东沃电子
DOWOSEMI

5KP Series

Reverse Voltage: 5.0 to 440 V
Peak Pulse Power: 5000 W

Axial Lead
Transient Voltage Suppressors

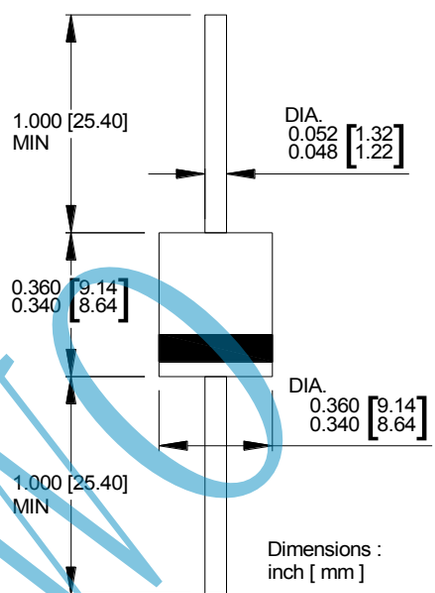
Features

- 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

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 °C	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	°C

Note:

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

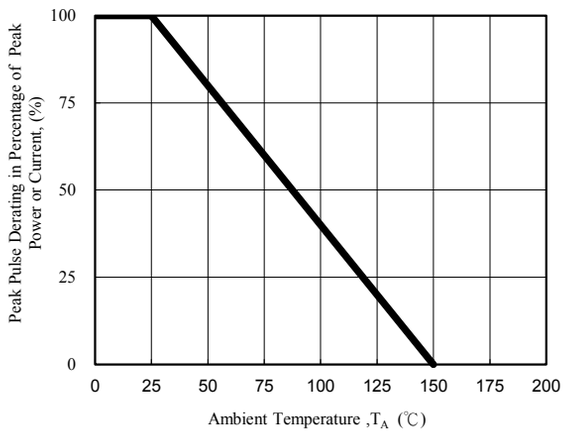


Fig. 1 - Pulse Derating Curve

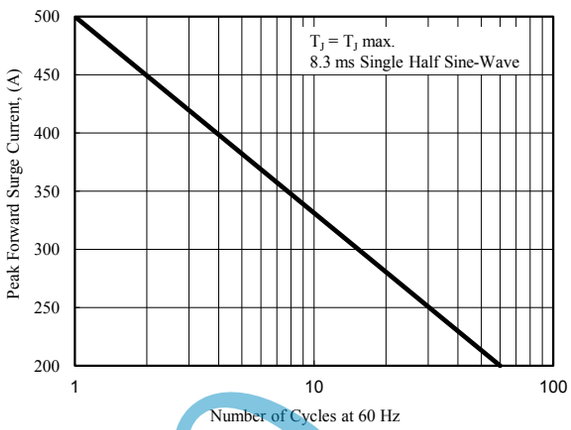


Fig. 2 - Maximum Non-Repetitive Surge Current

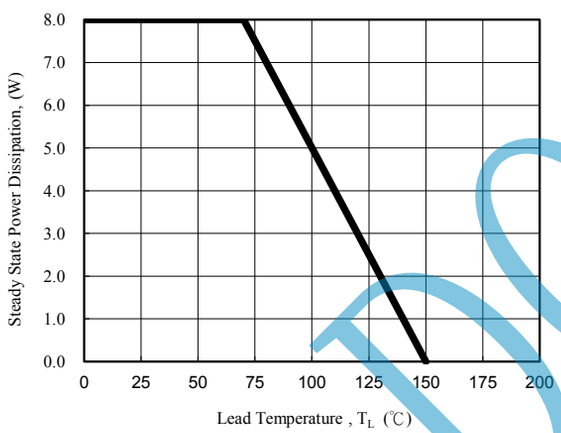


Fig. 3 - Steady State Power Derating Curve

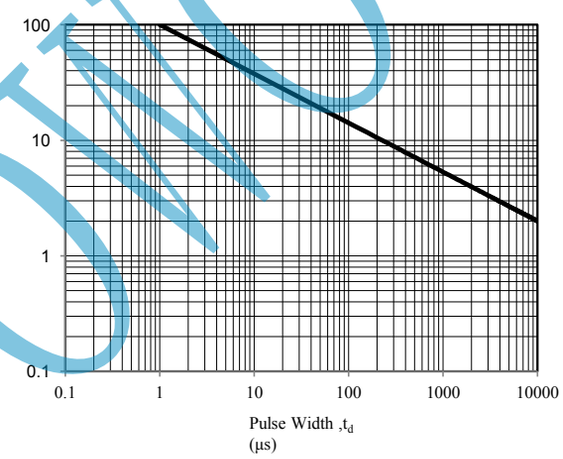


Fig. 4 - Peak Pulse Power Rating Curve

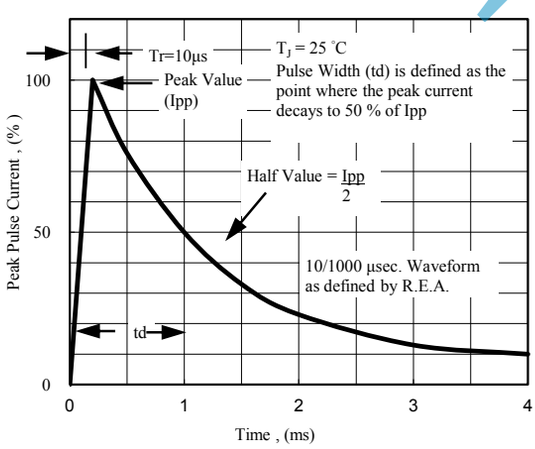


Fig. 5 - Pulse Waveform

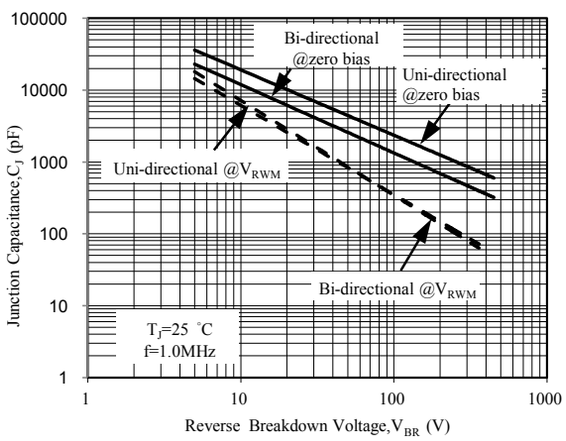


Fig. 6 - Typical Junction Capacitance

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)				
5KP5.0A	5KP5.0CA	6.40	7.00	50	5000	5	543.5	9.2
5KP6.0A	5KP6.0CA	6.67	7.37	50	5000	6	485.4	10.3
5KP6.5A	5KP6.5CA	7.22	7.98	50	2000	7	446.4	11.2
5KP7.0A	5KP7.0CA	7.78	8.60	50	1000	7	416.7	12.0
5KP7.5A	5KP7.5CA	8.33	9.21	5	250	8	387.6	12.9
5KP8.0A	5KP8.0CA	8.89	9.83	5	150	8	367.6	13.6
