

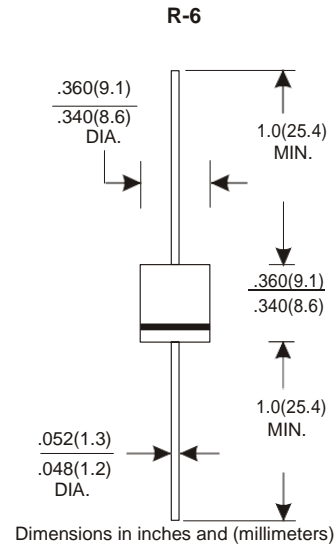
## 5000 WATT PEAK POWER TRANSIENT VOLTAGE SUPPRESSORS

### Features:

- \* 5000 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  $I_R$  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



## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°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 $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (NOTE 1)	$P_{PK}$	Minimum 5000	Watts
Power Dissipation on infinite heatsink at $T_L=75^\circ\text{C}$	$P_D$	8.0	Watt
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	500	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	$^\circ\text{C}$

#### NOTES:

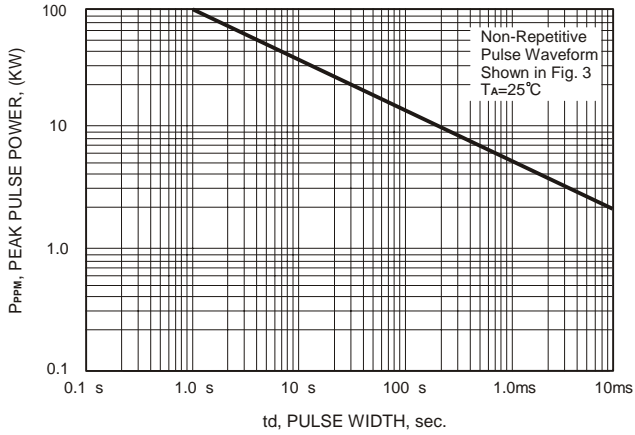
1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2.
2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.
3.  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$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

### DEVICES FOR BIPOLAR APPLICATIONS

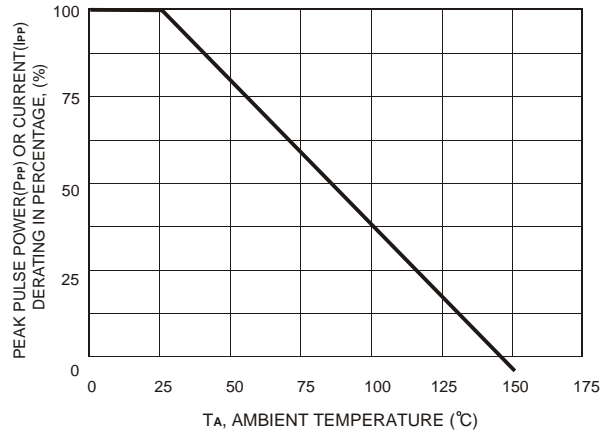
1. For Bidirectional use C or CA Suffix for types 5KP5.0 thru 5KP440.
2. Electrical characteristics apply in both directions.

**RATING AND CHARACTERISTIC CURVES (5KP SERIES)**

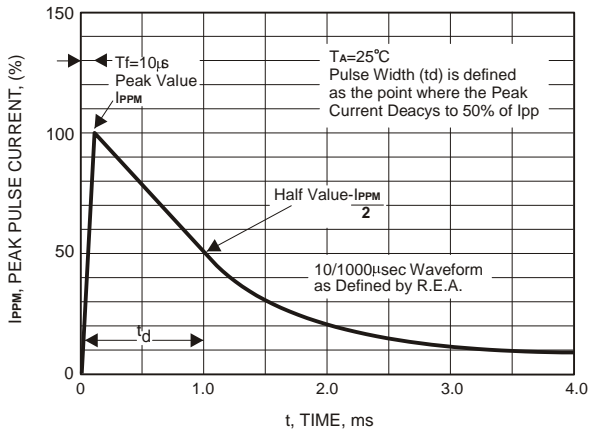
**FIG.1-PEAK PULSE POWER DERATING CURVE**



