

Features

- For surface mounted applications in order to optimize board space
- Low profile space
- Glass passivated chip
- Low inductance
- Excellent clamping capability
- Very fast response time
- 5000 W peak pulse power capability with a 10/1000 μ s waveform
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC



R-6/P600

Mechanical Data

- **Case:** R-6 molded plastic body over glass passivated chip
- **Terminals:** Solder plated, solderable per MIL-STD-750 Method 2026
- **Polarity:** For uni-directional types the band by laser denotes the cathode, which is positive with respect to the anode under normal TVS operation

P_{PPM}	5000 W
V_{RRM}	5 V to 190 V
I_{FSM}	600 A
$T_j \text{ max.}$	150 °C

Devices for Bidirectional Applications

- For bi-directional devices, use suffix C or CA (e.g. 5KP12C, 5KP12CA). Electrical characteristics apply in both directions.

Maximum Ratings & Thermal Characteristics

($T_A = 25\text{ °C}$ unless otherwise noted)

Items	Symbol	Value	UNIT
Peak pulse power dissipation with a 10/1000 μ s waveform	P_{PPM}	5000	W
Peak pulse current with a waveform (single pulse)	I_{PPM}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave uni-directional only	I_{FSM}	600	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Electrical Characteristics T_A = 25°C unless otherwise noted

TRR House No.		Marking Code		Breakdown Voltage at I _T ⁽¹⁾ V _(BR) (V)		Test Current	Stand-off Voltage	Maximum Reverse Leakage at V _{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage at I _{PPM}
UNI	BI	UNI	BI	Min	Max	I _T (mA)	V _{WM} (V)	I _D (μA)	I _{PPM} (A)	V _C (V)
5KP5.0	5KP5.0C	—	—	6.40	7.30	10	5.0	5000	521	9.6
5KP5.0A	5KP5.0CA	—	—	6.40	7.00	10	5.0	5000	543	9.2
5KP6.0	5KP6.0C	—	—	6.67	8.15	10	6.0	5000	439	11.4
5KP6.0A	5KP6.0CA	—	—	6.67	7.37	10	6.0	5000	485	10.3
5KP6.5	5KP6.5C	—	—	7.22	8.82	10	6.5	2000	407	12.3
5KP6.5A	5KP6.5CA	—	—	7.22	7.98	10	6.5	2000	446	11.2
5KP7.0	5KP7.0C	—	—	7.78	9.51	10	7.0	1000	376	13.3
5KP7.0A	5KP7.0CA	—	—	7.78	8.60	10	7.0	1000	417	12.0
5KP7.5	5KP7.5C	—	—	8.33	10.2	1	7.5	250	350	14.3
5KP7.5A	5KP7.5CA	—	—	8.33	9.21	1	7.5	250	388	12.9
5KP8.0	5KP8.0C	—	—	8.89	10.9	1	8.0	150	333	15.0
5KP8.0A	5KP8.0CA	—	—	8.89	9.83	1	8.0	150	368	13.6
5KP8.5	5KP8.5C	—	—	9.44	11.50	1	8.5	50	314	15.9
5KP8.5A	5KP8.5CA	—	—	9.44	10.4	1	8.5	50	347	14.4
5KP9.0	5KP9.0C	—	—	10.0	12.2	1	9.0	20	296	16.9
5KP9.0A	5KP9.0CA	—	—	10.0	11.1	1	9.0	20	325	15.4
5KP10	5KP10C	—	—	11.1	13.6	1	10	15	266	18.8
5KP10A	5KP10CA	—	—	11.1	12.3	1	10	15	294	17.0
5KP11	5KP11C	—	—	12.2	14.9	1	11	5	249	20.1
5KP11A	5KP11CA	—	—	12.2	13.5	1	11	5	275	18.2
5KP12	5KP12C	—	—	13.3	16.3	1	12	5	227	22.0
5KP12A	5KP12CA	—	—	13.3	14.7	1	12	5	251	19.9
5KP13	5KP13C	—	—	14.4	17.6	1	13	5	210	23.8
5KP13A	5KP13CA	—	—	14.4	15.9	1	13	5	233	21.5
5KP14	5KP14C	—	—	15.6	19.1	1	14	5	194	25.8
5KP14A	5KP14CA	—	—	15.6	17.2	1	14	5	216	23.2
5KP15	5KP15C	—	—	16.7	20.4	1	15	5	186	26.9
5KP15A	5KP15CA	—	—	16.7	18.5	1	15	5	205	24.4
5KP16	5KP16C	—	—	17.8	21.8	1	16	5	174	28.8
5KP16A	5KP16CA	—	—	17.8	19.7	1	16	5	192	26.0
5KP17	5KP17C	—	—	18.9	23.1	1	17	5	164	30.5
5KP17A	5KP17CA	—	—	18.9	20.9	1	17	5	181	27.6
5KP18	5KP18C	—	—	20.0	24.4	1	18	5	155	32.2
5KP18A	5KP18CA	—	—	20.0	22.1	1	18	5	171	29.2
5KP19	5KP19C	—	—	21.1	25.8	1	19	5	147	34.0
5KP19A	5KP19CA	—	—	21.1	23.3	1	19	5	162	30.8
5KP20	5KP20C	—	—	22.2	27.1	1	20	5	140	35.8
5KP20A	5KP20CA	—	—	22.2	24.5	1	20	5	154	32.4

