RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

TVS
5KP
SERIES

GPP TRANSIENT VOLTAGE SUPPRESSOR

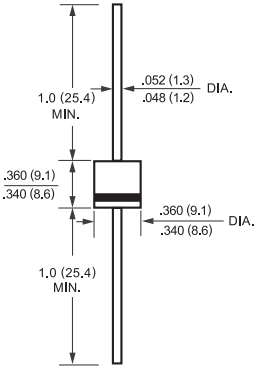
5000 WATT PEAK POWER 5.0 WATT STEADY STATE

FEATURES

* Plastic package has underwriters laboratory
* Glass passivated chip construction
* 5000 watt surage capability at 1ms
* Excellent clamping capability
* Low zener impedance
* Fast response time



R-6



Dimensions in inches and (millimeters)

Ratings at 25 °C ambient temperature unless otherwise specified.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load,
For capacitive load, derate current by 20%.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA suffix for types 5KP5.0 thru 5KP110

Electrical characteristics apply in both direction

MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation with a 10/1000uS waveform (Note 1, FIG.1)	P_{PPM}	Minimum 5000	Watts
Peak Pulse Current with a 10/1000uS waveform (Note 1, Fig. 3)	I_{PPM}	SEE TABLE 1	Amps
Steady State Power Dissipation at T_L = 75°C lead lengths 0.375" (9.5mm) (Note 2)	$P_{M(AV)}$	8.0	Watts
Peak Forward Surge Current, 8.3ms single half sine wave-superimposed on rated load(JEDEC METHOD) (Note 3)	I_{FSM}	400	Amps
Instantaneous Forward Voltage at 100A, (Note 3)	V_F	3.5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 175	°C

NOTES : 1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig.2.
2. Mounted on copper pad area of 0.8 X 0.8" (20 X 20mm) per Fig. 5
3. Measured on 8.3mS single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

Back

RATING AND CHARACTERISTIC CURVES (5KP5.0 THRU 5KP110CA)

