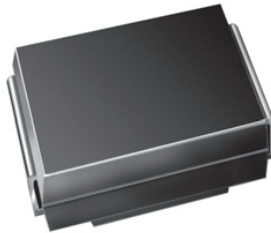


Surface Mount TRANSZORB® Transient Voltage Suppressors


SMB (DO-214AA)

RoHS
COMPLIANT
HALOGEN
FREE
FEATURES

- Uni-directional polarity only
- Peak pulse power: 600 W (10/1000 μ s)
- Excellent clamping capability
- Very fast response time
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units specifically for protecting 3.3 V supplied sensitive equipment against transient overvoltages.

MECHANICAL DATA
Case: SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD22-B102

M3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

PRIMARY CHARACTERISTICS	
V_{WM}	3.3 V
V_{BR} (uni-directional)	4.1 V
P_{PPM}	600 W
I_{FSM}	60 A
T_J max.	175 °C
Polarity	Uni-directional
Package	SMB (DO-214AA)

MAXIMUM RATINGS ($T_A = 25$ °C, unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation	$P_{PPM}^{(1)(2)}$	600	W
Peak pulse current with a 10/1000 μ s waveform (fig. 1)	I_{PP}	50	A
Peak pulse current with a 8/20 μ s waveform (fig. 1)	I_{PPM}	200	A
Non-repetitive peak forward surge current 8.3 ms single half sine-wave	$I_{FSM}^{(2)}$	60	A
Power dissipation on infinite heatsink, $T_L = 75$ °C	P_D	5	W
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175	°C

Notes
⁽¹⁾ Non-repetitive current pulse, per fig. 1

⁽²⁾ Mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads to each terminal

ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)											
DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} AT I_T		MAXIMUM REVERSE LEAKAGE CURRENT I_R AT V_{WM}	STAND-OFF VOLTAGE V_{WM}	MAXIMUM CLAMPING VOLTAGE V_C AT I_{PP} 10/1000 μ s		MAXIMUM CLAMPING VOLTAGE V_C AT I_{PPM} 8/20 μ s		TYPICAL TEMPERATURE COEFFICIENT OF V_{BR}	TYPICAL JUNCTION CAPACITANCE C_J AT 0 V 1 MHz
		MIN.				V	A	V	A		
		V	mA	μ A	V					V	A
SMBJ3V3	KC	4.1	1.0	200	3.3	7.3	50	10.3	200	-5.3	5200



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

PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to lead	$R_{\theta JL}^{(1)}$	20	$^\circ\text{C/W}$
Typical thermal resistance, junction to ambient	$R_{\theta JA}^{(2)}$	100	$^\circ\text{C/W}$

Notes

- (1) Thermal resistance from junction to lead - mounted on 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pads to each terminal
- (2) Thermal resistance from junction to ambient - mounted on the recommended PCB pad layout

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SMBJ3V3-M3/52	0.096	52	750	7" diameter plastic tape and reel
SMBJ3V3-M3/5B	0.096	5B	3200	13" diameter plastic tape and reel

