Features

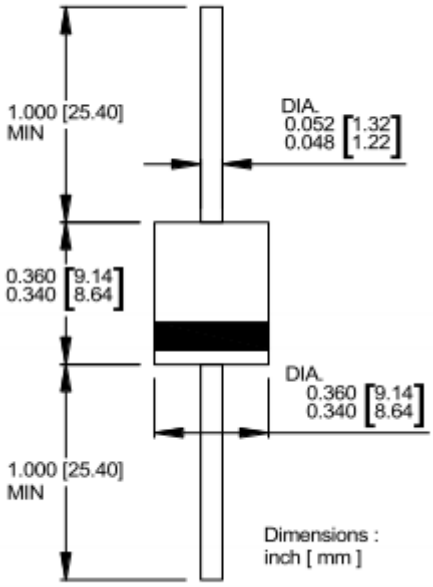
- ◆ Glass passivated chip
- ◆ 5000 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- ◆ Low leakage
- ◆ Uni and Bidirectional unit
- ◆ Excellent clamping capability
- ◆ Very fast response time
- ◆ RoHS compliant

Mechanical Data

- ◆ Case: Molded plastic
- ◆ Epoxy: UL 94V-0 rate flame retardant
- ◆ Lead: Solderable per MIL-STD-202, method 208 guranteed
- ◆ Polarity: Color band denotes cathode end except Bipolar
- ◆ Mounting position: Any

Axial Lead Transient Voltage Suppressors

R-6/P600



Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	UNIT
Peak power dissipation with a 10/1000μs waveform(1)	P_{PP}	5000	W
Peak pulse current wih a 10/1000μs waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at T_L = 75 ℃	P_D	8.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(2)	I_{FSM}	500	A
Maximum instantaneous forward voltage at 100 A for unidirectional only (3)	V_F	3.5/5.0	V
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +150	℃

Note：

(1)Non-repetitive current pulse per Fig.5 and derated above T_A= 25 ℃ per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3)V_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

