



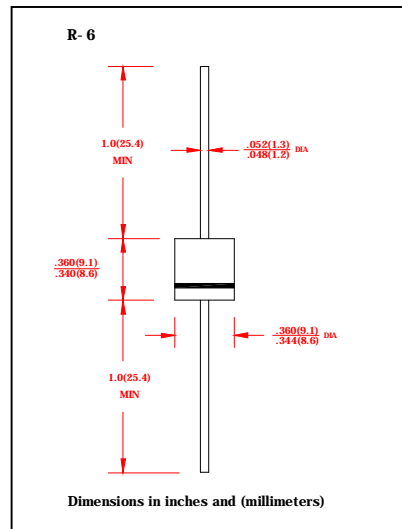
# PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

**5KP5.0 THRU 5KP110CA**  
**5KP5.0J THRU 5KP110CAJ**

Stand-off Voltage 5.0 to 110 Volts  
 Peak Pulse Power 5000 Watts

## FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction or silastic guard junction (open junction)
- 5000W peak pulse power capability with a 10/1000  $\mu$  s Waveform, repetition rate (duty cycle): 0.05%
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0 Volts to  $V_{(BR)}$
- Devices with  $V_{(BR)} > 10V$ ,  $I_D$  are typically less than 1.0  $\mu$  A
- High temperature soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length, 51bs.(2.3kg) tension



## MECHANICAL DATA

- Cass: molded plastic body over passivated junction
- Terminals: Solder plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: The Color bands denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Mounting Position: any
- Weight: 0.07 ounces, 2.1 grams

## DEVICES FOR BIDIRECTIONAL APPLICATIONS

- For bidirectional use C or CA suffix for types 5KP5.0 thru 5KP110 (e.g. 5KP7.5CA, 5KP110CA).Electrical Characteristics apply in both directions.
- Suffix A denotes  $\pm 5\%$  tolerance device, No suffix A denotes  $\pm 10\%$  tolerance device

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified

Ratings	Symbols	Value	Unit
Peak Pulse power dissipation with a 10/1000 $\mu$ s waveform (NOTE1)	PPPM	Minimum5000	Watts
Peak Pulse current with a 10/1000 $\mu$ s waveform (NOTE1)	IPPM	See Table 1	Amps
Steady Stage Power Dissipation at $T_L=75^\circ C$ Lead lengths 0.375"(9.5mm)(Note2)	$P_{M(AV)}$	8.0	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)(Note 3)	$I_{FSM}$	400.0	Amps
Maximum forward voltage at 100.0A (NOTE 3)	$V_F$	3.5	Volts
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	50 to +150	$^\circ C$

## Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ C$  per Fig.2
2. Mounted on copper pads ares of  $0.8 \times 0.8$ "( $20 \times 20$ mm) per Fig 5.
3. Measured on 8.3ms single half sine-wave or equivalent wave, duty cycle=4 pulses per minute maximum



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**Electrical Characteristic at (T<sub>A</sub> =25°C unless otherwise noted) TABLE1**

Device Type	Breakdown Voltage V <sub>(BR)</sub> (Volts) (Note 1)		Test Current at I <sub>r</sub> (mA)	Stand-off Voltage V <sub>WM</sub> (Volts)	Maximum Reverse Leakage at V <sub>WM</sub> I <sub>D</sub> (μ A)	Maximum Peak Pulse Current I <sub>PPM</sub> (Note 2) (Amps)	Maximum Clamping Voltage at I <sub>PPM</sub> V <sub>c</sub> (Volts)	Maximum Temperature Coefficient of V <sub>(BR)</sub> (%/°C)
	MIN	MAX						
5KP5.0/J	6.4	7.3	50	5	2000	521	9.6	0.057
5KP5.0A/J	6.4	7	50	5	2000	543	9.2	0.057
5KP6.0/J	6.67	8.15	50	6	5000	439	11.4	0.061
5KP6.0A/J	6.67	7.37	50	6	5000	485	10.3	0.061
5KP6.5/J	7.22	8.82	50	6.5	2000	407	12.3	0.065
5KP6.5A/J	7.22	7.98	50	6.5	2000	446	11.2	0.065
5KP 7.0/J	7.78	9.51	50	7	1000	376	13.3	0.068
5KP7.0A/J	7.78	8.6	50	7	100	417	12	0.068
5KP7.5/J	8.33	10.2	5	7.5	250	350	14.3	0.073
5KP7.5A/J	8.33	9.21	5	7.5	250	388	12.9	0.073
5KP8.0/J	8.89	10.9	5	8	150	333	15	0.075
5KP8.0A/J	8.89	9.83	5	8	150	368	13.6	0.075
5KP 8.5/J	9.44	11.5	5	8.5	50	314	15.9	0.076
5KP8.5A/J	9.44	10.4	5	8.5	50	347	14.4	0.078
5KP9.0/J	10	12.2	5	9	20	296	16.9	0.081
5KP9.0A/J	10	11.1	5	9	20	325	15.4	0.081
5KP10/J	11.1	13.6	5	10	15	266	18.8	0.084
5KP10A/J	11.1	12.3	5	10	15	294	17	0.084
5KP11/J	12.2	14.9	5	11	10	249	20.1	0.086
5KP11A/J	12.2	13.5	5	11	10	275	18.2	0.086
5KP12/J	13.3	16.3	5	12	10	227	22	0.088
5KP12A/J	13.3	14.7	5	12	10	251	19.9	0.089
5KP13/J	14.4	17.6	5	13	10	210	23.8	0.09
5KP13A/J	14.4	15.9	5	13	10	233	21.5	0.09
5KP14/J	15.6	19.1	5	14	10	194	25.8	0.092
5KP14A/J	15.6	17.2	5	14	10	216	23.2	0.092
5KP15/J	16.7	20.4	5	15	10	186	26.9	0.094
5KP15A/J	16.7	18.5	5	15	10	205	24.4	0.094
5KP16/J	17.8	21.8	5	16	10	174	28.8	0.096
5KP16A/J	17.8	19.7	5	16	10	192	26	0.096
5KP17/J	18.9	23.1	5	17	10	164	30.5	0.097
5KP17A/J	18.9	20.9	5	17	10	181	27.6	0.097
5KP18/J	20	24.4	5	18	10	155	32.2	0.098
5KP18A/J	20	22.1	5	18	10	171	29.2	0.098
5KP20/J	22.2	27.1	5	20	10	140	35.8	0.099
5KP20A/J	22.2	24.5	5	20	10	154	32.4	0.099
5KP22/J	24.4	29.8	5	22	10	127	39.4	0.1
5KP22A/J	24.4	26.9	5	22	10	141	35.5	0.1
5KP24/J	26.7	32.6	5	24	10	116	43	0.101
5KP24A/J	26.7	29.5	5	24	10	129	38.9	0.101
5KP26/J	28.9	35.3	5	26	10	107	46.6	0.101
5KP26A/J	28.9	31.9	5	26	10	119	42.1	0.101
5KP28/J	31.1	38	5	28	10	100	50.1	0.102
5KP28A/J	31.1	34.4	5	28	10	110	45.4	0.102
5KP30/J	33.3	40.7	5	30	10	93.5	53.5	0.103
5KP30A/J	33.3	36.8	5	30	10	103	48.4	0.103
5KP33/J	36.7	44.9	5	33	10	84.7	59	0.104
5KP33A/J	36.7	40.6	5	33	10	93.8	53.3	0.104



