New Jersey Semi-Conductor Products, Inc.

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R5KP SERIES

TRANSIENT VOLTAGE SUPPRESSOR

V_{RM} : 5.0 - 180 Volts
P_{PK} : 5000 Watts

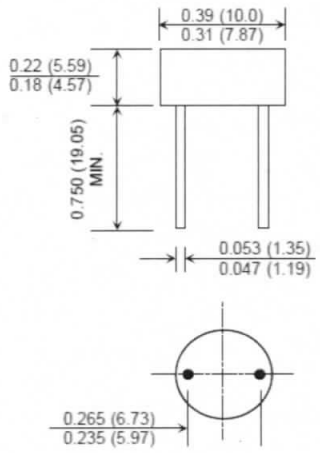
FEATURES :

* Glass passivated junction chip
* 5000W Peak Pulse Power
* Excellent clamping capability
* Low incremental surge resistance
* Fast response time : typically less then 1.0 ps from 0 volt to $V_{BR(min.)}$
* Typical I_R less then 1μA above 10V
* Pb / RoHS Free

MECHANICAL DATA

* Case : Void-free molded plastic body
* Epoxy : UL94V-0 rate flame retardant
* Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
* Polarity : Color band denotes cathode end
* Mounting position : Any
* Weight : 2.1 grams

5R



Dimension in inches and (millimeter)

DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional use C or CA Suffix
Electrical characteristics apply in both directions

MAXIMUM RATINGS (Rating at 25 °C ambient temperature unless otherwise specified.)

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation at tp = 1ms (Note 1, Fig. 4)	P_{PK}	Minimum 5000	W
Steady State Power Dissipation at T_L = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P_D	8.0	W
Operating and Storage Temperature Range	T_J, T_{STG}	- 55 to + 150	°C

Notes:

(1) Non-repetitive Current pulse, per Fig. 2 and derated above Ta = 25 °C per Fig. 1
(2) Mounted on Copper Leaf area of 0.79 in^2 (20mm^2).

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheet are current before placing orders.

Quality Semi-Conductors

ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

TYPE	Breakdown Voltage @ I_T (Note 1)			Reverse Stand off Voltage	Maximum Reverse Leakage @ V_{RM}	Maximum Peak Pulse Current	Maximum Clamping Voltage @ I_{PPM}	Maximum Temperature Coefficient of V_{BR}
	V_{BR} (V)		I_T	V_{RM}	I_R	I_{PPM}	V_C	
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	(%/°C)
R5KP5.0	6.40	7.30	50	5.0	5000	520	9.60	0.057
R5KP5.0A	6.40	7.00	50	5.0	5000	543	9.20	0.057
R5KP6.0	6.67	8.15	50	6.0	5000	439	11.4	0.061
R5KP6.0A	6.67	7.37	50	6.0	5000	485	10.3	0.061
R5KP6.5	7.22	8.82	50	6.5	2000	407	12.3	0.065
R5KP6.5A	7.22	7.98	50	6.5	2000	447	11.2	0.065
R5KP7.0	7.78	9.51	50	7.0	1000	378	13.3	0.068
R5KP7.0A	7.78	8.60	50	7.0	1000	417	12.0	0.068
R5KP7.5	8.33	10.2	5.0	7.5	250	350	14.3	0.073
R5KP7.5A	8.33	9.21	5.0	7.5	250	388	12.9	0.073
R5KP8.0	8.89	10.9	5.0	8.0	150	333	15.0	0.075
R5KP8.0A	8.89	9.83	5.0	8.0	150	367	13.6	0.075
R5KP8.5	9.44	11.5	5.0	8.5	50	314	15.9	0.078
R5KP8.5A	9.44	10.4	5.0	8.5	50	347	14.4	0.078
R5KP9.0	10.0	12.2	5.0	9.0	20	295	16.9	0.081
R5KP9.0A	10.0	11.1	5.0	9.0	20	325	15.4	0.081
R5KP10	11.1	13.6	5.0	10	15	266	18.8	0.084
R5KP10A	11.1	12.3	5.0	10	15	294	17.0	0.084
R5KP11	12.2	14.9	5.0	11	10	249	20.1	0.086
R5KP11A	12.2	13.5	5.0	11	10	274	18.2	0.086
R5KP12	13.3	16.3	5.0	12	10	227	22.0	0.088
R5KP12A	13.3	14.7	5.0	12	10	251	19.9	0.088
R5KP13	14.4	17.6	5.0	13	10	210	23.8	0.090
R5KP13A	14.4	15.9	5.0	13	10	232	21.5	0.090
R5KP14	15.6	19.1	5.0	14	10	194	25.8	0.092
R5KP14A	15.6	17.2	5.0	14	10	215	23.2	0.092
R5KP15	16.7	20.4	5.0	15	10	188	26.9	0.094
R5KP15A	16.7	18.5	5.0	15	10	206	24.4	0.094
R5KP16	17.8	21.8	5.0	16	10	176	28.8	0.096
R5KP16A	17.8	19.7	5.0	16	10	192	26.0	0.096
R5KP17	18.9	23.1	5.0	17	10	164	30.5	0.097
R5KP17A	18.9	20.9	5.0	17	10	181	27.6	0.097
R5KP18	20.0	24.4	5.0	18	10	155	32.2	0.098
R5KP18A	20.0	22.1	5.0	18	10	172	29.2	0.098
R5KP20	22.2	27.1	5.0	20	10	139	35.8	0.099
R5KP20A	22.2	24.5	5.0	20	10	154	32.4	0.099
R5KP22	24.4	29.8	5.0	22	10	127	39.4	0.100
R5KP22A	24.4	26.9	5.0	22	10	141	35.5	0.100
R5KP24	26.7	32.6	5.0	24	10	116	43.0	0.101
R5KP24A	26.7	29.5	5.0	24	10	128	38.9	0.101
R5KP26	28.9	35.3	5.0	26	10	107	46.6	0.101
R5KP26A	28.9	31.9	5.0	26	10	119	42.1	0.101
R5KP28	31.1	38.0	5.0	28	10	99	50.1	0.102
R5KP28A	31.1	34.4	5.0	28	10	110	45.4	0.102
R5KP30	33.3	40.7	5.0	30	10	93	53.5	0.103
R5KP30A	33.3	36.8	5.0	30	10	103	48.4	0.103
R5KP33	36.7	44.9	5.0	33	10	85	59.0	0.104
R5KP33A	36.7	40.6	5.0	33	10	94	53.3	0.104

ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

TYPE	Breakdown Voltage @ I_T (Note 1)			Reverse Stand off Voltage	Maximum Reverse Leakage @ V_{RM}	Maximum Peak Pulse Current	Maximum Clamping Voltage @ I_{PPM}	Maximum Temperature Coefficient of V_{BR}
	V_{BR} (V)		I_T	V_{RM}	I_R	I_{PPM}	V_C	
	Min.	Max.	(mA)	(V)	(μA)	(A)	(V)	(%/°C)
R5KP36	40.0	48.9	5.0	36	10	78	64.3	0.104
R5KP36A	40.0	44.2	5.0	36	10	86	58.1	0.104
R5KP40	44.4	54.3	5.0	40	10	70	71.4	0.105
R5KP40A	44.4	49.1	5.0	40	10	78	64.5	0.105
R5KP43	47.8	58.4	5.0	43	10	65	76.7	0.105
R5KP43A	47.8	52.8	5.0	43	10	72	69.4	0.105
R5KP45	50.0	61.1	5.0	45	10	62	80.3	0.106
R5KP45A	50.0	55.3	5.0	45	10	69	72.7	0.106
R5KP48	53.3	65.2	5.0	48	10	58	85.5	0.106
R5KP48A	53.3	58.9	5.0	48	10	65	77.4	0.106
R5KP51	56.7	69.3	5.0	51	10	55	91.1	0.107
R5KP51A	56.7	62.7	5.0	51	10	61	82.4	0.107
R5KP54	60.0	73.3	5.0	54	10	52	96.3	0.107
R5KP54A	60.0	66.3	5.0	54	10	57	87.1	0.107
R5KP56	62.2	76.1	5.0	56	10	50	100	0.107
R5KP56A	62.2	68.8	5.0	56	10	55	91	0.107
R5KP58	64.4	78.7	5.0	58	10	49	103	0.107
R5KP58A	64.4	71.2	5.0	58	10	53	94	0.107
R5KP60	66.7	81.5	5.0	60	10	47	107	0.108
R5KP60A	66.7	73.7	5.0	60	10	52	97	0.108
R5KP64	71.1	96.9	5.0	64	10	44	114	0.108
R5KP64A	71.1	78.6	5.0	64	10	49	103	0.108
R5KP70	77.6	95.1	5.0	70	10	40	125	0.108
R5KP70A	77.6	86.0	5.0	70	10	44	113	0.108
R5KP75	83.3	102	5.0	75	10	37	134	0.108
R5KP75A	83.3	92.1	5.0	75	10	41	121	0.108
R5KP78	86.7	106	5.0	78	10	36	139	0.108
R5KP78A	86.7	95.8	5.0	78	10	40	126	0.108
R5KP85	94.4	115	5.0	85	10	33	151	0.108
R5KP85A	94.4	104	5.0	85	10	36	137	0.110
R5KP90	100	122	5.0	90	10	31	160	0.110
R5KP90A	100	111	5.0	90	10	34	146	0.110
R5KP100	111	136	5.0	100	10	28	179	0.110
R5KP100A	111	123	5.0	100	10	31	162	0.110
R5KP110	122	149	5.0	110	10	26	196	0.112
R5KP110A	122	135	5.0	110	10	28	177	0.112
R5KP120	133	163	5.0	120	10	24	211	0.112
R5KP120A	133	147	5.0	120	10	26	194	0.112
R5KP150	167	204	5.0	150	10	19	263	0.112
R5KP150A	167	184	5.0	150	10	21	242	0.112
R5KP160	178	217	5.0	160	10	18	281	0.114
R5KP160A	178	196	5.0	160	10	19	258	0.114
R5KP170	189	231	5.0	170	10	17	298	0.114
R5KP170A	189	209	5.0	170	10	18	274	0.114
R5KP180	200	244	5.0	180	10	16	316	0.114
R5KP180A	200	221	5.0	180	10	17	290	0.114

Notes:

(1) V_{BR} measured after I_T applied for 300 μs., I_T = square wave pulse or equivalent.

(3) For Bi-directional devices having V_R of 10 Volts and under the I_R limit is doubled.

(4) For Bi-directional use C or CA Suffix , Type No. is as follows: R5KP5.0C, R5KP5.0CA, ..., R5KP180CA