

SM5A27 TRANSIENT SUPPRESSOR

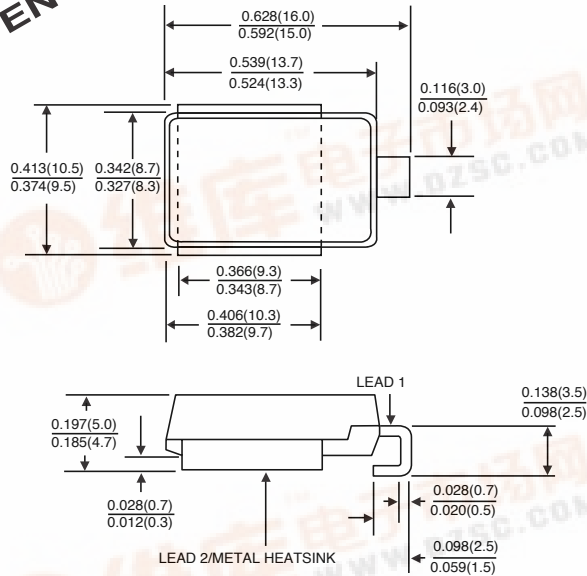
SURFACE MOUNT AUTOMOTIVE TRANSIENT VOLTAGE SUPPRESSOR

Zener Voltage - 27.0 Volts

Peak Pulse Current - 70.0 Amps

PATENTED*

DO-218



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

Dimensions in inches
and
(millimeters)

FEATURES

- ♦ Ideally suited for load dump protection
- ♦ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ♦ High temperature stability due to unique oxide passivation
- ♦ Exclusive patented PAR™ oxide passivated chip construction
- ♦ Integrally molded heatsink provides a very low thermal resistance for maximum heat dissipation
- ♦ Low leakage current at $T_J=175^\circ\text{C}$
- ♦ Low forward voltage drop
- ♦ High temperature soldering guaranteed: 260°C for 10 seconds at terminals



MECHANICAL DATA

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

Terminals: Plated, solderable per MIL-STD-750, Method 2026

Polarity: Heatsink is anode

Mounting Position: Any

Weight: 0.091 ounce, 2.58 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	SM5A27	UNITS
Steady state power dissipation	P_D	5.0	Watts
Non-repetitive peak reverse surge current for $10\mu\text{s}/10\text{ms}$ exponentially decaying waveform	I_{RSM}	70.0	Amps
Maximum working peak stand-off voltage	V_{WM}	22.0	Volts
Minimum reverse zener voltage at 10mA	V_Z	24.0	Volts
Maximum reverse zener voltage at 10mA	V_Z	30.0	Volts
Maximum zener voltage temperature coefficient at $I_Z=10\text{mA}$	V_{ZTC}	36.0	$\text{mV}/^\circ\text{C}$
Peak forward surge current, 8.3ms single half sine-wave	I_{FSM}	500.0	Amps
Maximum clamping voltage for $10\mu\text{s}/10\text{ms}$ exponentially decaying waveform at $I_{PP}=55\text{A}$	V_C	40.0	Volts
Maximum instantaneous forward voltage at 6.0A (NOTE 1)	V_F	1.0	Volts
Maximum reverse leakage current at rated V_{WM} $T_J=25^\circ\text{C}$ $T_J=175^\circ\text{C}$	I_R	0.2 10.0	μA
Maximum thermal resistance junction to case	$R_{\theta JC}$	1.0	$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

NOTE:
Measured on a $300\mu\text{s}$ square pulse width

NOTICE: Advanced product information is subject to change without notice

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RATINGS AND CHARACTERISTIC CURVES SM5A27

