Vishay Semiconductors
formerly General Semiconductor

Surface Mount Automotive Transient Voltage Suppressor

Zener Voltage 27 V
Peak Pulse Current 130 A (10/10,000 μs)
Peak Pulse Power 6600 W (10/1000 μs)

Features

- Ideally suited for load dump protection
- High temperature stability due to unique oxide passivation and patented PAR®construction
- Integrally molded heatsink provides a very low thermal resistance for maximum heat dissipation
- Low leakage current at T_J = 175 °C
- High temperature soldering guaranteed: 260 °C for 10 seconds at terminals
- Meets ISO7637-2 surge spec.
- Low forward voltage drop
- Meets MSL level 1 per J-STD-020C
- AEC-Q101qualified

Mechanical Data

Case: Molded plastic body, surface mount with heatsink integrally mounted in the encapsulation

Terminals: Solder plated or matte tin plated (E3 Suffix) leads, Solderable per J-STD-002B and Mil-STD-750, Method 2026

Polarity: Heatsink is anode

Mounting Position: Any

Weight: 0.091 oz., 2.58 g

Epoxy meets UL 94V-0 Flammability rating

Maximum Ratings and Thermal Characteristics

T_C = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Steady state power dissipation		P_D	8.0	W
Non-repetitive peak reverse surge current	for 10 μs/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
Typical thermal resistance junction to case		$R_{\theta JC}$	0.90	°C/W
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 condition	Symbol	Min	Typ	Max	Unit
Reverse zener voltage	at 10 mA	V_Z	24.0		30.0	V
Zener voltage temperature coefficient	at I_Z = 10 mA	V_{ZTC}			36	mV/°C
Clamping voltage	for 10 μs/10 ms exponentially decaying waveform at I_{PP} = 75 A	V_C			40.0	V
Instantaneous forward voltage(1)	at 6.0 A	V_F			0.98	V
	at 100 A	V_F		0.93		V
Reverse leakage current	at rated V_{WM}, T_J = 25 °C	I_R			1.0	μA
	at rated V_{WM}, T_J = 175 °C	I_R			50.0	μA

Notes: (1) Measured on a 300 μs square pulse width

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise specified)

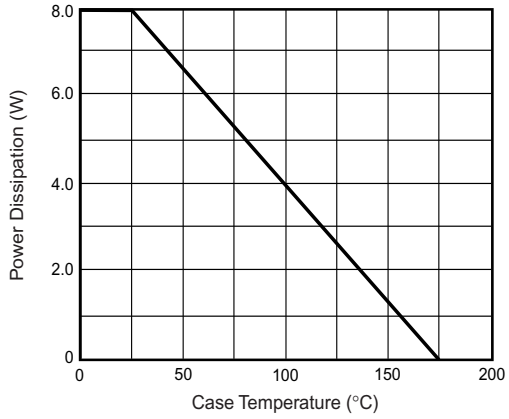


Figure 1. Power Derating Curves

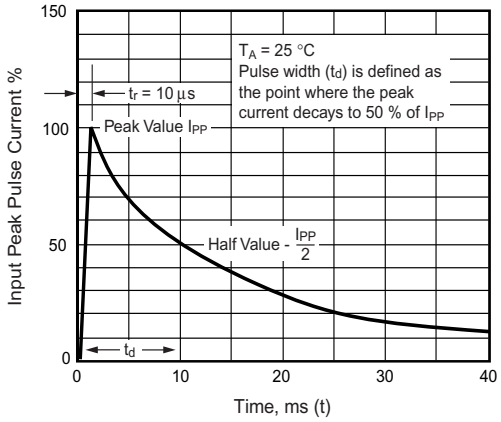


Figure 3. Pulse Waveform

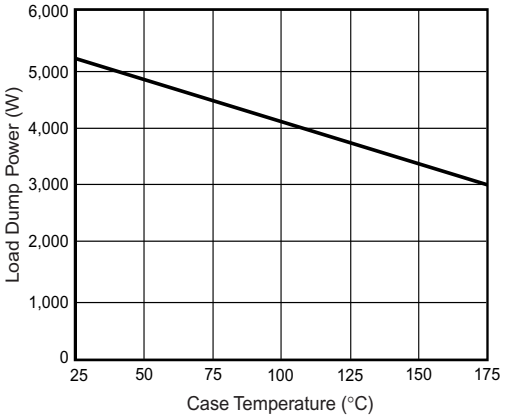


Figure 2. Load Dump Power Characteristics
(10 ms Exponential Waveform)

