

MDE Semiconductor, Inc.

78-150 Calle Tampico, Unit 210, La Quinta, CA., USA 92253 Tel: 760-564-8656 • Fax: 760-564-2414
1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

30KPA SERIES

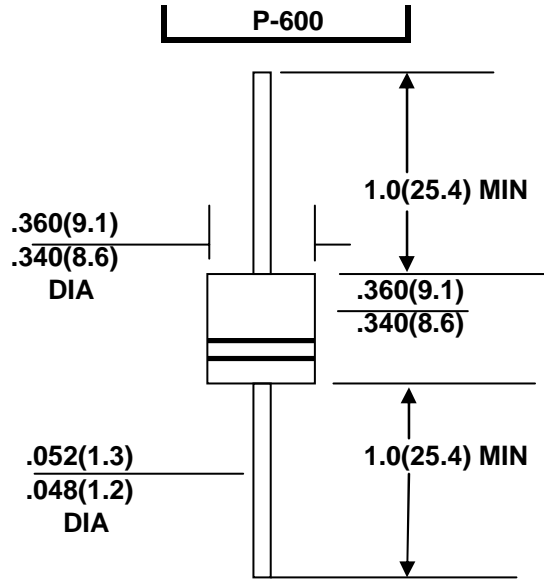
GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-28.0 TO 400 Volts 30000 Watt Peak Pulse Power

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 30KPA28 thru types 30KPA400
 Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTIC

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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30KPA 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 (μ A) |
|-----------|------------|---|--|------------------------------------|--|--|---|
| 30KPA28A | 30KPA28CA | 28.00 | 31.3 | 50 | 50.0 | 606.0 | 5000 |
| 30KPA30A | 30KPA30CA | 30.00 | 33.5 | 50 | 55.2 | 548.9 | 5000 |
| 30KPA33A | 30KPA33CA | 33.00 | 36.9 | 50 | 58.5 | 517.2 | 5000 |
| 30KPA36A | 30KPA36CA | 36.00 | 40.2 | 50 | 61.8 | 490.3 | 5000 |
| 30KPA39A | 30KPA39CA | 39.00 | 43.6 | 20 | 67.2 | 450.9 | 2000 |
| 30KPA42A | 30KPA42CA | 42.00 | 46.9 | 10 | 72.0 | 420.8 | 1000 |
| 30KPA43A | 30KPA43CA | 43.00 | 48.0 | 10 | 73.0 | 415.1 | 1000 |
| 30KPA45A | 30KPA45CA | 45.00 | 50.3 | 5 | 77.4 | 391.5 | 250 |
| 30KPA48A | 30KPA48CA | 48.00 | 53.6 | 5 | 81.6 | 371.3 | 150 |
| 30KPA51A | 30KPA51CA | 51.00 | 57.0 | 5 | 86.4 | 350.7 | 50 |
| 30KPA54A | 30KPA54CA | 54.00 | 60.3 | 5 | 91.4 | 331.5 | 20 |
| 30KPA58A | 30KPA58CA | 58.00 | 64.8 | 5 | 92.4 | 327.9 | 20 |
| 30KPA60A | 30KPA60CA | 60.00 | 67.0 | 5 | 102.0 | 297.1 | 15 |
| 30KPA64A | 30KPA64CA | 64.00 | 71.5 | 5 | 104.0 | 291.3 | 10 |
| 30KPA66A | 30KPA66CA | 66.00 | 73.7 | 5 | 107.0 | 283.2 | 10 |
| 30KPA70A | 30KPA70CA | 70.00 | 78.2 | 5 | 109.0 | 278.0 | 10 |
| 30KPA71A | 30KPA71CA | 71.00 | 79.3 | 5 | 111.5 | 271.7 | 10 |
| 30KPA72A | 30KPA72CA | 72.00 | 80.4 | 5 | 114.0 | 265.8 | 10 |
| 30KPA75A | 30KPA75CA | 75.00 | 83.8 | 5 | 119.4 | 253.8 | 10 |
| 30KPA78A | 30KPA78CA | 78.00 | 87.1 | 5 | 129.0 | 234.0 | 10 |
| 30KPA84A | 30KPA84CA | 84.00 | 93.8 | 5 | 139.2 | 217.7 | 10 |
| 30KPA90A | 30KPA90CA | 90.00 | 100.5 | 5 | 146.4 | 207.0 | 10 |
| 30KPA96A | 30KPA96CA | 96.00 | 107.2 | 5 | 156.0 | 194.2 | 10 |
| 30KPA102A | 30KPA102CA | 102.00 | 113.9 | 5 | 165.6 | 183.0 | 10 |
| 30KPA108A | 30KPA108CA | 108.00 | 120.6 | 5 | 175.2 | 172.9 | 10 |
| 30KPA120A | 30KPA120CA | 120.00 | 134.0 | 5 | 194.4 | 155.9 | 10 |
| 30KPA132A | 30KPA132CA | 132.00 | 147.4 | 5 | 213.0 | 142.3 | 10 |
| 30KPA144A | 30KPA144CA | 144.00 | 160.8 | 5 | 223.2 | 135.8 | 10 |
| 30KPA150A | 30KPA150CA | 150.00 | 167.6 | 5 | 233.4 | 129.8 | 10 |
| 30KPA156A | 30KPA156CA | 156.00 | 174.3 | 5 | 245.0 | 123.7 | 10 |
| 30KPA160A | 30KPA160CA | 160.00 | 178.7 | 5 | 252.6 | 120.0 | 10 |
| 30KPA168A | 30KPA168CA | 168.00 | 187.7 | 5 | 272.4 | 111.2 | 10 |
| 30KPA170A | 30KPA170CA | 170.00 | 189.9 | 5 | 275.0 | 110.2 | 10 |
| 30KPA180A | 30KPA180CA | 180.00 | 201.1 | 5 | 290.4 | 104.3 | 10 |
| 30KPA198A | 30KPA198CA | 198.00 | 221.2 | 5 | 319.8 | 94.7 | 10 |
| 30KPA216A | 30KPA216CA | 216.00 | 241.3 | 5 | 348.6 | 86.9 | 10 |
| 30KPA240A | 30KPA240CA | 240.00 | 268.1 | 5 | 387.0 | 78.3 | 10 |
| 30KPA258A | 30KPA258CA | 258.00 | 288.2 | 5 | 416.4 | 72.8 | 10 |
| 30KPA260A | 30KPA260CA | 260.00 | 290.4 | 5 | 416.0 | 72.8 | 10 |
| 30KPA270A | 30KPA270CA | 270.00 | 301.6 | 5 | 436.2 | 69.5 | 10 |
| 30KPA280A | 30KPA280CA | 280.00 | 312.8 | 5 | 464.0 | 65.3 | 10 |
| 30KPA288A | 30KPA288CA | 288.00 | 321.7 | 5 | 469.9 | 64.5 | 10 |
| 30KPA300A | 30KPA300CA | 300.00 | 333.0 | 5 | 483.0 | 62.0 | 10 |
| 30KPA350A | 30KPA350CA | 350.00 | 389.0 | 5 | 564.0 | 53.0 | 10 |
| 30KPA400A | 30KPA400CA | 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