FIG. 1 - PEAK PULSE POWER RATING CURVE

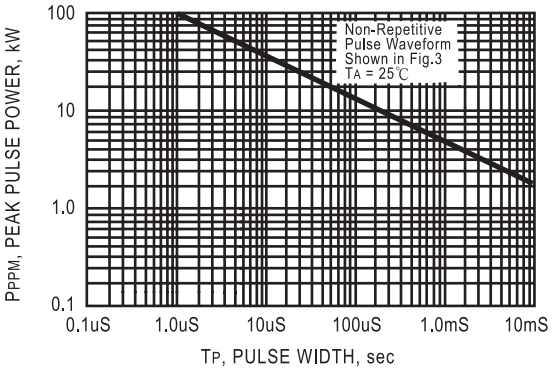


FIG. 2 - PULSE DERATING CURVE

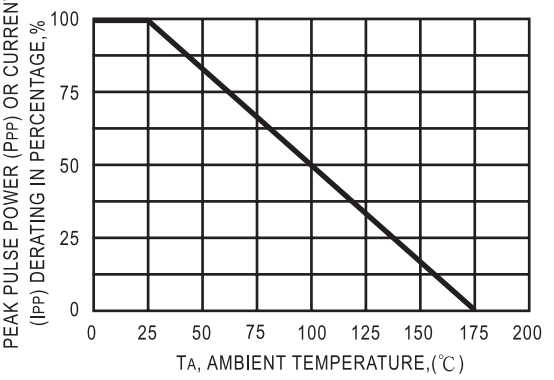


FIG. 3 - PULSE WAVEFORM

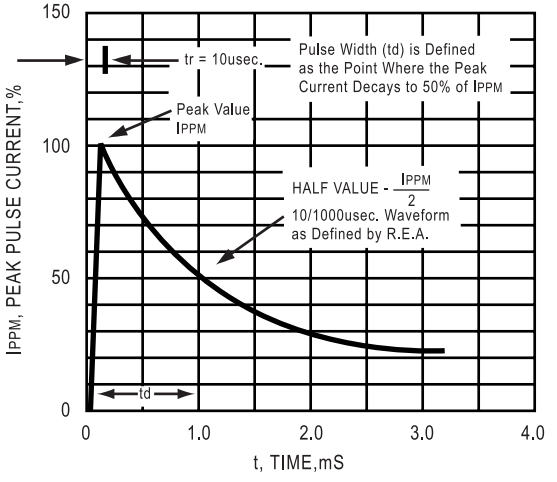


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

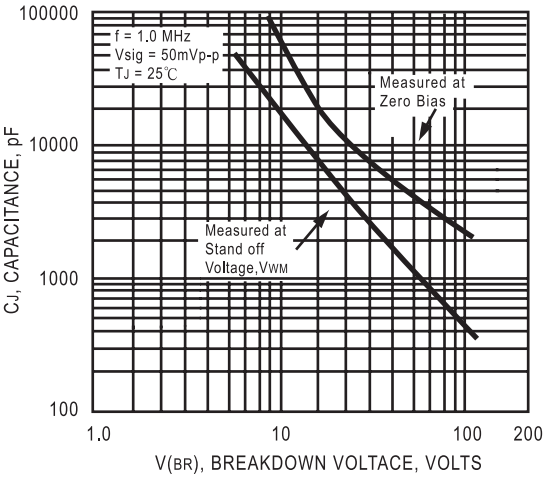


FIG. 5 - STEADY STATE POWER DERATING CURVE

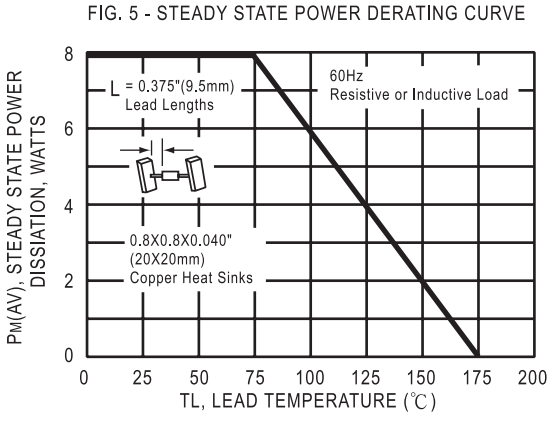
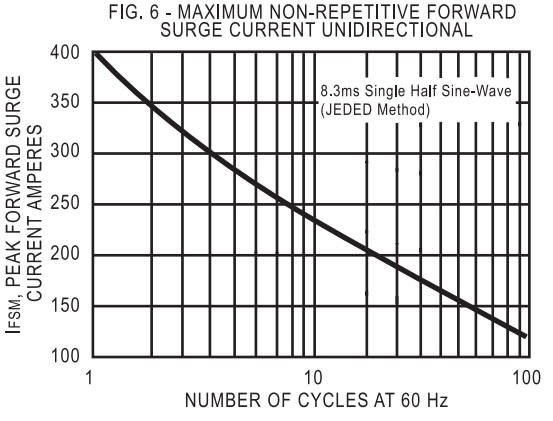


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



TRANSIENT VOLTAGE SUPPRESSORS

5000W SERIES TVS DIODES／ R-6 (CASE 12) 5000W

TYPE	Breakdown Voltage			Reverse Stand off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_D(uA)	Maximum Peak Pulse Current I_{PPM} (Amps)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)
	V_{BR} (Volts)		@I_T (mA)				
	MIN.	MAX.					
5KP5.0	6.40	7.30	50	5.0	2000	546	9.6
5KP5.0A	6.40	7.00	50	5.0	2000	570	9.2
5KP6.0	6.67	8.15	50	6.0	5000	460	11.4
5KP6.0A	6.67	7.37	50	6.0	5000	509	10.3
5KP6.5	7.22	8.82	50	6.5	2000	426	12.3
5KP6.5A	7.22	7.98	50	6.5	2000	468	11.2
5KP7.0	7.78	9.51	50	7.0	1000	394	13.3
5KP7.0A	7.78	8.86	50	7.0	1000	437	12.0
5KP7.5	8.33	10.2	5.0	7.5	250	367	14.3
5KP7.5A	8.33	9.21	5.0	7.5	250	406	12.9
5KP8.0	8.89	10.9	5.0	8.0	150	356	15.0
5KP8.0A	8.89	9.83	5.0	8.0	150	386	13.6
5KP8.5	9.44	11.5	5.0	8.5	50	330	15.9
5KP8.5A	9.44	10.4	5.0	8.5	50	364	14.4
5KP9.0	10.0	12.2	5.0	9.0	20	310	16.9
5KP9.0A	10.0	15.0	5.0	9.0	20	340	15.4
5KP10	11.1	13.6	5.0	10.0	15	279	18.8
5KP10A	11.1	12.3	5.0	10.0	15	308	17.0
5KP11	12.2	14.9	5.0	11.0	10	261	20.1
5KP11A	12.2	13.5	5.0	11.0	10	288	18.2
5KP12	13.3	16.5	5.0	12.0	10	238	22.0
5KP12A	13.3	14.7	5.0	12.0	10	263	19.9
5KP13	14.4	17.6	5.0	13.0	10	220	23.8
5KP13A	14.4	15.9	5.0	13.0	10	244	21.5
5KP14	15.6	19.1	5.0	14.0	10	203	25.8
5KP14A	15.6	17.2	5.0	14.0	10	226	23.2
5KP15	16.7	20.4	5.0	15.0	10	195	26.9
5KP15A	16.7	18.5	5.0	15.0	10	215	24.4
5KP16	17.8	21.8	5.0	16.0	10	182	28.8
5KP16A	17.8	19.7	5.0	16.0	10	201	26.0
5KP17	18.9	23.1	5.0	17.0	10	172	30.5
5KP17A	18.9	20.9	5.0	17.0	10	190	27.6
5KP18	20.0	24.2	5.0	18.0	10	163	32.2
5KP18A	20.0	22.1	5.0	18.0	10	179	29.2
5KP20	22.2	27.1	5.0	20.0	10	146	35.8
5KP20A	22.2	24.5	5.0	20.0	10	162	32.4
5KP22	24.4	29.8	5.0	22.0	10	133	39.4
5KP22A	24.4	26.9	5.0	22.0	10	147	35.5
5KP24	26.7	32.6	5.0	24.0	10	122	43.0
5KP24A	26.7	29.5	5.0	24.0	10	134	38.9
5KP26	28.9	35.3	5.0	26.0	10	112	46.6
5KP26A	28.9	31.9	5.0	26.0	10	124	42.1
5KP28	31.1	38.0	5.0	28.0	10	104	50.1
5KP28A	31.1	34.4	5.0	28.0	10	115	45.4
5KP30	33.3	40.7	5.0	30.0	10	98	53.5
5KP30A	33.3	36.8	5.0	30.0	10	108	48.4