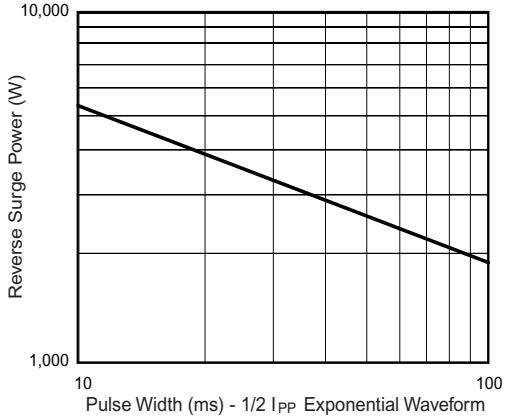


Figure 4. Reverse Power Capability

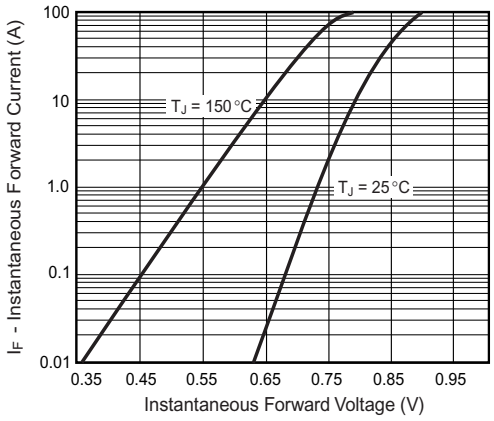


Figure 5. Typical Instantaneous Forward Characteristics

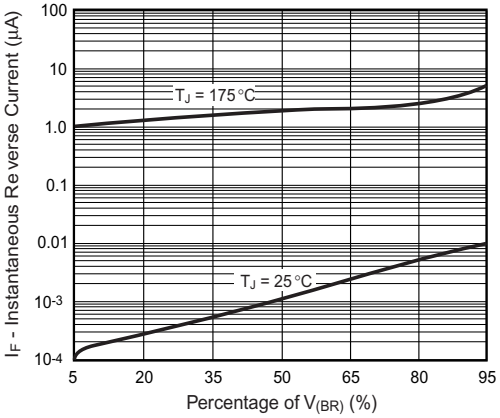


Figure 6. Typical Reverse Characteristics

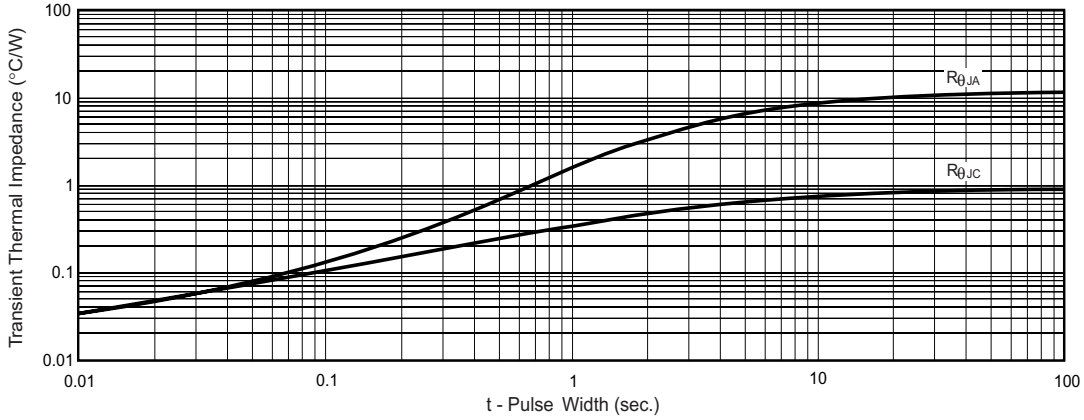
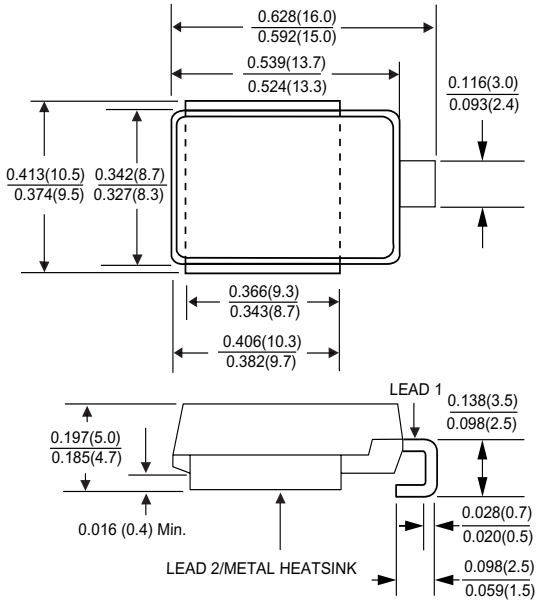


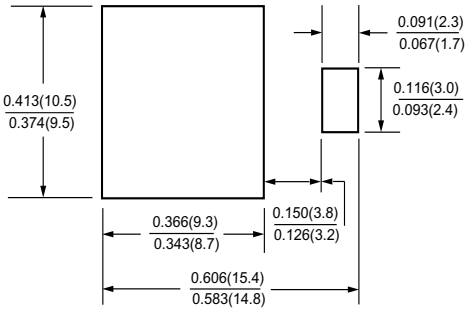
Figure 7. Typical Transient Thermal Impedance

Package Dimensions in Inches (mm)

DO-218AB



Mounting Pad Layout



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