Electrical Characteristics T_A = 25°C unless otherwise noted

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UNI	BI	UNI	BI	Min	Max	I _T (mA)	V _{WM} (V)	I _D (μA)	I _{PPM} (A)	V _C (V)
5KP22	5KP22C	—	—	24.4	29.8	1	22	5	127	39.4
5KP22A	5KP22CA	—	—	24.4	26.9	1	22	5	141	35.5
5KP24	5KP24C	—	—	26.7	32.6	1	24	5	116	43.0
5KP24A	5KP24CA	—	—	26.7	29.5	1	24	5	129	38.9
5KP26	5KP26C	—	—	28.9	35.3	1	26	5	107	46.6
5KP26A	5KP26CA	—	—	28.9	31.9	1	26	5	119	42.1
5KP28	5KP28C	—	—	31.1	38.0	1	28	5	100	50.0
5KP28A	5KP28CA	—	—	31.1	34.4	1	28	5	110	45.4
5KP30	5KP30C	—	—	33.3	40.7	1	30	5	93.5	53.5
5KP30A	5KP30CA	—	—	33.3	36.8	1	30	5	103.0	48.4
5KP33	5KP33C	—	—	36.7	44.9	1	33	5	84.7	59.0
5KP33A	5KP33CA	—	—	36.7	40.6	1	33	5	93.8	53.3
5KP36	5KP36C	—	—	40.0	48.9	1	36	5	77.8	64.3
5KP36A	5KP36CA	—	—	40.0	44.2	1	36	5	86.1	58.1
5KP40	5KP40C	—	—	44.4	54.3	1	40	5	70.0	71.4
5KP40A	5KP40CA	—	—	44.4	49.1	1	40	5	77.5	64.5
5KP43	5KP43C	—	—	47.8	58.4	1	43	5	65.2	76.7
5KP43A	5KP43CA	—	—	47.8	52.8	1	43	5	72.0	69.4
5KP45	5KP45C	—	—	50.0	61.1	1	45	5	62.3	80.3
5KP45A	5KP45CA	—	—	50.0	55.3	1	45	5	68.8	72.7
5KP48	5KP48C	—	—	53.3	65.1	1	48	5	58.5	85.5
5KP48A	5KP48CA	—	—	53.3	58.9	1	48	5	64.6	77.4
5KP51	5KP51C	—	—	56.7	69.3	1	51	5	54.9	91.1
5KP51A	5KP51CA	—	—	56.7	62.7	1	51	5	60.7	82.4
5KP54	5KP54C	—	—	60.0	73.3	1	54	5	51.9	96.3
5KP54A	5KP54CA	—	—	60.0	66.3	1	54	5	57.4	87.1
5KP58	5KP58C	—	—	64.4	78.7	1	58	5	48.5	103
5KP58A	5KP58CA	—	—	64.4	71.2	1	58	5	53.4	93.6
5KP60	5KP60C	—	—	66.7	81.5	1	60	5	46.7	107
5KP60A	5KP60CA	—	—	66.7	73.7	1	60	5	51.7	96.8
5KP64	5KP64C	—	—	71.1	86.9	1	64	5	43.9	114
5KP64A	5KP64CA	—	—	71.1	78.6	1	64	5	48.5	103
5KP70	5KP70C	—	—	77.8	95.1	1	70	5	40.0	125
5KP70A	5KP70CA	—	—	77.8	86.0	1	70	5	44.2	113
5KP75	5KP75C	—	—	83.3	102	1	75	5	37.3	134
5KP75A	5KP75CA	—	—	83.3	92.1	1	75	5	41.3	121
5KP78	5KP78C	—	—	86.7	106	1	78	5	36.0	139
5KP78A	5KP78CA	—	—	86.7	95.8	1	78	5	39.7	126

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UNI	BI	UNI	BI	Min	Max	I _T (mA)	V _{WM} (V)	I _D (μA)	I _{PPM} (A)	V _C (V)
5KP80	5KP80C	—	—	89.0	109	1	80	5	34.9	143
5KP80A	5KP80CA	—	—	88.8	97.6	1	80	5	38.6	130
5KP85	5KP85C	—	—	94.4	115	1	85	5	33.1	151
5KP85A	5KP85CA	—	—	94.4	104	1	85	5	36.5	137
5KP90	5KP90C	—	—	100	122	1	90	5	31.3	160
5KP90A	5KP90CA	—	—	100	111	1	90	5	34.2	146
5KP100	5KP100C	—	—	111	136	1	100	5	27.9	179
5KP100A	5KP100CA	—	—	111	123	1	100	5	30.9	162
5KP110	5KP110C	—	—	122	149	1	110	5	25.5	196
5KP110A	5KP110CA	—	—	122	135	1	110	5	28.2	177
5KP120	5KP120C	—	—	133	163	1	120	5	23.4	214
5KP120A	5KP120CA	—	—	133	147	1	120	5	25.9	193
5KP130	5KP130C	—	—	144	176	1	130	5	21.6	231
5KP130A	5KP130CA	—	—	144	159	1	130	5	23.9	209
5KP140	5KP140C	—	—	156	190	1	140	5	20.0	251
5KP140A	5KP140CA	—	—	155	171	1	140	5	22.0	227
5KP150	5KP150C	—	—	167	204	1	150	5	18.7	268
5KP150A	5KP150CA	—	—	167	185	1	150	5	20.6	243
5KP160	5KP160C	—	—	178	218	1	160	5	17.4	287
5KP160A	5KP160CA	—	—	178	197	1	160	5	19.3	259
5KP170	5KP170C	—	—	189	231	1	170	5	16.4	304
5KP170A	5KP170CA	—	—	189	209	1	170	5	18.2	275
5KP180	5KP180C	—	—	200	245	1	180	5	15.5	322
5KP180A	5KP180CA	—	—	200	220	1	180	5	17.1	292
5KP190	5KP190C	—	—	211	258	1	190	5	14.7	340
5KP190A	5KP190CA	—	—	211	232	1	190	5	16.2	308

Package Outline