

# 6KA24 TRANSIENT SUPPRESSOR

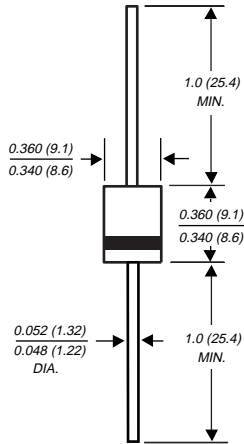
## PREMIUM AUTOMOTIVE TRANSIENT VOLTAGE SUPPRESSOR

Stand-off Voltage - 24 Volts

Peak Pulse Power - 6000 Watts

**PATENTED\***

Case Style P600

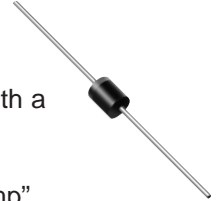


Dimensions in inches and (millimeters)

\* Patent #'s 4,980,315  
5,166,769  
5,278,094

### FEATURES

- ◆ Designed for under the hood applications
- ◆ Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- ◆ Exclusive patented PAR™ oxide passivated chip construction
- ◆ 6000W peak pulse power capability with a 10/1000μs waveform
- ◆ 2000W peak pulse power capability with a 10μs/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 10/1000μs waveform (NOTE 1)	PPPM	6000	Watts
Peak pulse power dissipation with a 10μs/50ms waveform (NOTE 2)	PPPM	2000	Watts
Steady state power dissipation, (NOTE 6) lead lengths 0.375" (9.5mm), T <sub>L</sub> =85°C	P <sub>M(AV)</sub>	5.0	Watts
Peak forward surge current, 8.3ms single half sine-wave on rated load (JEDEC Method) (NOTE 3)	I <sub>FSM</sub>	400	Amps
Maximum DC reverse leakage current at V <sub>WM</sub> =24V T <sub>A</sub> =25°C T <sub>A</sub> =150°C	I <sub>D</sub>	1.0 50.0	μA
Reverse Breakdown Voltage at 100mA T <sub>A</sub> =25°C minimum T <sub>A</sub> =25°C maximum T <sub>A</sub> =150°C minimum T <sub>A</sub> =150°C maximum	V <sub>(BR)</sub>	26.7 32.6 29.7 36.7	Volts
Maximum clamping voltage at I <sub>PP</sub> =90A (NOTE 4) T <sub>A</sub> =25°C T <sub>A</sub> =150°C	V <sub>C</sub>	40.0 45.0	Volts
Maximum instantaneous forward voltage at 100A (NOTE 5)	V <sub>F</sub>	1.8	Volts
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +185	°C

#### NOTES:

- (1) Non-repetitive current pulse, per Fig. 2, with a 10/1000μs waveform
- (2) Non-repetitive current pulse, per Fig. 5, with a 10μs/50ms waveform
- (3) Measured on 8.3ms half sine-wave, or equivalent square wave, duty cycle=4 pulses maximum
- (4) Measured on 80μs square pulse width
- (5) Measured on 300μs 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

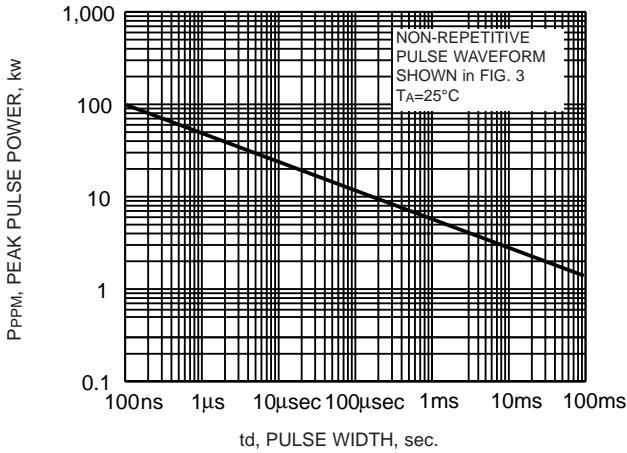


FIG. 2 - 10/1000 $\mu$ s PULSE WAVEFORM

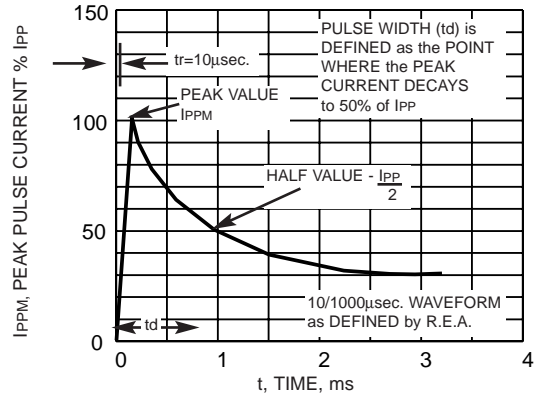


FIG. 3 - PULSE DERATING CURVE

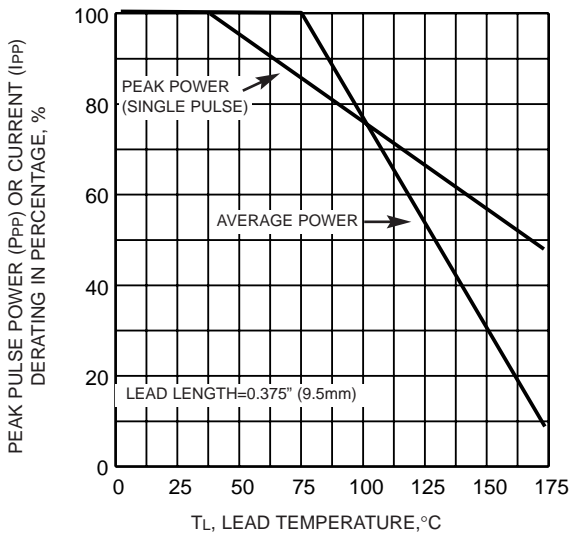


FIG. 4 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

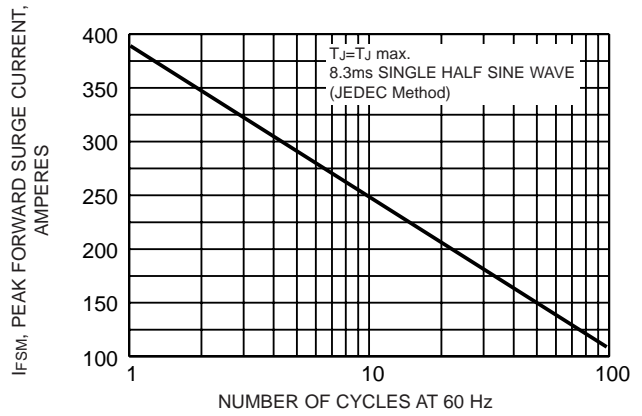


FIG. 5 - 50 $\mu$ s/50ms PULSE WAVEFORM

