

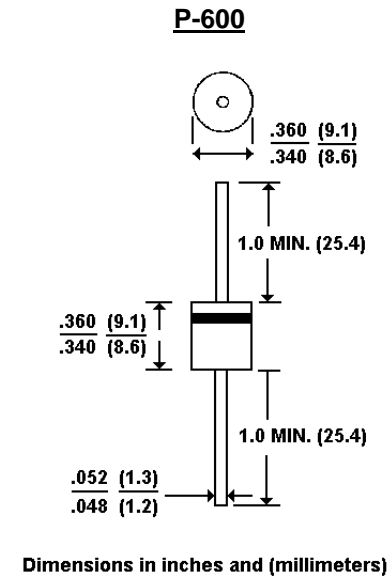
# 3KP SERIES

## GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

### VOLTAGE - 5.0 TO 170 Volts      3000 Watt Peak Pulse Power

#### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- 3000W Peak Pulse Power capability on 10/1000  $\mu$ S waveform
- Excellent clamping capability
- Repetition rate(Duty Cycle): 0.05%
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volts to BV
- Typical  $I_D$  less than 1  $\mu$ A above 10V
- High temperature soldering guaranteed: 300  $^{\circ}$ C/10 seconds/.375", (9.5mm) lead length/5lbs., (2.3kg) tension



#### MECHANICAL DATA

Case: Molded plastic over glass passivated junction

Terminals: Plated Axial leads, solderable per

MIL-STD-750, Method 2026

Polarity: Color band denoted positive

end(cathode)

Mounting Position: Any

Weight: 0.07 ounce, 2.1 grams

#### DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types  
Electrical characteristics apply in both directions.

#### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25  $^{\circ}$ C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ S waveform (Note 1, FIG.1)	$P_{PPM}$	Minimum 3000	Watts
Peak Pulse Current of on 10/1000 $\mu$ S waveform (Note 1, FIG.3)	$I_{PPM}$	SEE TABLE 1	Amps
Steady State Power Dissipation at $T_L=75^{\circ}$ C Lead Lengths .375", (9.5mm) (Note 2)	$P_{M(AV)}$	8.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, Unidirectional only (JECED Method) (Note 3)	$I_{FSM}$	250	Amps
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +175	$^{\circ}$ C

#### NOTES:

- 1.Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^{\circ}$ C per Fig. 2.
- 2.Mounted on Copper Leaf area of 0.79in<sup>2</sup>(20mm<sup>2</sup>).
- 3.Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle= 4 pulses per minutes maximum.

