

MDE Semiconductor, Inc.

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30KP SERIES

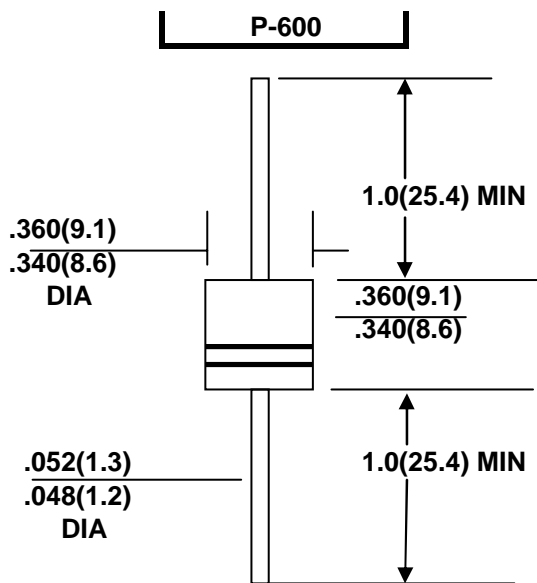
GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-30.0 TO 400 Volts 30000 Watt Peak Pulse Power

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 30000W Peak Pulse Power capability on 10/1000 μ s waveform
- Excellent clamping capability
- Repetition rate (duty cycle):0.05%
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volts to BV
- Typical I_d 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 ounce, 2.1 gram



Dimensions in inches (millimeters)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 30KP30 thru types 30KP400
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) | P_{PPM} | Minimum 30000 | Watts |
| Peak Pulse Current of on 10-1000 μ s waveform (NOTE 1) | I_{PPM} | SEE TABLE 1 | Amps |
| Steady State Power Dissipation at $T_I=75^\circ\text{C}$ Lead Lengths .375", (9.5mm)(NOTE 2) | $P_{M(AV)}$ | 8.0 | Watts |
| Peak Forward Surge Current, 8.3ms Sine-Wave Superimposed on Rated Load, (JEDEC Method) (NOTE 3) | I_{FSM} | 400.0 | Amps |
| Operatings and Storage Temperature Range | T_J, T_{STG} | -55 to +175 | °C |

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_a=25^\circ\text{C}$ 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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30KP Series Rating and Characteristic Curves



