RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

TVS 3KP SERIES

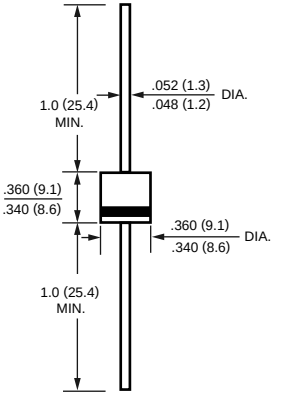
GPP TRANSIENT VOLTAGE SUPPRESSOR

3000 WATT PEAK POWER 8.0 WATTS STEADY STATE

FEATURES

* Plastic package has underwriters laboratory
* Glass passivated chip construction
* 3000 watt surage capability at 1ms
* Excellent clamping capability
* Low zener impedance
* Fast response time

R-6



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified.

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA suffix for types 3KP5.0 thru 3KP110

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 3000	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}	250	Amps
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.

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RATING AND CHARACTERISTIC CURVES(3KP5.0 THRU 3KP110A)

FIG. 1 - PEAK PULSE POWER RATING CURVE

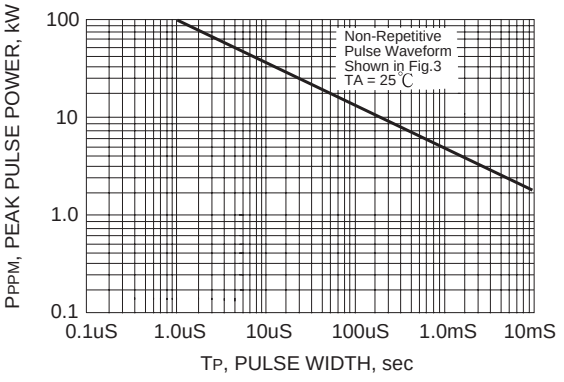


FIG. 2 - PULSE DERATING CURVE

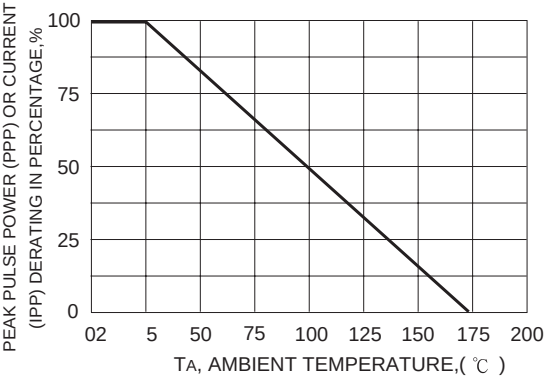


FIG. 3 - PULSE WAVEFORM

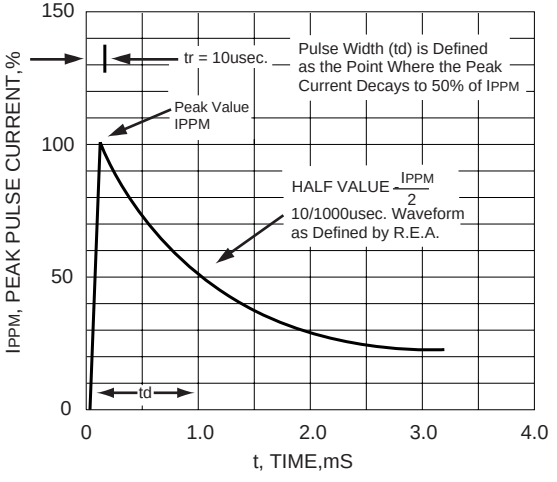


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

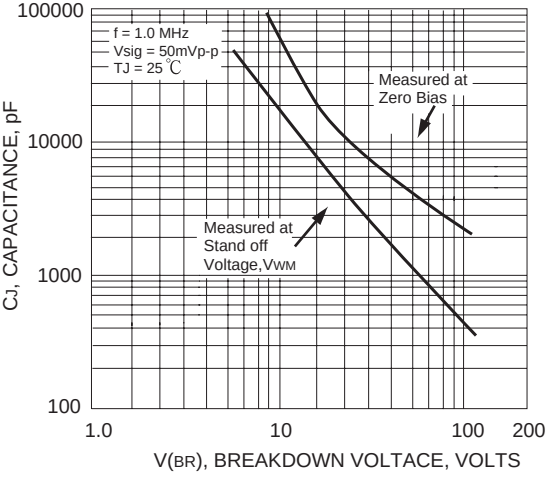


FIG. 5 - STEADY STATE POWER DERATING CURVE

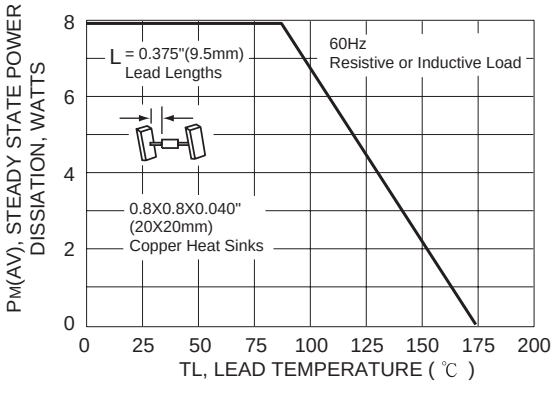
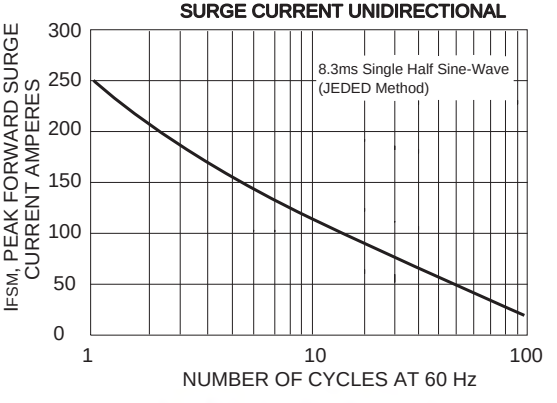


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



TRANSIENT VOLTAGE SUPPRESSORS

3000W SERIES TVS DIODES/R-6 (CASE 12) 3000W

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				
	MIN.	MAX.	(mA)				
3KP5.0	6.40	7.30	50	5.0	2000	312.5	9.6
3KP5.0A	6.40	7.00	50	5.0	2000	326	9.2
3KP6.0	6.67	8.15	50	6.0	5000	263	11.4
3KP6.0A	6.67	7.37	50	6.0	5000	291	10.3
