

Transient Voltage Suppressor Diode

6KA24

Stand-off Voltage 24V

Peak Pulse Power 6000W

Automotive Applications

DATASHEET

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OEM – General Semiconductor

Source: General Semiconductor Databook 1998

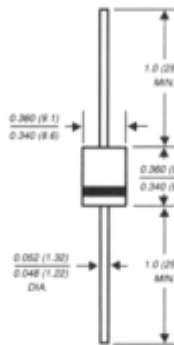
6KA24 TRANSIENT SUPPRESSOR

PREMIUM AUTOMOTIVE TRANSIENT VOLTAGE SUPPRESSOR

Stand-off Voltage - 24 Volts Peak Pulse Power - 6000 Watts

PATENTED *

Case Style P600



Dimensions in inches and (millimeters)

* Patent #'s 4,980,315
5,166,789
5,278,094

FEATURES

- Designed for under the hood applications
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Exclusive GI patented Passivated Anisotropic Rectifier (PAR) construction
- 6000W peak pulse power capability with a 10/1000 μ s waveform
- 2000W peak pulse power capability with a 10 μ s/50ms waveform
- Low incremental surge resistance
- Ideally suited for automotive "load dump" applications
- High temperature soldering guaranteed: 300°C/10 seconds 0.375" (9.5mm) lead lengths, 5lbs (2.3kg) tension



MECHANICAL DATA

Case: Molded plastic body over nitride passivated die

Terminals: Axial leads solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes positive end (cathode)

Mounting Position: Any

Weight: 0.07 ounce, 2.1 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° ambient temperature unless otherwise specified.

RATINGS	SYMBOL	VALUE	UNITS
Peak pulse power dissipation with a 10/1000 μ s waveform (NOTE 1)	PPPM	6000	Watts
Peak pulse power dissipation with a 10 μ s/50ms waveform (NOTE 2)	PPPM	2000	Watts
Steady state power dissipation, (NOTE 6) lead lengths 0.375" (9.5mm), T _L =85°C	PM(AV)	5.0	Watts
Peak forward surge current, 8.3ms single half sine-wave on rated load (JEDEC Method) (NOTE 3)	IFSM	400	Amps
Maximum DC reverse leakage current at V _{WM} =24V T _A =25°C T _A =150°C	I _D	1.0 50.0	μ A
Reverse Breakdown Voltage at 100mA T _A =25°C minimum T _A =25°C maximum T _A =150°C minimum T _A =150°C maximum	V _(BR)	26.7 32.6 29.7 36.7	Volts
Maximum clamping voltage at I _{PPM} =90A (NOTE 4) T _A =25°C T _A =150°C	V _C	40.0 45.0	Volts
Maximum instantaneous forward voltage at 100A (NOTE 5)	V _F	1.8	Volts
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +185	°C

NOTES:

- (1) Non repetitive current pulse, per Fig. 2, with a 10/1000 μ s waveform
- (2) Non repetitive current pulse, per Fig. 5, with a 10 μ s/50ms waveform
- (3) Measured on 8.3ms half sine-wave, or equivalent square wave, duty cycle=4 pulses maximum
- (4) Measured on 80 μ s square pulse width
- (5) Measured on 300 μ s second square pulse width
- (6) Mounted on copper pad area of 0.8 x 8.0" (20 x 20mm) per Fig. 5

RATINGS AND CHARACTERISTIC CURVES 6KA24

FIG. 1 - PEAK PULSE POWER RATING CURVE

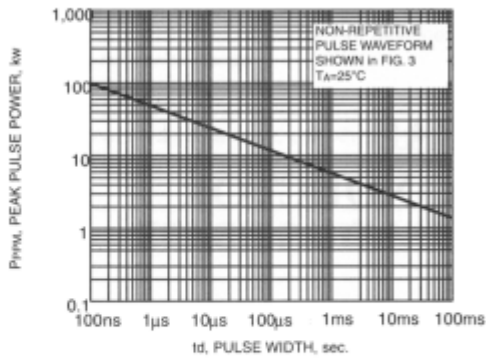


FIG. 2 - PULSE WAVEFORM

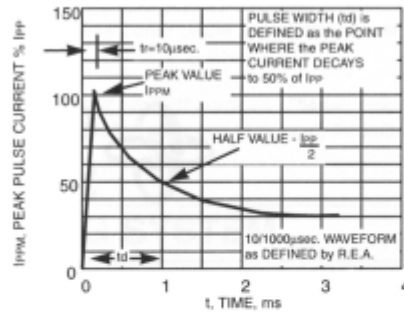


FIG. 3 - PULSE DERATING CURVE

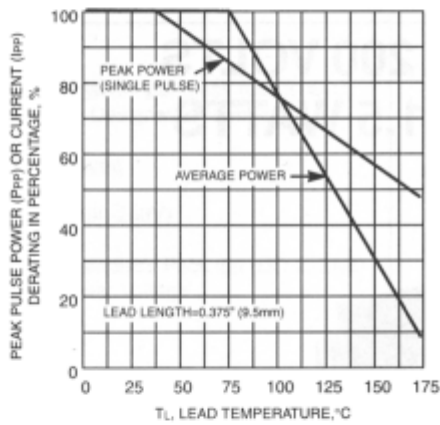


FIG. 4 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

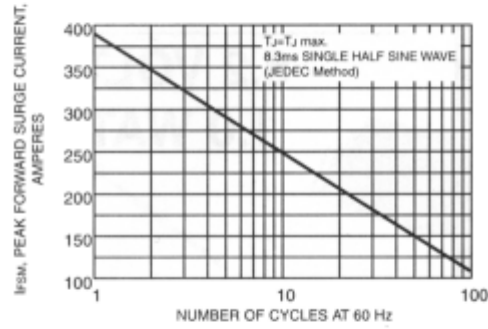


FIG. 5 - PULSE WAVEFORM

