

Automotive Protection Axial Lead Transient Voltage Suppressors

Breakdown Voltage: 12.4 to 60 V
Peak Pulse Power: 6000 W

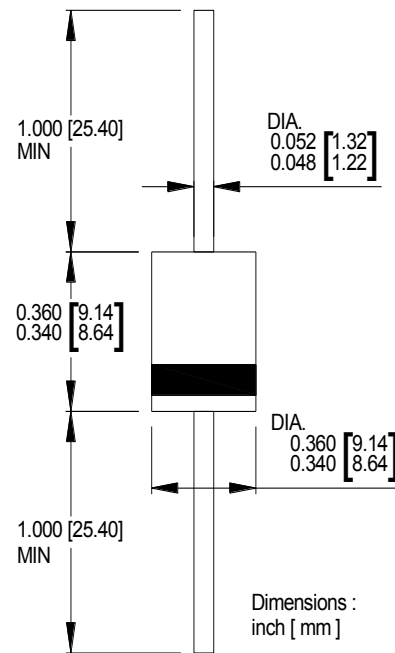
Features

- Glass passivated chip
- 6000 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01 %
- High reliability application and automotive grade AEC Q101 qualified
- Meets ISO7637-2 5a/5b surge specifications
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-202, method 208 guranteed
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

R-6/P600



Maximum Ratings($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾	P_{PP}	6000	W
Peak power dissipation with a 10/10,000 μ s waveform ⁽¹⁾	P_{PP}	2400	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	8.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾	I_{FSM}	500	A
Maximum instantaneous forward voltage at 100 A for unidirectional only	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^\circ\text{C}$

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above $T_A = 25^\circ\text{C}$ per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

