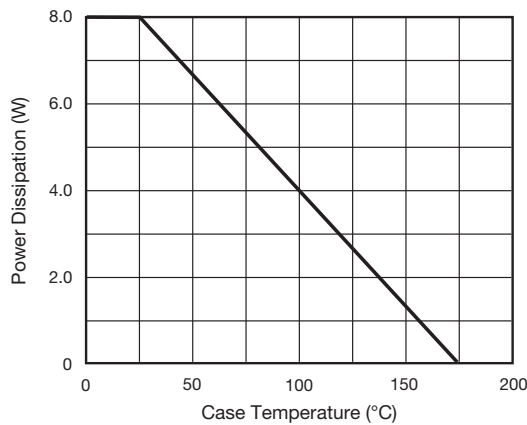


Fig. 1 - Power Derating Curve

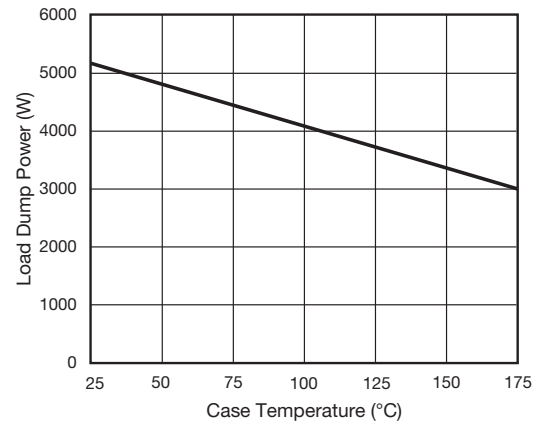


Fig. 2 - Load Dump Power Characteristics (10 ms Exponential Waveform)

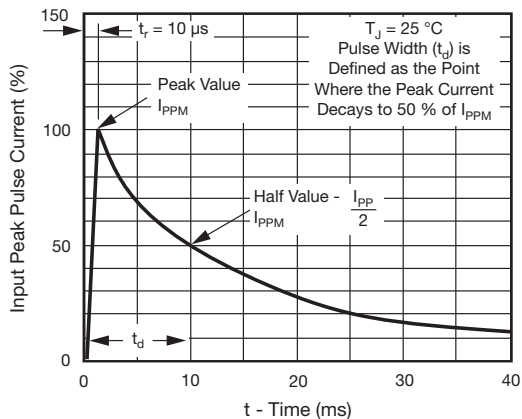


Fig. 3 - Pulse Waveform

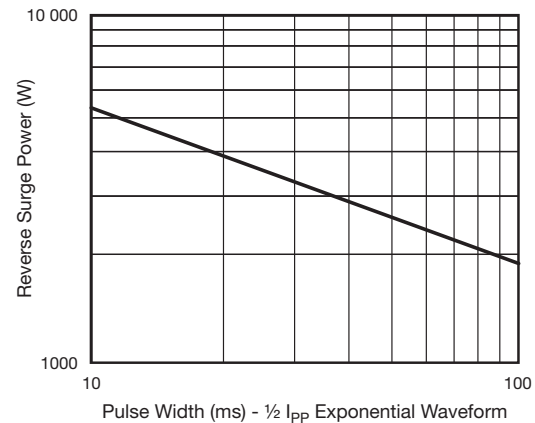


Fig. 4 - Reverse Power Capability

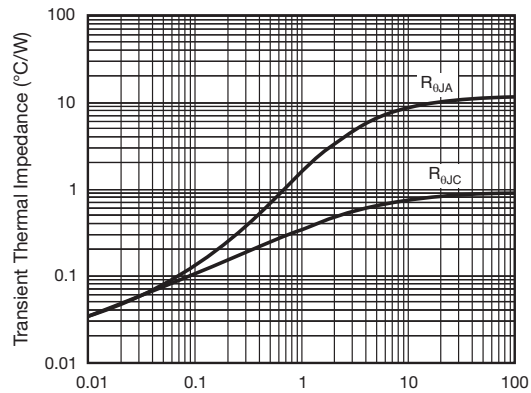


Fig. 5 - Typical Transient Thermal Impedance

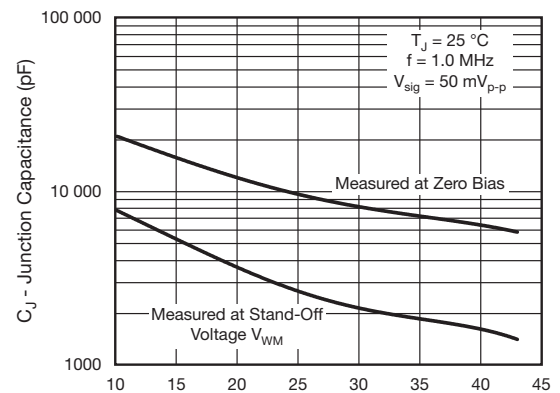
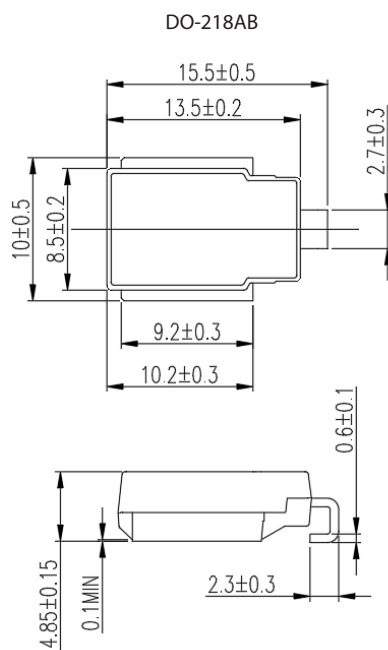


Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS (millimeters)



Mounting Pad Layout

