

# 3KP SERIES



3000 WATT PEAK POWER TRANSIENT VOLTAGE SUPPRESSORS



## FEATURES

- \* 3000 Watts Surge Capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_k$  less than  $1\mu A$  above 10V

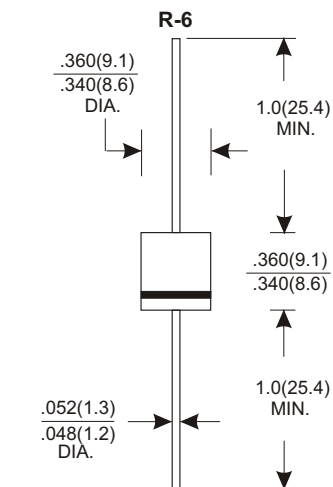
## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Axial leads, solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end
- \* Mounting position: Any

## VOLTAGE RANGE

5.0 to 440 Volts

3000 Watts Peak Power



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating  $25^{\circ}C$  ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^{\circ}C$ , $T_P=1ms$ (NOTE 1)	$P_{PK}$	Minimum 3000	Watts
Power Dissipation on infinite heatsink at $T_L=75^{\circ}C$	$P_D$	6.5	Watt
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	300	Amps
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	$V_F$	3.5/5.0	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^{\circ}C$

### NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^{\circ}C$  per Fig. 2.
2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.
3.  $V_F < 3.5V$  for devices of  $V_{BR} < 200V$  and  $V_F < 5.0V$  for devices of  $V_{BR} > 201V$ .

## DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types 3KP5.0 thru 3KP440.
2. Electrical characteristics apply in both directions.

