

Surface Mount Automotive Transient Voltage Suppressors

High Temperature Stability and High Reliability Conditions

Patented*

*Patent #s:
4,980,315
5,166,769
5,278,095


DO-218AB
FEATURES

- Patented PAR[®] construction
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge spec
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

Used 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

Molding compound meets UL 94 V-0 flammability rating

Base P/NHE3 - RoHS compliant, high reliability/automotive grade (AEC Q101 qualified)

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

HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Heatsink is anode

PRIMARY CHARACTERISTICS	
V_{BR}	27 V
P_{PPM} (10 x 1000 μ s)	6600 W
P_D	8.0 W
I_{RSM}	130 A
I_{FSM}	700 A
T_J max.	175 °C

MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with 10/1000 μ s waveform	P_{PPM}	6600	W
Power dissipation on infinite heatsink at $T_C = 25$ °C (Fig. 1)	P_D	8.0	
Non-repetitive peak reverse surge current for 10 μ s/10 ms exponentially decaying waveform	I_{RSM}	130	A
Maximum working stand-off voltage	V_{WM}	22.0	V
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

ELECTRICAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	MIN	TYP	MAX	UNIT
Reverse zener voltage	10 mA		V _Z	24.0		30.0	V
Zener voltage temperature coefficient	I _Z = 10 mA		V _{ZTC}			36	mV/°C
Clamping voltage for 10 μs/10 ms exponentially decaying waveform	I _{PP} = 75 A		V _C			40.0	V
Instantaneous forward voltage ⁽¹⁾		6.0 A 100 A	V _F		0.93	0.98	V
Reverse leakage current	rated V _{WM}	T _J = 25 °C T _J = 175 °C	I _R			1.0 50.0	μA

Note:

(1) Measured on a 300 μs square pulse width

THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to case	R _{θJC}	0.90	°C/W

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SM8A27HE3/2D	2.605	2D	750	13" diameter paper tape and reel, anode towards the sprocket hole