3KP6.5	7.22	8.82	50	6.5	2000	244	12.3
3KP6.5A	7.22	7.98	50	6.5	2000	267.8	11.2
3KP7.0	7.78	9.51	50	7.0	1000	225.5	13.3
3KP7.0A	7.78	8.60	50	7.0	1000	250	12.0
3KP7.5	8.33	10.2	5.0	7.5	250	209.7	14.3
3KP7.5A	8.33	9.21	5.0	7.5	250	232.5	12.9
3KP8.0	8.89	10.9	5.0	8.0	150	200	15.0
3KP8.0A	8.89	9.83	5.0	8.0	150	220.6	13.6
3KP8.5	9.44	11.5	5.0	8.5	50	188.7	15.9
3KP8.5A	9.44	10.4	5.0	8.5	50	208.3	14.4
3KP9.0	10.0	12.2	5.0	9.0	20	177.5	16.9
3KP9.0A	10.0	11.1	5.0	9.0	20	194.8	15.4
3KP10	11.1	13.6	5.0	10.0	15	159.6	18.8
3KP10A	11.1	12.3	5.0	10.0	15	176.4	17.0
3KP11	12.2	14.9	5.0	11.0	10	149.2	20.1
3KP11A	12.2	13.5	5.0	11.0	10	164.8	18.2
3KP12	13.3	16.3	5.0	12.0	10	136.4	22.0
3KP12A	13.3	14.7	5.0	12.0	10	150.7	19.9
3KP13	14.4	17.6	5.0	13.0	10	126	23.8
3KP13A	14.4	15.9	5.0	13.0	10	139.5	21.5
3KP14	15.6	19.1	5.0	14.0	10	116.3	25.8
3KP14A	15.6	17.2	5.0	14.0	10	129.3	23.2
3KP15	16.7	20.4	5.0	15.0	10	111.5	26.9
3KP15A	16.7	18.5	5.0	15.0	10	122.9	24.4
3KP16	17.8	21.8	5.0	16.0	10	104.2	28.8
3KP16A	17.8	19.7	5.0	16.0	10	115.4	26.0
3KP17	18.9	23.1	5.0	17.0	10	98.4	30.5
3KP17A	18.9	20.9	5.0	17.0	10	108.7	27.6
3KP18	20.0	24.4	5.0	18.0	10	93.2	32.2
3KP18A	20.0	22.1	5.0	18.0	10	102.7	29.2
3KP20	22.2	27.1	5.0	20.0	10	83.8	35.8
3KP20A	22.2	24.5	5.0	20.0	10	92.6	32.4
3KP22	24.4	29.8	5.0	22.0	10	76.1	39.4
3KP22A	24.4	26.9	5.0	22.0	10	84.5	35.5
3KP24	26.7	32.6	5.0	24.0	10	69.7	43.0
3KP24A	26.7	29.5	5.0	24.0	10	77.1	38.9
3KP26	28.9	35.3	5.0	26.0	10	64.4	46.6
3KP26A	28.9	31.9	5.0	26.0	10	71.2	42.1
3KP28	31.1	38.0	5.0	28.0	10	59.9	50.1
3KP28A	31.1	34.4	5.0	28.0	10	66.1	45.4
3KP30	33.3	40.7	5.0	30.0	10	56	53.5
3KP30A	33.3	36.8	5.0	30.0	10	62	48.4