## RATING AND CHARACTERISTIC CURVES 3KP SERIES

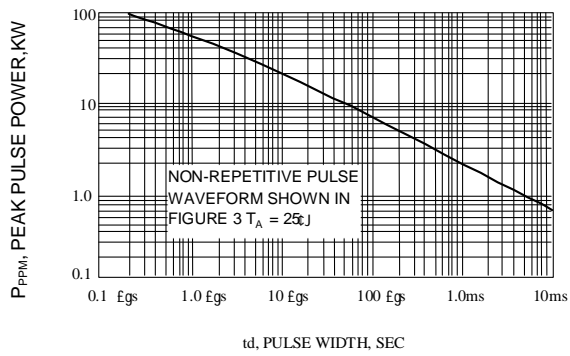


Fig. 1-PEAK PULSE POWER VS PULSE TIME

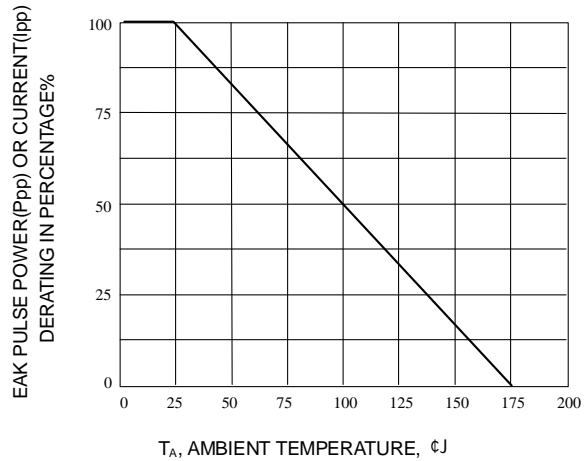


Fig. 2-DERATING CURVE

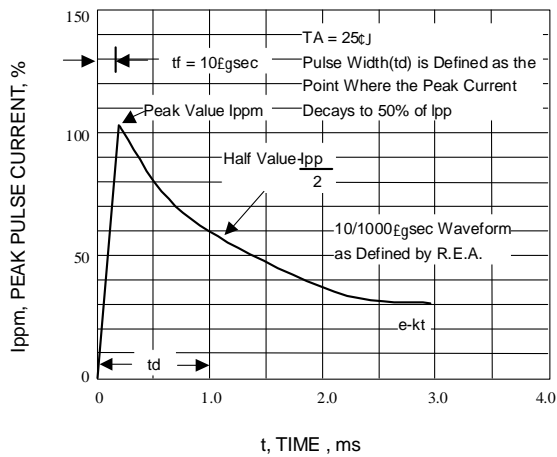


Fig. 3-PULSE WAVEFORM

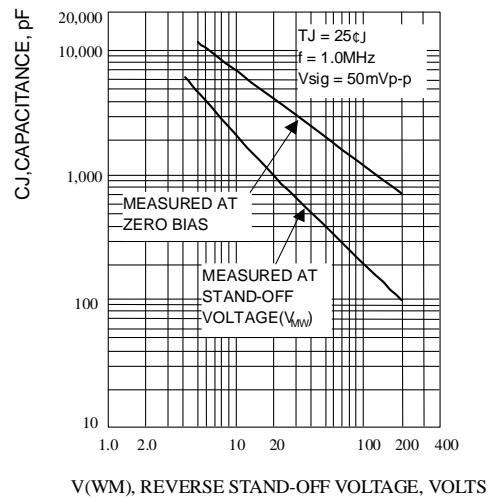


Fig. 4-TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE

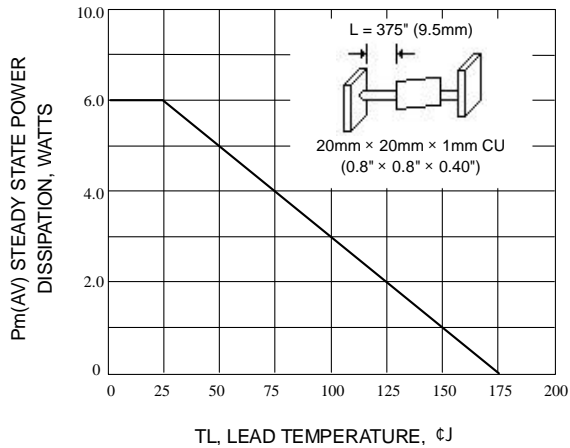


Fig. 5-STEADY STATE POWER DERATING

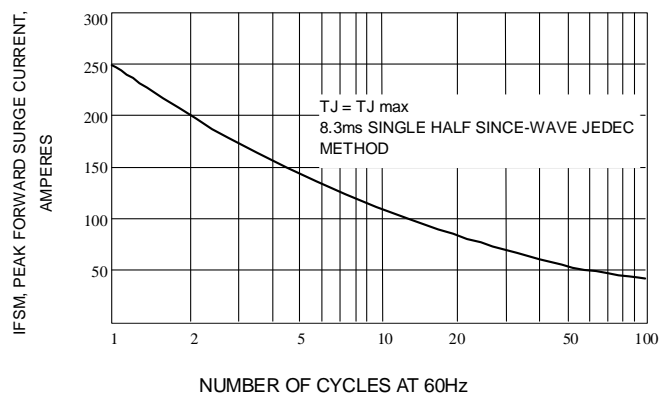


Fig. 6-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

**UNI-DIRECTIONAL 3000 Watt Axial Lead TVS**

UNI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @I <sub>PP</sub> VC (V)	PEAK PULSE CURRENT I <sub>PP</sub> (A)	REVERSE LEAKAGE @VRWM IR (uA)
3KP5.0	5.00	6.40	7.55	10	9.6	312.5	1000
3KP5.0A	5.00	6.40	7.25	10	9.2	326.0	1000
3KP6.0	6.00	6.67	8.45	10	11.4	263.2	1000
3KP6.0A	6.00	6.67	7.67	10	10.3	291.3	1000
3KP6.5	6.50	7.22	9.14	10	12.3	243.9	500
3KP6.5A	6.50	7.22	8.30	10	11.2	267.9	500
3KP7.0	7.00	7.78	9.86	10	13.3	225.6	200
3KP7.0A	7.00	7.78	8.95	10	12.0	250.0	200
3KP7.5	7.50	8.33	10.67	1	14.3	209.8	100
3KP7.5A	7.50	8.33	9.58	1	12.9	232.6	100
3KP8.0	8.00	8.89	11.30	1	15.0	220.0	50
3KP8.0A	8.00	8.89	10.23	1	13.6	220.6	50
3KP8.5	8.50	9.44	11.92	1	15.9	188.8	25
3KP8.5A	8.50	9.44	10.82	1	14.4	208.4	25
3KP9.0	9.00	10.00	12.60	1	16.9	177.4	10
3KP9.0A	9.00	10.00	11.50	1	15.4	194.8	10
3KP10	10.00	11.10	14.10	1	18.8	159.6	5
3KP10A	10.00	11.10	12.80	1	17.0	176.4	5
3KP11	11.00	12.20	15.40	1	20.1	149.2	5
3KP11A	11.00	12.20	14.00	1	18.2	184.8	5
3KP12	12.00	13.30	16.90	1	22.0	136.4	5
3KP12A	12.00	13.30	15.30	1	19.9	150.6	5
