

## 6KA24

**Stand-off Voltage: 24V**  
**Peak Pulse Power: 6000W (10/1000µs)**

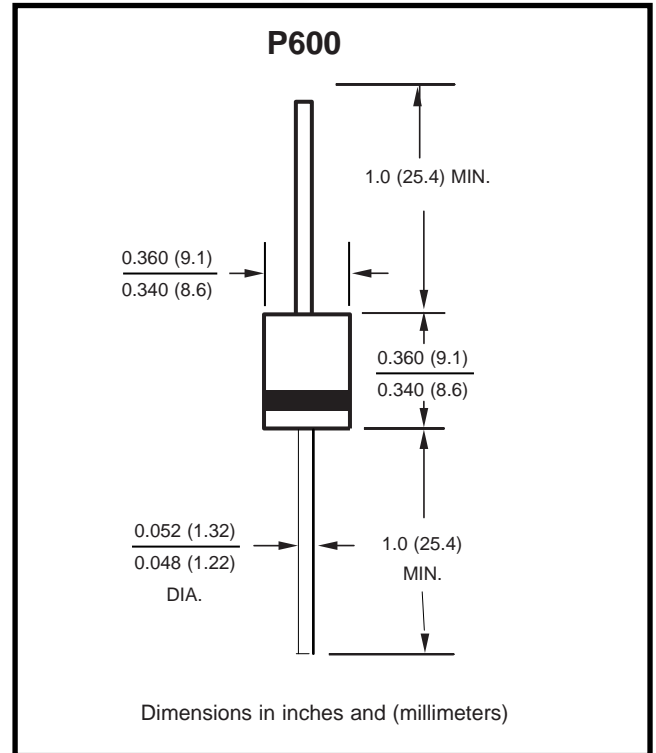


### Features

- Designed for under the hood applications
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exclusive patented PAR® oxide passivated chip construction
- Low incremental surge resistance
- Ideally suited for automotive “load dump” applications
- High temp. soldering guaranteed: 300°C/10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3 kg) tension
- Available in unidirectional only

### 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)
- Weight: 0.07 oz., 2.1 g
- Mounting Position: Any



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Peak pulse power dissipation w/ 10/1000µs waveform <sup>(1)</sup>	PPPM	6000	W
Peak pulse power dissipation w/ 10µs/50ms waveform <sup>(2)</sup>	PPPM	2000	W
Steady state power dissipation lead lengths 0.375" (9.5mm), T <sub>L</sub> = 85°C <sup>(6)</sup>	PM(AV)	6.5	W
Maximum working stand-off voltage	V <sub>WM</sub>	24	V
Peak forward surge current, 8.3ms single half sine-wave <sup>(3)</sup>	I <sub>FSM</sub>	400	A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +185	°C

### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

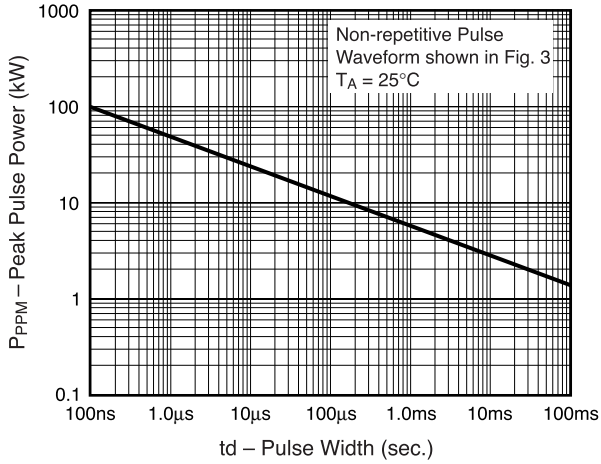
Maximum DC reverse leakage current at V <sub>WM</sub> = 24V	T <sub>A</sub> = 25°C T <sub>A</sub> = 150°C	I <sub>D</sub>	1.0 50	µA
Reverse Breakdown Voltage at 100mA	T <sub>A</sub> = 25°C min. T <sub>A</sub> = 25°C max. T <sub>A</sub> = 150°C min. T <sub>A</sub> = 150°C max.	V <sub>(BR)</sub>	26.7 32.6 29.7 36.7	V
Maximum clamping voltage at I <sub>PP</sub> = 90A <sup>(4)</sup>	T <sub>A</sub> = 25°C T <sub>A</sub> = 150°C	V <sub>C</sub>	40 45	V
Maximum instantaneous forward voltage at 100A <sup>(5)</sup>		V <sub>F</sub>	1.8	V

