

Automotive Transient Voltage Suppressor



6KA24

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

Features

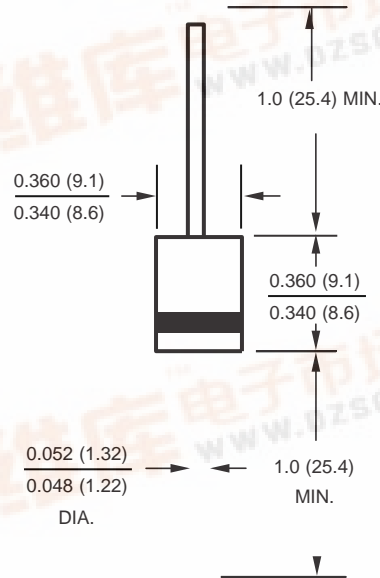
- Designed for under the hood applications
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Exclusive patented PAR® oxide passivated chip construction
- Low incremental surge resistance
- Ideally suited for automotive "load dump" applications
- High temp. soldering guaranteed: 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



P600



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

Parameter	Symbol	Limit	Unit
Peak pulse power dissipation w/ 10/1000µs waveform ⁽¹⁾	PPPM	6000	W
Peak pulse power dissipation w/ 10µs/50ms waveform ⁽²⁾	PPPM	2000	W
Steady state power dissipation lead lengths 0.375" (9.5mm), T _L = 85°C ⁽⁶⁾	PM(AV)	6.5	W
Maximum 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)

Maximum 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 29.7 36.7	V
Maximum clamping voltage at I _{PP} = 90A ⁽⁴⁾	T _A = 25°C T _A = 150°C	V _C	40 45	V
Maximum instantaneous forward voltage at 100A ⁽⁵⁾		V _F	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

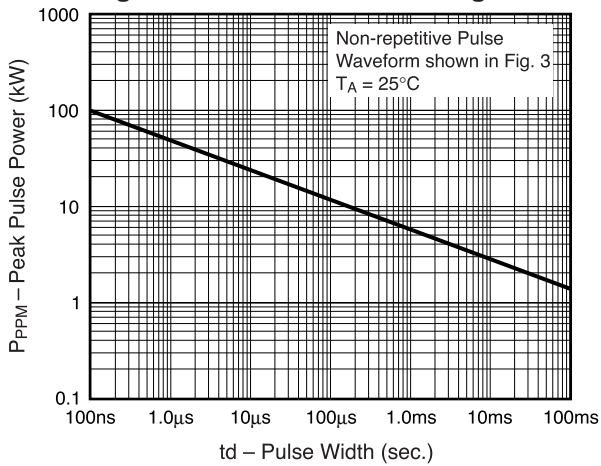


Fig. 2 – 10/1000µs Pulse Waveform

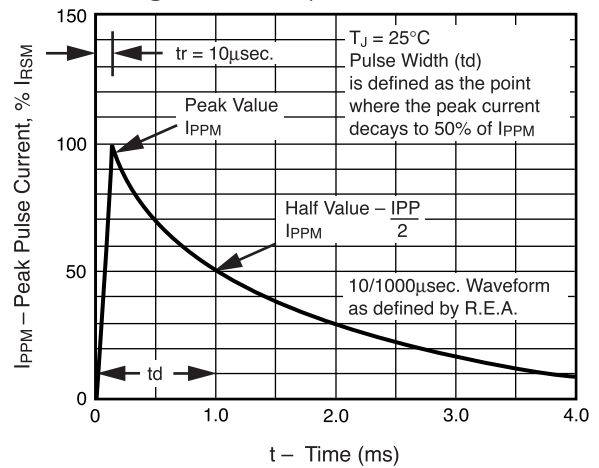


Fig. 3 – Pulse Derating Curve

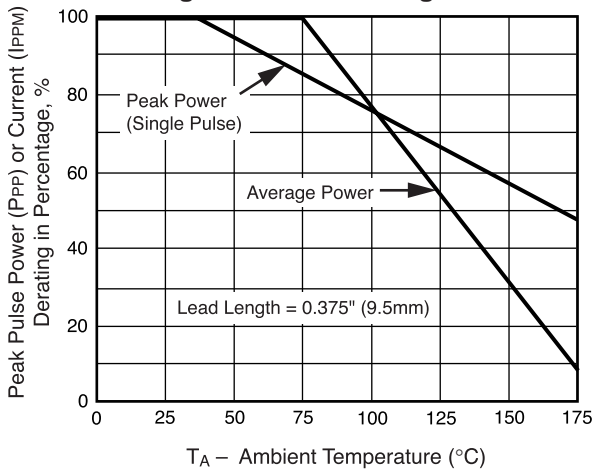


Fig. 4 – Maximum Non-Repetitive Peak Forward Surge Current

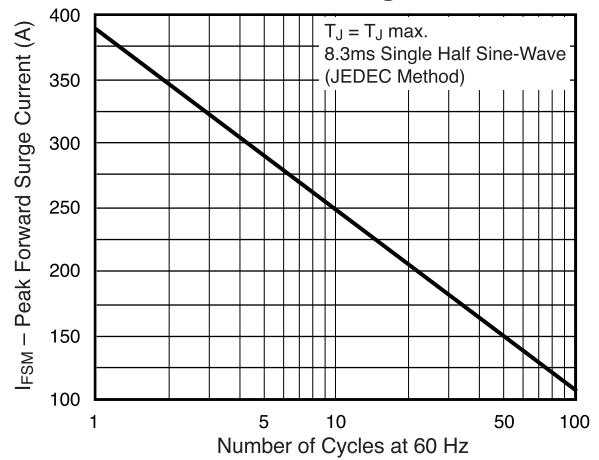


Fig. 5 – 10µs/50ms Pulse Waveform