## RATING AND CHARACTERISTIC CURVES (3KP SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

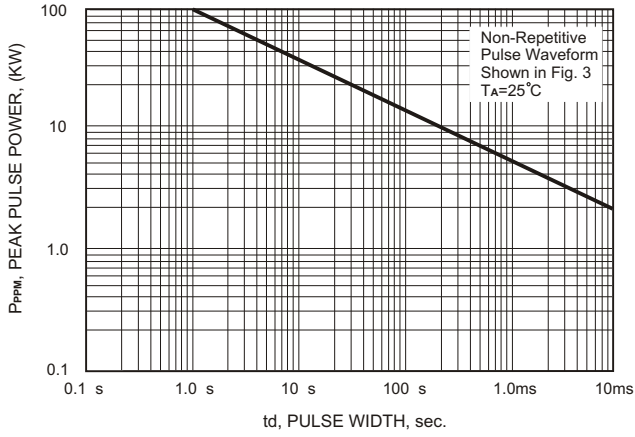


FIG.2-PULSE DERATING CURVE

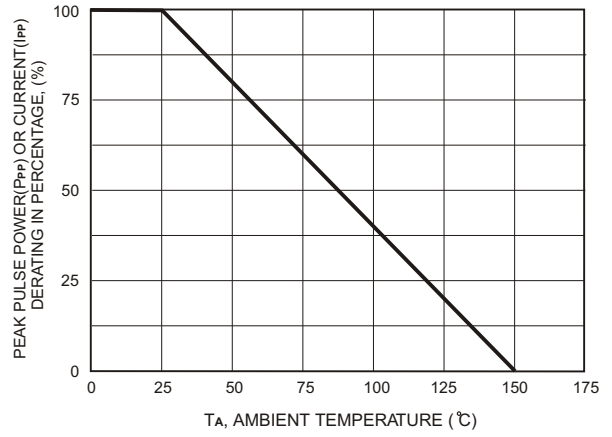


FIG.3-PULSE WAVE FORM

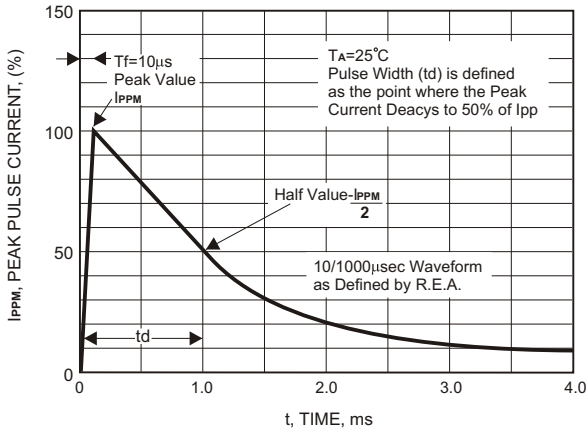


FIG.4-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT, UNIDIRECTIONAL

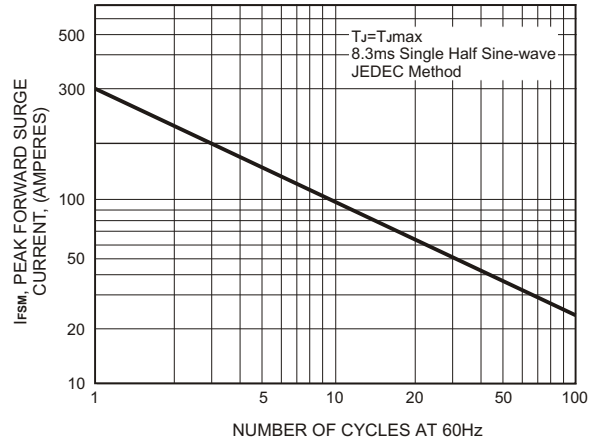
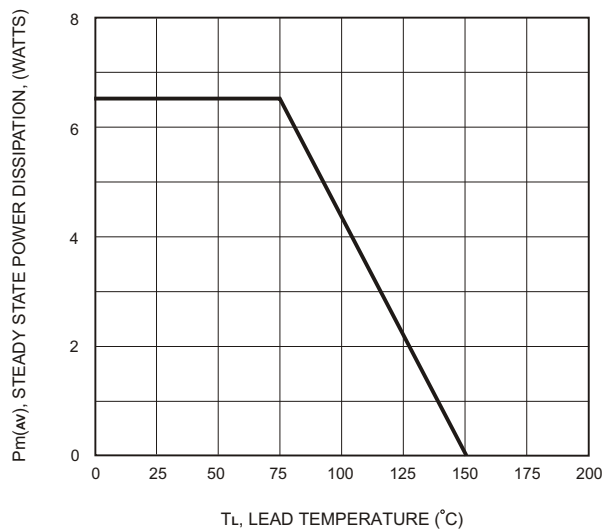