3KP13	13.00	14.40	18.20	1	23.8	126.0	5
3KP13A	13.00	14.40	16.50	1	21.5	139.4	5
3KP14	14.00	15.60	19.80	1	25.8	116.2	5
3KP14A	14.00	15.60	17.90	1	23.2	129.4	5
3KP15	15.00	16.70	21.10	1	26.9	111.6	5
3KP15A	15.00	16.70	19.20	1	24.4	123.0	5
3KP16	16.00	17.80	22.60	1	28.8	104.2	5
3KP16A	16.00	17.80	20.50	1	26.0	115.4	5
3KP17	17.00	18.90	23.90	1	30.5	98.4	5
3KP17A	17.00	18.90	21.70	1	27.6	106.6	5
3KP18	18.00	20.00	25.30	1	32.2	93.2	5
3KP18A	18.00	20.00	23.30	1	29.2	102.8	5
3KP20	20.00	22.20	28.10	1	35.8	83.8	5
3KP20A	20.00	22.20	25.50	1	32.4	92.6	5
3KP22	22.00	24.40	30.90	1	39.4	76.2	5
3KP22A	22.00	24.40	28.00	1	35.5	84.4	5
3KP24	24.00	26.70	33.80	1	43.0	69.8	5
3KP24A	24.00	26.70	30.70	1	38.9	77.2	5
3KP26	26.00	28.90	36.60	1	46.6	64.4	5
3KP26A	26.00	28.90	33.20	1	42.1	71.2	5
3KP28	28.00	31.10	39.40	1	50.0	60.0	5
3KP28A	28.00	31.10	35.80	1	45.4	66.0	5
3KP30	30.00	33.30	42.20	1	53.5	56.0	5
3KP30A	30.00	33.30	38.30	1	48.4	62.0	5
3KP33	33.00	36.70	46.50	1	59.0	50.4	5
3KP33A	33.00	36.70	42.20	1	53.3	56.2	5
3KP36	36.00	40.00	50.70	1	64.3	46.6	5
3KP36A	36.00	40.00	46.00	1	58.1	51.6	5
3KP40	40.00	44.40	56.30	1	71.4	42.0	5
3KP40A	40.00	44.40	51.10	1	64.5	46.4	5
3KP43	43.00	47.80	60.50	1	76.7	39.2	5
3KP43A	43.00	47.80	54.90	1	69.4	43.2	5
3KP45	45.00	50.00	63.30	1	80.3	37.4	5
3KP45A	45.00	50.00	57.50	1	72.7	41.2	5
3KP48	48.00	53.30	67.50	1	85.5	35.0	5
3KP48A	48.00	53.30	61.30	1	77.4	38.8	5
3KP51	51.00	56.70	71.80	1	91.1	37.0	5
3KP51A	51.00	56.70	65.20	1	82.4	36.4	5
3KP54	54.00	60.00	76.00	1	96.3	31.2	5
3KP54A	54.00	60.00	69.00	1	87.1	34.4	5
3KP58	58.00	64.40	81.60	1	103.0	29.2	5
3KP58A	58.00	64.40	74.10	1	93.6	32.0	5

