

5KP SERIES

Transient Voltage Suppressor Rectifier

Features

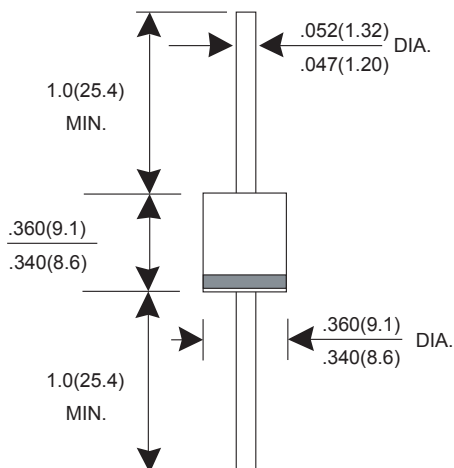
- ★ Glass passivated chip
- ★ Low profile package
- ★ 5000W peak pulse power capability at 10/1000 us waveform, repetition rate (duty cycle): 0.01%
- ★ Low leakage
- ★ Excellent clamping capability
- ★ Fast response time
- ★ RoHS compliant

Mechanical Data

- ★ Case: P-600, Molded plastic has UL flammability classification 94V-0
- ★ Terminal: Solder plated, solderable per MIL-STD-202, Method 208
- ★ Polarity: Cathode band denotes uni-directional device except bi-directional device
- ★ Weight: 2.1 gram

Working Voltage 5.0 to 440 V
Power Dissipation 5000 Watts

P-600



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

T_A= 25°C unless otherwise noted

PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation at T _A =25°C by 10/1000us waveform fig.1 (Note 1,2)	PPPM	5000	Watts
Peak Forward Surge Current, 8.3ms single Half sine-wave super imposed on rated load (Note 3)	I _{FSM}	400	A
Steady State Power Dissipation at T _L =75°C	P _D	8.0	Watts
Maximum Instantaneous forward voltage at 100A for unidirectional devices only (Note 4)	V _F	3.5 / 5.0	V
Typical Thermal Resistance Junction to Ambient	R _{θJA}	40	°C/W
Typical Thermal Resistance Junction to Lead	R _{θJL}	8.0	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to +175	°C

NOTES : (1) Non-repetitive current pulse, per fig. 3 and derated above T_A=25 °C per fig. 2.
(2) Mounted on 20 x 20 x 1.0 mm copper pads to each terminal
(3) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle= 4 pulses per minute maximum
(4) V_F<3.5V for V_{BR}≤200V and V_F<5.0V for V_{BR}≥201V