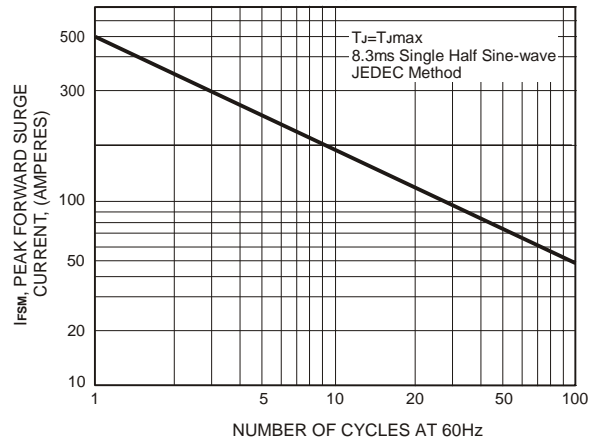
**FIG.2-PULSE DERATING CURVE**



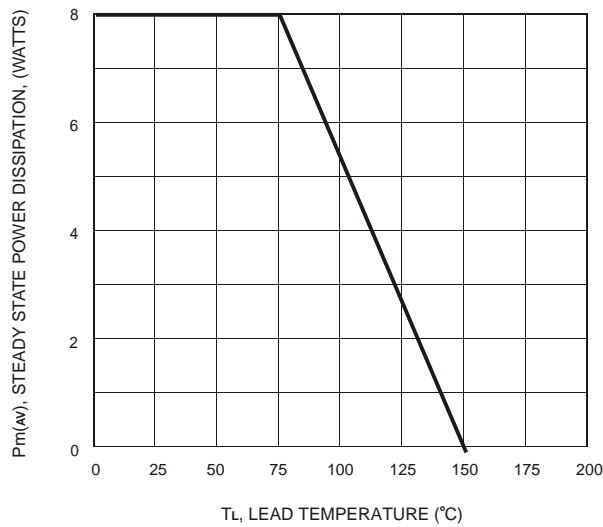
**FIG.3-PULSE WAVE FORM**



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



**FIG.5-STEADY STATE POWER DERATING CURVE**



**5000 Watt Axial Lead TVS**

Part Number (Uni)	Part Number (Bi)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage @ VR	Maximum Peak Pulse Current	Maximum Clamping Voltage @ $I_{pp}$
			VR (V)	Min (V)	Max (V)			
5KP5.0	5KP5.0C	5.0	6.40	7.30	50	5000	520.83	9.6
5KP5.0A	5KP5.0CA	5.0	6.40	7.00	50	5000	543.48	9.2
5KP6.0	5KP6.0C	6.0	6.67	8.15	50	5000	438.60	11.4
5KP6.0A	5KP6.0CA	6.0	6.67	7.37	50	5000	485.44	10.3
5KP6.5	5KP6.5C	6.5	7.22	8.82	50	2000	406.50	12.3
5KP6.5A	5KP6.5CA	6.5	7.22	7.98	50	2000	446.43	11.2
5KP7.0	5KP7.0C	7.0	7.78	9.51	50	1000	375.94	13.3
5KP7.0A	5KP7.0CA	7.0	7.78	8.60	50	1000	416.67	12.0
5KP7.5	5KP7.5C	7.5	8.33	10.20	5	250	349.65	14.3
5KP7.5A	5KP7.5CA	7.5	8.33	9.21	5	250	387.60	12.9
5KP8.0	5KP8.0C	8.0	8.89	10.90	5	150	333.33	15.0
5KP8.0A	5KP8.0CA	8.0	8.89	9.83	5	150	367.65	13.6
5KP8.5	5KP8.5C	8.5	9.44	11.50	5	50	314.47	15.9
5KP8.5A	5KP8.5CA	8.5	9.44	10.40	5	50	347.22	14.4
5KP9.0	5KP9.0C	9.0	10.00	12.20	5	20	295.86	16.9
5KP9.0A	5KP9.0CA	9.0	10.00	11.10	5	20	324.68	15.4
5KP10	5KP10C	10.0	11.10	13.60	5	15	265.96	18.8
5KP10A	5KP10CA	10.0	11.10	12.30	5	15	294.12	17.0
5KP11	5KP11C	11.0	12.20	14.90	5	5	248.76	20.1
5KP11A	5KP11CA	11.0	12.20	13.50	5	5	274.73	18.2
5KP12	5KP12C	12.0	13.30	16.30	5	5	227.27	22.0
