

**Reverse Voltage: 5.0 to 440 V**  
**Peak Pulse Power: 3000 W**

## Axial Lead Transient Voltage Suppressors

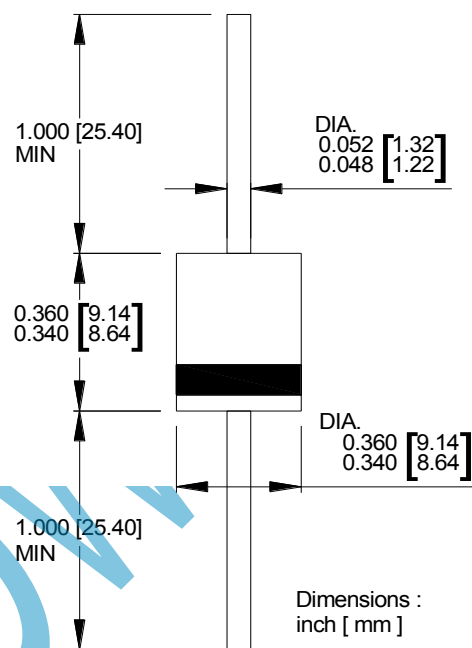
### Features

- Glass passivated chip
- 3000 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- 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 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	3000	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	6.5	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	300	A
Maximum instantaneous forward voltage at 100 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/5.0	V
Operating junction and storage temperature range	$T_J, T_{STG}$	$\square$ 55 to +150	$^\circ\text{C}$