TRANSIENT VOLTAGE SUPPRESSORS

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TYPE	Breakdown Voltage			Reverse Stand off Voltage	Maximum Reverse Leakage	Maximum Peak Pulse Current	Maximum Clamping Voltage
	V_{BR} (Volts)		@I_T	V_{WM}	at V_{WM}	I_{PPM}	at I_{PPM}
	MIN.	MAX.	(mA)	(Volts)	I_D(uA)	(Amps)	V_C (Volts)
3KP33	36.7	44.9	5.0	33.0	10	50.8	59.0
3KP33A	36.7	40.6	5.0	33.0	10	56.3	53.3
3KP36	40.0	48.9	5.0	36.0	10	46.6	64.3
3KP36A	40.0	44.2	5.0	36.0	10	51.6	58.1
3KP40	44.4	54.3	5.0	40.0	10	42.0	71.4
3KP40A	44.4	49.1	5.0	40.0	10	46.5	64.5
3KP43	47.8	58.4	5.0	43.0	10	39.1	76.7
3KP43A	47.8	52.8	5.0	43.0	10	43.2	69.4
3KP45	50.0	61.1	5.0	45.0	10	37.3	80.3
3KP45A	50.0	55.3	5.0	45.0	10	41.3	72.7
3KP48	53.3	65.2	5.0	48.0	10	35.1	85.5
3KP48A	53.3	58.9	5.0	48.0	10	38.7	77.4
3KP51	56.7	69.3	5.0	51.0	10	32.9	91.1
3KP51A	56.7	62.7	5.0	51.0	10	36.4	82.4
3KP54	60.0	73.3	5.0	54.0	10	31.2	96.3
3KP54A	60.0	66.3	5.0	54.0	10	34.4	87.1
3KP58	64.4	78.7	5.0	58.0	10	29.1	103
3KP58A	64.4	71.2	5.0	58.0	10	31.9	94
3KP60	66.7	81.5	5.0	60.0	10	28.0	107
3KP60A	66.7	73.7	5.0	60.0	10	30.9	97
3KP64	71.1	96.9	5.0	64.0	10	26.3	114
3KP64A	71.1	78.6	5.0	64.0	10	29.1	103
3KP70	77.8	95.1	5.0	70.0	10	24.0	125
3KP70A	77.8	86.0	5.0	70.0	10	26.5	113
3KP75	83.3	102	5.0	75.0	10	22.4	134
3KP75A	83.3	92.1	5.0	75.0	10	24.8	121
3KP78	86.7	106	5.0	78.0	10	21.6	139
3KP78A	86.7	95.8	5.0	78.0	10	23.8	126
3KP85	94.4	115	5.0	85.0	10	19.8	151
3KP85A	94.4	104	5.0	85.0	10	21.9	137
3KP90	100	122	5.0	90.0	10	18.7	160
3KP90A	100	111	5.0	90.0	10	20.5	146
3KP100	111	136	5.0	100	10	16.7	179
3KP100A	111	123	5.0	100	10	18.5	162
3KP110	122	149	5.0	110	10	15.3	196
3KP110A	122	135	5.0	110	10	16.9	177

Notes :

1. V_{BR} measured after I_T applied for 300us. I_T = square pulse or equivalent.
2. All devices UL listed under file# E211196.
3. For bidirectional use C or CA suffixs for all type (ex. 3KP5.0C,3KP110CA) electrical characteristics apply in both directions.
4. For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled.

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