5KP SERIES

TRANSIENT VOLTAGE SUPPRESSOR

V_{BR} : 5.0 - 180 Volts
P_{PK} : 5000 Watts

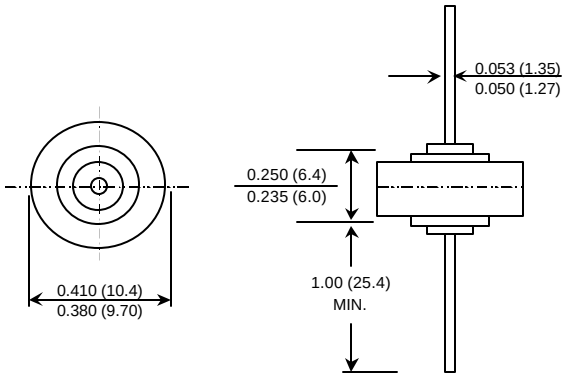
FEATURES :

* 5000W Peak Pulse Power
* Excellent clamping capability
* Low incremental surge resistance
* Fast response time : typically less then 1.0 ps from 0 volt to $V_{BR(min.)}$
* Typical I_R less then 1µA above 10V

MECHANICAL DATA

* Case : Molded plastic
* Epoxy : UL94V-O rate flame retardant
* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
* Polarity : Cathode polarity band
* Mounting position : Any
* Weight : 2.73 grams

AR - L



Dimensions in inches and (millimeter)

DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional use C or CA Suffix
Electrical characteristics apply in both directions

MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation at tp = 1ms (Note 1, Fig. 4)	P_{PK}	Minimum 5000	Watts
Steady State Power Dissipation at T_L = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P_D	8.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	400	Amps.
Operating and Storage Temperature Range	T_J, T_{STG}	- 55 to + 150	°C

Note :

(1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
(2) Mounted on Copper Leaf area of 0.79 in^2 (20mm^2).
(3) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.

UPDATE : SEPTEMBER 6, 2001

ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ I_T (Note 1)			Reverse Stand off Voltage	Maximum Reverse Leakage @ V_{RM}	Maximum Peak Pulse Current (Note2)	Maximum Clamping Voltage @ I_{PPM}	Maximum Voltage Temperature Variation of
	V_{BR} (V)		I_T	V_{RWM}	I_R	I_{PPM}	V_C	V_{BR} (mV/°C)
	Min.	Max.	(mA)	(V)	(µA)	(A)	(V)	
5KP5.0	6.40	7.30	50	5.0	5000	520	9.60	4.0
5KP5.0A	6.40	7.00	50	5.0	5000	543	9.20	4.0
5KP6.0	6.67	8.15	50	6.0	5000	439	11.4	4.0
5KP6.0A	6.67	7.37	50	6.0	5000	485	10.3	4.0
5KP6.5	7.22	8.82	50	6.5	2000	407	12.3	4.0
5KP6.5A	7.22	7.98	50	6.5	2000	447	11.2	4.0
5KP7.0	7.78	9.51	5.0	7.0	1000	378	13.3	5.0
5KP7.0A	7.78	8.60	5.0	7.0	1000	417	12.0	5.0
5KP7.5	8.33	10.2	5.0	7.5	250	350	14.3	6.0
5KP7.5A	8.33	9.21	5.0	7.5	250	388	12.9	6.0
5KP8.0	8.89	10.9	5.0	8.0	150	333	15.0	6.0
5KP8.0A	8.89	9.83	5.0	8.0	150	367	13.6	6.0
5KP8.5	9.44	11.5	5.0	8.5	50	314	15.9	7.0
5KP8.5A	9.44	10.4	5.0	8.5	50	347	14.4	7.0
5KP9.0	10.0	12.2	5.0	9.0	20	295	16.9	8.0
5KP9.0A	10.0	11.1	5.0	9.0	20	325	15.4	8.0
5KP10	11.1	13.6	5.0	10	15	266	18.8	9.0
5KP10A	11.1	12.3	5.0	10	15	294	17.0	9.0
5KP11	12.2	14.9	5.0	11	10	249	20.1	10
5KP11A	12.2	13.5	5.0	11	10	274	18.2	10
5KP12	13.3	16.3	5.0	12	10	227	22.0	11
5KP12A	13.3	14.7	5.0	12	10	251	19.9	11
5KP13	14.4	17.6	5.0	13	10	210	23.8	12
5KP13A	14.4	15.9	5.0	13	10	232	21.5	12
5KP14	15.6	19.1	5.0	14	10	194	25.8	13
5KP14A	15.6	17.2	5.0	14	10	215	23.2	13
5KP15	16.7	20.4	5.0	15	10	188	26.9	15
5KP15A	16.7	18.5	5.0	15	10	206	24.4	15
5KP16	17.8	21.8	5.0	16	10	176	28.8	18
5KP16A	17.8	19.7	5.0	16	10	192	26.0	16
5KP17	18.9	23.1	5.0	17	10	164	30.5	19
5KP17A	18.9	20.9	5.0	17	10	181	27.6	18
5KP18	20.0	24.4	5.0	18	10	155	32.2	20
5KP18A	20.0	22.1	5.0	18	10	172	29.2	19
5KP20	22.2	27.1	5.0	20	10	139	35.8	24
5KP20A	22.2	24.5	5.0	20	10	154	32.4	22
5KP22	24.4	29.8	5.0	22	10	127	39.4	27
5KP22A	24.4	26.9	5.0	22	10	141	35.5	24
5KP24	26.7	32.6	5.0	24	10	116	43.0	30
5KP24A	26.7	29.5	5.0	24	10	128	38.9	27
5KP26	28.9	35.3	5.0	26	10	107	46.6	33
5KP26A	28.9	31.9	5.0	26	10	119	42.1	29
5KP28	31.1	38.0	5.0	28	10	99	50.1	34
5KP28A	31.1	34.4	5.0	28	10	110	45.4	30
5KP30	33.3	40.7	5.0	30	10	93	53.5	38
5KP30A	33.3	36.8	5.0	30	10	103	48.4	35
5KP33	36.7	44.9	5.0	33	10	85	59.0	41
5KP33A	36.7	40.6	5.0	33	10	94	53.3	38

ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ I_T (Note 1)			Reverse Stand off Voltage	Maximum Reverse Leakage @ V_{RM}	Maximum Peak Pulse Current (Note2)	Maximum Clamping Voltage @ I_{PPM}	Maximum Voltage Temperature Variation of V_{BR} (mV/°C)
	V_{BR} (V)		I_T	V_{RWM}	I_R	I_{PPM}	V_C	
	Min.	Max.	(mA)	(V)	(µA)	(A)	(V)	
5KP36	40.0	48.9	5.0	36	10	78	64.3	45
5KP36A	40.0	44.2	5.0	36	10	86	58.1	40
5KP40	44.4	54.3	5.0	40	10	70	71.4	50
5KP40A	44.4	49.1	5.0	40	10	78	64.5	45
5KP43	47.8	58.4	5.0	43	10	65	76.7	54
5KP43A	47.8	52.8	5.0	43	10	72	69.4	49
5KP45	50.0	61.1	5.0	45	10	62	80.3	57
5KP45A	50.0	55.3	5.0	45	10	69	72.7	51
5KP48	53.3	65.2	5.0	48	10	58	85.5	62
5KP48A	53.3	58.9	5.0	48	10	65	77.4	55
5KP51	56.7	69.3	5.0	51	10	55	91.1	65
5KP51A	56.7	62.7	5.0	51	10	61	82.4	60
5KP54	60.0	73.3	5.0	54	10	52	96.3	70
5KP54A	60.0	66.3	5.0	54	10	57	87.1	64
5KP58	64.4	78.7	5.0	58	10	49	103	77
5KP58A	64.4	71.2	5.0	58	10	53	94	69
5KP60	66.7	81.5	5.0	60	10	47	107	79
5KP60A	66.7	73.7	5.0	60	10	52	97	70
5KP64	71.1	96.9	5.0	64	10	44	114	85
5KP64A	71.1	78.6	5.0	64	10	49	103	75
5KP70	77.6	95.1	5.0	70	10	40	125	93
5KP70A	77.6	86.0	5.0	70	10	44	113	84
5KP75	83.3	102	5.0	75	10	37	134	100
5KP75A	83.3	92.1	5.0	75	10	41	121	90
5KP78	86.7	106	5.0	78	10	36	139	104
5KP78A	86.7	95.8	5.0	78	10	40	126	94
5KP85	94.4	115	5.0	85	10	33	151	113
5KP85A	94.4	104	5.0	85	10	36	137	102
5KP90	100	122	5.0	90	10	31	160	120
5KP90A	100	111	5.0	100	10	34	146	109
5KP100	111	136	5.0	100	10	28	179	134
5KP110	122	149	5.0	110	10	26	196	147
5KP120	133	163	5.0	120	10	23	215	158
5KP150	166	204	5.0	150	10	19	268	200
5KP180	200	244	5.0	180	10	15	320	240

Note:

(1) V_{BR} measured after I_T applied for 300 µs., I_T = square wave pulse or equivalent.