**UNI-DIRECTIONAL 3000 Watt Axial Lead TVS**

UNI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @I <sub>PP</sub> VC (V)	PEAK PULSE CURRENT I <sub>PP</sub> (A)	REVERSE LEAKAGE @VRWM IR (uA)
3KP60	60.00	66.70	84.50	1	107.0	28.0	5
3KP60A	60.00	66.70	76.70	1	96.8	31.0	5
3KP64	64.00	71.10	90.10	1	114.0	26.4	5
3KP64A	64.00	71.10	81.80	1	103.0	29.2	5
3KP70	70.00	77.80	98.60	1	125.0	24.0	5
3KP70A	70.00	77.80	89.50	1	113.0	26.6	5
3KP75	75.00	83.30	105.70	1	134.0	22.4	5
3KP75A	75.00	83.30	95.80	1	121.0	24.8	5
3KP78	78.00	86.70	109.80	1	139.0	21.6	5
3KP78A	78.00	86.70	99.70	1	126.0	22.8	5
3KP85	85.00	94.40	119.20	1	151.0	19.8	5
3KP85A	85.00	94.40	108.20	1	137.0	20.8	5
3KP90	90.00	100.00	126.50	1	160.0	18.8	5
3KP90A	90.00	100.00	115.50	1	146.0	20.6	5
3KP100	100.00	111.00	141.00	1	179.0	16.6	5
3KP100A	100.00	111.00	128.00	1	162.0	18.6	5
3KP110	110.00	122.00	154.50	1	196.0	15.4	5
3KP110A	110.00	122.00	140.50	1	177.0	16.8	5
3KP120	120.00	133.00	169.00	1	214.0	14.0	5
3KP120A	120.00	133.00	153.00	1	193.0	15.6	5
3KP130	130.00	144.00	182.50	1	231.0	13.0	5
3KP130A	130.00	144.00	165.50	1	209.0	14.4	5
3KP150	150.00	167.00	211.50	1	268.0	11.2	5
3KP150A	150.00	167.00	192.50	1	243.0	12.4	5
3KP160	160.00	178.00	226.00	1	287.0	10.4	5
3KP160A	160.00	178.00	205.00	1	259.0	11.6	5
3KP170	170.00	189.00	239.50	1	304.0	9.8	5
3KP170A	170.00	189.00	217.50	1	275.0	11.0	5

# BI-DIRECTIONAL 3000 Watt Axial Lead TVS

BI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @IPP VC (V)	PEAK PULSE CURRENT IPP (A)	REVERSE LEAKAGE @VRWM IR (uA)
3KP5.0C	5.00	6.40	7.55	10	9.6	312.5	2000
3KP5.0CA	5.00	6.40	7.25	10	9.2	326.0	2000
3KP6.0C	6.00	6.67	8.45	10	11.4	263.2	2000
3KP6.0CA	6.00	6.67	7.67	10	10.3	291.3	2000
3KP6.5C	6.50	7.22	9.14	10	12.3	243.9	1000
3KP6.5CA	6.50	7.22	8.30	10	11.2	267.9	1000
3KP7.0C	7.00	7.78	9.86	10	13.3	225.6	400
3KP7.0CA	7.00	7.78	8.95	10	12.0	250.0	400
3KP7.5C	7.50	8.33	10.67	1	14.3	209.8	200
3KP7.5CA	7.50	8.33	9.58	1	12.9	232.6	200
3KP8.0C	8.00	8.89	11.30	1	15.0	220.0	100
3KP8.0CA	8.00	8.89	10.23	1	13.6	220.6	100
3KP8.5C	8.50	9.44	11.92	1	15.9	188.8	50
3KP8.5CA	8.50	9.44	10.82	1	14.4	208.4	50
3KP9.0C	9.00	10.00	12.60	1	16.9	177.4	20
3KP9.0CA	9.00	10.00	11.50	1	15.4	194.8	20
3KP10C	10.00	11.10	14.10	1	18.8	159.6	5
3KP10CA	10.00	11.10	12.80	1	17.0	176.4	5
3KP11C	11.00	12.20	15.40	1	20.1	149.2	5
3KP11CA	11.00	12.20	14.00	1	18.2	184.8	5
3KP12C	12.00	13.30	16.90	1	22.0	136.4	5
3KP12CA	12.00	13.30	15.30	1	19.9	150.6	5
3KP13C	13.00	14.40	18.20	1	23.8	126.0	5
3KP13CA	13.00	14.40	16.50	1	21.5	139.4	5
3KP14C	14.00	15.60	19.80	1	25.8	116.2	5
3KP14CA	14.00	15.60	17.90	1	23.2	129.4	5
3KP15C	15.00	16.70	21.10	1	26.9	111.6	5
3KP15CA	15.00	16.70	19.20	1	24.4	123.0	5
3KP16C	16.00	17.80	22.60	1	28.8	104.2	5
3KP16CA	16.00	17.80	20.50	1	26.0	115.4	5
3KP17C	17.00	18.90	23.90	1	30.5	98.4	5
3KP17CA	17.00	18.90	21.70	1	27.6	106.6	5
3KP18C	18.00	20.00	25.30	1	32.2	93.2	5
3KP18CA	18.00	20.00	23.30	1	29.2	102.8	5
3KP20C	20.00	22.20	28.10	1	35.8	83.8	5
3KP20CA	20.00	22.20	25.50	1	32.4	92.6	5
3KP22C	22.00	24.40	30.90	1	39.4	76.2	5
3KP22CA	22.00	24.40	28.00	1	35.5	84.4	5
3KP24C	24.00	26.70	33.80	1	43.0	69.8	5
3KP24CA	24.00	26.70	30.70	1	38.9	77.2	5
3KP26C	26.00	28.90	36.60	1	46.6	64.4	5
3KP26CA	26.00	28.90	33.20	1	42.1	71.2	5
3KP28C	28.00	31.10	39.40	1	50.0	60.0	5
3KP28CA	28.00	31.10	35.80	1	45.4	66.0	5
3KP30C	30.00	33.30	42.20	1	53.5	56.0	5
3KP30CA	30.00	33.30	38.30	1	48.4	62.0	5
3KP33C	33.00	36.70	46.50	1	59.0	50.4	5
3KP33CA	33.00	36.70	42.20	1	53.3	56.2	5
3KP36C	36.00	40.00	50.70	1	64.3	46.6	5
3KP36CA	36.00	40.00	46.00	1	58.1	51.6	5
3KP40C	40.00	44.40	56.30	1	71.4	42.0	5
3KP40CA	40.00	44.40	51.10	1	64.5	46.4	5
3KP43C	43.00	47.80	60.50	1	76.7	39.2	5
3KP43CA	43.00	47.80	54.90	1	69.4	43.2	5
3KP45C	45.00	50.00	63.30	1	80.3	37.4	5
3KP45CA	45.00	50.00	57.50	1	72.7	41.2	5
3KP48C	48.00	53.30	67.50	1	85.5	35.0	5
3KP48CA	48.00	53.30	61.30	1	77.4	38.8	5
3KP51C	51.00	56.70	71.80	1	91.1	37.0	5
3KP51CA	51.00	56.70	65.20	1	82.4	36.4	5
3KP54C	54.00	60.00	76.00	1	96.3	31.2	5
3KP54CA	54.00	60.00	69.00	1	87.1	34.4	5
3KP58C	58.00	64.40	81.60	1	103.0	29.2	5
3KP58CA	58.00	64.40	74.10	1	93.6	32.0	5