#### 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

(3) $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$

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

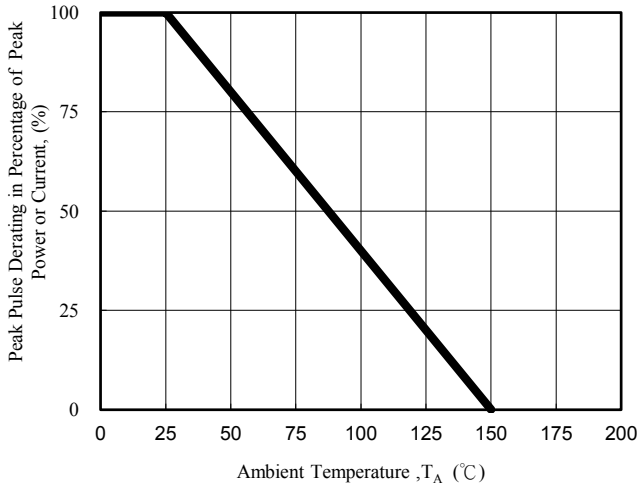


Fig. 1 - Pulse Derating Curve

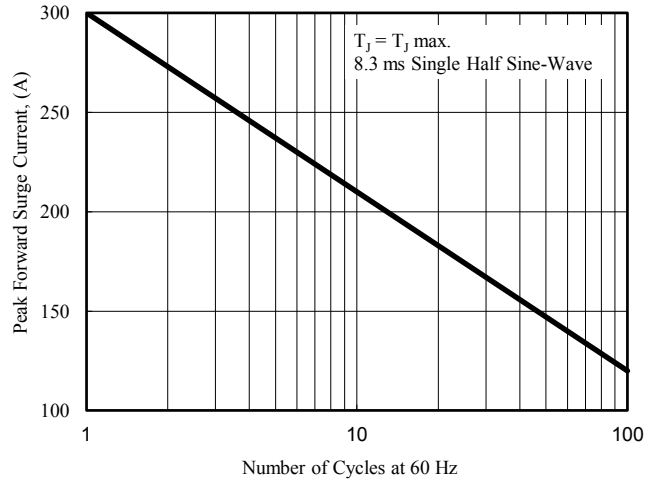


Fig. 2 - Maximum Non-Repetitive Surge Current

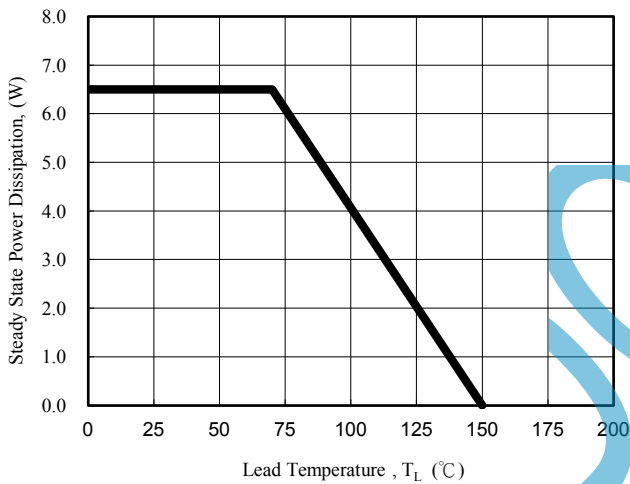


Fig. 3 - Steady State Power Derating Curve

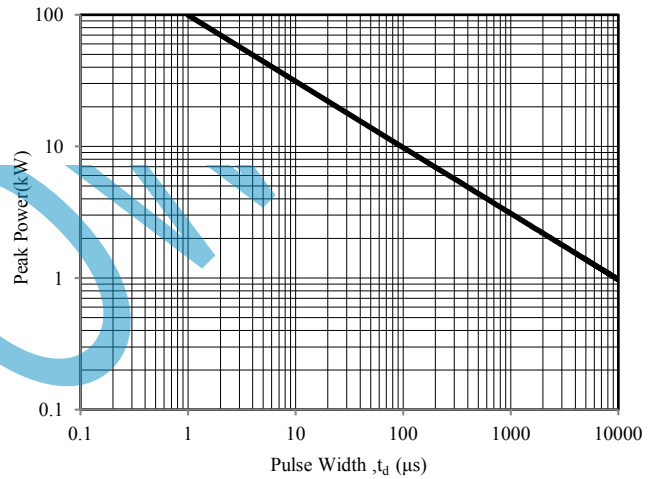


Fig. 4 - Peak Pulse Power Rating Curve

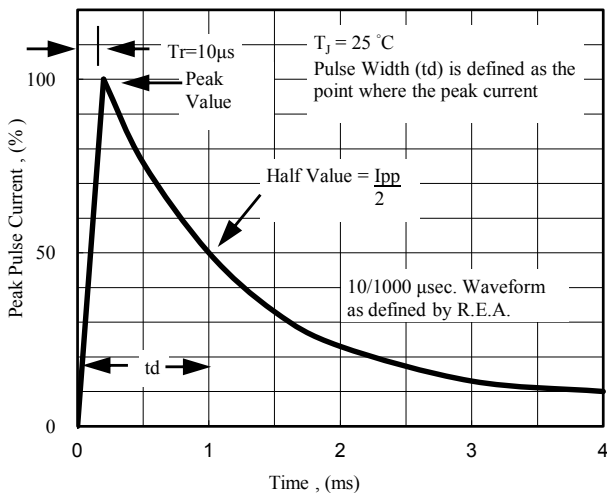


Fig. 5 - Pulse Waveform

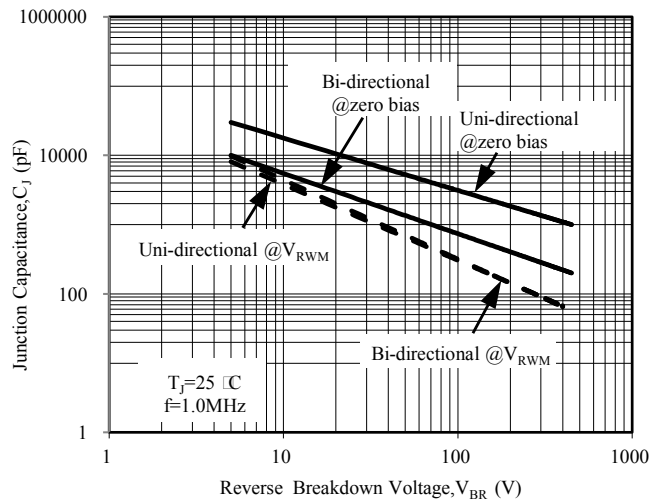


Fig. 6 - Typical Junction Capacitance

## 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 $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	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)				
3KP5.0A	3KP5.0CA	6.40	7.00	50	5000	5	326.1	9.2
3KP6.0A	3KP6.0CA	6.67	7.37	50	5000	6	291.3	10.3
3KP6.5A	3KP6.5CA	7.22	7.98	50	2000	7	267.9	11.2
3KP7.0A	3KP7.0CA	7.78	8.60	50	1000	7	250.0	12.0
3KP7.5A	3KP7.5CA	8.33	9.21	5	250	8	232.6	12.9
3KP8.0A	3KP8.0CA	8.89	9.83	5	150	8	220.6	13.6
3KP8.5A	3KP8.5CA	9.44	10.40	5	50	9	208.3	14.4
3KP9.0A	3KP9.0CA	10.00	11.10	5	20	9	194.8	15.4
3KP10A	3KP10CA	11.10	12.30	5	15	10	176.5	17.0
3KP11A	3KP11CA	12.20	13.50	5	2	11	164.8	18.2
3KP12A	3KP12CA	13.30	14.70	5	2	12	150.8	19.9
3KP13A	3KP13CA	14.40	15.90	5	2	13	139.5	21.5
3KP14A	3KP14CA	15.60	17.20	5	2	14	129.3	23.2
3KP15A	3KP15CA	16.70	18.50	5	2	15	123.0	24.4
3KP16A	3KP16CA	17.80	19.70	5	2	16	115.4	26.0
3KP17A	3KP17CA	18.90	20.90	5	2	17	108.7	27.6
3KP18A	3KP18CA	20.00	22.10	5	2	18	102.7	29.2
3KP19A	3KP19CA	21.10	23.30	5	2	19	97.5	30.8
3KP20A	3KP20CA	22.20	24.50	5	2	20	92.6	32.4
3KP22A	3KP22CA	24.40	26.90	5	2	22	84.5	35.5
3KP24A	3KP24CA	26.70	29.50	5	2	24	77.1	38.9
3KP26A	3KP26CA	28.90	31.90	5	2	26	71.3	42.1
3KP28A	3KP28CA	31.10	34.40	5	2	28	66.1	45.4
3KP30A	3KP30CA	33.30	36.80	5	2	30	62.0	48.4
