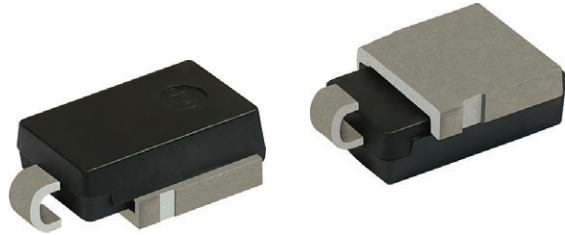


# Surface Mount XClampR™ Transient Voltage Suppressors

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 $\mu$ s)	11000 W <sup>(1)</sup>
$P_{PPM}$ (10/10 000 $\mu$ s)	7000 W <sup>(2)</sup>
$T_J$ 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.

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Device marking code		X8A24C	
Peak pulse power dissipation	with 10/1000 $\mu$ s waveform	11 000 <sup>(1)</sup>	W
	with 10/10 000 $\mu$ s waveform	7000 <sup>(1)</sup>	W
Peak pulse current with a 10/10 000 $\mu$ s waveform, fig.4	$I_{PPM}$ <sup>(2)</sup>	180	A
Operating junction and storage temperature range	$T_J, T_{STG}$	-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  $T_A = 25$  °C

**FEATURES**

- XClampR™ extremely low clamping voltage
- $I_{PPM} = 180$  A with a 10/10 000  $\mu$ s 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 [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

**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



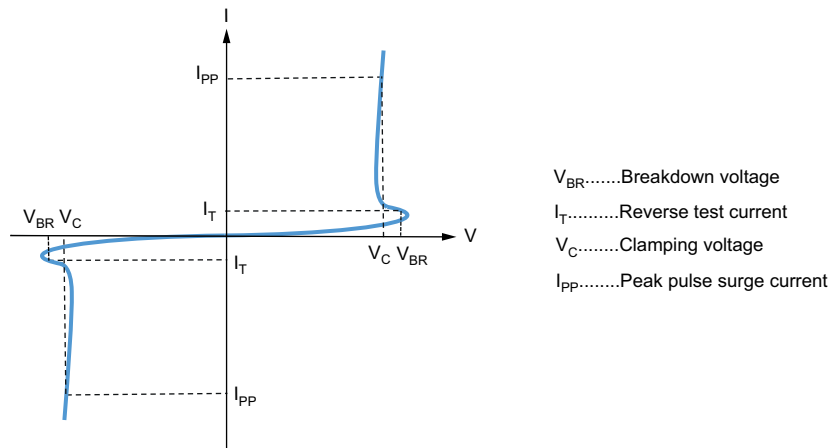
ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
DEVICE TYPE	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) AT I <sub>T</sub>		TEST CURRENT I <sub>T</sub> (mA)	STAND-OFF VOLTAGE V <sub>WM</sub> (V)	MAX. REVERSE LEAKAGE AT V <sub>WM</sub> I <sub>D</sub> (μA)	MAX. PEAK PULSE CURRENT AT 10/10 000 μs WAVEFORM (A)	CLAMPING VOLTAGE AT I <sub>PPM</sub> V <sub>C</sub> (V)	
	MIN.	MAX.					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 <sup>(1)</sup>	2.605	I	750	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

