



Taiwan Goodark Technology Co.,Ltd

5KP5.0~5KP110A

Glass Passivated Junction Transient Voltage Suppressor

Breakdown Voltage 5.0-11 Volts Peak Pulse Power:5000 Watts

FEATURE

- 5000w peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0v to V_{BR} for unidirectional and 5.0ns for bidirectional types.
- High temperature soldering guaranteed:
265°C/10S/9.5mm lead length at 5 lbs tension

MECHANICAL DATA

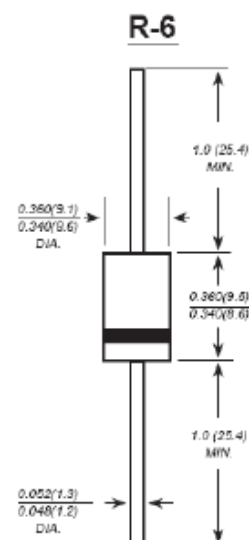
Case: R-6 molded plastic body over
passivated junction

Terminals: Plated axial leads, solderable per MIL-STD 750
method 2026

Polarity: Color band denotes cathode except for
bidirectional types

Mounting Position: Any

Weight: 0.072 ounce, 2.05 grams



Dimensions in inches and (millimeters)

Available in unidirectional only

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOLS	VALUE	UNITS
Peak power dissipation (Note 1)	PPPM	Minimum 5000	Watts
Peak pulse reverse current (Note 1, Fig.3)	IPPM	See Table 1	Amps
Steady state power dissipation (Note 2)	$P_{M(AV)}$	8.0	Watts
Peak forward surge current (Note 3)	IFSM	400	Amps
Maximum instantaneous forward voltage at 100A for unidirectional only (Note 3)	V_F	3.5	Volts
Operating junction and storage temperature range	T_{STG}, T_J	-55 to + 175	°C

Note:

- 1.10/1000ms waveform non-repetitive current pulse, per Fig.3 and derated above $T_a=25^\circ\text{C}$ per Fig.2
2. $T_L=75^\circ\text{C}$, lead lengths 9.5mm, Mounted on copper pad area of (20x20mm) Fig.5
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.



ELECTRICAL CHARACTERISTICS (at TA=25°C unless otherwise noted)

Device Type	Breakdown Voltage V _(BR) (Volts)(NOTES 1)		Test Current I _T (mA)	Stand-off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} I _D (NOTE3)(μ A)	Maximum Peak Puls Reverse Current I _{PPM} (NOTE2) (Amps)	Maximum Clamping Voltage at I _{PPM} V _C (Volts)	Maximum Temperature Coefficient of V _(BR) (%/°C)
	MIN	MAX						
5KP5.0	6.40	7.30	50	5.0	5000	522	9.6	0.057
5KP5.0A	6.40	7.00	50	5.0	5000	544	9.2	0.057
5KP6.0	6.67	8.15	50	6.0	5000	439	11.4	0.061
5KP6.0A	6.67	7.37	50	6.0	5000	486	10.3	0.061
5KP6.5	7.22	8.82	50	6.5	2000	407	12.3	0.065
5KP6.5A	7.22	7.98	50	6.5	2000	447	11.2	0.065
5KP7.0	7.78	9.51	50	7.0	1000	377	13.3	0.068
5KP7.0A	7.78	8.60	50	7.0	1000	417	12.0	0.068
5KP7.5	8.33	10.20	5	7.5	250	350	14.3	0.073
5KP7.5A	8.33	9.21	5	7.5	250	388	12.9	0.073
5KP8.0	8.89	10.90	5	8.0	150	334	15.0	0.075
5KP8.0A	8.89	9.83	5	8.0	150	368	13.6	0.075
5KP8.5	9.44	11.50	5	8.5	50	315	15.9	0.078
5KP8.5A	9.44	10.40	5	8.5	50	348	14.4	0.078
5KP9.0	10.00	12.20	5	9.0	20	296	16.9	0.081
5KP9.0A	10.00	11.10	5	9.0	20	325	15.4	0.081
5KP10	11.10	13.60	5	10.00	15	266	18.8	0.084
5KP10A	11.10	12.30	5	10.00	15	295	17.0	0.084
5KP11	12.20	14.90	5	11.00	10	249	20.1	0.086
5KP11A	12.20	13.50	5	11.00	10	275	18.2	0.086
5KP12	13.30	16.30	5	12.00	10	228	22.0	0.088
5KP12A	13.30	14.70	5	12.00	10	252	19.9	0.088
5KP13	14.40	17.60	5	13.00	10	210	23.8	0.090
5KP13A	14.40	15.90	5	13.00	10	233	21.5	0.090
5KP14	15.60	19.10	5	14.00	10	194	25.8	0.092
5KP14A	15.60	17.20	5	14.00	10	216	23.2	0.092
5KP15	16.70	20.40	5	15.00	10	186	26.9	0.094
5KP15A	16.70	18.50	5	15.00	10	205	24.4	0.094
5KP16	17.80	21.80	5	16.00	10	174	28.8	0.096
5KP16A	17.80	19.70	5	16.00	10	193	26.0	0.096
5KP17	18.90	23.10	5	17.00	10	164	30.5	0.097
5KP17A	18.90	20.90	5	17.00	10	181	27.6	0.097
5KP18	20.00	24.40	5	18.00	10	155	32.2	0.098
5KP18A	20.00	22.10	5	18.00	10	172	29.2	0.098
5KP20	22.20	27.10	5	20.00	10	140	35.8	0.099
5KP20A	22.20	24.50	5	20.00	10	154	32.4	0.099
5KP22	24.40	29.80	5	22.00	10	127	39.4	0.100
5KP22A	24.40	26.90	5	22.00	10	141	35.5	0.100
5KP24	26.70	32.60	5	24.00	10	116	43.0	0.101
5KP24A	26.70	29.50	5	24.00	10	129	38.9	0.101
5KP26	28.90	35.30	5	26.00	10	107	46.6	0.101
5KP26A	28.90	31.90	5	26.00	10	119	42.1	0.101
5KP28	31.10	38.00	5	28.00	10	100	50.1	0.102
5KP28A	31.10	34.40	5	28.00	10	110	45.4	0.102
5KP30	33.30	40.70	5	30.00	10	93.6	53.5	0.103
5KP30A	33.30	36.80	5	30.00	10	103	48.4	0.103
5KP33	36.70	44.90	5	33.00	10	84.8	59.0	0.104
5KP33A	36.70	40.60	5	33.00	10	93.9	53.3	0.104