5KP12A	5KP12CA	12.0	13.30	14.70	5	5	251.26	19.9
5KP13	5KP13C	13.0	14.40	17.60	5	5	210.08	23.8
5KP13A	5KP13CA	13.0	14.40	15.90	5	5	232.56	21.5
5KP14	5KP14C	14.0	15.60	19.10	5	5	193.80	25.8
5KP14A	5KP14CA	14.0	15.60	17.20	5	5	215.52	23.2
5KP15	5KP15C	15.0	16.70	20.40	5	5	185.87	26.9
5KP15A	5KP15CA	15.0	16.70	18.50	5	5	204.92	24.4
5KP16	5KP16C	16.0	17.80	21.80	5	5	173.61	28.8
5KP16A	5KP16CA	16.0	17.80	19.70	5	5	192.31	26.0
5KP17	5KP17C	17.0	18.90	23.10	5	5	163.93	30.5
5KP17A	5KP17CA	17.0	18.90	20.90	5	5	181.16	27.6
5KP18	5KP18C	18.0	20.00	24.40	5	5	155.28	32.2
5KP18A	5KP18CA	18.0	20.00	22.10	5	5	171.23	29.2
5KP20	5KP20C	20.0	22.20	27.10	5	5	139.66	35.8
5KP20A	5KP20CA	20.0	22.20	24.50	5	5	154.32	32.4
5KP22	5KP22C	22.0	24.40	29.80	5	5	126.90	39.4
5KP22A	5KP22CA	22.0	24.40	26.90	5	5	140.85	35.5
5KP24	5KP24C	24.0	26.70	32.60	5	5	116.28	43.0
5KP24A	5KP24CA	24.0	26.70	29.50	5	5	128.53	38.9
5KP26	5KP26C	26.0	28.90	35.30	5	5	107.30	46.6
5KP26A	5KP26CA	26.0	28.90	31.90	5	5	118.76	42.1
5KP28	5KP28C	28.0	31.10	38.00	5	5	100.00	50.0
5KP28A	5KP28CA	28.0	31.10	34.40	5	5	110.13	45.4
5KP30	5KP30C	30.0	33.30	40.70	5	5	93.46	53.5
5KP30A	5KP30CA	30.0	33.30	36.80	5	5	103.31	48.4
5KP33	5KP33C	33.0	36.70	44.90	5	5	84.75	59.0
5KP33A	5KP33CA	33.0	36.70	40.60	5	5	93.81	53.3
5KP36	5KP36C	36.0	40.00	48.90	5	5	77.76	64.3
5KP36A	5KP36CA	36.0	40.00	44.20	5	5	86.06	58.1
5KP40	5KP40C	40.0	44.40	54.30	5	5	70.03	71.4
5KP40A	5KP40CA	40.0	44.40	49.10	5	5	77.52	64.5