I - V CURVE CHARACTERISTICS



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

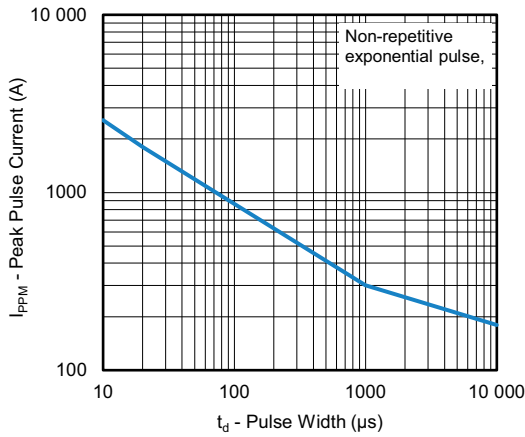


Fig. 1 - Peak Pulse Current Rating Curve

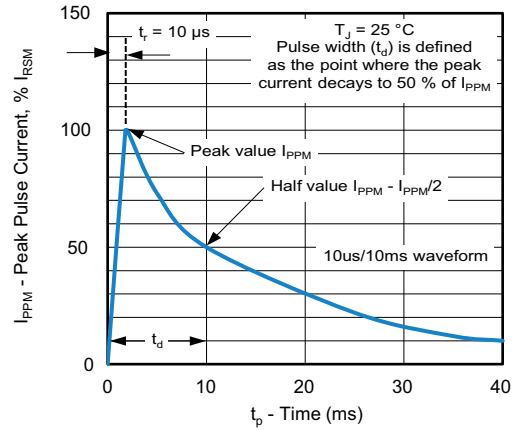


Fig. 4 - Pulse Waveform

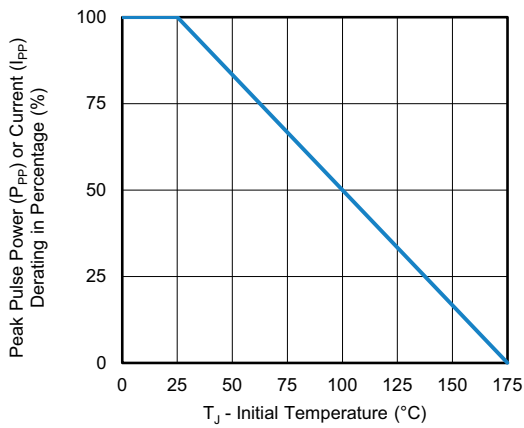


Fig. 2 - Peak Pulse Current vs. Initial Junction Temperature

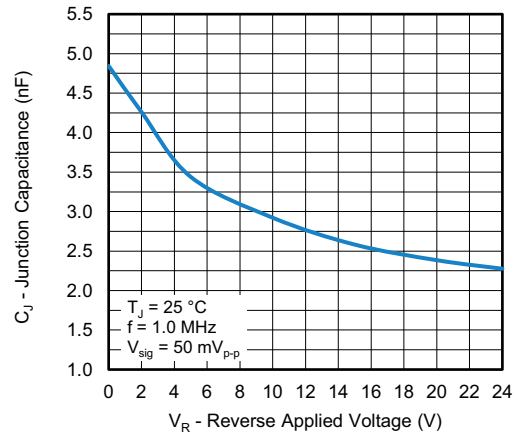


Fig. 5 - Typical Junction Capacitance

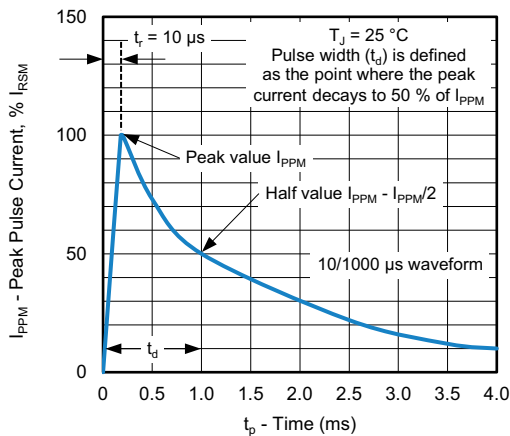


Fig. 3 - Pulse Waveform

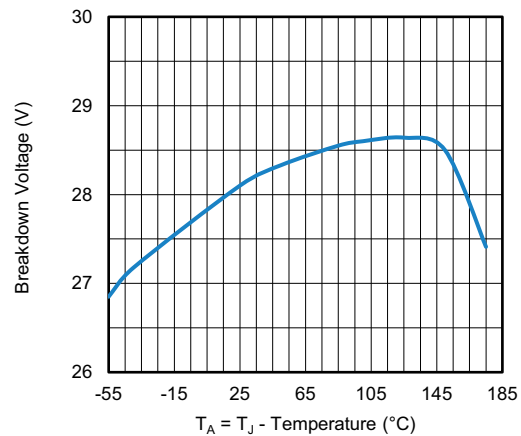
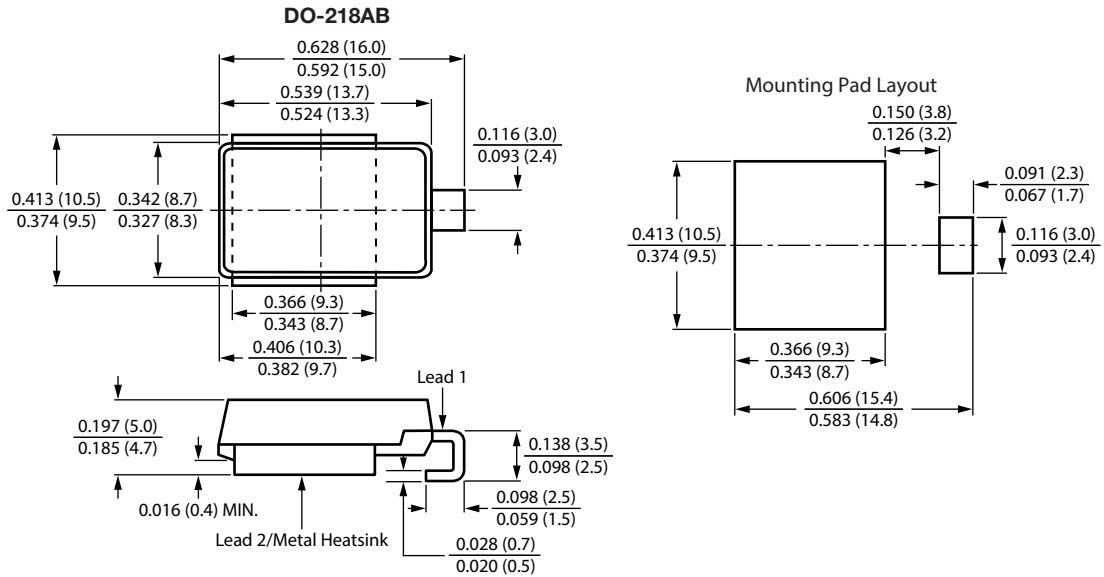


Fig. 6 - Typical Breakdown Voltage vs. Temperature Curve



**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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