

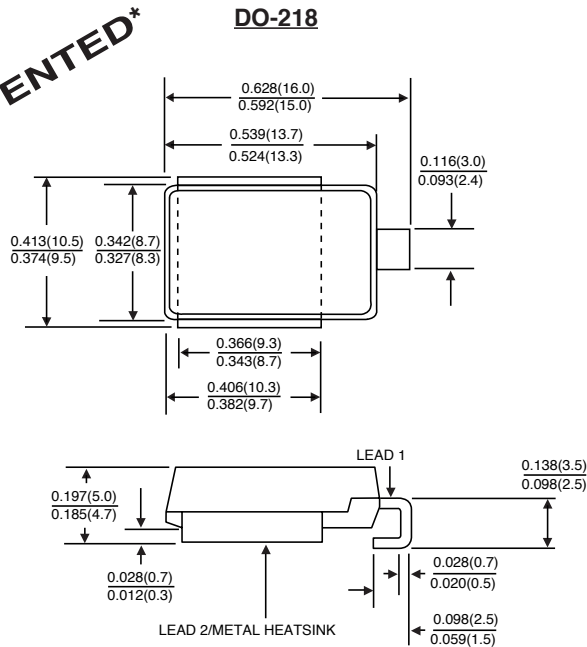
SM5A27 TRANSIENT SUPPRESSOR

SURFACE MOUNT AUTOMOTIVE TRANSIENT VOLTAGE SUPPRESSOR

Zener Voltage - 27.0 Volts

Peak Pulse Current - 70.0 Amps

PATENTED*



* 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 μs /10ms 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 | mV/ $^\circ\text{C}$ |
| Peak forward surge current, 8.3ms single half sine-wave | I_{FSM} | 500.0 | Amps |
| Maximum clamping voltage for 10 μs /10ms 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} | I_R | 0.2 10.0 | μA |
| | | | $T_J=25^\circ\text{C}$ $T_J=175^\circ\text{C}$ |
| 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:

(1) Measured on a 300 μs square pulse width

NOTICE: Advanced product information is subject to change without notice

RATINGS AND CHARACTERISTIC CURVES SM5A27

FIG. 1 - POWER DERATING CURVE

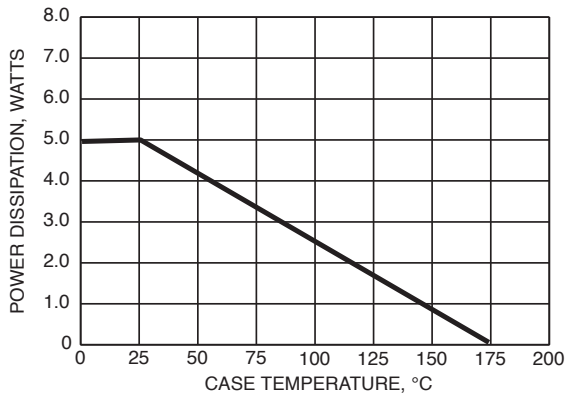


FIG. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

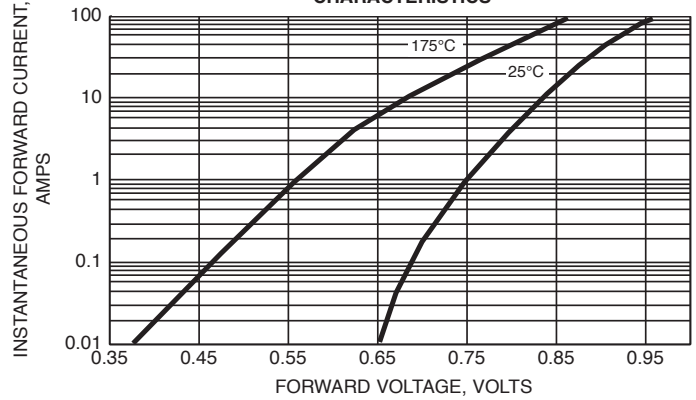


FIG. 3 - PULSE WAVEFORM

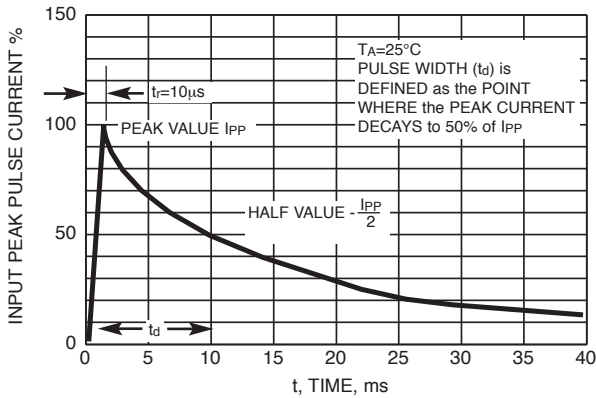


FIG. 4 - REVERSE POWER CAPABILITY

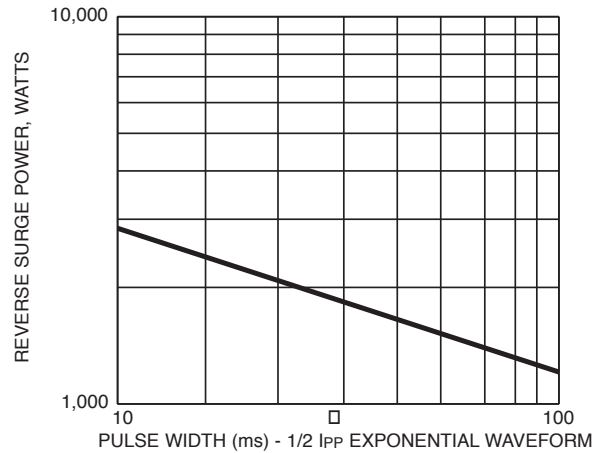


FIG. 5 - LOAD DUMP POWER CHARACTERISTICS (10ms EXPONENTIAL WAVEFORM)

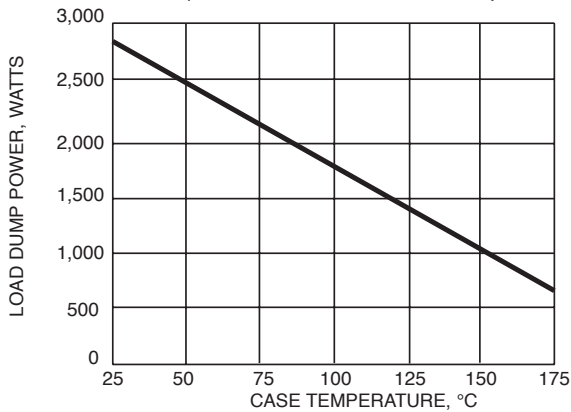


FIG. 6 - TYPICAL REVERSE CHARACTERISTICS

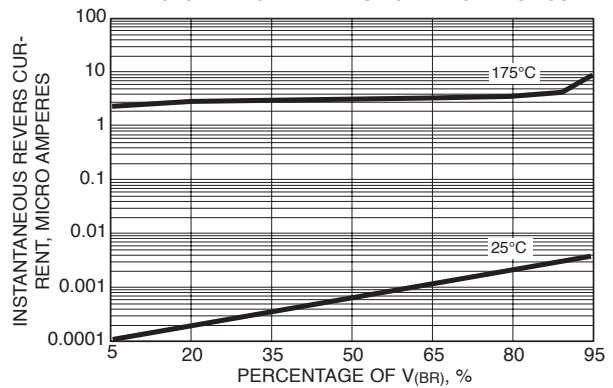


FIG. 7 - TYPICAL TRANSIENT THERMAL IMPEDANCE

