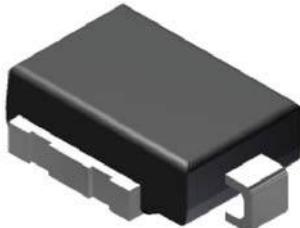


Surface Mount PAR® Transient Voltage Suppressors

High Temperature Stability and High Reliability Conditions



DO-218 Compatible



RoHS
COMPLIANT

FEATURES

- Junction passivation optimized design passivated anisotropic rectifier technology
- $T_J = 175^\circ\text{C}$ capability suitable for high reliability and automotive requirement
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge specification
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245°C
- AEC-Q101 qualified
- 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, especially for automotive load dump protection application.

MECHANICAL DATA

Case: DO-218AC

Molding compound meets UL 94 V-0 flammability rating
Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

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

HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Heatsink is anode

PRIMARY CHARACTERISTICS	
V_{WM}	22 V
V_{BR}	27 V
P_{PPM} (10 x 1000 μs)	4600 W
P_D	6 W
I_{RSM}	90 A
I_{FSM}	600 A
T_J max.	175 $^\circ\text{C}$
Polarity	Uni-directional
Package	DO-218AC

MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$ unless otherwise noted)				
PARAMETER		SYMBOL	VALUE	UNIT
Peak pulse power dissipation with 10/1000 μs waveform		P_{PPM}	4600	W
Power dissipation on infinite heatsink at $T_C = 25^\circ\text{C}$ (fig. 1)		P_D	6.0	W
Non-repetitive peak reverse surge current for 10 μs /10 ms exponentially decaying waveform		I_{RSM}	90	A
Maximum working stand-off voltage		V_{WM}	22.0	V
Peak forward surge current 8.3 ms single half sine-wave		I_{FSM}	600	A
Operating junction and storage temperature range		T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)				
DEVICE TYPE	BREAKDOWN VOLTAGE V_{BR} AT I_T (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)
	MIN.	MAX.		
SM6A27T	24	30	10	22

ADDITIONAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$ unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	MIN.	TYP.	MAX.	UNIT
Zener voltage temperature coefficient	$I_Z = 10 \text{ mA}$		V_{ZTC}	-	-	36	$\text{mV}/^\circ\text{C}$
Clamping voltage for 10 $\mu\text{s}/10 \text{ ms}$ exponentially decaying waveform	$I_{PP} = 65 \text{ A}$		V_C	-	-	40.0	V
Instantaneous forward voltage	$I_F = 6.0 \text{ A}$		$V_F^{(1)}$	-	-	0.99	V
	$I_F = 100 \text{ A}$			-	0.94	-	
Reverse leakage current	Rated V_{WM}	$T_J = 25^\circ\text{C}$	I_R	-	-	0.5	μA
		$T_J = 175^\circ\text{C}$		-	-	20.0	

Note

(1) Measured on a 300 μs square pulse width

THERMAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		SYMBOL	VALUE		UNIT	
Typical thermal resistance, junction to case		$R_{\theta JC}$	0.95		$^\circ\text{C}/\text{W}$	

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SM6A27THE3/I ⁽¹⁾	2.550	I	750	13" diameter plastic tape and reel, anode towards the sprocket hole

Note

(1) AEC-Q101 qualified

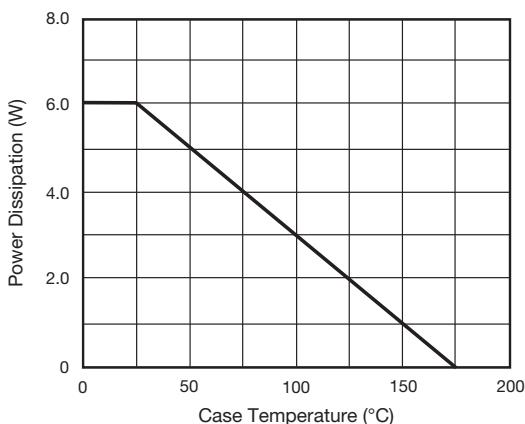
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)


