

MDE Semiconductor, Inc.

78-150 Calle Tampico, Unit 210, La Quinta, CA, U.S.A. 92253 Tel: 760-564-8656 • Fax: 760-564-2414

5KP SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE-5.0 TO 180.0 Volts

5000 Watt Peak Pulse Power

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O
- Glass passivated junction
- 5000W Peak Pulse Power capability on 10/1000 μ s waveform
- Glass passivated junction
- Low incremental surge resistance
- Excellent clamping capability
- Repetition rate (duty cycle): 0.05%
- Fast response time: typically less than 1.0 ps from 0 volts to BV
- Typical IR less than 1 μ A above 10V
- High temperature soldering guaranteed: 265°C/10 seconds/ .375", (9.5mm) lead length, 5lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass passivated junction

Terminals: Plated Axial leads, solderable per

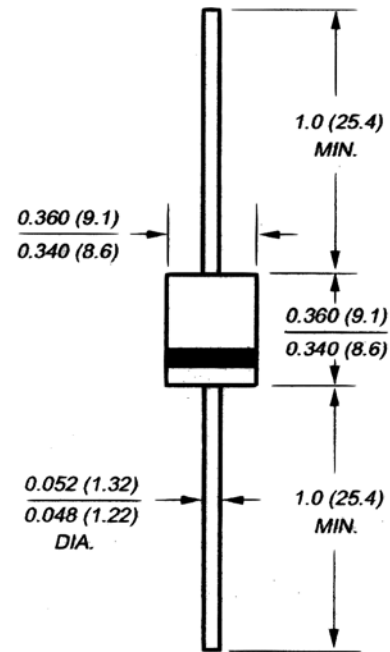
MIL-STD-750, Method 2026

Polarity: Color band denoted positive end (cathode) except Bipolar

Mounting Position: Any

Weight: 0.07 ounces, 2.1 gram

Case Style P600



Dimensions in inches and (millimeters)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 5KP5.0 thru types 5KP180 (e.g. 5KP5.0C, 5KP180CA)

Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 μ s waveform (NOTE 1, Fig.1)	P _{ppm}	Minimum 5000	Watts
Peak Pulse Current of on 10/1000 μ s waveform (Note 1, Fig 3)	I _{ppm}	SEE TABLE 1	Amps
Steady State Power Dissipation at T _L = 75°C Lead lengths .375", 9.5mm (Note 2)	P _{m(AV)}	8.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method)(Note 3)	I _{FSM}	400	Amps
Operating and Storage Temperature Range	T _j , T _{stg}	-55 +175	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above Ta=25 °C per Fig.2.
2. Mounted on Copper Pad area of 0.8x0.8" (20x20mm) per Fig.5.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pulses per minutes maximum.