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

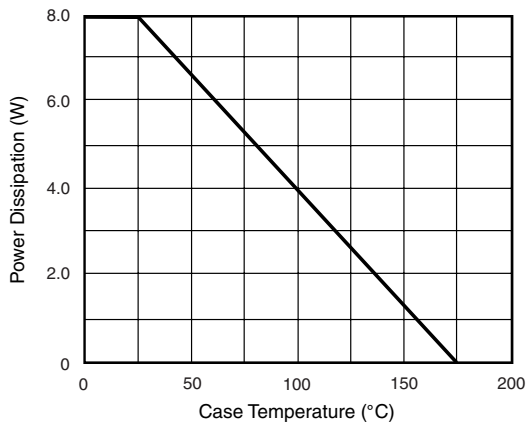


Figure 1. Power Derating Curve

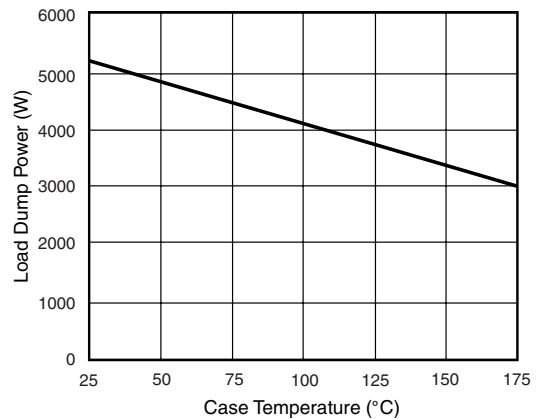
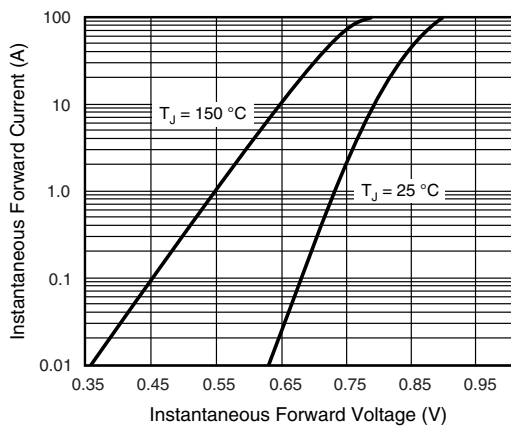
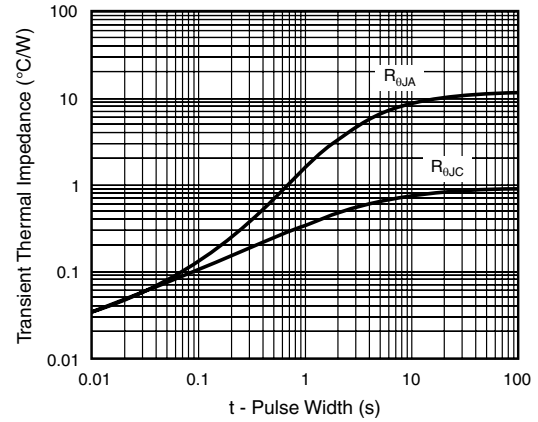
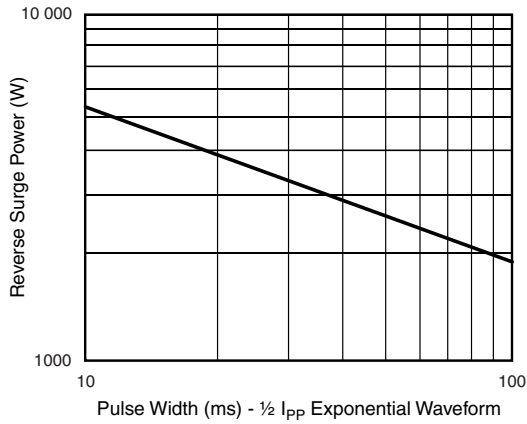
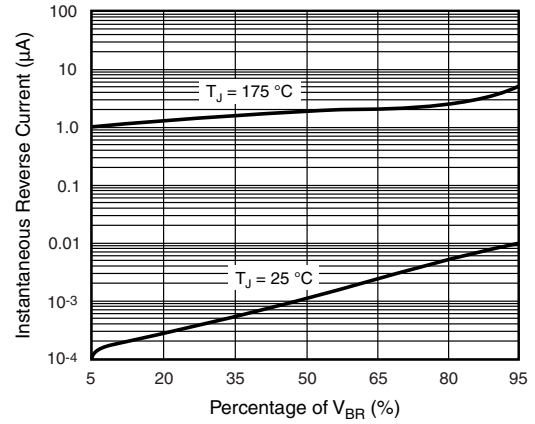
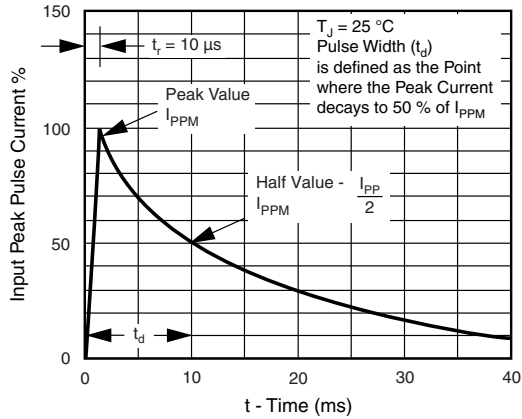
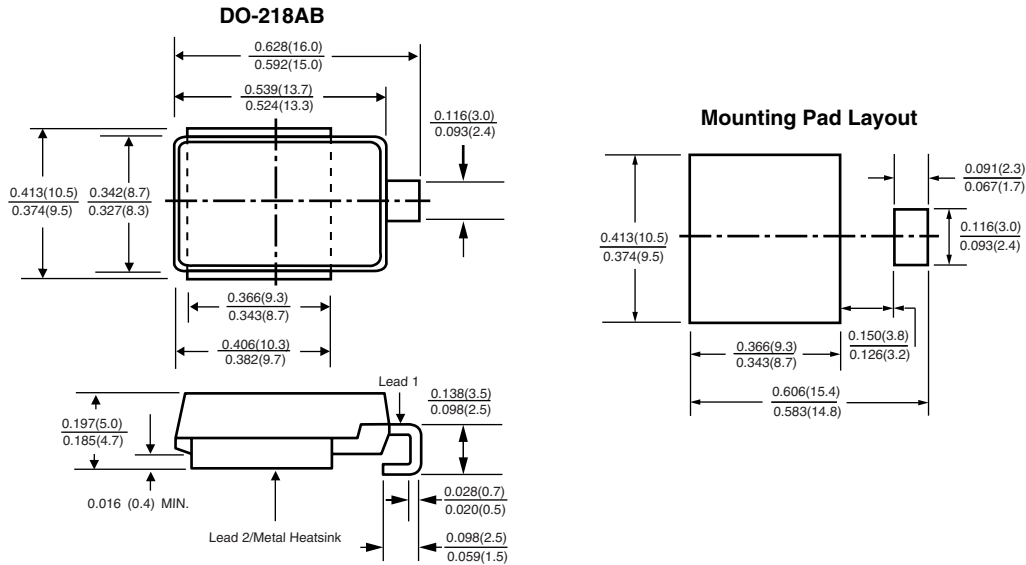


Figure 2. Load Dump Power Characteristics (10 ms Exponential Waveform)



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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