HALOGEN

FREE



Vishay General Semiconductor

Surface Mount XClampRTM Transient Voltage Suppressors

High Temperature Stability and High Reliability Conditions



DO-218AB

PRIMARY CHARACTERISTICS					
V _{WM}	24 V				
V_{BR}	26.7 ~ 29.5				
V _{CL} max.	26 V				
P _{PPM} (10/1000 μs)	11000 W ⁽¹⁾				
P _{PPM} (10/10 000 μs)	7000 W ⁽²⁾				
T _J max.	175 °C				
Polarity	Bidirectional				
Package	DO-218AB				

Notes

- (1) Equivalent I_{PPM} with conventional 11 kW TVS
- (2) Equivalent I_{PPM} with conventional 7000 W TVS

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lightning, especially for automotive load dump protection application withstanding 24 V jumper-start voltage test for 12 V powertrain. May need to connect in series with one conventional TVS to address in applications for various stand-off voltages and clamping voltages.

FEATURES

- XClampRTM extremely low clamping voltage
- I_{PPM} = 180 A with a 10/10 000 μs waveform
- T_J = 175 °C capability suitable for high reliability and automotive requirement
- Bidirectional
- · Low leakage current
- AEC-Q101 qualified
 - Automotive ordering code: base P/NHM3
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- Material categorization: for definitions of compliance please see <u>www.vishav.com/doc?99912</u>

MECHANICAL DATA

Case: DO-218AB

Molding compound meets UL 94 V-0 flammability rating Base P/NHM3 - halogen-free, RoHS-compliant, and AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

HM3 suffix meet JESD 201 class 2 whisker test

Polarity: no cathode marking on bidirectional types

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	VALUE	UNIT				
Device marking code		X8A24C					
Peak pulse power dissipation	with 10/1000 µs waveform	P _{PPM}	11 000 ⁽¹⁾	W			
	with 10/10 000 µs waveform		7000 (1)	W			
Peak pulse current with a 10/10 000 µs waveform, fig.4		I _{PPM} ⁽²⁾	180	А			
Operating junction and storage temperature rar	T _J , T _{STG}	-55 to +175	°C				

Notes

- (1) The peak pulse power at equivalent I_{PPM} with conventional TVS
- $^{(2)}$ Non-repetitive current pulse and derated above T_A = 25 $^{\circ}C$



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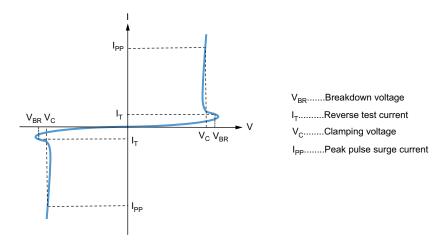
ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
DEVICE TYPE	BREAKDOWN VOLTAGE V _{BR} (V) AT I _T		TEST CURRENT I _T (mA)	STAND-OFF VOLTAGE V _{WM} (V)	MAX. REVERSE LEAKAGE AT V _{WM}	MAX. PEAK PULSE CURRENT AT 10/10 000 μs	CLAMPING VOLTAGE AT I _{PPM} V _C (V)	
	MIN.	MAX.			I _D (μ A)	WAVEFORM (A)	MIN.	MAX.
XLD8A24CA	26.7	29.5	5	24	1.0	180	18	26

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
XLD8A24CAHM3/I ⁽¹⁾	2.605	I	750	13" diameter plastic tape and reel		

Note

(1) AEC-Q101 qualified

I - V CURVE CHARACTERISTICS





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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

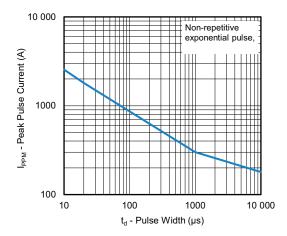


Fig. 1 - Peak Pulse Current Rating Curve

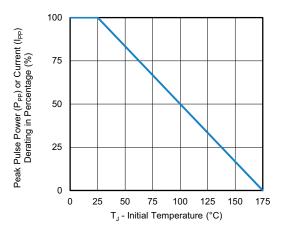


Fig. 2 - Peak Pulse Current vs. Initial Junction Temperature

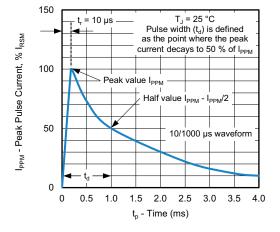


Fig. 3 - Pulse Waveform

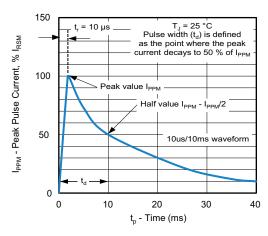


Fig. 4 - Pulse Waveform

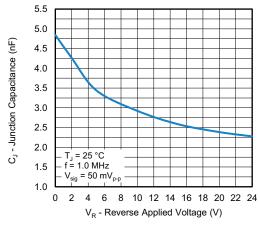


Fig. 5 - Typical Junction Capacitance

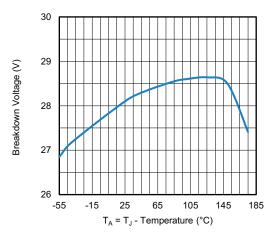
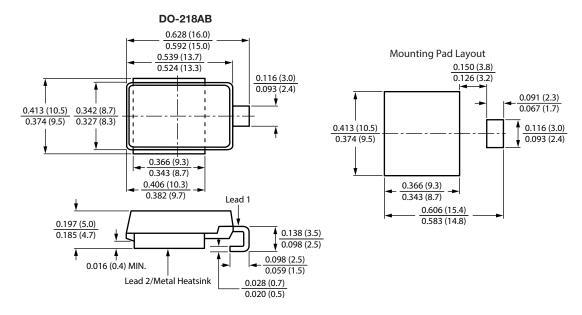


Fig. 6 - Typical Breakdown Voltage vs. Temperature Curve



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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