TRANSIENT VOLTAGE SUPPRESSORS

5000W SERIES TVS DIODES／ R-6 (CASE 12) 5000W

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	V_{BR} (Volts)		@I_T (mA)				
	MIN.	MAX.					
5KP33	36.7	44.9	5.0	33.0	10	88	59.0
5KP33A	36.7	40.6	5.0	33.0	10	98	53.3
5KP36	40.0	48.9	5.0	36.0	10	81	64.3
5KP36A	40.0	44.2	5.0	36.0	10	90	58.1
5KP40	44.4	54.3	5.0	40.0	10	73	71.4
5KP40A	44.4	49.1	5.0	40.0	10	81	64.5
5KP43	47.8	58.4	5.0	43.0	10	68	76.7
5KP43A	47.8	52.8	5.0	43.0	10	75	69.4
5KP45	50.0	61.1	5.0	45.0	10	65	80.3
5KP45A	50.0	55.3	5.0	45.0	10	72	72.7
5KP48	53.3	65.2	5.0	48.0	10	61	85.5
5KP48A	53.3	58.9	5.0	48.0	10	67	77.4
5KP51	56.7	69.3	5.0	51.0	10	57	91.1
5KP51A	56.7	62.7	5.0	51.0	10	63	82.4
5KP54	60.0	73.3	5.0	54.0	10	54	96.3
5KP54A	60.0	66.3	5.0	54.0	10	60	87.1
5KP58	64.4	78.7	5.0	58.0	10	50	103
5KP58A	64.4	71.2	5.0	58.0	10	55	94
5KP60	66.7	81.5	5.0	60.0	10	49	107
5KP60A	66.7	73.7	5.0	60.0	10	54	97
5KP64	71.1	96.9	5.0	64.0	10	46	114
5KP64A	71.1	78.8	5.0	64.0	10	50	103
5KP70	77.6	95.1	5.0	70.0	10	42	125
5KP70A	77.6	86.0	5.0	70.0	10	46	113
5KP75	83.3	102	5.0	75.0	10	39	134
5KP75A	83.3	92.1	5.0	75.0	10	43	121
5KP78	86.7	106	5.0	78.0	10	37	126
5KP78A	86.7	95.8	5.0	78.0	10	41	139
5KP85	94.4	115	5.0	85.0	10	34	151
5KP85A	94.4	104	5.0	85.0	10	38	137
5KP90	100	122	5.0	90.0	10	32	160
5KP90A	100	111	5.0	90.0	10	35	146
5KP100	111	136	5.0	100	10	29	179
5KP100A	111	123	5.0	100	10	32	162
5KP110	122	149	5.0	110	10	26	196
5KP110A	122	135	5.0	110	10	29	177

NOTES : 1. V_{BR} measured after I_T applied for 300ms. I_T = square pluse or equivalent.
2. Available in unidirectional only.