**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

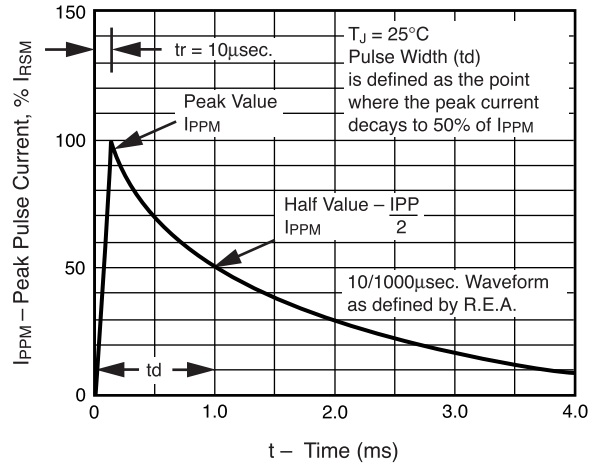
(4) Measured on 80µs square pulse width  
(5) Measured on 300µs second square pulse width  
(6) Mounted on copper pad area of 1.6 x 1.6" (40 x 40mm) per Fig. 5

## Rating and Characteristic Curves (6KA24) (TA = 25°C unless otherwise noted)

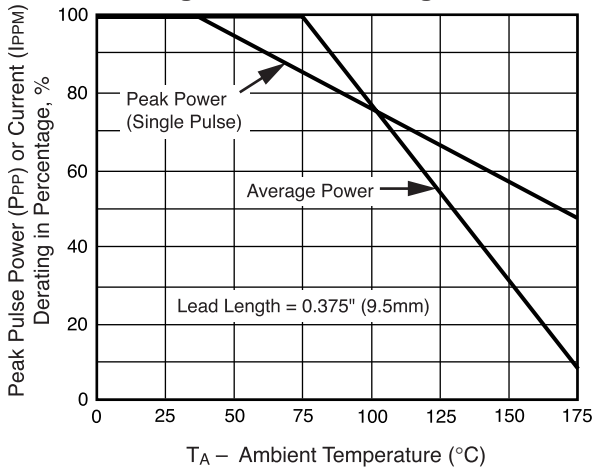
**Fig. 1 – Peak Pulse Power Rating Curve**



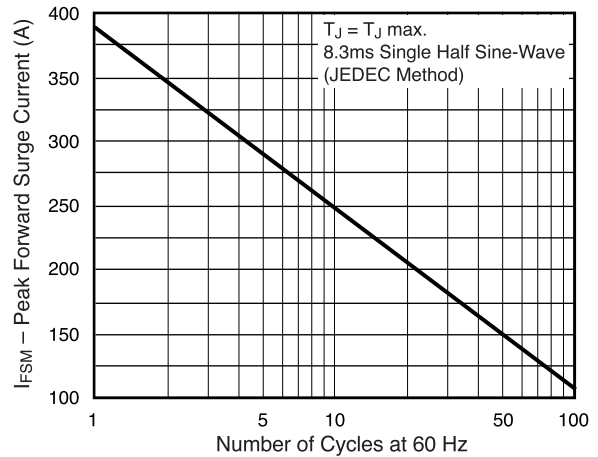
**Fig. 2 – 10/1000µs Pulse Waveform**



**Fig. 3 – Pulse Derating Curve**



**Fig. 4 – Maximum Non-Repetitive Peak Forward Surge Current**



**Fig. 5 – 10µs/50ms Pulse Waveform**