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RATING AND CHARACTERISTIC CURVES 5KP SERIES

Fig. 1 - Peak Pulse Power Rating Curve

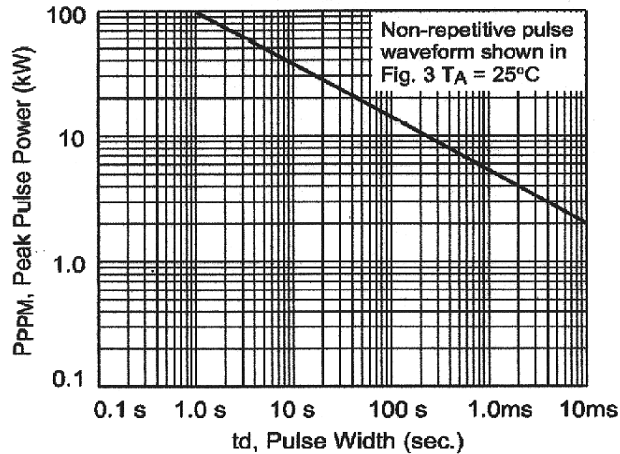


Fig. 2 - Pulse Derating Curve

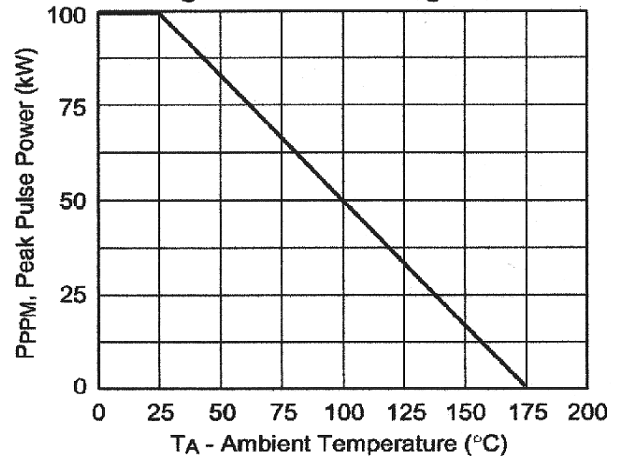


Fig. 3 - Pulse Waveform

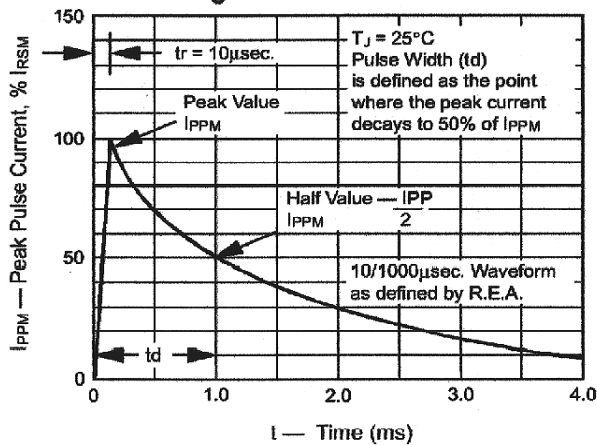


Fig. 4 - Typical Junction Capacitance

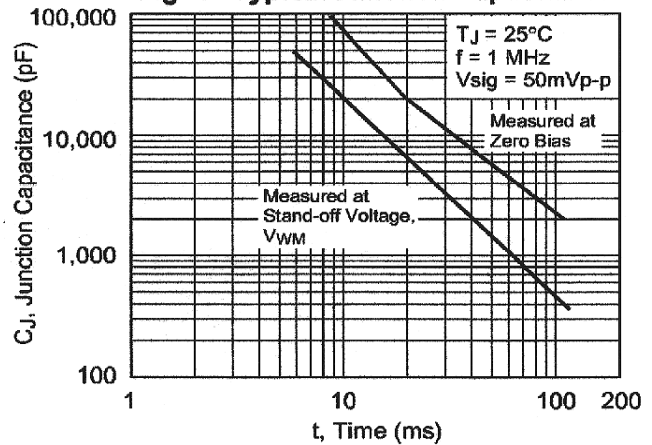


Fig. 5 - Steady State Power Derating Curve

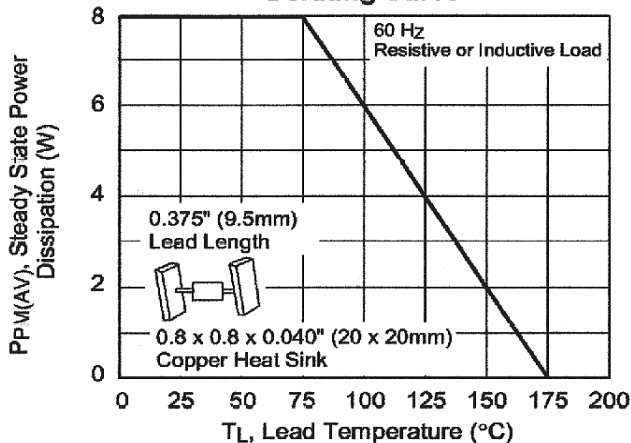
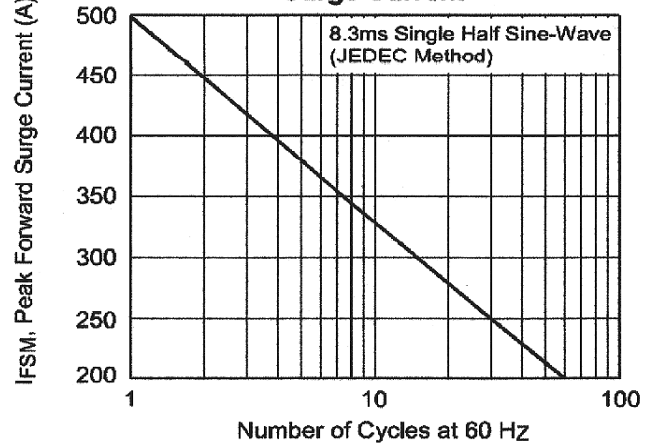