FIG.5-STEADY STATE POWER DERATING CURVE



# 3000 Watt Axial Lead TVS



Part Number (Uni)	Part Number (Bi)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_r$			Maximum Reverse Leakage @ $V_R$	Maximum Peak Pulse Current	Maximum Clamping Voltage @ $I_{pp}$
			VR (V)	Min (V)	Max (V)			
3KP5.0	3KP5.0C	5.0	6.40	7.30	50	5000	312.50	9.6
3KP5.0A	3KP5.0CA	5.0	6.40	7.00	50	5000	326.09	9.2
3KP6.0	3KP6.0C	6.0	6.67	8.15	50	5000	263.16	11.4
3KP6.0A	3KP6.0CA	6.0	6.67	7.37	50	5000	291.26	10.3
3KP6.5	3KP6.5C	6.5	7.22	8.82	50	2000	243.90	12.3
3KP6.5A	3KP6.5CA	6.5	7.22	7.98	50	2000	267.86	11.2
3KP7.0	3KP7.0C	7.0	7.78	9.51	50	1000	225.56	13.3
3KP7.0A	3KP7.0CA	7.0	7.78	8.60	50	1000	250.00	12.0
3KP7.5	3KP7.5C	7.5	8.33	10.20	5	250	209.79	14.3
3KP7.5A	3KP7.5CA	7.5	8.33	9.21	5	250	232.56	12.9
3KP8.0	3KP8.0C	8.0	8.89	10.90	5	150	200.00	15.0
3KP8.0A	3KP8.0CA	8.0	8.89	9.83	5	150	220.59	13.6
3KP8.5	3KP8.5C	8.5	9.44	11.50	5	50	188.68	15.9
3KP8.5A	3KP8.5CA	8.5	9.44	10.40	5	50	208.33	14.4
3KP9.0	3KP9.0C	9.0	10.00	12.20	5	20	177.51	16.9
3KP9.0A	3KP9.0CA	9.0	10.00	11.10	5	20	194.81	15.4
3KP10	3KP10C	10.0	11.10	13.60	5	15	159.57	18.8
3KP10A	3KP10CA	10.0	11.10	12.30	5	15	176.47	17.0
3KP11	3KP11C	11.0	12.20	14.90	5	5	149.25	20.1
3KP11A	3KP11CA	11.0	12.20	13.50	5	5	164.84	18.2
3KP12	3KP12C	12.0	13.30	16.30	5	5	136.36	22.0
3KP12A	3KP12CA	12.0	13.30	14.70	5	5	150.75	19.9
3KP13	3KP13C	13.0	14.40	17.60	5	5	126.05	23.8
3KP13A	3KP13CA	13.0	14.40	15.90	5	5	139.53	21.5
3KP14	3KP14C	14.0	15.60	19.10	5	5	116.28	25.8
3KP14A	3KP14CA	14.0	15.60	17.20	5	5	129.31	23.2
3KP15	3KP15C	15.0	16.70	20.40	5	5	111.52	26.9
3KP15A	3KP15CA	15.0	16.70	18.50	5	5	122.95	24.4
3KP16	3KP16C	16.0	17.80	21.80	5	5	104.17	28.8
3KP16A	3KP16CA	16.0	17.80	19.70	5	5	115.38	26.0
3KP17	3KP17C	17.0	18.90	23.10	5	5	98.36	30.5
3KP17A	3KP17CA	17.0	18.90	20.90	5	5	108.70	27.6
3KP18	3KP18C	18.0	20.00	24.40	5	5	93.17	32.2
3KP18A	3KP18CA	18.0	20.00	22.10	5	5	102.74	29.2
3KP20	3KP20C	20.0	22.20	27.10	5	5	83.80	35.8
3KP20A	3KP20CA	20.0	22.20	24.50	5	5	92.59	32.4
3KP22	3KP22C	22.0	24.40	29.80	5	5	76.14	39.4
3KP22A	3KP22CA	22.0	24.40	26.90	5	5	84.51	35.5
3KP24	3KP24C	24.0	26.70	32.60	5	5	69.77	43.0
3KP24A	3KP24CA	24.0	26.70	29.50	5	5	77.12	38.9
3KP26	3KP26C	26.0	28.90	35.30	5	5	64.38	46.6
3KP26A	3KP26CA	26.0	28.90	31.90	5	5	71.26	42.1
3KP28	3KP28C	28.0	31.10	38.00	5	5	60.00	50.0
3KP28A	3KP28CA	28.0	31.10	34.40	5	5	66.08	45.4
3KP30	3KP30C	30.0	33.30	40.70	5	5	56.07	53.5
3KP30A	3KP30CA	30.0	33.30	36.80	5	5	61.98	48.4
3KP33	3KP33C	33.0	36.70	44.90	5	5	50.85	59.0
3KP33A	3KP33CA	33.0	36.70	40.60	5	5	56.29	53.3
3KP36	3KP36C	36.0	40.00	48.90	5	5	46.66	64.3
3KP36A	3KP36CA	36.0	40.00	44.20	5	5	51.64	58.1
3KP40	3KP40C	40.0	44.40	54.30	5	5	42.02	71.4
3KP40A	3KP40CA	40.0	44.40	49.10	5	5	46.51	64.5

