

MDE Semiconductor, Inc.

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

3KP SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

**VOLTAGE-5.0 TO 180 Volts
3000 Watt Peak Pulse Power**

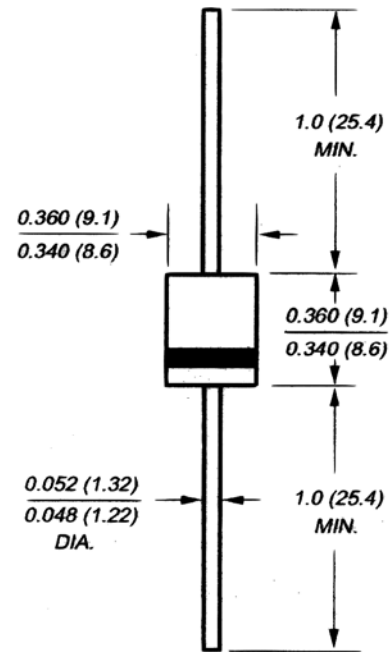
FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-0
- Glass passivated junction
- 3000W 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 grams

Case Style P600



Dimensions in inches and (millimeters)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 3KP5.0 thru types 3KP180 (e.g. 3KP5.0C, 3KP180CA)
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 3000	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}	250	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 3KP SERIES

Fig. 1 - Peak Pulse Power Rating Curve

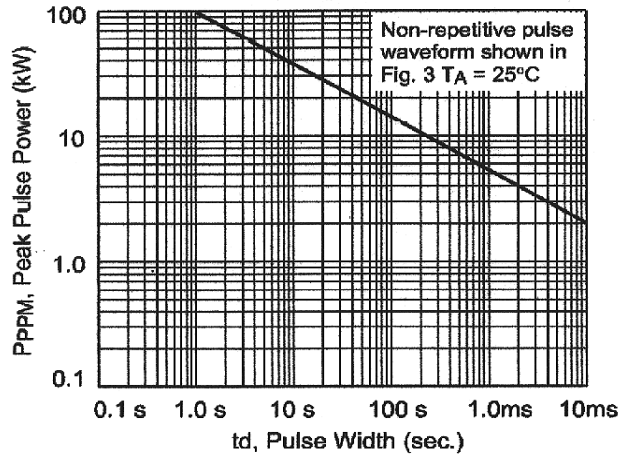


Fig. 2 - Pulse Derating Curve

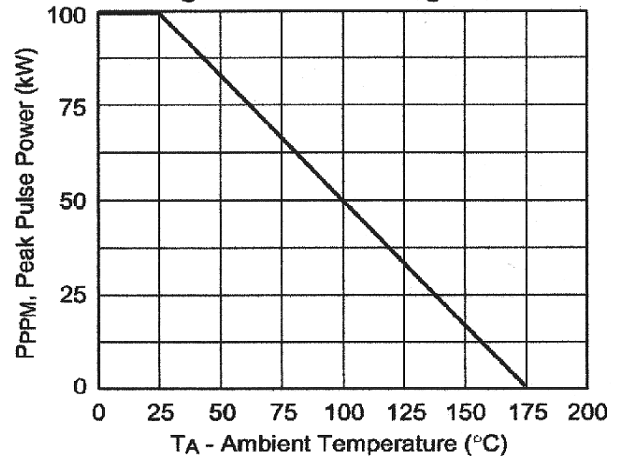


Fig. 3 - Pulse Waveform

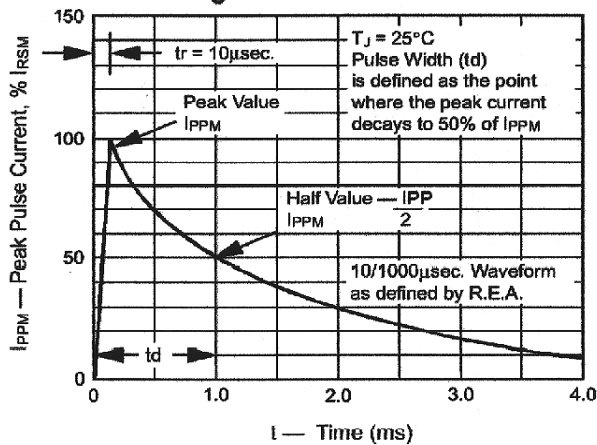


Fig. 4 - Typical Junction Capacitance

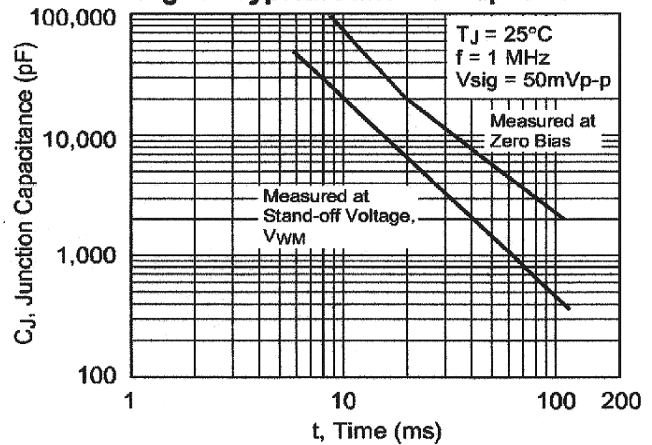


Fig. 5 - Steady State Power Derating Curve

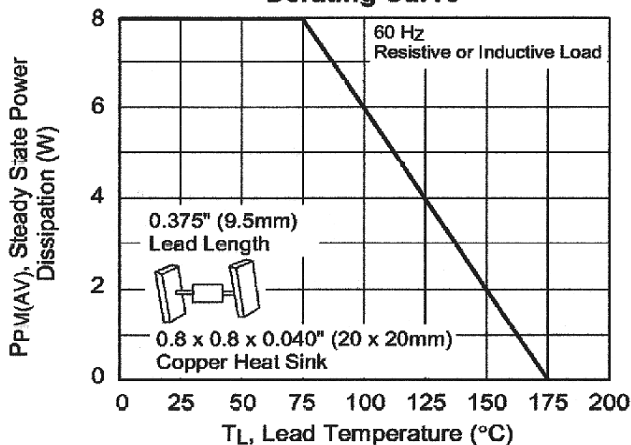
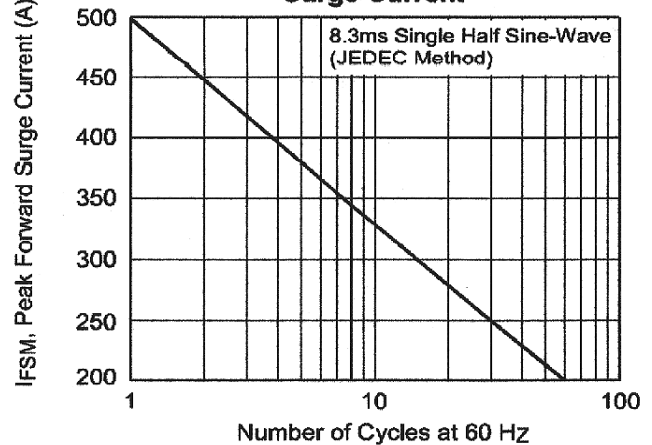


Fig. 6 - Maximum Non-repetitive Forward Surge Current



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3000 Watt TVS

UNI-DIRECTIONAL PART NUMBER	REVERSE STANDOFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @ IT	BREAKDOWN VOLTAGE VBR (V) MAX. @ IT	TEST CURRENT (It) mA	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ VRWM IR (μA)
3KP5.0	5.00	6.40	7.30	50	9.6	312.5	2000
3KP5.0A	5.00	6.40	7.00	50	9.2	323.0	2000
3KP6.0	6.00	6.67	8.15	50	11.4	263.2	2000
3KP6.0A	6.00	6.67	7.37	50	10.3	291.3	2000
3KP6.5	6.50	7.22	8.82	50	12.3	243.9	1000