5KP SERIES

Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage I_R $@V_{RWM}$ (μA)	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)	$I_T(\text{mA})$				
5KP5.0A	5KP5.0CA	6.40	7.00	50	5000	5	543.48	9.2
5KP6.0A	5KP6.0CA	6.67	7.37	50	5000	6	485.44	10.3
5KP6.5A	5KP6.5CA	7.22	7.98	50	2000	6.5	446.43	11.2
5KP7.0A	5KP7.0CA	7.78	8.60	50	1000	7	416.67	12.0
5KP7.5A	5KP7.5CA	8.33	9.21	5	250	7.5	387.60	12.9
5KP8.0A	5KP8.0CA	8.89	9.83	5	150	8	367.65	13.6
5KP8.5A	5KP8.5CA	9.44	10.40	5	50	8.5	347.22	14.4
5KP9.0A	5KP9.0CA	10.00	11.10	5	20	9	324.68	15.4
5KP10A	5KP10CA	11.10	12.30	5	15	10	294.12	17.0
5KP11A	5KP11CA	12.20	13.50	5	2	11	274.73	18.2
5KP12A	5KP12CA	13.30	14.70	5	2	12	251.26	19.9
5KP13A	5KP13CA	14.40	15.90	5	2	13	232.56	21.5
5KP14A	5KP14CA	15.60	17.20	5	2	14	215.52	23.2
5KP15A	5KP15CA	16.70	18.50	5	2	15	204.92	24.4
5KP16A	5KP16CA	17.80	19.70	5	2	16	192.31	26.0
5KP17A	5KP17CA	18.90	20.90	5	2	17	181.16	27.6
5KP18A	5KP18CA	20.00	22.10	5	2	18	171.23	29.2
5KP20A	5KP20CA	22.20	24.50	5	2	20	154.32	32.4
5KP22A	5KP22CA	24.40	26.90	5	2	22	140.85	35.5
5KP24A	5KP24CA	26.70	29.50	5	2	24	128.53	38.9
5KP26A	5KP26CA	28.90	31.90	5	2	26	118.76	42.1
5KP28A	5KP28CA	31.10	34.40	5	2	28	110.13	45.4
5KP30A	5KP30CA	33.30	36.80	5	2	30	103.31	48.4
5KP33A	5KP33CA	36.70	40.60	5	2	33	93.81	53.3
5KP36A	5KP36CA	40.00	44.20	5	2	36	86.06	58.1
5KP40A	5KP40CA	44.40	49.10	5	2	40	77.52	64.5
5KP43A	5KP43CA	47.80	52.80	5	2	43	72.05	69.4
5KP45A	5KP45CA	50.00	55.30	5	2	45	68.78	72.7
5KP48A	5KP48CA	53.30	58.90	5	2	48	64.60	77.4
5KP51A	5KP51CA	56.70	62.70	5	2	51	60.68	82.4
5KP54A	5KP54CA	60.00	66.30	5	2	54	57.41	87.1
5KP58A	5KP58CA	64.40	71.20	5	2	58	53.42	93.6
5KP60A	5KP60CA	66.70	73.70	5	2	60	51.65	96.8
5KP64A	5KP64CA	71.10	78.60	5	2	64	48.54	103.0
5KP70A	5KP70CA	77.80	86.00	5	2	70	44.25	113.0
5KP75A	5KP75CA	83.30	92.10	5	2	75	41.32	121.0
5KP78A	5KP78CA	86.70	95.80	5	2	78	39.68	126.0
5KP85A	5KP85CA	94.40	104.00	5	2	85	36.50	137.0
5KP90A	5KP90CA	100.00	111.00	5	2	90	34.25	146.0
5KP100A	5KP100CA	111.00	123.00	5	2	100	30.86	162.0
5KP110A	5KP110CA	122.00	135.00	5	2	110	28.25	177.0
5KP120A	5KP120CA	133.00	147.00	5	2	120	25.91	193.0
5KP130A	5KP130CA	144.00	159.00	5	2	130	23.92	209.0
5KP150A	5KP150CA	167.00	185.00	5	2	150	20.58	243.0
5KP160A	5KP160CA	178.00	197.00	5	2	160	19.31	259.0
5KP170A	5KP170CA	189.00	209.00	5	2	170	18.18	275.0
5KP180A	5KP180CA	200.00	220.00	5	2	180	17.15	291.6
5KP190A	5KP190CA	211.00	232.00	5	2	190	16.24	307.8
5KP200A	5KP200CA	224.00	247.00	5	2	200	15.43	324.0
5KP210A	5KP210CA	233.00	258.00	5	2	210	14.31	349.5
5KP220A	5KP220CA	246.00	272.00	5	2	220	14.04	356.0
5KP250A	5KP250CA	279.00	309.00	5	2	250	12.35	405.0
5KP300A	5KP300CA	335.00	371.00	5	2	300	10.29	486.0
5KP350A	5KP350CA	391.00	432.00	5	2	350	8.82	567.0
5KP400A	5KP400CA	447.00	494.00	5	2	400	7.72	648.0
5KP440A	5KP440CA	492.00	543.00	5	2	440	7.01	713.0

Suffix C: Bi-Directional

For bi-directional devices $V_{RWM} \leq 10\text{V}$, the I_R limit is double.