Ratings and Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

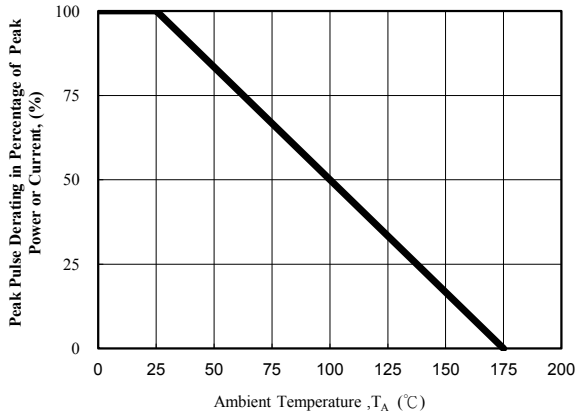


Fig. 1 - Pulse Derating Curve

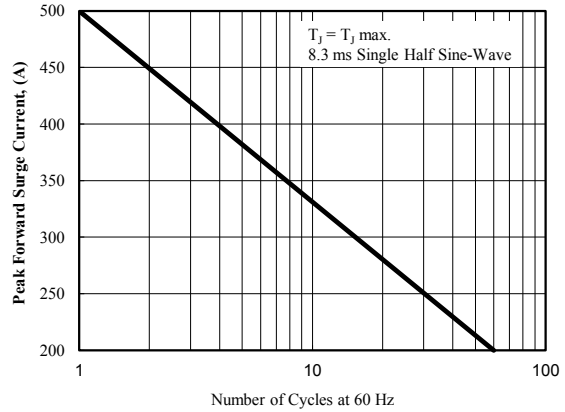


Fig. 2 - Maximum Non-Repetitive Surge Current

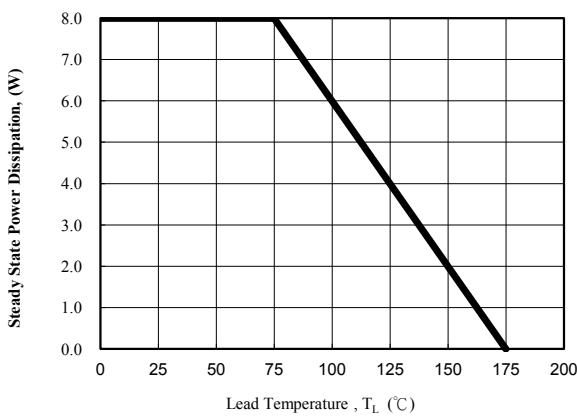


Fig. 3 - Steady State Power Derating Curve

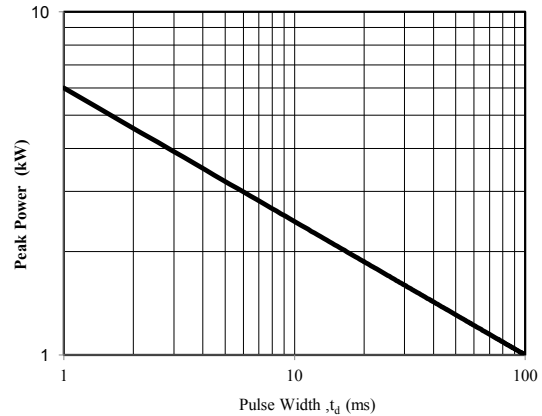


Fig. 4 - Peak Pulse Power Rating Curve

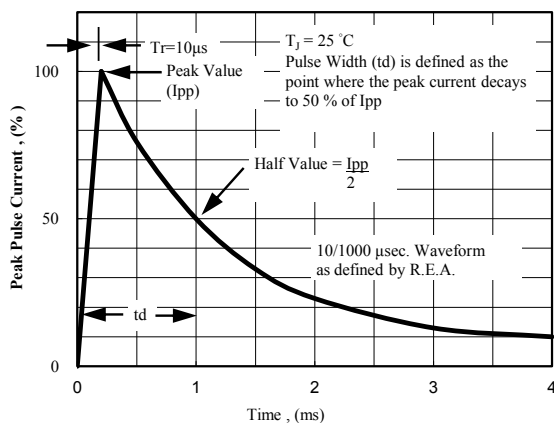


Fig. 5 - Pulse Waveform

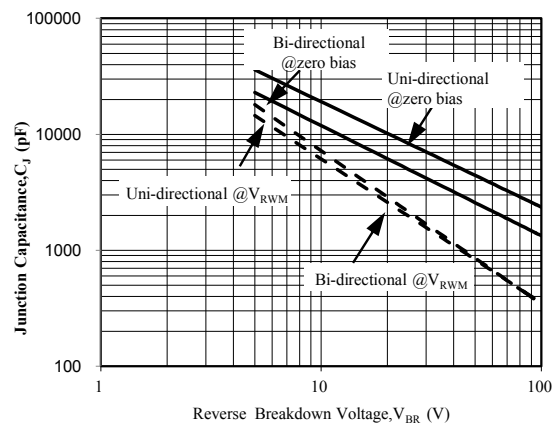


Fig. 6 - Typical Junction Capacitance

Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
LDP10A	LDP10CA	11.80	13.0	5	10	10	350.0	17.0
LDP11A	LDP11CA	12.20	13.5	5	10	11	327.0	18.2
LDP12A	LDP12CA	13.30	14.7	5	10	12	300.0	19.9
LDP13A	LDP13CA	14.40	15.9	5	10	13	277.0	21.5
LDP14A	LDP14CA	15.60	17.2	5	10	14	257.0	23.2
LDP15A	LDP15CA	16.70	18.5	5	10	15	245.0	24.4
LDP16A	LDP16CA	17.80	19.7	5	10	16	229.0	26.0
LDP17A	LDP17CA	18.90	20.9	5	10	17	216.0	27.6
LDP18A	LDP18CA	20.00	22.1	5	10	18	204.0	29.2
LDP20A	LDP20CA	22.20	24.5	5	10	20	184.0	32.4
LDP22A	LDP22CA	24.40	26.9	5	10	22	168.0	35.5
LDP24A	LDP24CA	26.70	29.5	5	10	24	154.0	38.9
LDP26A	LDP26CA	28.90	31.9	5	10	26	142.0	42.1
LDP28A	LDP28CA	31.10	34.4	5	10	28	131.0	45.4
LDP30A	LDP30CA	33.30	36.8	5	10	30	123.0	48.4
LDP33A	LDP33CA	36.70	40.6	5	10	33	112.0	53.3
LDP36A	LDP36CA	40.00	44.2	5	10	36	103.0	58.1
LDP40A	LDP40CA	44.40	49.1	5	10	40	92.50	64.5
LDP43A	LDP43CA	49.00	54.2	5	10	43	86.00	69.4
LDP48A	LDP48CA	53.30	58.9	5	10	48	77.00	77.4
LDP54A	LDP54CA	60.00	66.3	5	10	54	68.50	87.1
LDP58A	LDP58CA	64.40	71.2	5	10	58	64.00	93.6
LDP60A	LDP60CA	68.40	75.6	5	10	60	61.50	96.8

Note:

1. Add suffix 'CA' after part number to specify Bi-directional devices
2. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double
3. Surge current waveform is defined at 10/1000uS waveform