Fig. 6 - Maximum Non-repetitive Forward Surge Current



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5KP5.0	5.00	6.40	7.30	50	9.6	521.0	5000
5KP5.0A	5.00	6.40	7.00	50	9.2	543.0	5000
5KP6.0	6.00	6.67	8.15	50	11.4	439.0	5000
5KP6.0A	6.00	6.67	7.37	50	10.3	485.0	5000
5KP6.5	6.50	7.22	8.82	50	12.3	407.0	2000
5KP6.5A	6.50	7.22	7.98	50	11.2	446.0	2000
5KP7.0	7.00	7.78	9.51	50	13.3	376.0	1000
5KP7.0A	7.00	7.78	8.60	50	12.0	417.0	1000
5KP7.5	7.50	8.33	10.20	5	14.3	350.0	250
5KP7.5A	7.50	8.33	9.21	5	12.9	388.0	250
5KP8.0	8.00	8.89	10.90	5	15.0	333.0	150
5KP8.0A	8.00	8.89	9.83	5	13.6	368.0	150
5KP8.5	8.50	9.44	11.50	5	15.9	314.0	50
5KP8.5A	8.50	9.44	10.40	5	14.4	347.0	50
5KP9.0	9.00	10.00	12.20	5	16.9	296.0	20
5KP9.0A	9.00	10.00	11.10	5	15.4	325.0	20
5KP10	10.00	11.10	13.60	5	18.8	266.0	15
5KP10A	10.00	11.10	12.30	5	17.0	294.0	15
5KP11	11.00	12.20	14.90	5	20.1	249.0	10
5KP11A	11.00	12.20	13.50	5	18.2	275.0	10
5KP12	12.00	13.30	16.30	5	22.0	227.0	10
5KP12A	12.00	13.30	14.70	5	19.9	251.0	10
5KP13	13.00	14.40	17.60	5	23.8	210.0	10
5KP13A	13.00	14.40	15.90	5	21.5	233.0	10
5KP14	14.00	15.60	19.10	5	25.8	194.0	10
5KP14A	14.00	15.60	17.20	5	23.2	216.0	10
5KP15	15.00	16.70	20.40	5	26.9	186.0	10
5KP15A	15.00	16.70	18.50	5	24.4	205.0	10
5KP16	16.00	17.80	21.80	5	28.8	174.0	10
5KP16A	16.00	17.80	19.70	5	26.0	192.0	10
5KP17	17.00	18.90	23.10	5	30.5	164.0	10
5KP17A	17.00	18.90	20.90	5	27.6	181.0	10
5KP18	18.00	20.00	24.40	5	32.2	155.0	10
5KP18A	18.00	20.00	22.10	5	29.2	171.0	10
5KP20	20.00	22.20	27.10	5	35.8	140.0	10
5KP20A	20.00	22.20	24.50	5	32.4	154.0	10
5KP22	22.00	24.40	29.80	5	39.4	127.0	10
5KP22A	22.00	24.40	26.90	5	35.5	141.0	10
5KP24	24.00	26.70	32.60	5	43.0	116.0	10
5KP24A	24.00	26.70	29.50	5	38.9	129.0	10
5KP26	26.00	28.90	35.30	5	46.6	107.0	10
5KP26A	26.00	28.90	31.90	5	42.1	119.0	10
5KP28	28.00	31.10	38.00	5	50.1	100.0	10
5KP28A	28.00	31.10	34.40	5	45.4	110.0	10
5KP30	30.00	33.30	40.70	5	53.5	93.5	10
5KP30A	30.00	33.30	36.80	5	48.4	103.0	10
5KP33	33.00	36.70	44.90	5	59.0	84.7	10
5KP33A	33.00	36.70	40.60	5	53.3	93.8	10