**5000 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)			
5KP43	5KP43C	43.0	47.80	58.40	5	5	65.19	76.7
5KP43A	5KP43CA	43.0	47.80	52.80	5	5	72.05	69.4
5KP45	5KP45C	45.0	50.00	61.10	5	5	62.27	80.3
5KP45A	5KP45CA	45.0	50.00	55.30	5	5	68.78	72.7
5KP48	5KP48C	48.0	53.30	65.10	5	5	58.48	85.5
5KP48A	5KP48CA	48.0	53.30	58.90	5	5	64.60	77.4
5KP51	5KP51C	51.0	56.70	69.30	5	5	54.88	91.1
5KP51A	5KP51CA	51.0	56.70	62.70	5	5	60.68	82.4
5KP54	5KP54C	54.0	60.00	73.30	5	5	51.92	96.3
5KP54A	5KP54CA	54.0	60.00	66.30	5	5	57.41	87.1
5KP58	5KP58C	58.0	64.40	78.70	5	5	48.54	103.0
5KP58A	5KP58CA	58.0	64.40	71.20	5	5	53.42	93.6
5KP60	5KP60C	60.0	66.70	81.50	5	5	46.73	107.0
5KP60A	5KP60CA	60.0	66.70	73.70	5	5	51.65	96.8
5KP64	5KP64C	64.0	71.10	86.40	5	5	43.86	114.0
5KP64A	5KP64CA	64.0	71.10	78.60	5	5	48.54	103.0
5KP70	5KP70C	70.0	77.80	95.10	5	5	40.00	125.0
5KP70A	5KP70CA	70.0	77.80	86.00	5	5	44.25	113.0
5KP75	5KP75C	75.0	83.30	102.00	5	5	37.31	134.0
5KP75A	5KP75CA	75.0	83.30	92.10	5	5	41.32	121.0
5KP78	5KP78C	78.0	86.70	106.00	5	5	35.97	139.0
5KP78A	5KP78CA	78.0	86.70	95.80	5	5	39.68	126.0
5KP85	5KP85C	85.0	94.40	115.00	5	5	33.11	151.0
5KP85A	5KP85CA	85.0	94.40	104.00	5	5	36.50	137.0
5KP90	5KP90C	90.0	100.00	122.00	5	5	31.25	160.0
5KP90A	5KP90CA	90.0	100.00	111.00	5	5	34.25	146.0
5KP100	5KP100C	100.0	111.00	136.00	5	5	27.93	179.0
5KP100A	5KP100CA	100.0	111.00	123.00	5	5	30.86	162.0
5KP110	5KP110C	110.0	122.00	149.00	5	5	25.51	196.0
5KP110A	5KP110CA	110.0	122.00	135.00	5	5	28.25	177.0
5KP120	5KP120C	120.0	133.00	163.00	5	5	23.36	214.0
5KP120A	5KP120CA	120.0	133.00	147.00	5	5	25.91	193.0
5KP130	5KP130C	130.0	144.00	176.00	5	5	21.65	231.0
5KP130A	5KP130CA	130.0	144.00	159.00	5	5	23.92	209.0
5KP150	5KP150C	150.0	167.00	204.00	5	5	18.66	268.0
5KP150A	5KP150CA	150.0	167.00	185.00	5	5	20.58	243.0
5KP160	5KP160C	160.0	178.00	218.00	5	5	17.42	287.0
5KP160A	5KP160CA	160.0	178.00	197.00	5	5	19.31	259.0
5KP170	5KP170C	170.0	189.00	231.00	5	5	16.45	304.0
5KP170A	5KP170CA	170.0	189.00	209.00	5	5	18.18	275.0
5KP180	5KP180C	180.0	200.00	244.00	5	5	15.52	322.2
5KP180A	5KP180CA	180.0	200.00	220.00	5	5	17.15	291.6
5KP190	5KP190C	190.0	211.00	258.00	5	5	14.70	340.1
5KP190A	5KP190CA	190.0	211.00	232.00	5	5	16.24	307.8
5KP200A	5KP200CA	200.0	224.00	247.00	5	5	15.43	324.0
5KP220A	5KP220CA	220.0	246.00	272.00	5	5	14.04	356.0
5KP250A	5KP250CA	250.0	279.00	309.00	5	5	12.35	405.0
5KP300A	5KP300CA	300.0	335.00	371.00	5	5	10.29	486.0
5KP350A	5KP350CA	350.0	391.00	432.00	5	5	8.82	567.0
5KP400A	5KP400CA	400.0	447.00	494.00	5	5	7.72	648.0
5KP440A	5KP440CA	440.0	492.00	543.00	5	5	7.01	713.0