

Automotive Transient Voltage Suppressor



6K24-G (RoHS Device)

Stand-off Voltage: 24 Volts

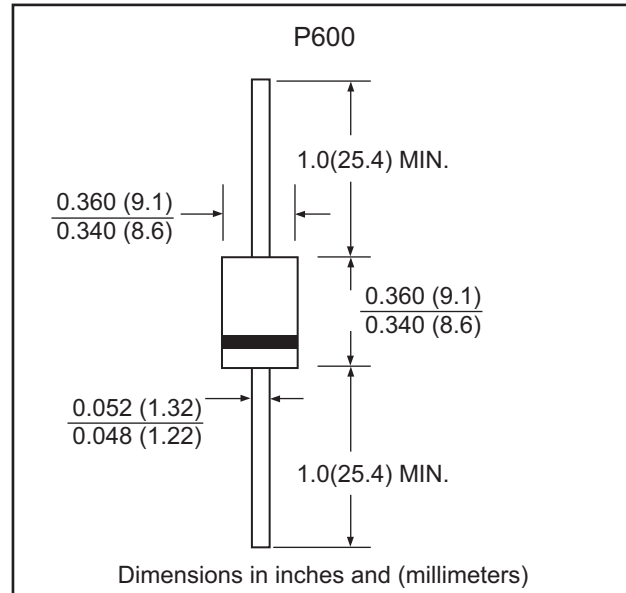
Peak Pulse Power: 6000W (10/1000μs)

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. (2.3kg) 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)
- Weight: 0.07oz., 2.1g
- Mounting Position: Any



Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Peak pulse power dissipation w/ 10/1000 μs waveform ⁽¹⁾	P _{PPM}	6000	W
Peak pulse power dissipation w/ 10μs/50ms waveform ⁽²⁾	P _{PPM}	2000	W
Steady state power dissipation lead length 0.375" (9.5mm), TL = 85°C ⁽⁶⁾	P _{M(AV)}	6.5	W
Max. working stand-off voltage	V _{WM}	24	V
Peak forward surge current, 8.3ms single half sine-wave ⁽³⁾	I _{FSM}	400	A
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +185	°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Max. DC reverse leakage current at V _{wm} = 24V	T _A = 25°C T _A = 150°C	I _D	1.0 50	μA
Reverse Breakdown Voltage at 100mA	T _A = 25°C min. T _A = 25°C max. T _A = 150°C min. T _A = 150°C max.	V _(BR)	26.7 32.6 29.6 36.7	V
Max. clamping voltage at I _{pp} = 90A ⁽⁴⁾	T _A = 25°C T _A = 150°C	V _C	40 45	V
Max. instantaneous forward voltage at 100A ⁽⁵⁾		V _F	1.8	V

Note: (1) Non-repetitive current pulse, per Fig. 2, with a 10/1000μs waveform
 (2) Non-repetitive current pulse, per Fig. 5, with 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 1.6x1.6" (40x40mm) per Fig. 5

"-G" suffix designated RoHS compliant version

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Rating and Characteristic Curve (6KA24-G) ($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Peak Pulse Power Rating Curve

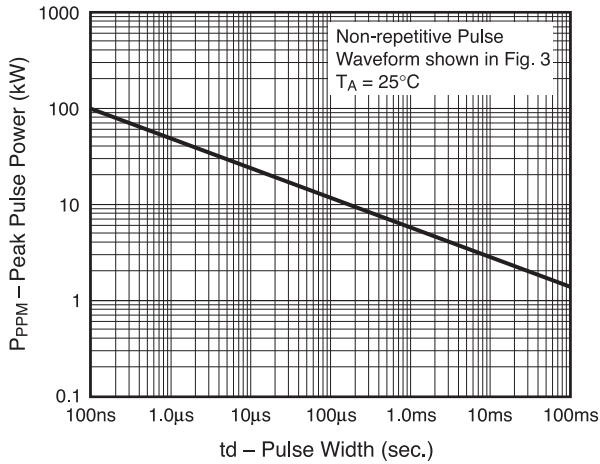


Fig. 2 – 10/1000 μs Pulse Waveform

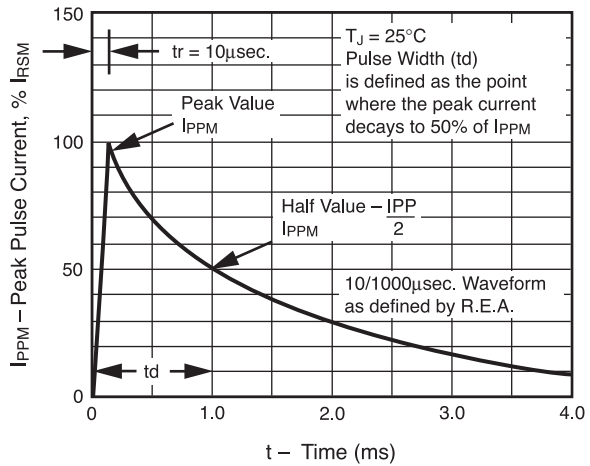


Fig. 3 – Pulse Derating Curve

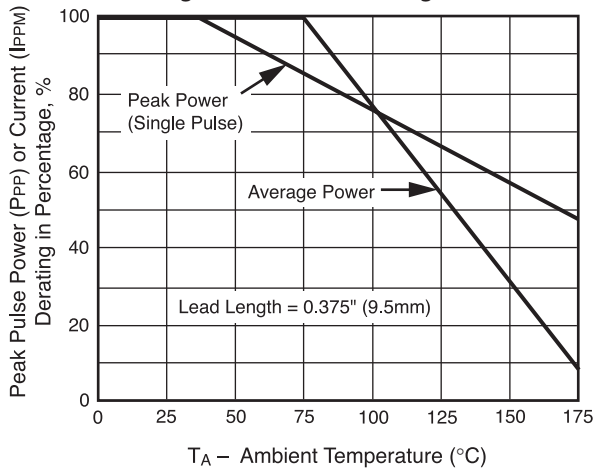


Fig. 4 – Maximum Non-Repetitive Peak Forward Surge Current

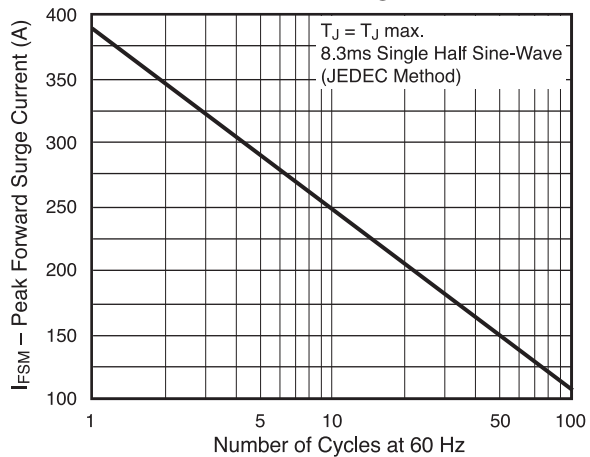


Fig. 5 – 10 μs /50ms Pulse Waveform