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

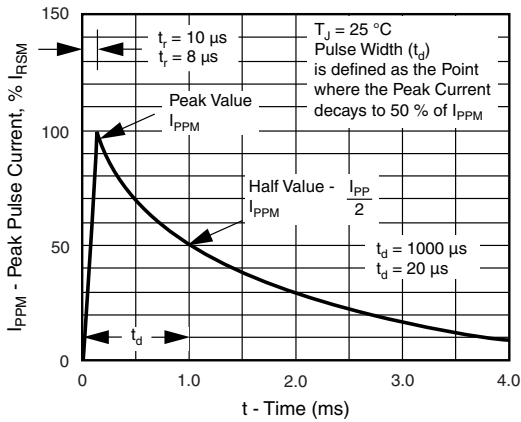


Fig. 1 - Pulse Waveform

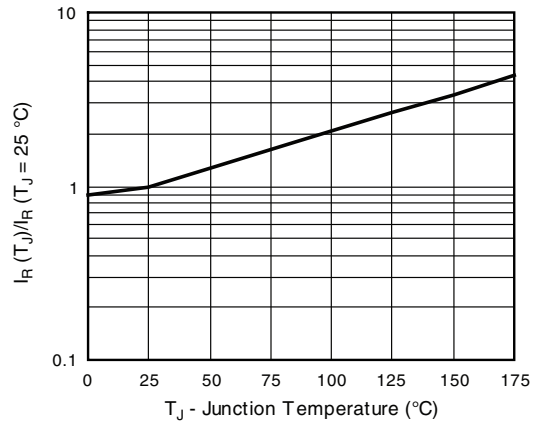


Fig. 3 - Relative Variation of Leakage Current vs. Junction Temperature

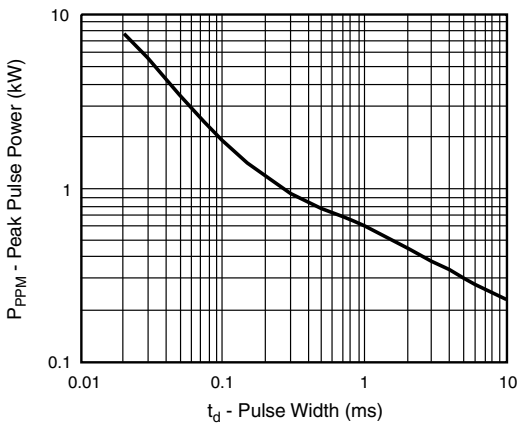


Fig. 2 - Peak Pulse Power Rating Curve

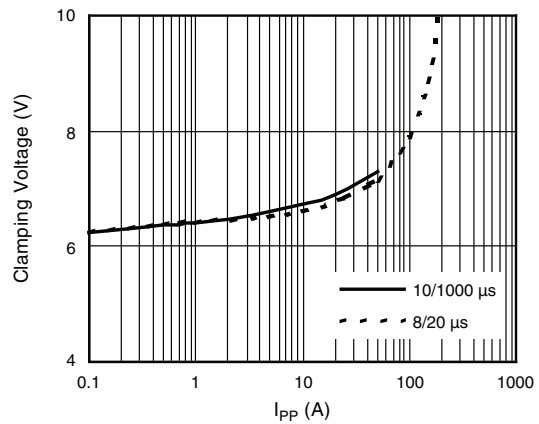


Fig. 4 - Clamping Voltage vs. Peak Pulse Current (T_J initial = $25\text{ }^\circ\text{C}$)

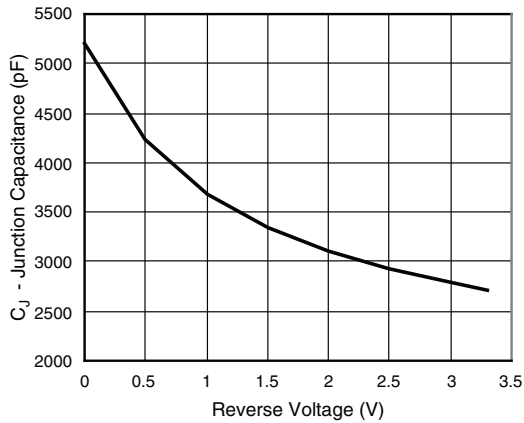


Fig. 5 - Typical Junction Capacitance

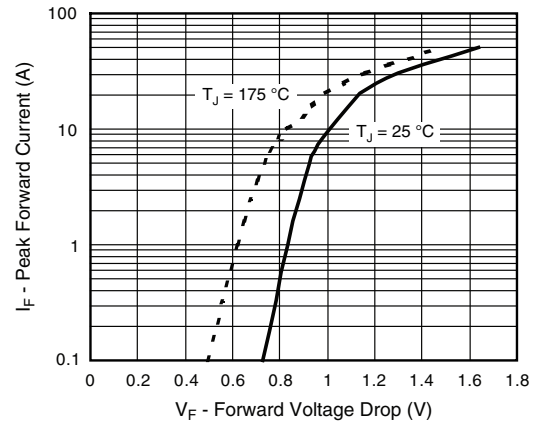


Fig. 7 - Typical Peak Forward Voltage Drop vs. Peak Forward Current

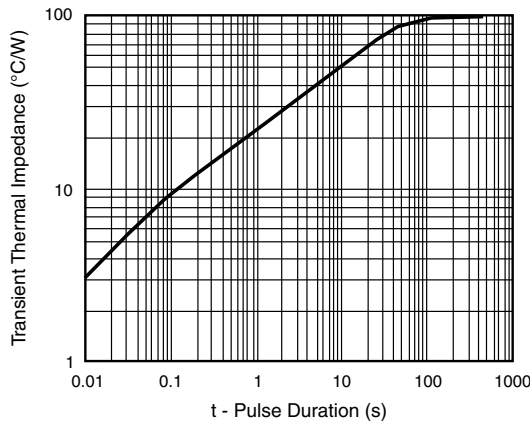
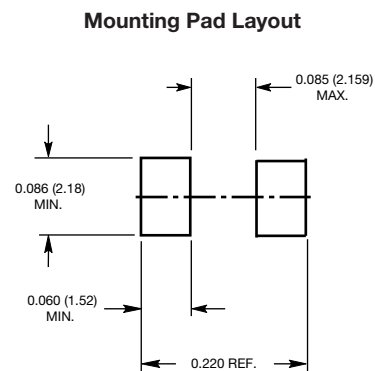
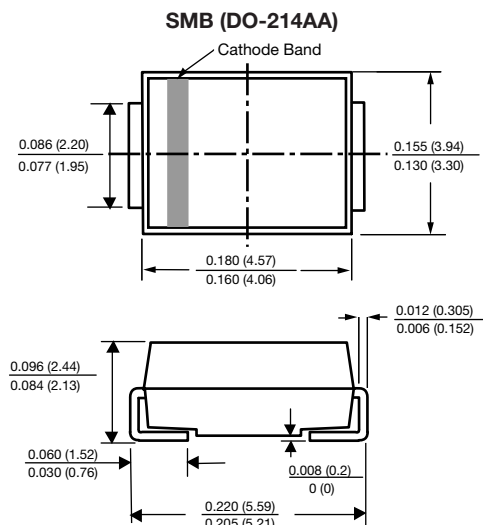


Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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