

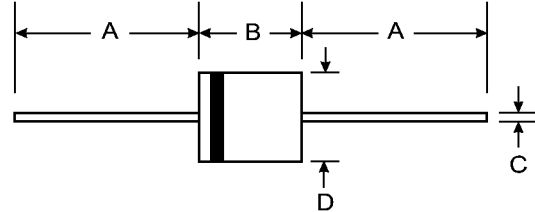


5KP5.0 - 5KP240CA(S)

5000W TRANSIENT VOLTAGE SUPPRESSOR

Features

- 5000W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Uni- and Bi-directional Version Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0



Mechanical Data

- Case: 5KP/5KW, Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Marking: Type Number
- Weight: 2.1 grams (approx.)

Dim	5KP		5KW	
	Min	Max	Min	Max
A	25.40	—	25.40	—
B	—	8.60	—	9.00
C	0.95	1.07	1.20	1.30
D	—	9.53	—	8.00
All Dimensions in mm				

"S" Suffix Designates 5KW Package
No "S" Designates 5KP Package

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above $T_A = 25^\circ\text{C}$) (Note 1)	P_{PK}	5000	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	I_{FSM}	400	A
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$, Lead Lengths @ 9.5mm(Note 1)	P_D	8.0	W
Instantaneous Forward Voltage @ $I_{PP} = 100\text{A}$ (Notes 1, 2, & 3)	V_F	3.5	V
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. Valid provided that the terminals are maintained at a distance of 10mm from case at 25°C .
 2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
 3. Unidirectional units only.

Type Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current I_T (mA)	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Max. Voltage Temp. Variation of V_{BR}
		V_{RWM} (V)	Min (V)					
5KP5.0(C)	5.0	6.40	7.30	50	5000	9.6	520.0	4.0
5KP5.0(C)A	5.0	6.40	7.00	50	5000	9.2	543.0	4.0
5KP6.0(C)	6.0	6.67	8.15	50	5000	11.4	439.0	4.0
5KP6.0(C)A	6.0	6.67	7.37	50	5000	10.3	485.0	4.0
5KP6.5(C)	6.5	7.22	8.82	50	2000	12.3	407.0	4.0
5KP6.5(C)A	6.5	7.22	7.98	50	2000	11.2	447.0	4.0
5KP7.0(C)	7.0	7.78	9.51	50	1000	13.3	378.0	5.0
5KP7.0(C)A	7.0	7.78	8.60	50	1000	12.0	417.0	5.0
5KP7.5(C)	7.5	8.33	10.20	5.0	250	14.3	350.0	6.0
5KP7.5(C)A	7.5	8.33	9.21	5.0	250	12.9	388.0	6.0
5KP8.0(C)	8.0	8.89	10.90	5.0	150	15.0	333.0	6.0
5KP8.0(C)A	8.0	8.89	9.83	5.0	150	13.6	367.0	6.0
5KP8.5(C)	8.5	9.44	11.50	5.0	50	15.9	314.0	7.0
5KP8.5(C)A	8.5	9.44	10.40	5.0	50	14.4	347.0	7.0
5KP9.0(C)	9.0	10.00	12.20	5.0	20	16.9	295.0	8.0
5KP9.0(C)A	9.0	10.00	11.10	5.0	20	15.4	325.0	8.0
5KP10(C)	10.0	11.10	13.60	5.0	15	18.8	266.0	9.0
5KP10(C)A	10.0	11.10	12.30	5.0	15	17.0	294.0	9.0
5KP11(C)	11.0	12.20	14.90	5.0	10	20.1	249.0	10
5KP11(C)A	11.0	12.20	13.50	5.0	10	18.2	274.0	10
5KP12(C)	12.0	13.30	16.30	5.0	10	22.0	227.0	11
5KP12(C)A	12.0	13.30	14.70	5.0	10	19.9	251.0	11
5KP13(C)	13.0	14.40	17.60	5.0	10	23.8	210.0	12
5KP13(C)A	13.0	14.40	15.90	5.0	10	21.5	232.0	12
5KP14(C)	14.0	15.60	19.10	5.0	10	25.8	194.0	13
5KP14(C)A	14.0	15.60	17.20	5.0	10	23.2	215.0	13
5KP15(C)	15.0	16.70	20.40	5.0	10	26.9	188.0	15
5KP15(C)A	15.0	16.70	18.50	5.0	10	24.4	206.0	15
5KP16(C)	16.0	17.80	21.80	5.0	10	28.8	176.0	18
5KP16(C)A	16.0	17.80	19.70	5.0	10	26.0	192.0	16
5KP17(C)	17.0	18.90	23.10	5.0	10	30.5	164.0	19
5KP17(C)A	17.0	18.90	20.90	5.0	10	27.6	181.0	18
5KP18(C)	18.0	20.00	24.40	5.0	10	32.2	155.0	20
5KP18(C)A	18.0	20.00	22.10	5.0	10	29.2	172.0	19
5KP20(C)	20.0	22.20	27.10	5.0	10	35.8	139.0	24
5KP20(C)A	20.0	22.20	24.50	5.0	10	32.4	154.0	22
5KP22(C)	22.0	24.40	29.80	5.0	10	39.4	127.0	27
5KP22(C)A	22.0	24.40	26.90	5.0	10	35.5	141.0	24
5KP24(C)	24.0	26.70	32.60	5.0	10	43.0	116.0	30
5KP24(C)A	24.0	26.70	29.50	5.0	10	38.9	128.0	27
5KP26(C)	26.0	28.90	35.30	5.0	10	46.6	107.0	33
5KP26(C)A	26.0	28.90	31.90	5.0	10	42.1	119.0	29
5KP28(C)	28.0	31.10	38.00	5.0	10	50.1	99.0	34
5KP28(C)A	28.0	31.10	34.40	5.0	10	45.5	110.0	30
5KP30(C)	30.0	33.30	40.70	5.0	10	53.5	93.0	38
5KP30(C)A	30.0	33.30	36.80	5.0	10	48.4	103.0	35