RATINGS AND CHARACTERISTIC CURVES 5KP SERIES

FIG.1 - PULSE RATING CURVE

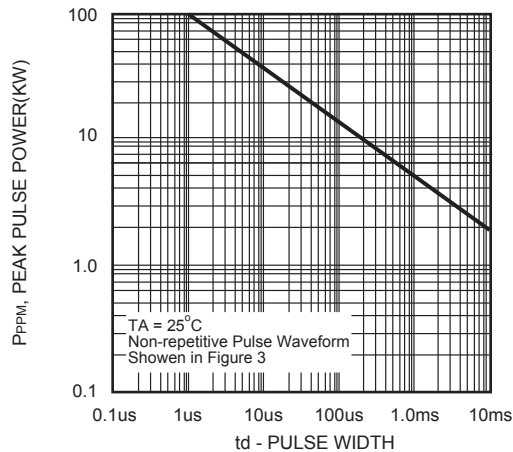


FIG.2 - PULSE DERATING CURVE

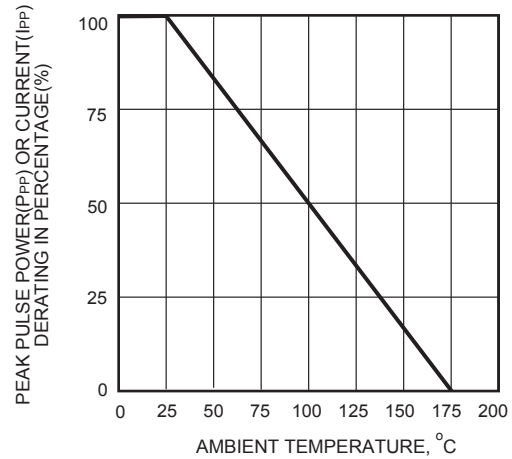


FIG.3 - PULSE WAVEFORM

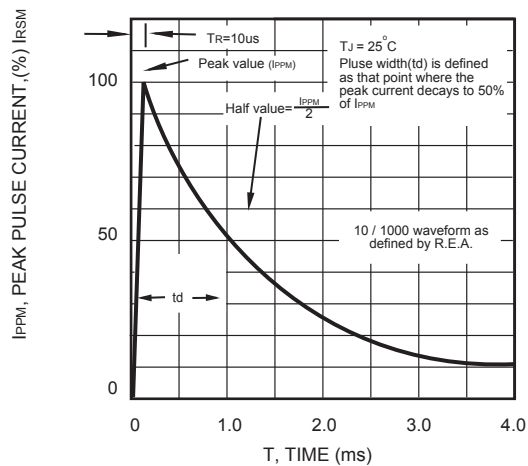


FIG.4 - TYPICAL JUNCTION CAPACITANCE

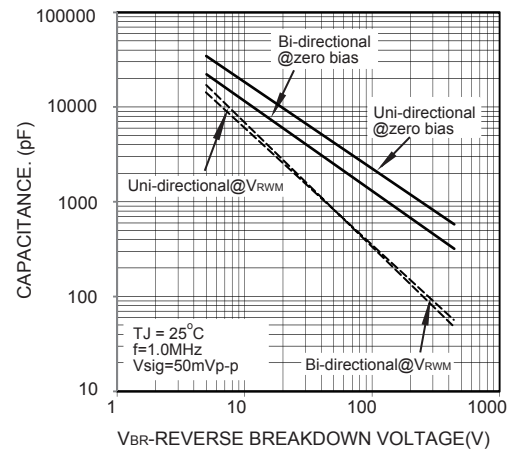


FIG.5 - STEADY STATE POWER DERATING CURVE

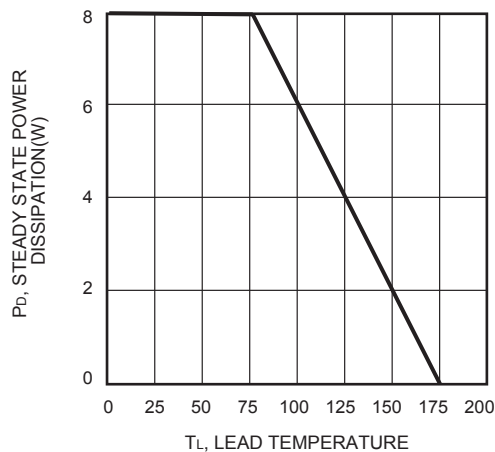


FIG.6 - MAXIMUM NON-REPETITIVE SURGE CURRENT

