



**DC COMPONENTS CO., LTD.**

RECTIFIER SPECIALISTS

**5KP5.0  
THRU  
5KP180CA**

**TECHNICAL SPECIFICATIONS OF TRANSIENT VOLTAGE SUPPRESSOR**

VOLTAGE RANGE - 5.0 to 180 Volts

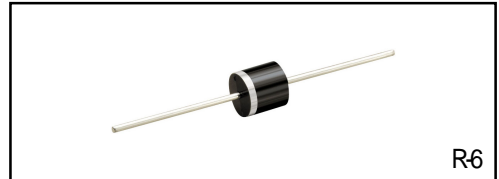
PEAK PULSE POWER - 5000 Watts

**FEATURES**

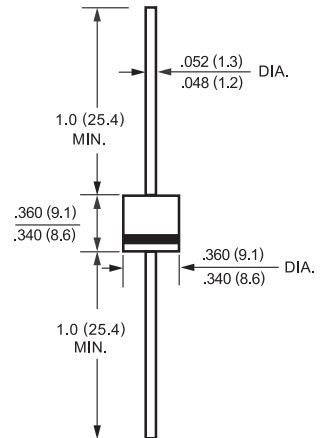
- \* Glass passivated junction
- \* 5000 Watts Peak Pulse Power capability on 10/1000  $\mu$ s waveform
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time

**MECHANICAL DATA**

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes positive end (cathode) except bidirectional types
- \* Mounting position: Any
- \* Weight: 2.1 gram



R6



Dimensions in inches and (millimeters)

**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 (e.g. 5KP5.0C, 5KP180CA).

Electrical characteristics apply in both directions

	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note1,FIG.1)	PPPM	Minimum 5000	Watts
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths .375"(9.5mm) (Note 2)	PM(AV)	8.0	Watts
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load( JEDEC Method ) (Note 3)	IFSM	400	Amps
Maximum Instantaneous Forward Voltage at 100A for Unidirectional Only	V <sub>F</sub>	3.5	Volts
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 175	°C

- NOTES : 1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.2.  
2. Mounted on Copper Leaf area of 0.8 X 0.8" ( 20 X 20mm ) per Fig. 5  
3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

RATING AND CHARACTERISTIC CURVES ( 5KP5.0 THRU 5KP180CA )