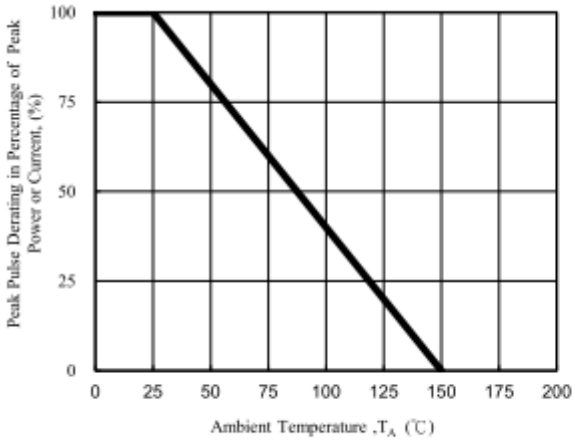


Fig. 1 - Pulse Derating Curve

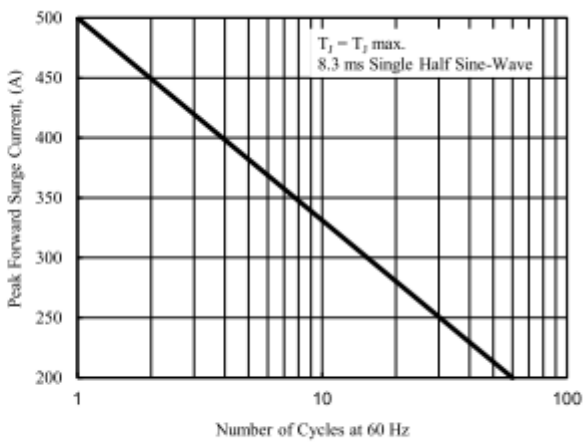


Fig. 2 - Maximum Non-Repetitive Surge Current

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

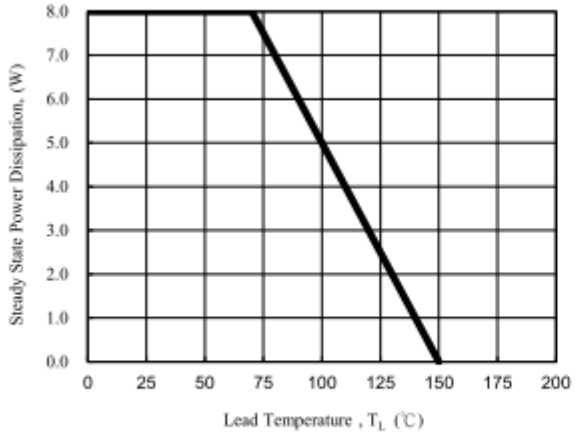


Fig. 3 - Steady State Power Derating Curve

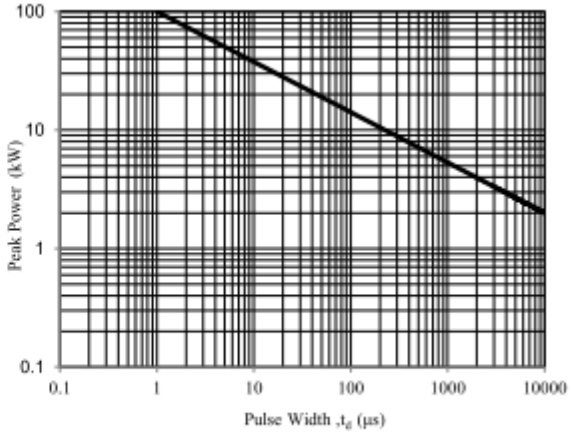


Fig. 4 - Peak Pulse Power Rating Curve

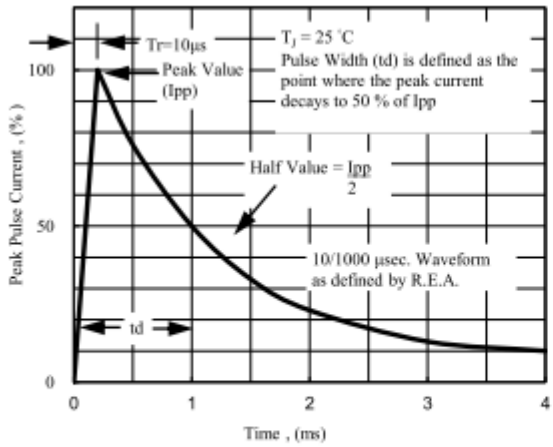


Fig. 5 - Pulse Waveform

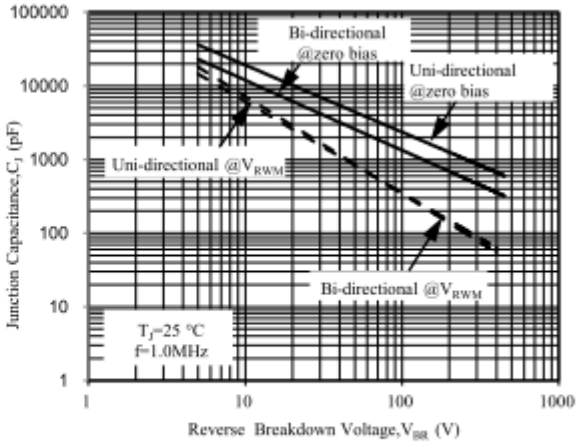


Fig. 6 - Typical Junction Capacitance

Electrical Characteristics(T_A=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
5KP5.0	5KP5.0C	6.40	7.30	50	5000	5	520.83	9.6
5KP5.0A	5KP5.0CA	6.40	7.00	50	5000	5	543.48	9.2
5KP6.0	5KP6.0C	6.67	8.15	50	5000	6	438.60	11.4
5KP6.0A	5KP6.0CA	6.67	7.37	50	5000	6	485.44	10.3
5KP6.5	5KP6.5C	7.22	8.82	50	2000	7	406.50	12.3
5KP6.5A	5KP6.5CA	7.22	7.98	50	2000	7	446.43	11.2
5KP7.0	5KP7.0C	7.78	9.51	50	1000	7	375.94	13.3
5KP7.0A	5KP7.0CA	7.78	8.60	50	1000	7	416.67	12.0
5KP7.5	5KP7.5C	8.33	10.2	5	250	8	349.65	14.3
5KP7.5A	5KP7.5CA	8.33	9.21	5	250	8	387.60	12.9
5KP8.0	5KP8.0C	8.89	10.9	5	150	8	333.33	15.0
5KP8.0A	5KP8.0CA	8.89	9.83	5	150	8	367.65	13.6
5KP8.5	5KP8.5C	9.44	11.5	5	50	9	314.47	15.9
5KP8.5A	5KP8.5CA	9.44	10.4	5	50	9	347.22	14.4
5KP9.0	5KP9.0C	10.00	12.2	5	20	9	295.86	16.9
5KP9.0A	5KP9.0CA	10.00	11.1	5	20	9	324.68	15.4
5KP10	5KP10C	11.10	13.6	5	15	10	265.96	18.8
5KP10A	5KP10CA	11.10	12.3	5	15	10	294.12	17.0
5KP11	5KP11C	12.20	14.9	5	2	11	248.76	20.1