5KP8.5A	5KP8.5CA	9.44	10.40	5	50	9	347.2	14.4
5KP9.0A	5KP9.0CA	10.00	11.10	5	20	9	324.7	15.4
5KP10A	5KP10CA	11.10	12.30	5	15	10	294.1	17.0
5KP11A	5KP11CA	12.20	13.50	5	2	11	274.7	18.2
5KP12A	5KP12CA	13.30	14.70	5	2	12	251.3	19.9
5KP13A	5KP13CA	14.40	15.90	5	2	13	232.6	21.5
5KP14A	5KP14CA	15.60	17.20	5	2	14	215.5	23.2
5KP15A	5KP15CA	16.70	18.50	5	2	15	204.9	24.4
5KP16A	5KP16CA	17.80	19.70	5	2	16	192.3	26.0
5KP17A	5KP17CA	18.90	20.90	5	2	17	181.2	27.6
5KP18A	5KP18CA	20.00	22.10	5	2	18	171.2	29.2
5KP19A	5KP19CA	21.10	23.30	5	2	19	162.4	30.8
5KP20A	5KP20CA	22.20	24.50	5	2	20	154.3	32.4
5KP22A	5KP22CA	24.40	26.90	5	2	22	140.8	35.5
5KP24A	5KP24CA	26.70	29.50	5	2	24	128.5	38.9
5KP26A	5KP26CA	28.90	31.90	5	2	26	118.8	42.1
5KP28A	5KP28CA	31.10	34.40	5	2	28	110.1	45.4
5KP30A	5KP30CA	33.30	36.80	5	2	30	103.3	48.4
5KP33A	5KP33CA	36.70	40.60	5	2	33	93.8	53.3
5KP36A	5KP36CA	40.00	44.20	5	2	36	86.1	58.1
5KP40A	5KP40CA	44.40	49.10	5	2	40	77.5	64.5
5KP43A	5KP43CA	47.80	52.80	5	2	43	72.0	69.4
5KP45A	5KP45CA	50.00	55.30	5	2	45	68.8	72.7
5KP48A	5KP48CA	53.30	58.90	5	2	48	64.6	77.4
5KP51A	5KP51CA	56.70	62.70	5	2	51	60.7	82.4
5KP54A	5KP54CA	60.00	66.30	5	2	54	57.4	87.1
5KP58A	5KP58CA	64.40	71.20	5	2	58	53.4	93.6
5KP60A	5KP60CA	66.70	73.70	5	2	60	51.7	96.8
5KP64A	5KP64CA	71.10	78.60	5	2	64	48.5	103.0