- Notes: 4. Suffix C denotes Bi-directional device. Suffix A denotes standard product with tighter tolerance.
5. V_{BR} measured with I_T current pulse = 300 μ s
6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

Type Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current I_T (mA)	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Max. Voltage Temp. Variation of V_{BR}
		V_{RWM} (V)	Min (V)					
5KP33(C)	33.0	36.70	44.90	5.0	10	59.0	86.0	41
5KP33(C)A	33.0	36.70	40.60	5.0	10	53.3	94.0	38
5KP36(C)	36.0	40.00	48.90	5.0	10	64.3	78.0	45
5KP36(C)A	36.0	40.00	44.20	5.0	10	58.1	86.0	40
5KP40(C)	40.0	44.40	54.30	5.0	10	71.4	70.0	50
5KP40(C)A	40.0	44.40	49.10	5.0	10	64.5	78.0	45
5KP43(C)	43.0	47.80	58.40	5.0	10	76.7	65.0	54
5KP43(C)A	43.0	47.80	52.80	5.0	10	69.4	72.0	49
5KP45(C)	45.0	50.00	61.10	5.0	10	80.3	62.0	57
5KP45(C)A	45.0	50.00	55.30	5.0	10	72.7	69.0	51
5KP48(C)	48.0	53.30	65.10	5.0	10	85.5	58.0	62
5KP48(C)A	48.0	53.30	58.90	5.0	10	77.4	65.0	55
5KP51(C)	51.0	56.70	69.30	5.0	10	91.1	55.0	65
5KP51(C)A	51.0	56.70	62.70	5.0	10	82.4	61.0	60
5KP54(C)	54.0	60.00	73.30	5.0	10	96.3	52.0	70
5KP54(C)A	54.0	60.00	66.30	5.0	10	87.1	57.0	64
5KP58(C)	58.0	64.40	78.70	5.0	10	103.0	49.0	77
5KP58(C)A	58.0	64.40	71.20	5.0	10	93.6	53.0	69
5KP60(C)	60.0	66.70	81.50	5.0	10	107.0	47.0	79
5KP60(C)A	60.0	66.70	73.70	5.0	10	96.8	52.0	70
5KP64(C)	64.0	71.10	86.90	5.0	10	114.0	44.0	85
5KP64(C)A	64.0	71.10	78.60	5.0	10	103.0	49.0	75
5KP70(C)	70.0	77.80	95.10	5.0	10	125.0	40.0	93
5KP70(C)A	70.0	77.80	86.00	5.0	10	113.0	44.0	84
5KP75(C)	75.0	83.30	102.00	5.0	10	134.0	37.0	100
5KP75(C)A	75.0	83.30	92.10	5.0	10	121.0	41.0	90
5KP78(C)	78.0	86.70	106.00	5.0	10	139.0	36.0	104
5KP78(C)A	78.0	86.70	95.80	5.0	10	126.0	40.0	94
5KP85(C)	85.0	94.40	115.00	5.0	10	151.0	33.0	113
5KP85(C)A	85.0	94.40	104.00	5.0	10	137.0	36.0	102
5KP90(C)	90.0	100.00	122.00	5.0	10	160.0	31.0	120
5KP90(C)A	90.0	100.00	111.00	5.0	10	146.0	34.0	109
5KP100(C)	100.0	111.00	136.00	5.0	10	179.0	28.0	134
5KP100(C)A	100.0	111.00	123.00	5.0	10	162.0	31.0	122
5KP110(C)	110.0	122.00	149.00	5.0	10	196.0	26.0	147
5KP110(C)A	110.0	122.00	135.00	5.0	10	177.0	28.0	132
5KP120(C)	120.0	133.00	163.00	5.0	10	215.0	23.0	158
5KP120(C)A	120.0	133.00	148.00	5.0	10	194.0	25.0	140
5KP150(C)	150.0	166.00	204.00	5.0	10	268.0	18.5	200
5KP150(C)A	150.0	166.00	184.00	5.0	10	242.0	20.0	180
5KP180(C)	180.0	200.00	244.00	5.0	10	320.0	15.0	240
5KP180(C)A	180.0	200.00	222.00	5.0	10	292.0	17.0	218
5KP240(C)	240.0	266.00	326.00	5.0	10	430.0	11.5	316
5KP240(CA)	240.0	266.00	296.00	5.0	10	388.0	12.5	280