5KP11A	5KP11CA	12.20	13.5	5	2	11	274.73	18.2
5KP12	5KP12C	13.30	16.3	5	2	12	227.27	22.0
5KP12A	5KP12CA	13.30	14.7	5	2	12	251.26	19.9
5KP13	5KP13C	14.40	17.6	5	2	13	210.08	23.8
5KP13A	5KP13CA	14.40	15.9	5	2	13	232.56	21.5
5KP14	5KP14C	15.60	19.1	5	2	14	193.80	25.8
5KP14A	5KP14CA	15.60	17.2	5	2	14	215.52	23.2
5KP15	5KP15C	16.70	20.4	5	2	15	185.87	26.9
5KP15A	5KP15CA	16.70	18.5	5	2	15	204.92	24.4
5KP16	5KP16C	17.80	21.8	5	2	16	173.61	28.8
5KP16A	5KP16CA	17.80	19.7	5	2	16	192.31	26.0
5KP17	5KP17C	18.90	23.1	5	2	17	163.93	30.5
5KP17A	5KP17CA	18.90	20.9	5	2	17	181.16	27.6
5KP18	5KP18C	20.00	24.4	5	2	18	155.28	32.2
5KP18A	5KP18CA	20.00	22.1	5	2	18	171.23	29.2
5KP19	5KP19C	21.13	25.8	5	2	19	147.02	34.0
5KP19A	5KP19CA	21.10	23.3	5	2	19	162.44	30.8
5KP20	5KP20C	22.20	27.1	5	2	20	139.66	35.8
5KP20A	5KP20CA	22.20	24.5	5	2	20	154.32	32.4
5KP22	5KP22C	24.40	29.8	5	2	22	126.90	39.4
5KP22A	5KP22CA	24.40	26.9	5	2	22	140.85	35.5
5KP24	5KP24C	26.70	32.6	5	2	24	116.28	43.0
5KP24A	5KP24CA	26.70	29.5	5	2	24	128.53	38.9
5KP26	5KP26C	28.90	35.3	5	2	26	107.30	46.6
5KP26A	5KP26CA	28.90	31.9	5	2	26	118.76	42.1
5KP28	5KP28C	31.10	38.0	5	2	28	100.00	50.0
5KP28A	5KP28CA	31.10	34.4	5	2	28	110.13	45.4
5KP30	5KP30C	33.30	40.7	5	2	30	93.46	53.5
5KP30A	5KP30CA	33.30	36.8	5	2	30	103.31	48.4
5KP33	5KP33C	36.70	44.9	5	2	33	84.75	59.0
5KP33A	5KP33CA	36.70	40.6	5	2	33	93.81	53.3
5KP36	5KP36C	40.00	48.9	5	2	36	77.76	64.3
5KP36A	5KP36CA	40.00	44.2	5	2	36	86.06	58.1
5KP40	5KP40C	44.40	54.3	5	2	40	70.03	71.4
5KP40A	5KP40CA	44.40	49.1	5	2	40	77.52	64.5