# 3000 Watt Axial Lead TVS



Part Number (Uni)	Part Number (Bi)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage @ $V_R$	Maximum Peak Pulse Current	Maximum Clamping Voltage @ $I_{pp}$
			$V_R$ (V)	Min (V)	Max (V)			
3KP43	3KP43C	43.0	47.80	58.40	5	5	39.11	76.7
3KP43A	3KP43CA	43.0	47.80	52.80	5	5	43.23	69.4
3KP45	3KP45C	45.0	50.00	61.10	5	5	37.36	80.3
3KP45A	3KP45CA	45.0	50.00	55.30	5	5	41.27	72.7
3KP48	3KP48C	48.0	53.30	65.10	5	5	35.09	85.5
3KP48A	3KP48CA	48.0	53.30	58.90	5	5	38.76	77.4
3KP51	3KP51C	51.0	56.70	69.30	5	5	32.93	91.1
3KP51A	3KP51CA	51.0	56.70	62.70	5	5	36.41	82.4
3KP54	3KP54C	54.0	60.00	73.30	5	5	31.15	96.3
3KP54A	3KP54CA	54.0	60.00	66.30	5	5	34.44	87.1
3KP58	3KP58C	58.0	64.40	78.70	5	5	29.13	103.0
3KP58A	3KP58CA	58.0	64.40	71.20	5	5	32.05	93.6
3KP60	3KP60C	60.0	66.70	81.50	5	5	28.04	107.0
3KP60A	3KP60CA	60.0	66.70	73.70	5	5	30.99	96.8
3KP64	3KP64C	64.0	71.10	86.40	5	5	26.32	114.0
3KP64A	3KP64CA	64.0	71.10	78.60	5	5	29.13	103.0
3KP70	3KP70C	70.0	77.80	95.10	5	5	24.00	125.0
3KP70A	3KP70CA	70.0	77.80	86.00	5	5	26.55	113.0
3KP75	3KP75C	75.0	83.30	102.00	5	5	22.39	134.0
3KP75A	3KP75CA	75.0	83.30	92.10	5	5	24.79	121.0
3KP78	3KP78C	78.0	86.70	106.00	5	5	21.58	139.0
3KP78A	3KP78CA	78.0	86.70	95.80	5	5	23.81	126.0
3KP85	3KP85C	85.0	94.40	115.00	5	5	19.87	151.0
3KP85A	3KP85CA	85.0	94.40	104.00	5	5	21.90	137.0
3KP90	3KP90C	90.0	100.00	122.00	5	5	18.75	160.0
3KP90A	3KP90CA	90.0	100.00	111.00	5	5	20.55	146.0
3KP100	3KP100C	100.0	111.00	136.00	5	5	16.76	179.0
3KP100A	3KP100CA	100.0	111.00	123.00	5	5	18.52	162.0
3KP110	3KP110C	110.0	122.00	149.00	5	5	15.31	196.0
3KP110A	3KP110CA	110.0	122.00	135.00	5	5	16.95	177.0
3KP120	3KP120C	120.0	133.00	163.00	5	5	14.02	214.0
3KP120A	3KP120CA	120.0	133.00	147.00	5	5	15.54	193.0
3KP130	3KP130C	130.0	144.00	176.00	5	5	12.99	231.0
3KP130A	3KP130CA	130.0	144.00	159.00	5	5	14.35	209.0
3KP150	3KP150C	150.0	167.00	204.00	5	5	11.19	268.0
3KP150A	3KP150CA	150.0	167.00	185.00	5	5	12.35	243.0
3KP160	3KP160C	160.0	178.00	218.00	5	5	10.45	287.0
3KP160A	3KP160CA	160.0	178.00	197.00	5	5	11.58	259.0
3KP170	3KP170C	170.0	189.00	231.00	5	5	9.87	304.0
3KP170A	3KP170CA	170.0	189.00	209.00	5	5	10.91	275.0
3KP180	3KP180C	180.0	200.00	244.00	5	5	9.31	322.2
3KP180A	3KP180CA	180.0	200.00	220.00	5	5	10.29	291.6
3KP190	3KP190C	190.0	211.00	258.00	5	5	8.82	340.1
3KP190A	3KP190CA	190.0	211.00	232.00	5	5	9.75	307.8
3KP200A	3KP200CA	200.0	224.00	247.00	5	5	9.26	324.0
3KP220A	3KP220CA	220.0	246.00	272.00	5	5	8.43	356.0
3KP250A	3KP250CA	250.0	279.00	309.00	5	5	7.41	405.0
3KP300A	3KP300CA	300.0	335.00	371.00	5	5	6.17	486.0
3KP350A	3KP350CA	350.0	391.00	432.00	5	5	5.29	567.0
3KP400A	3KP400CA	400.0	447.00	494.00	5	5	4.63	648.0
3KP440A	3KP440CA	440.0	492.00	543.00	5	5	4.21	713.0