3KP6.5A	6.50	7.22	7.98	50	11.2	267.9	1000
3KP7.0	7.00	7.78	9.51	50	13.3	225.6	400
3KP7.0A	7.00	7.78	8.60	50	12.0	250.0	400
3KP7.5	7.50	8.33	10.20	5	14.3	209.8	200
3KP7.5A	7.50	8.33	9.21	5	12.9	232.6	200
3KP8.0	8.00	8.89	10.90	5	15.0	220.0	100
3KP8.0A	8.00	8.89	9.83	5	13.6	220.6	100
3KP8.5	8.50	9.44	11.50	5	15.9	188.8	50
3KP8.5A	8.50	9.44	10.40	5	14.4	208.4	50
3KP9.0	9.00	10.00	12.20	5	16.9	177.4	20
3KP9.0A	9.00	10.00	11.10	5	15.4	194.8	20
3KP10	10.00	11.10	13.60	5	18.8	159.6	15
3KP10A	10.00	11.10	12.30	5	17.0	176.4	15
3KP11	11.00	12.20	14.90	5	20.1	149.2	10
3KP11A	11.00	12.20	13.50	5	18.2	184.8	10
3KP12	12.00	13.30	16.30	5	22.0	136.4	10
3KP12A	12.00	13.30	14.70	5	19.9	150.6	10
3KP13	13.00	14.40	17.60	5	23.8	126.0	10
3KP13A	13.00	14.40	15.90	5	21.5	139.4	10
3KP14	14.00	15.60	19.10	5	25.8	116.2	10
3KP14A	14.00	15.60	17.20	5	23.2	129.4	10
3KP15	15.00	16.70	20.40	5	26.9	111.6	10
3KP15A	15.00	16.70	18.50	5	24.4	123.0	10
3KP16	16.00	17.80	21.80	5	28.8	104.2	10
3KP16A	16.00	17.80	19.70	5	26.0	115.4	10
3KP17	17.00	18.90	23.10	5	30.5	98.4	10
3KP17A	17.00	18.90	20.90	5	27.6	106.6	10
3KP18	18.00	20.00	24.40	5	32.2	93.2	10
3KP18A	18.00	20.00	22.10	5	29.2	102.8	10
3KP20	20.00	22.20	27.10	5	35.8	83.8	10
3KP20A	20.00	22.20	24.50	5	32.4	92.6	10
3KP22	22.00	24.40	29.80	5	39.4	76.2	10
3KP22A	22.00	24.40	26.90	5	35.5	84.4	10
3KP24	24.00	26.70	32.60	5	43.0	69.8	10
3KP24A	24.00	26.70	29.50	5	38.9	44.2	10
3KP26	26.00	28.90	35.30	5	46.6	64.4	10
3KP26A	26.00	28.90	31.90	5	42.1	41.2	10
3KP28	28.00	31.10	38.00	5	50.1	60.0	10
3KP28A	28.00	31.10	34.40	5	45.4	66.0	10
3KP30	30.00	33.30	40.70	5	53.5	56.0	10
3KP30A	30.00	33.30	36.80	5	48.4	62.0	10
3KP33	33.00	36.70	44.90	5	59.0	50.4	10
3KP33A	33.00	36.70	40.60	5	53.3	56.2	10