FIG. 1 PEAK PULSE POWER RATING

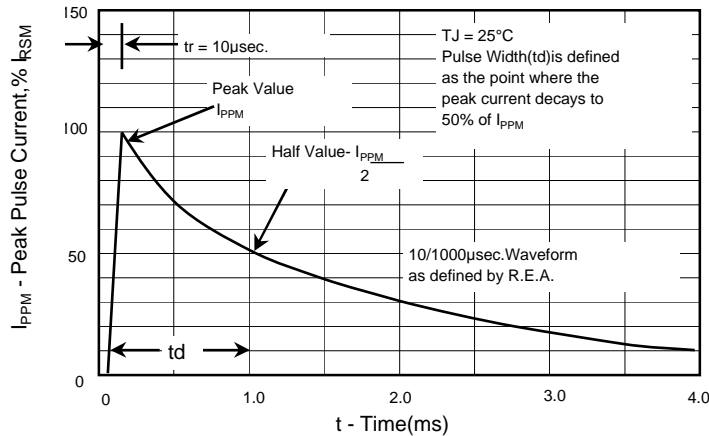


Fig.3 - Pulse Waveform

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30000 Watt TVS

| UNI-POLAR | BI-POLAR | REVERSE STANDOFF VOLTAGE V_{RWM} (V) | BREAKDOWN VOLTAGE V_{BR} (V) MIN. @ I_T | TEST CURRENT (I_T) mA | MAXIMUM CLAMPING VOLTAGE @ I_{PP} V_c (V) | PEAK PULSE CURRENT I_{PP} (A) | REVERSE LEAKAGE @ V_{RWM} I_R (μA) |
|-----------|-----------|---|--|------------------------------------|--|--|--|
| 30KP28A | 30KP28CA | 28.00 | 31.3 | 50 | 50.0 | 606.0 | 5000 |
| 30KP30A | 30KP30CA | 30.00 | 33.5 | 50 | 55.2 | 548.9 | 5000 |
| 30KP33A | 30KP33CA | 33.00 | 36.9 | 50 | 58.5 | 517.2 | 5000 |
| 30KP36A | 30KP36CA | 36.00 | 40.2 | 50 | 61.8 | 490.3 | 5000 |
| 30KP39A | 30KP39CA | 39.00 | 43.6 | 20 | 67.2 | 450.9 | 2000 |
| 30KP42A | 30KP42CA | 42.00 | 46.9 | 10 | 72.0 | 420.8 | 1000 |
| 30KP43A | 30KP43CA | 43.00 | 48.0 | 10 | 73.0 | 415.1 | 1000 |
| 30KP45A | 30KP45CA | 45.00 | 50.3 | 5 | 77.4 | 391.5 | 250 |
| 30KP48A | 30KP48CA | 48.00 | 53.6 | 5 | 81.6 | 371.3 | 150 |
| 30KP51A | 30KP51CA | 51.00 | 57.0 | 5 | 86.4 | 350.7 | 50 |
| 30KP54A | 30KP54CA | 54.00 | 60.3 | 5 | 91.4 | 331.5 | 20 |
| 30KP58A | 30KP58CA | 58.00 | 64.8 | 5 | 92.4 | 327.9 | 20 |
| 30KP60A | 30KP60CA | 60.00 | 67.0 | 5 | 102.0 | 297.1 | 15 |
| 30KP64A | 30KP64CA | 64.00 | 71.5 | 5 | 104.0 | 291.3 | 10 |
| 30KP66A | 30KP66CA | 66.00 | 73.7 | 5 | 107.0 | 283.2 | 10 |
| 30KP70A | 30KP70CA | 70.00 | 78.2 | 5 | 109.0 | 278.0 | 10 |
| 30KP71A | 30KP71CA | 71.00 | 79.3 | 5 | 111.5 | 271.7 | 10 |
| 30KP72A | 30KP72CA | 72.00 | 80.4 | 5 | 114.0 | 265.8 | 10 |
| 30KP75A | 30KP75CA | 75.00 | 83.8 | 5 | 119.4 | 253.8 | 10 |
| 30KP78A | 30KP78CA | 78.00 | 87.1 | 5 | 129.0 | 234.0 | 10 |
| 30KP84A | 30KP84CA | 84.00 | 93.8 | 5 | 139.2 | 217.7 | 10 |
| 30KP90A | 30KP90CA | 90.00 | 100.5 | 5 | 146.4 | 207.0 | 10 |
| 30KP96A | 30KP96CA | 96.00 | 107.2 | 5 | 156.0 | 194.2 | 10 |
| 30KP102A | 30KP102CA | 102.00 | 113.9 | 5 | 165.6 | 183.0 | 10 |
| 30KP108A | 30KP108CA | 108.00 | 120.6 | 5 | 175.2 | 172.9 | 10 |
| 30KP120A | 30KP120CA | 120.00 | 134.0 | 5 | 194.4 | 155.9 | 10 |
| 30KP132A | 30KP132CA | 132.00 | 147.4 | 5 | 213.0 | 142.3 | 10 |
| 30KP144A | 30KP144CA | 144.00 | 160.8 | 5 | 223.2 | 135.8 | 10 |
| 30KP150A | 30KP150CA | 150.00 | 167.6 | 5 | 233.4 | 129.8 | 10 |
| 30KP156A | 30KP156CA | 156.00 | 174.3 | 5 | 245.0 | 123.7 | 10 |
| 30KP160A | 30KP160CA | 160.00 | 178.7 | 5 | 252.6 | 120.0 | 10 |
| 30KP168A | 30KP168CA | 168.00 | 187.7 | 5 | 272.4 | 111.2 | 10 |
| 30KP170A | 30KP170CA | 170.00 | 189.9 | 5 | 275.0 | 110.2 | 10 |
| 30KP180A | 30KP180CA | 180.00 | 201.1 | 5 | 290.4 | 104.3 | 10 |
| 30KP198A | 30KP198CA | 198.00 | 221.2 | 5 | 319.8 | 94.7 | 10 |
| 30KP216A | 30KP216CA | 216.00 | 241.3 | 5 | 348.6 | 86.9 | 10 |
| 30KP240A | 30KP240CA | 240.00 | 268.1 | 5 | 387.0 | 78.3 | 10 |
| 30KP258A | 30KP258CA | 258.00 | 288.2 | 5 | 416.4 | 72.8 | 10 |
| 30KP260A | 30KP260CA | 260.00 | 290.4 | 5 | 416.0 | 72.8 | 10 |
| 30KP270A | 30KP270CA | 270.00 | 301.6 | 5 | 436.2 | 69.5 | 10 |
| 30KP280A | 30KP280CA | 280.00 | 312.8 | 5 | 464.0 | 65.3 | 10 |
| 30KP288A | 30KP288CA | 288.00 | 321.7 | 5 | 469.9 | 64.5 | 10 |
| 30KP300A | 30KP300CA | 300.00 | 333.0 | 5 | 483.0 | 62.0 | 10 |
| 30KP350A | 30KP350CA | 350.00 | 389.0 | 5 | 564.0 | 53.0 | 10 |
| 30KP400A | 30KP400CA | 400.00 | 444.0 | 5 | 644.0 | 46.0 | 10 |

For bidirectional type having V_{RWM} of 40 volts and less, the IR limit is double

For parts without A , the V_{BR} is $\pm 10\%$

Certified RoHS Compliant

UL File # E223026