(2) Surge Current waveform per Fig. 3 and Derate per Fig. 2

(3) V_F = 3.5 Volts max. for devices of V_R < 100 V, and V_F = 5 Volts max. for devices of V_R > 100 V.

(4) For Bi-directional devices having V_R of 10 Volts and under the I_R limit is doubled.

RATING AND CHARACTERISTIC CURVES (5KP SERIES)

FIG.1 - PULSE DERATING CURVE

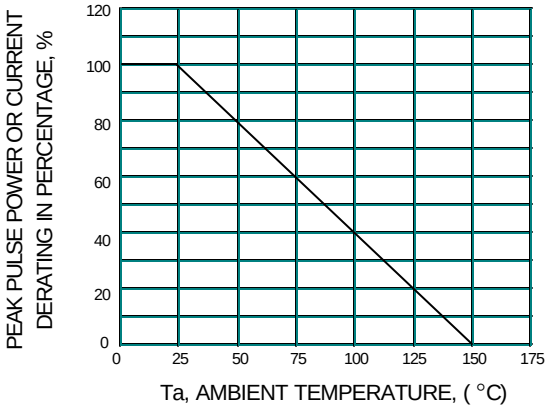


FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

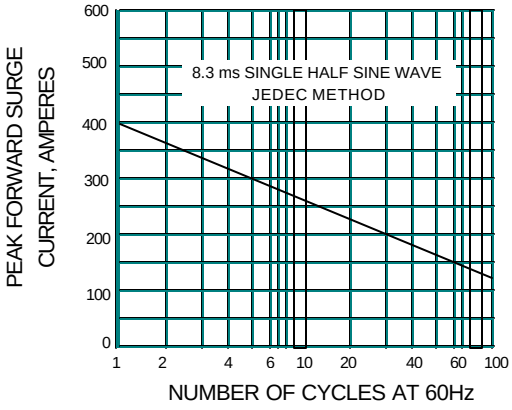


FIG.3 - STEADY STATE POWER DERATING

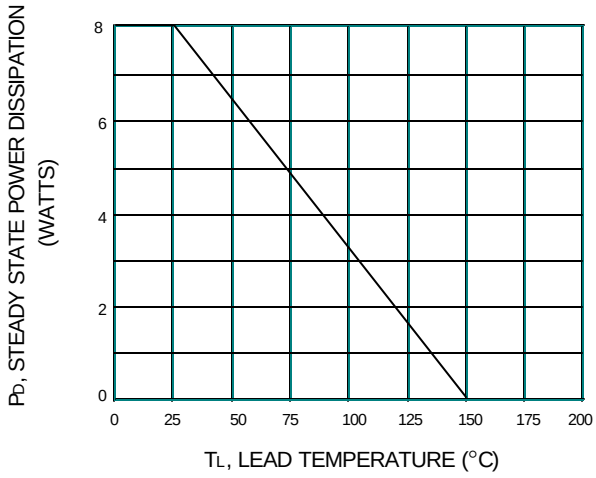


FIG.4 - PEAK PULSE POWER RATING CURVE

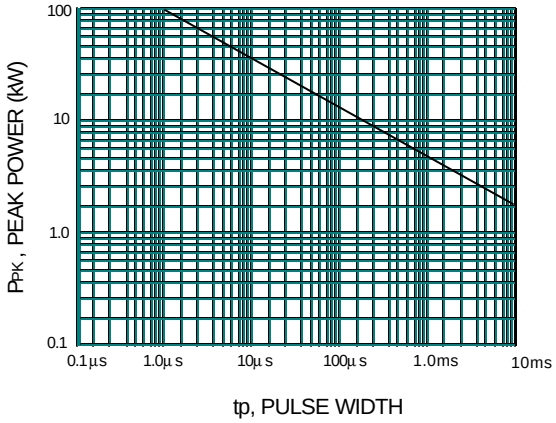
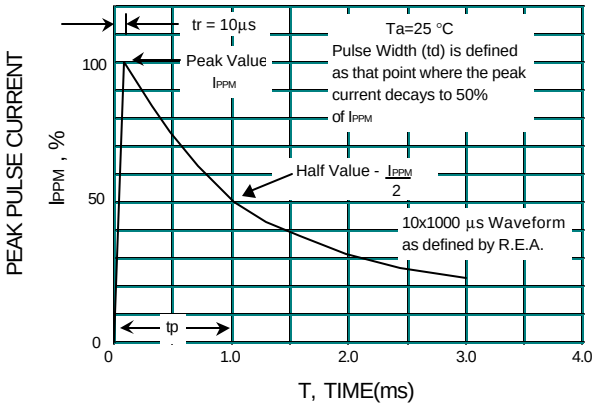


FIG.5 - PULSE WAVEFORM



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