ELECTRICAL CHARACTERISTICS (at TA=25°C unless otherwise noted)

Device Type	Breakdown Voltage V _(BR) (Volts)(NOTES 1)		Test Current I _T (mA)	Stand-off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} I _D (NOTE3)(μ A)	Maximum Peak Puls Reverse Current I _{PPM} (NOTE2) (Amps)	Maximum Clamping Voltage at I _{PPM} V _c (Volts)	Maximum Temperature Coefficient of V _(BR) (%/°C)
	MIN	MAX						
5KP36	40.00	48.90	5.0	36.00	10	64.3	77.8	0.104
5KP36A	40.00	44.20	5.0	36.00	10	58.1	86.1	0.104
5KP40	44.40	54.30	5.0	40.00	10	71.4	70.1	0.105
5KP40A	44.40	49.10	5.0	40.00	10	64.5	77.6	0.105
5KP43	47.80	58.40	5.0	43.00	10	76.7	65.2	0.105
5KP43A	47.80	52.80	5.0	43.00	10	69.4	72.1	0.105
5KP45	50.00	61.10	5.0	45.00	10	80.3	62.3	0.106
5KP45A	50.00	55.30	5.0	45.00	10	72.7	68.8	0.106
5KP48	53.30	65.20	5.0	48.00	10	85.8	58.5	0.106
5KP48A	53.30	58.90	5.0	48.00	10	77.4	64.7	0.106
5KP51	56.70	69.30	5.0	51.00	10	91.1	54.9	0.107
5KP51A	56.70	62.70	5.0	51.00	10	82.4	60.7	0.107
5KP54	60.00	73.30	5.0	54.00	10	96.3	52.0	0.107
5KP54A	60.00	66.30	5.0	54.00	10	87.1	57.5	0.107
5KP58	64.40	78.70	5.0	58.00	10	103.0	48.6	0.107
5KP58A	64.40	71.20	5.0	58.00	10	93.6	53.5	0.107
5KP60	66.70	81.50	5.0	60.00	10	107.0	46.8	0.108
5KP60A	66.70	73.70	5.0	60.00	10	96.8	51.7	0.108
5KP64	71.10	86.90	5.0	64.00	10	114.0	43.9	0.108
5KP64A	71.10	78.60	5.0	64.00	10	103.0	48.6	0.108
5KP70	77.80	95.10	5.0	70.00	10	125.0	40.0	0.108
5KP70A	77.80	86.00	5.0	70.00	10	113.0	44.3	0.108
5KP75	83.30	102.00	5.0	75.00	10	134.0	37.4	0.108
5KP75A	83.30	92.10	5.0	75.00	10	121.0	41.4	0.108
5KP78	86.70	106.00	5.0	78.00	10	139.0	36.0	0.108
5KP78A	86.70	95.80	5.0	78.00	10	126.0	39.7	0.108
5KP85	94.40	115.00	5.0	85.00	10	151.0	33.2	0.108
5KP85A	94.40	104.00	5.0	85.00	10	137.0	36.5	0.108
5KP90	100.00	122.00	5.0	90.00	10	160.0	31.3	0.110
5KP90A	100.00	111.00	5.0	90.00	10	146.0	34.3	0.110
5KP100	111.00	136.00	5.0	100.00	10	179.0	28.0	0.110
5KP100A	111.00	123.00	5.0	100.00	10	162.0	30.9	0.110
5KP110	122.00	149.00	5.0	110.00	10	196.0	25.6	0.112
5KP110A	122.00	135.00	5.0	110.00	10	177.0	28.3	0.112