3KP33A	3KP33CA	36.70	40.60	5	2	33	56.3	53.3
3KP36A	3KP36CA	40.00	44.20	5	2	36	51.6	58.1
3KP40A	3KP40CA	44.40	49.10	5	2	40	46.5	64.5
3KP43A	3KP43CA	47.80	52.80	5	2	43	43.2	69.4
3KP45A	3KP45CA	50.00	55.30	5	2	45	41.3	72.7
3KP48A	3KP48CA	53.30	58.90	5	2	48	38.8	77.4
3KP51A	3KP51CA	56.70	62.70	5	2	51	36.4	82.4
3KP54A	3KP54CA	60.00	66.30	5	2	54	34.4	87.1
3KP58A	3KP58CA	64.40	71.20	5	2	58	32.1	93.6
3KP60A	3KP60CA	66.70	73.70	5	2	60	31.0	96.8
3KP64A	3KP64CA	71.10	78.60	5	2	64	29.1	103.0
3KP70A	3KP70CA	77.80	86.00	5	2	70	26.5	113.0
3KP75A	3KP75CA	83.30	92.10	5	2	75	24.8	121.0
3KP78A	3KP78CA	86.70	95.80	5	2	78	23.8	126.0
3KP80A	3KP80CA	88.80	97.60	5	2	80	23.1	129.6
3KP85A	3KP85CA	94.40	104.00	5	2	85	21.9	137.0
3KP90A	3KP90CA	100.00	111.00	5	2	90	20.5	146.0
3KP100A	3KP100CA	111.00	123.00	5	2	100	18.5	162.0
3KP110A	3KP110CA	122.00	135.00	5	2	110	16.9	177.0
3KP120A	3KP120CA	133.00	147.00	5	2	120	15.5	193.0
3KP130A	3KP130CA	144.00	159.00	5	2	130	14.4	209.0
3KP140A	3KP140CA	155.00	171.00	5	2	140	13.2	226.8
3KP150A	3KP150CA	167.00	185.00	5	2	150	12.3	243.0

## 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 $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	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)				
3KP160A	3KP160CA	178.00	197.00	5	2	160	11.6	259.0
3KP170A	3KP170CA	189.00	209.00	5	2	170	10.9	275.0
3KP180A	3KP180CA	200.00	221.00	5	2	180	10.3	291.6
3KP190A	3KP190CA	211.00	233.00	5	2	190	9.7	307.8
3KP200A	3KP191CA	222.00	246.00	5	2	200	9.3	324.0
3KP210A	3KP210CA	233.00	258.00	5	2	210	8.6	349.5
3KP220A	3KP220CA	244.00	270.00	5	2	220	8.1	371.1
3KP250A	3KP250CA	279.00	309.00	5	2	250	7.4	405.0
3KP300A	3KP300CA	335.00	371.00	5	2	300	6.2	486.0
3KP350A	3KP350CA	391.00	432.00	5	2	350	5.3	567.0
3KP400A	3KP400CA	447.00	494.00	5	2	400	4.6	648.0
3KP440A	3KP440CA	492.00	543.00	5	2	440	4.2	713.0

### Note:

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double



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