Notes: 4. Suffix C denotes Bi-directional device. Suffix A denotes standard product with tighter tolerance.
5. V_{BR} measured with I_T current pulse = 300 μ s
6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

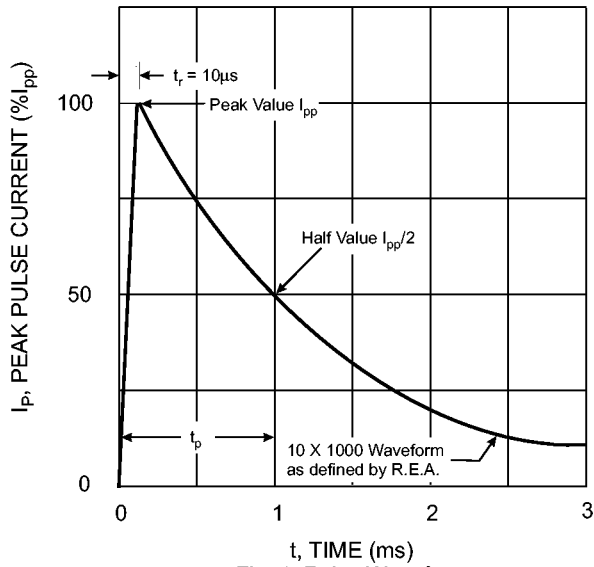


Fig. 1 Pulse Waveform