NOTES:

- 1.V_(BR) measured after I_T applied for 300ms I_T=square wave pulse or equivalent
- 2.Surge current waveform per Fig.3 and derate per Fig.2
- 3.All items and symbols are consistent with ANSI/IEEE C62.35



RATINGS AND CHARACTERISTIC CURVES

FIG. 1-PEAK PULSE POWER RATING CURVE

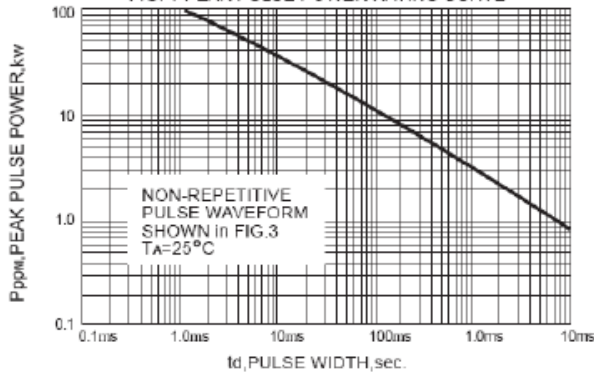


FIG. 2-PULSE DERATING CURVE

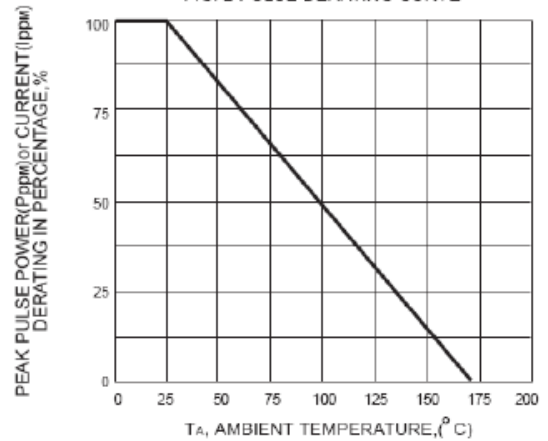


FIG.3-PULSE WAVEFORM

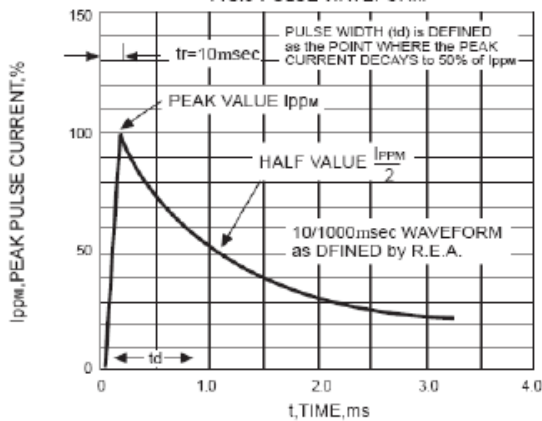


FIG. 4-TYPICAL JUNCTION CAPACITANCE

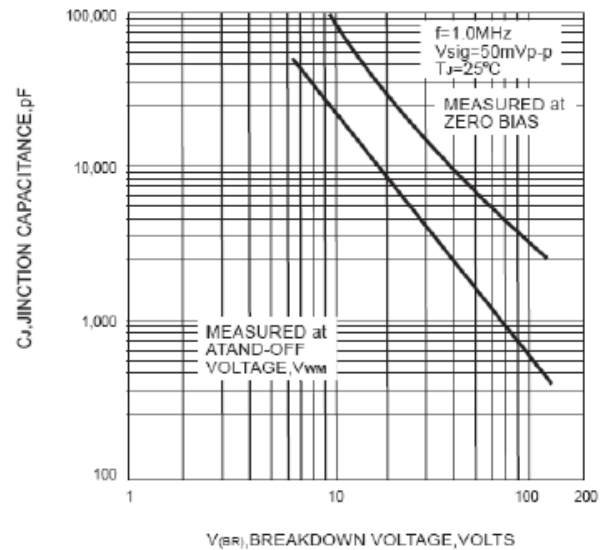


FIG.5-STEADY STATE POWER DERATING CURVE

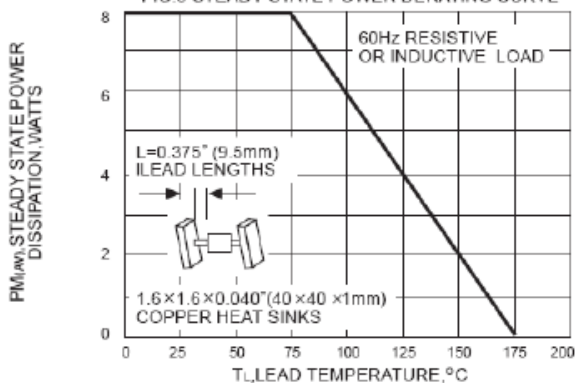


FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