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5KP36	36.00	40.00	48.90	5	64.3	77.8	10
5KP36A	36.00	40.00	44.20	5	58.1	86.1	10
5KP40	40.00	44.40	54.30	5	71.4	70.0	10
5KP40A	40.00	44.40	49.10	5	64.5	77.5	10
5KP43	43.00	47.80	58.40	5	76.7	65.2	10
5KP43A	43.00	47.80	52.80	5	69.4	72.0	10
5KP45	45.00	50.00	61.10	5	80.3	62.3	10
5KP45A	45.00	50.00	55.30	5	72.7	68.8	10
5KP48	48.00	53.30	65.20	5	85.5	58.5	10
5KP48A	48.00	53.30	58.90	5	77.4	64.6	10
5KP51	51.00	56.70	69.30	5	91.1	54.9	10
5KP51A	51.00	56.70	62.70	5	82.4	60.7	10
5KP54A	54.00	60.00	73.30	5	96.3	51.9	10
5KP54A	54.00	60.00	66.30	5	87.1	57.4	10
5KP58	58.00	64.40	78.70	5	103.0	48.4	10
5KP58A	58.00	64.40	71.20	5	93.6	53.4	10
5KP60	60.00	66.70	81.50	5	107.0	46.7	10
5KP60A	60.00	66.70	73.70	5	96.8	51.7	10
5KP64	64.00	71.10	86.90	5	114.0	43.9	10
5KP64A	64.00	71.10	78.60	5	103.0	48.5	10
5KP70	70.00	77.80	95.10	5	125.0	40.0	10
5KP70A	70.00	77.80	86.00	5	113.0	44.2	10
5KP75	75.00	83.30	102.00	5	134.0	37.3	10
5KP75A	75.00	83.30	92.10	5	121.0	41.3	10
5KP78	78.00	86.70	106.00	5	139.0	36.0	10
5KP78A	78.00	86.70	95.80	5	126.0	39.7	10
5KP85	85.00	94.40	115.00	5	151.0	33.1	10
5KP85A	85.00	94.40	104.00	5	137.0	36.5	10
5KP90	90.00	100.00	122.00	5	160	31.3	10
5KP90A	90.00	100.00	111.00	5	146	34.2	10
5KP100	100.00	111.00	136.00	5	179	27.9	10
5KP100A	100.00	111.00	123.00	5	162	30.9	10
5KP110	110.00	122.00	149.00	5	196	25.5	10
5KP110A	110.00	122.00	135.00	5	177	28.2	10
5KP120	120.00	133.00	163.00	5	214	23.4	10
5KP120A	120.00	133.00	147.00	5	193	26	10
5KP130	130.00	144.00	176.00	5	230	21.8	10
5KP130A	130.00	144.00	159.00	5	209	24	10
5KP150	150.00	167.00	204.00	5	268	18.7	10
5KP150A	150.00	167.00	185.00	5	243	20.6	10
5KP160	160.00	178.00	218.00	5	287	17.5	10
5KP160A	160.00	178.00	197.00	5	259	19.3	10
5KP170	170.00	189.00	231.00	5	304	16.5	10
5KP170A	170.00	189.00	209.00	5	275	18.2	10
5KP180	180.00	200.00	244.00	5	320	15.7	10
5KP180A	180.00	200.00	233.00	5	289	17.3	10

For Bidirectional type having Vrwm of 10volts and less, the IR limit is double.