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Min (V)	Max (V)	I_T (mA)				
5KP43	5KP43C	47.80	58.4	5	2	43	65.19	76.7
5KP43A	5KP43CA	47.80	52.8	5	2	43	72.05	69.4
5KP45	5KP45C	50.00	61.1	5	2	45	62.27	80.3
5KP45A	5KP45CA	50.00	55.3	5	2	45	68.78	72.7
5KP48	5KP48C	53.30	65.1	5	2	48	58.48	85.5
5KP48A	5KP48CA	53.30	58.9	5	2	48	64.60	77.4
5KP51	5KP51C	56.70	69.3	5	2	51	54.88	91.1
5KP51A	5KP51CA	56.70	62.7	5	2	51	60.68	82.4
5KP54	5KP54C	60.00	73.3	5	2	54	51.92	96.3
5KP54A	5KP54CA	60.00	66.3	5	2	54	57.41	87.1
5KP58	5KP58C	64.40	78.7	5	2	58	48.54	103.0
5KP58A	5KP58CA	64.40	71.2	5	2	58	53.42	93.6
5KP60	5KP60C	66.70	81.5	5	2	60	46.73	107.0
5KP60A	5KP60CA	66.70	73.7	5	2	60	51.65	96.8
5KP64	5KP64C	71.10	86.9	5	2	64	43.86	114.0
5KP64A	5KP64CA	71.10	78.6	5	2	64	48.54	103.0
5KP70	5KP70C	77.80	95.1	5	2	70	40.00	125.0
5KP70A	5KP70CA	77.80	86.0	5	2	70	44.25	113.0
5KP75	5KP75C	83.30	102	5	2	75	37.31	134.0
5KP75A	5KP75CA	83.30	92.1	5	2	75	41.32	121.0
5KP78	5KP78C	86.70	106.0	5	2	78	35.97	139.0
5KP78A	5KP78CA	86.70	95.8	5	2	78	39.68	126.0
5KP80	5KP80C	88.96	108.8	5	2	80	34.92	143.2
5KP80A	5KP80CA	88.80	97.6	5	2	80	38.58	129.6
5KP85	5KP85C	94.40	115.0	5	2	85	33.11	151.0
5KP85A	5KP85CA	94.40	104.0	5	2	85	36.50	137.0
5KP90	5KP90C	100.00	122.0	5	2	90	31.25	160.0
5KP90A	5KP90CA	100.00	111.0	5	2	90	34.25	146.0
5KP100	5KP100C	111.00	136.0	5	2	100	27.93	179.0
5KP100A	5KP100CA	111.00	123.0	5	2	100	30.86	162.0
5KP110	5KP110C	122.00	149.0	5	2	110	25.51	196.0
5KP110A	5KP110CA	122.00	135.0	5	2	110	28.25	177.0
5KP120	5KP120C	133.00	163.0	5	2	120	23.36	214.0
5KP120A	5KP120CA	133.00	147.0	5	2	120	25.91	193.0
5KP130	5KP130C	144.00	176.0	5	2	130	21.65	231.0
5KP130A	5KP130CA	144.00	159.0	5	2	130	23.92	209.0
5KP140	5KP140C	155.68	190.4	5	2	140	19.95	250.6
5KP140A	5KP140CA	155.00	171.0	5	2	140	22.05	226.8
5KP150	5KP150C	167.00	204.0	5	2	150	18.66	268.0
5KP150A	5KP150CA	167.00	185.0	5	2	150	20.58	243.0
5KP160	5KP160C	178.00	218.0	5	2	160	17.42	287.0
5KP160A	5KP160CA	178.00	197.0	5	2	160	19.31	259.0
5KP170	5KP170C	189.00	231.0	5	2	170	16.45	304.0
5KP170A	5KP170CA	189.00	209.0	5	2	170	18.18	275.0
5KP180	5KP180C	200.16	244.8	5	2	180	15.52	322.2
5KP180A	5KP180CA	200.00	220.0	5	2	180	17.15	291.6
5KP190	5KP190C	211.28	258.4	5	2	190	14.70	340.1
5KP190A	5KP190CA	211.00	232.0	5	2	190	16.24	307.8
5KP200A	5KP200CA	224.00	247.0	5	2	200	15.43	324.0
5KP210A	5KP210CA	233.00	258.0	5	2	210	42.10	349.5
5KP220A	5KP220CA	246.00	272.0	5	2	220	50.00	356.0
5KP250A	5KP250CA	279.00	309.0	5	2	250	45.40	405.0
5KP300A	5KP300CA	335.00	371.0	5	2	300	53.50	486.0
5KP350A	5KP350CA	391.00	432.0	5	2	350	48.40	567.0
5KP400A	5KP400CA	447.00	494.0	5	2	400	7.72	648.0
5KP440A	5KP440CA	492.00	543.0	5	2	440	7.01	713.0

Note:

1. Suffix 'A ' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices
3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double