FIG. 1 - POWER DERATING CURVE

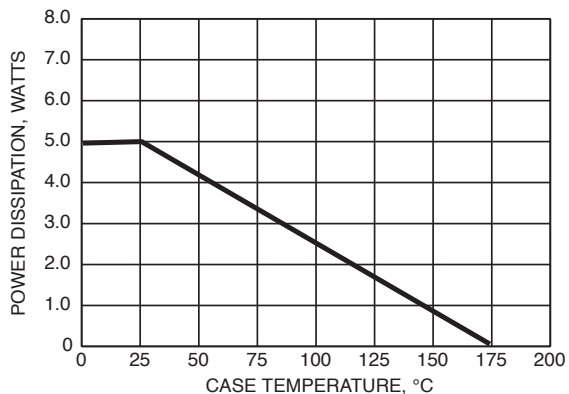


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

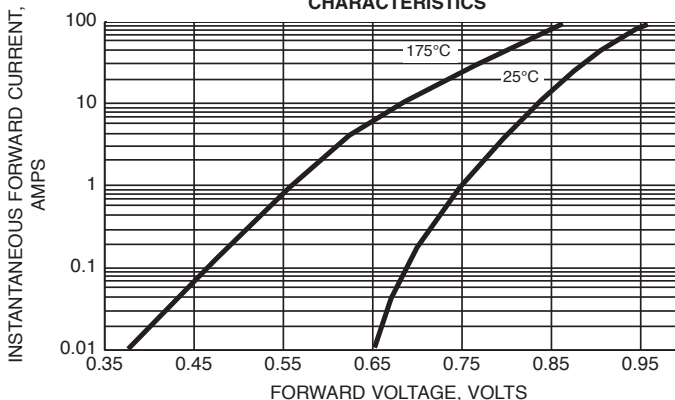


FIG. 3 - PULSE WAVEFORM

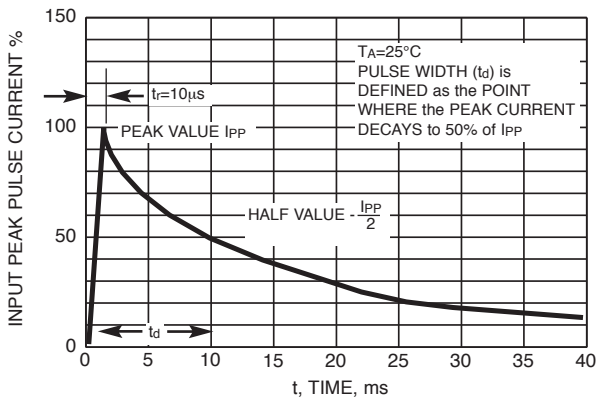


FIG. 4 - REVERSE POWER CAPABILITY

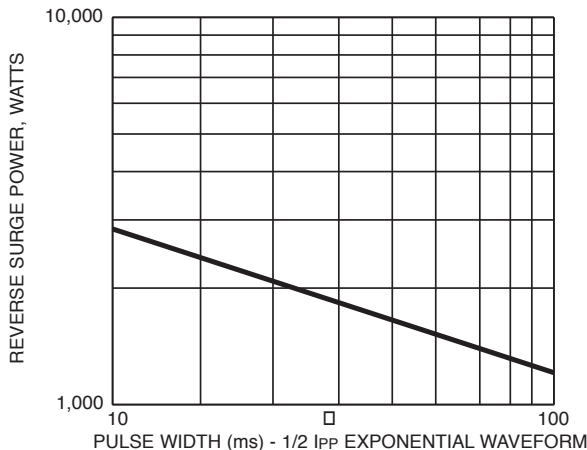


FIG. 5 - LOAD DUMP POWER CHARACTERISTICS (10ms EXPONENTIAL WAVEFORM)

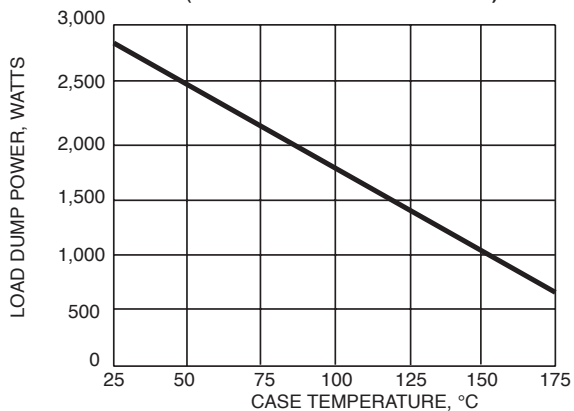


FIG. 6 - TYPICAL REVERSE CHARACTERISTICS

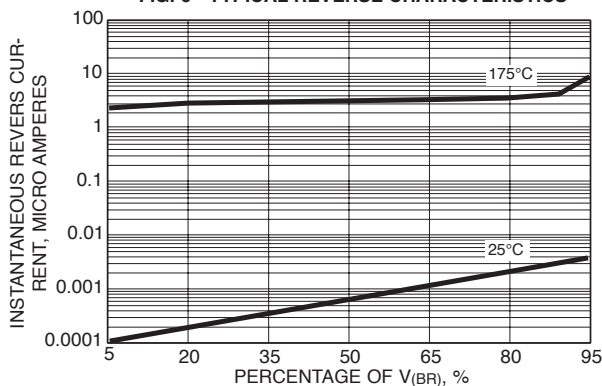


FIG. 7 - TYPICAL TRANSIENT THERMAL IMPEDANCE