FIG. 1 - PEAK PULSE POWER RATING CURVE

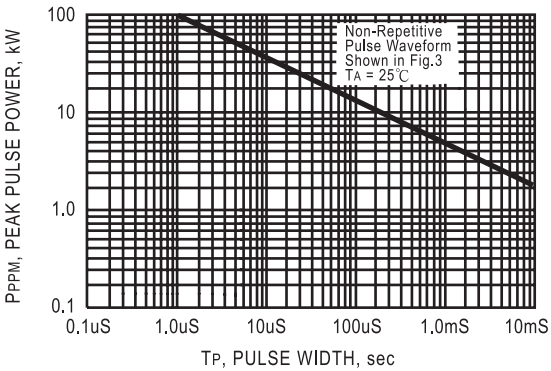


FIG. 2 - PULSE DERATING CURVE

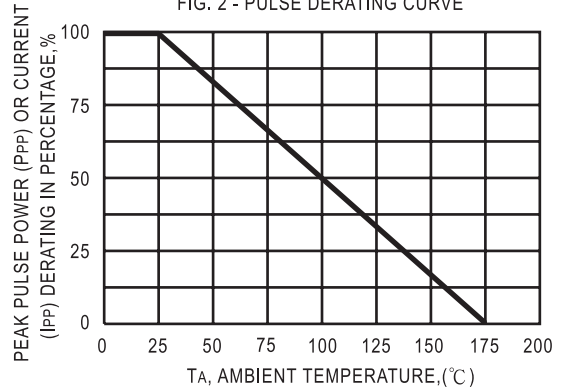


FIG. 3 - PULSE WAVEFORM

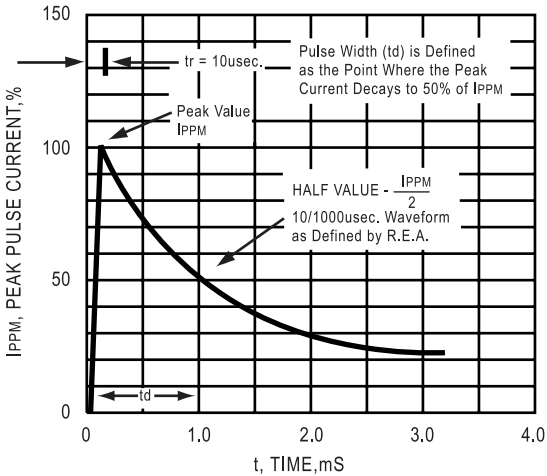


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

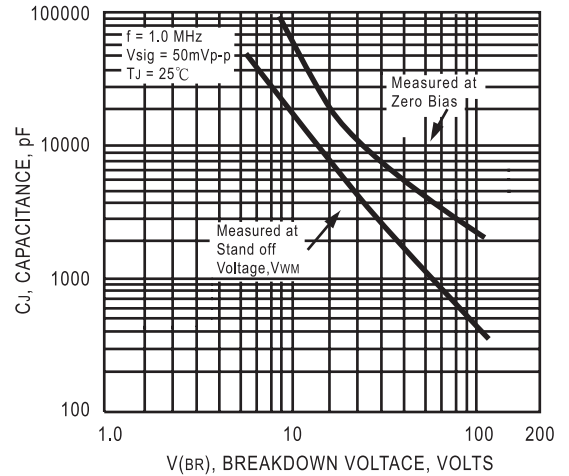


FIG. 5 - STEADY STATE POWER DERATING CURVE

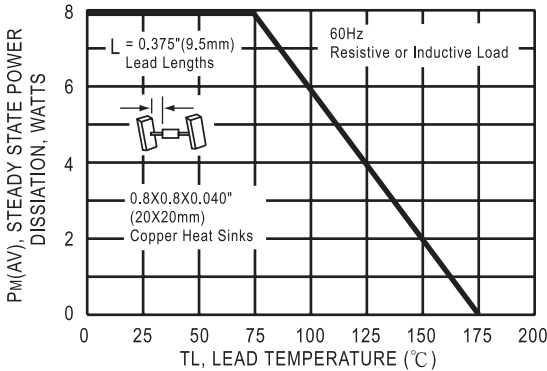
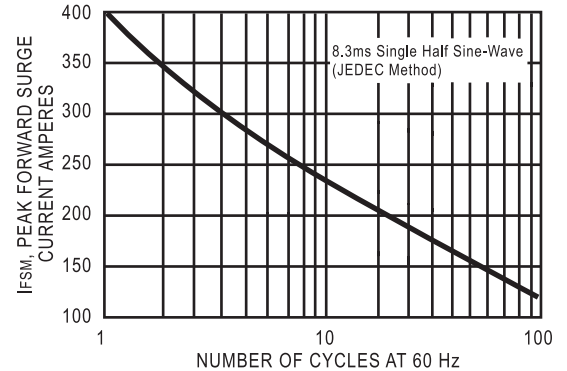


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



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5KP (5000W) SERIES TRANSIENT VOLTAGE SUPPRESSORS

TYPE	Breakdown Voltage			Reverse Stand off Voltage V <sub>WM</sub> (Volts)	Maximum Reverse Leakage at V <sub>WM</sub> I <sub>D</sub> (uA)	Maximum Peak Pulse Current I <sub>PPM</sub> (Amps)	Maximum Clamping Voltage at I <sub>PPM</sub> V <sub>C</sub> (Volts)
	V <sub>BR</sub> (Volts)		@I <sub>T</sub> (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



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	V <sub>BR</sub> (Volts)		@I <sub>T</sub> (mA)				
	MIN.	MAX.					
5KP36	40.0	48.9	5.0	36.0	10	78	64.3
5KP36A	40.0	44.2	5.0	36.0	10	86	58.1
5KP40	44.4	54.3	5.0	40.0	10	70	71.4
5KP40A	44.4	49.1	5.0	40.0	10	78	64.5
5KP43	47.8	58.4	5.0	43.0	10	65	76.7
5KP43A	47.8	52.8	5.0	43.0	10	62	80.3
5KP45	50.0	61.1	5.0	45.0	10	62	80.3
5KP45A	50.0	55.3	5.0	45.0	10	69	72.7
5KP48	53.3	65.2	5.0	48.0	10	58	85.5
5KP48A	53.3	58.9	5.0	48.0	10	65	77.4
5KP51	56.7	69.3	5.0	51.0	10	55	91.1
5KP51A	56.7	62.7	5.0	51.0	10	61	82.4
5KP54	60.0	73.3	5.0	54.0	10	52	96.3
5KP54A	60.0	66.3	5.0	54.0	10	49	87.1
5KP58	64.4	66.3	5.0	58.0	10	49	103
5KPP58A	64.4	71.2	5.0	58.0	10	53	93.6
5KP60	66.7	81.5	5.0	60.0	10	47	107
5KP60A	66.7	73.7	5.0	60.0	10	52	96.8
5KP64	71.1	86.9	5.0	64.0	10	44	114
5KP64A	71.1	78.6	5.0	64.0	10	49	103
5KP70	77.8	95.1	5.0	70.0	10	40	125
5KP70A	77.8	86.0	5.0	70.0	10	44	113
5KP75	83.3	102	5.0	75.0	10	37	134
5KP75A	83.3	92.1	5.0	75.0	10	41	121
5KP78	86.7	106	5.0	78.0	10	36	139
5KP78A	86.7	95.8	5.0	78.0	10	40	126
5KP85	94.4	115	5.0	85.0	10	33	151
5KP85A	94.4	104	5.0	85.0	10	36	137
5KP90	100	122	5.0	90.0	10	31	160
5KP90A	100	111	5.0	90.0	10	34	146
5KP100	111	136	5.0	100	10	28	179
5KP100A	111	123	5.0	100	10	31	162
5KP110	122	149	5.0	110	10	26	196
5KP110A	122	135	5.0	110	10	28	177
5KP120	133	163	5.0	120	10	23	215
5KP120A	133	148	5.0	120	10	26	194
5KP150	166	204	5.0	150	10	19	269
5KP150A	166	186	5.0	150	10	21	242
5KP160	178	217	5.0	160	10	17	285
5KP160A	178	196	5.0	160	10	19	285
5KP170	189	230	5.0	170	10	17	302
5KP170A	189	208	5.0	170	10	18	273
5KP180	200	245	5.0	180	10	16	322
5KP180A	200	222	5.0	180	10	17	292

- NOTES : 1.V<sub>BR</sub> measured after I<sub>T</sub> applied for 300μs. I<sub>T</sub> = Square Wave Pulse or equivalent.  
 2.For bidirectional use C or CA suffixs for all types (ex. 5KP5.0C, 5KP180CA). electrical characteristics apply in both directions.  
 3.For bidirectional types having V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled.



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