5KP70A	5KP70CA	77.80	86.00	5	2	70	44.2	113.0
5KP75A	5KP75CA	83.30	92.10	5	2	75	41.3	121.0
5KP78A	5KP78CA	86.70	95.80	5	2	78	39.7	126.0
5KP80A	5KP80CA	88.80	97.60	5	2	80	38.6	129.6
5KP85A	5KP85CA	94.40	104.00	5	2	85	36.5	137.0
5KP90A	5KP90CA	100.00	111.00	5	2	90	34.2	146.0
5KP100A	5KP100CA	111.00	123.00	5	2	100	30.9	162.0
5KP110A	5KP110CA	122.00	135.00	5	2	110	28.2	177.0
5KP120A	5KP120CA	133.00	147.00	5	2	120	25.9	193.0
5KP130A	5KP130CA	144.00	159.00	5	2	130	23.9	209.0
5KP140A	5KP140CA	155.00	171.00	5	2	140	22.0	226.8

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)				
5KP150A	5KP150CA	167.00	185.0	5	2	150	20.58	243.0
5KP160A	5KP160CA	178.00	197.0	5	2	160	19.31	259.0
5KP170A	5KP170CA	189.00	209.0	5	2	170	18.18	275.0
5KP180A	5KP180CA	200.00	220.0	5	2	180	17.15	291.6
5KP190A	5KP190CA	211.00	232.0	5	2	190	16.24	307.8
5KP200A	5KP200CA	222.00	246.0	5	2	200	15.43	324.0
5KP210A	5KP210CA	233.00	258.0	5	2	210	14.31	349.5
5KP220A	5KP220CA	244.00	270.0	5	2	220	14.04	356.0
5KP250A	5KP250CA	277.00	306.0	5	2	250	12.35	405.0
5KP300A	5KP300CA	335.00	371.0	5	2	300	10.29	486.0
5KP350A	5KP350CA	391.00	432.0	5	2	350	8.82	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

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