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3KP36	36.00	40.00	48.90	5	64.3	46.6	10
3KP36A	36.00	40.00	44.20	5	58.1	51.6	10
3KP40	40.00	44.40	54.30	5	71.4	42.0	10
3KP40A	40.00	44.40	49.10	5	64.5	46.4	10
3KP43	43.00	47.80	58.40	5	76.7	39.2	10
3KP43A	43.00	47.80	52.80	5	69.4	43.2	10
3KP45	45.00	50.00	61.10	5	80.3	37.4	10
3KP45A	45.00	50.00	55.30	5	72.7	41.2	10
3KP48	48.00	53.30	65.20	5	85.5	35.0	10
3KP48A	48.00	53.30	58.90	5	77.4	38.8	10
3KP51	51.00	56.70	69.30	5	91.1	37.0	10
3KP51A	51.00	56.70	62.70	5	82.4	36.4	10
3KP54A	54.00	60.00	73.30	5	96.3	31.2	10
3KP54A	54.00	60.00	66.30	5	87.1	34.4	10
3KP58	58.00	64.40	78.70	5	103.0	29.2	10
3KP58A	58.00	64.40	71.20	5	93.6	32.0	10
3KP60	60.00	66.70	81.50	5	107.0	28.0	10
3KP60A	60.00	66.70	73.70	5	96.8	31.0	10
3KP64	64.00	71.10	86.90	5	114.0	26.4	10
3KP64A	64.00	71.10	78.60	5	103.0	29.2	10
3KP70	70.00	77.80	95.10	5	125.0	24.0	10
3KP70A	70.00	77.80	86.00	5	113.0	26.6	10
3KP75	75.00	83.30	102.00	5	134.0	22.4	10
3KP75A	75.00	83.30	92.10	5	121.0	24.8	10
3KP78	78.00	86.70	106.00	5	139.0	21.6	10
3KP78A	78.00	86.70	95.80	5	126.0	22.8	10
3KP85	85.00	94.40	115.00	5	151.0	19.8	10
3KP85A	85.00	94.40	104.00	5	137.0	20.8	10
3KP90	90.00	100.00	122.00	5	160	18.8	10
3KP90A	90.00	100.00	111.00	5	146	20.6	10
3KP100	100.00	111.00	136.00	5	179	16.6	10
3KP100A	100.00	111.00	123.00	5	162	18.6	10
3KP110	110.00	122.00	149.00	5	196	15.4	10
3KP110A	110.00	122.00	135.00	5	177	16.8	10
3KP120	120.00	133.00	163.00	5	214	14.0	10
3KP120A	120.00	133.00	147.00	5	193	15.6	10
3KP130	130.00	144.00	176.00	5	230	13.0	10
3KP130A	130.00	144.00	159.00	5	209	14.4	10
3KP150	150.00	167.00	204.00	5	268	11.2	10
3KP150A	150.00	167.00	185.00	5	243	12.4	10
3KP160	160.00	178.00	218.00	5	287	10.4	10
3KP160A	160.00	178.00	197.00	5	259	11.6	10
3KP170	170.00	189.00	231.00	5	304	9.8	10
3KP170A	170.00	189.00	209.00	5	275	11.0	10
3KP180	180.00	200.00	244.00	5	320	9.4	10
3KP180A	180.00	200.00	233.00	5	289	10.4	10

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