Fig. 1 - Power Derating Curve

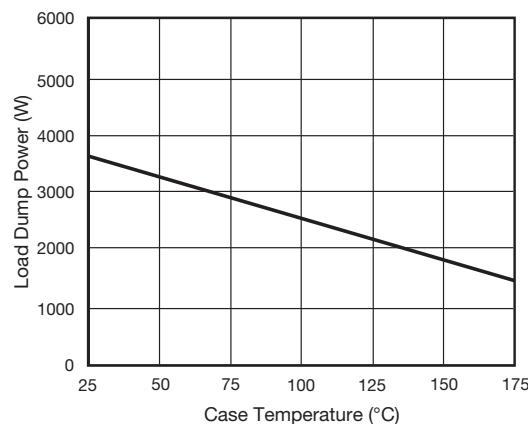
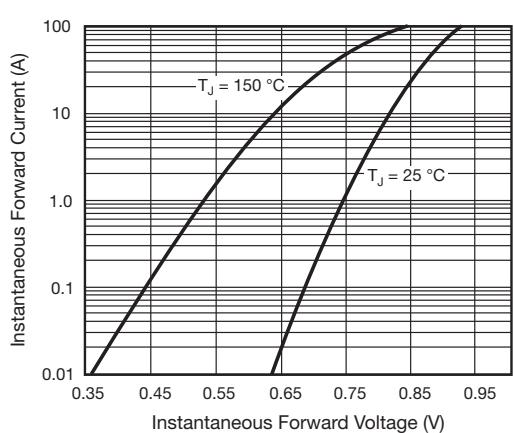
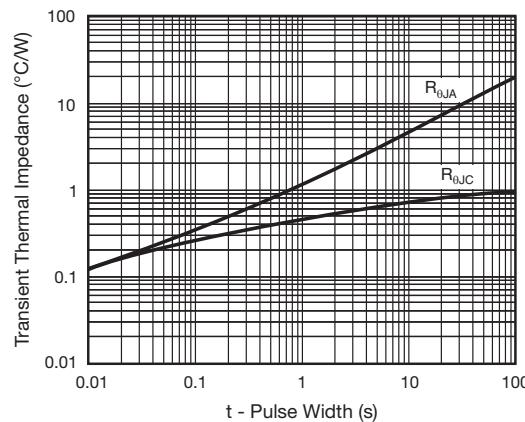
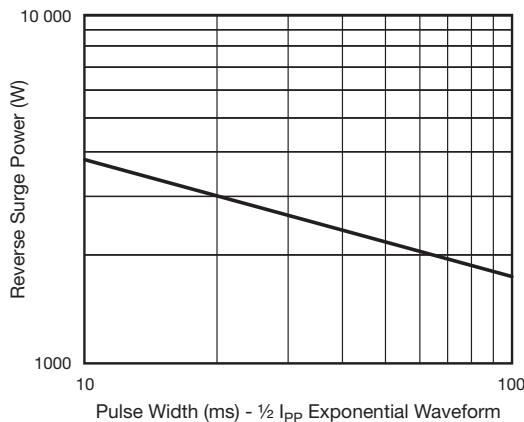
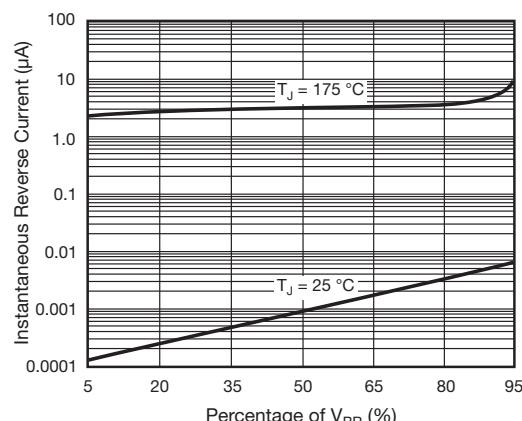
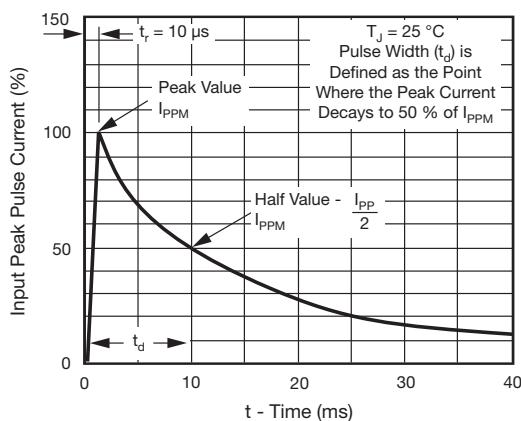
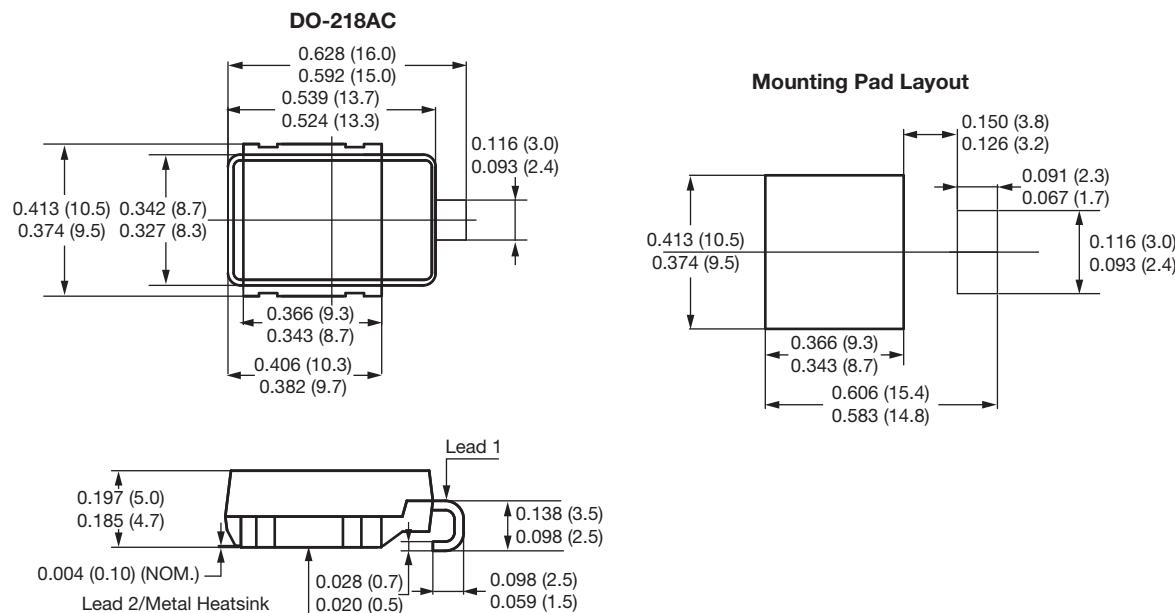


Fig. 2 - Load Dump Power Characteristics
(10 ms Exponential Waveform)



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)


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