**BI-DIRECTIONAL 3000 Watt Axial Lead TVS**

BI-DIRECTIONAL PART NUMBER	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @I <sub>PP</sub> VC (V)	PEAK PULSE CURRENT I <sub>PP</sub> (A)	REVERSE LEAKAGE @VRWM IR (uA)
3KP60C	60.00	66.70	84.50	1	107.0	28.0	5
3KP60CA	60.00	66.70	76.70	1	96.8	31.0	5
3KP64C	64.00	71.10	90.10	1	114.0	26.4	5
3KP64CA	64.00	71.10	81.80	1	103.0	29.2	5
3KP70C	70.00	77.80	98.60	1	125.0	24.0	5
3KP70CA	70.00	77.80	89.50	1	113.0	26.6	5
3KP75C	75.00	83.30	105.70	1	134.0	22.4	5
3KP75CA	75.00	83.30	95.80	1	121.0	24.8	5
3KP78C	78.00	86.70	109.80	1	139.0	21.6	5
3KP78CA	78.00	86.70	99.70	1	126.0	22.8	5
3KP85C	85.00	94.40	119.20	1	151.0	19.8	5
3KP85CA	85.00	94.40	108.20	1	137.0	20.8	5
3KP90C	90.00	100.00	126.50	1	160.0	18.8	5
3KP90CA	90.00	100.00	115.50	1	146.0	20.6	5
3KP100C	100.00	111.00	141.00	1	179.0	16.6	5
3KP100CA	100.00	111.00	128.00	1	162.0	18.6	5
3KP110C	110.00	122.00	154.50	1	196.0	15.4	5
3KP110CA	110.00	122.00	140.50	1	177.0	16.8	5
3KP120C	120.00	133.00	169.00	1	214.0	14.0	5
3KP120CA	120.00	133.00	153.00	1	193.0	15.6	5
3KP130C	130.00	144.00	182.50	1	231.0	13.0	5
3KP130CA	130.00	144.00	165.50	1	209.0	14.4	5
3KP150C	150.00	167.00	211.50	1	268.0	11.2	5
3KP150CA	150.00	167.00	192.50	1	243.0	12.4	5
3KP160C	160.00	178.00	226.00	1	287.0	10.4	5
3KP160CA	160.00	178.00	205.00	1	259.0	11.6	5
3KP170C	170.00	189.00	239.50	1	304.0	9.8	5
3KP170CA	170.00	189.00	217.50	1	275.0	11.0	5