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Peak Pulse Power 5000 Watts

**Electrical Characteristic at (T<sub>A</sub> =25°C unless otherwise noted) TABLE 1 (Cont'd)**

Device Type	Breakdown Voltage V <sub>(BR)</sub> (Volts) (Note 1)		Test Current at I <sub>r</sub> (mA)	Stand-off Voltage V <sub>WM</sub> (Volts)	Maximum Reverse Leakage At V <sub>WM</sub> I <sub>D</sub> (μ A)	Maximum Peak Pulse Current I <sub>PPM</sub> (Note 2) (Amps)	Maximum Clamping Voltage at I <sub>PPM</sub> V <sub>c</sub> (Volts)	Maximum Temperature Coefficient of V <sub>(BR)</sub> (%/°C)
	MIN	MAX						
5KP36	40	48.9	5	36	10	77.8	64.3	0.104
5KP36A	40	44.2	5	36	10	86.1	58.1	0.104
5KP40	44.4	54.3	5	40	10	70	71.4	0.105
5KP40A	44.4	49.1	5	40	10	77.5	64.5	0.105
5KP43	47.8	58.4	5	43	10	65.2	76.7	0.105
5KP43A	47.8	52.8	5	43	10	72	69.4	0.105
5KP45	50	61.1	5	45	10	62.3	80.3	0.106
5KP45A	50	55.3	5	45	10	68.8	72.7	0.106
5KP48	53.3	65.2	5	48	10	58.5	85.5	0.106
5KP48A	53.3	58.9	5	48	10	64.6	77.4	0.106
5KP51	56.1	69.3	5	51	10	54.9	91.1	0.107
5KP51A	56.1	62.7	5	51	10	60.7	82.4	0.107
5KP54	60	73.3	5	54	10	51.9	96.3	0.107
5KP54A	60	66.3	5	54	10	57.4	87.1	0.107
5KP58	64.4	78.7	5	58	10	48.5	103	0.107
5KP58A	64.4	71.2	5	58	10	53.4	94	0.107
5KP60	66.7	81.5	5	60	10	46.7	107	0.108
5KP60A	66.7	73.7	5	60	10	51.7	97	0.108
5KP64	71.1	96.9	5	64	10	43.9	114	0.108
5KP64A	71.1	78.6	5	64	10	48.5	103	0.108
5KP70	77.6	95.1	5	70	10	40	125	0.108
5KP70A	77.8	86	5	70	10	44.2	113	0.108
5KP75	83.3	102	5	75	10	37.3	134	0.108
5KP75A	83.3	92.1	5	75	10	41.3	121	0.108
5KP78	86.7	106	5	78	10	36	139	0.108
5KP78A	86.7	95.8	5	78	10	39.7	126	0.108
5KP85	94.4	115	5	85	10	33.1	151	0.108
5KP85A	94.4	104	5	85	10	36.5	137	0.11
5KP90	100	122	5	90	10	31.3	160	0.11
5KP90A	100	111	5	90	10	34.2	146	0.11
5KP100	111	136	5	100	10	27.9	179	0.11
5KP100A	111	123	5	100	10	30.9	162	0.11
5KP110	122	149	5	110	10	25.5	196	0.112
5KP110A	122	135	5	110	10	28.2	177	0.112

**Notes:**

- (1) V<sub>(BR)</sub> measured after I<sub>r</sub> applied for 300ms I<sub>r</sub> =square wave pulse or equivalent
- (2) Surge current waveform per Figure 3 and derate per Fig.2
- (3) All terms and symbols are consistent with ANSI/IEEE C62.35



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## RATING AND CHARACTERISTIC CURVES 5KP5.0/J THRU 5KP110A/J