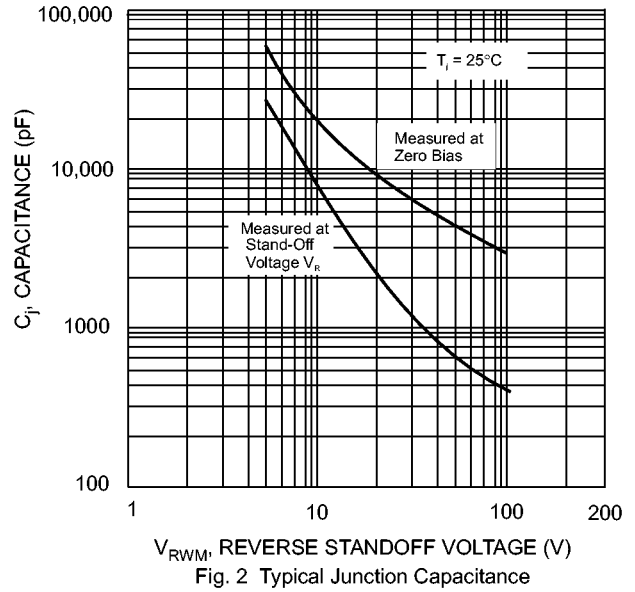


Fig. 2 Typical Junction Capacitance

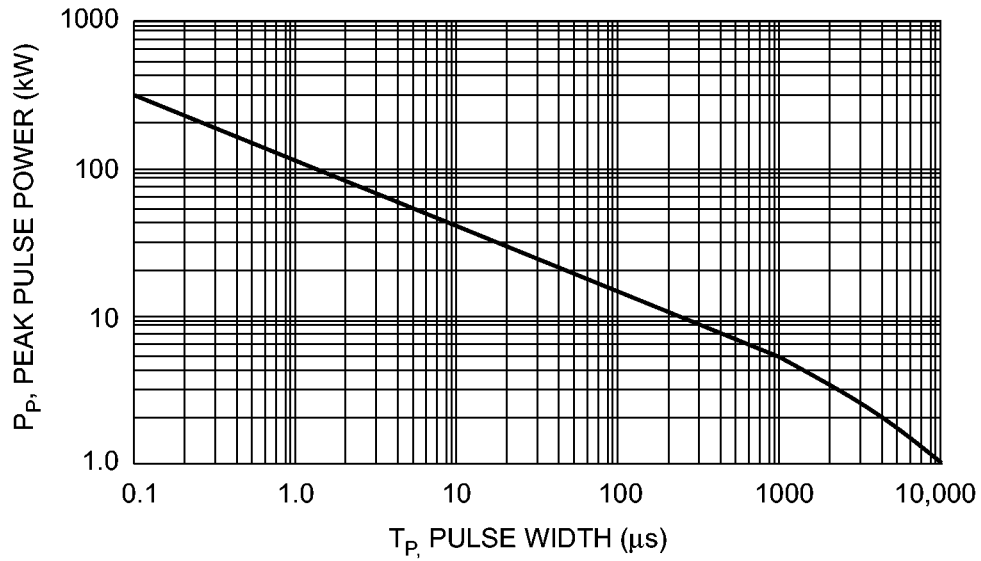


Fig. 3 Pulse Derating Curve

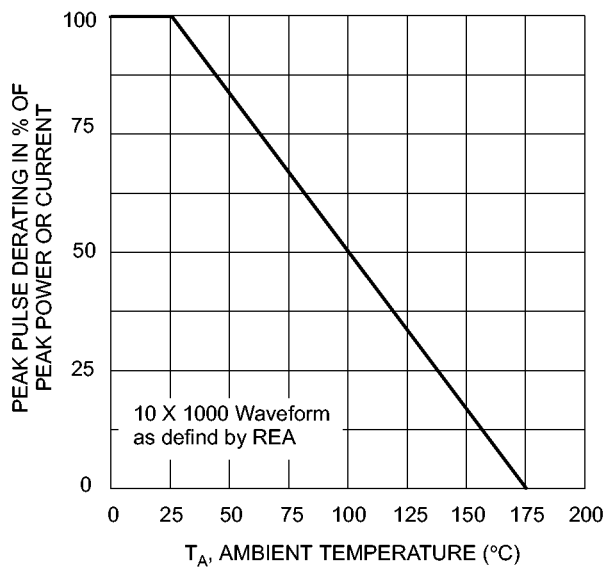


Fig. 4 Pulse Derating Curve

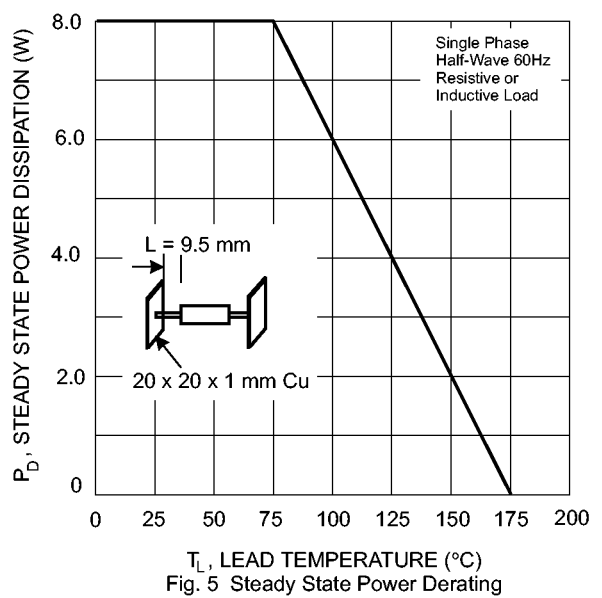


Fig. 5 Steady State Power Derating