

# 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

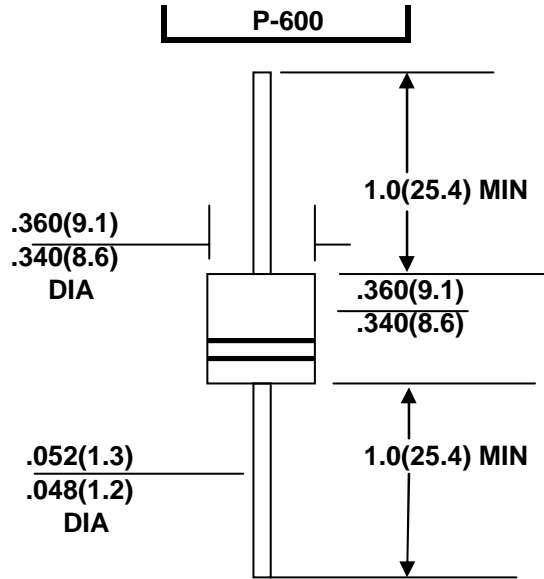
### GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-28.0 TO 400 Volts 30000 Watt Peak Pulse Power

#### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 30000W Peak Pulse Power capability on 10/1000  $\mu$ 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 $\mu$ 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 $\mu$ s waveform (NOTE 1)                               | $P_{PPM}$      | Minimum 30000 | Watts |
| Peak Pulse Current of on 10-1000 $\mu$ 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

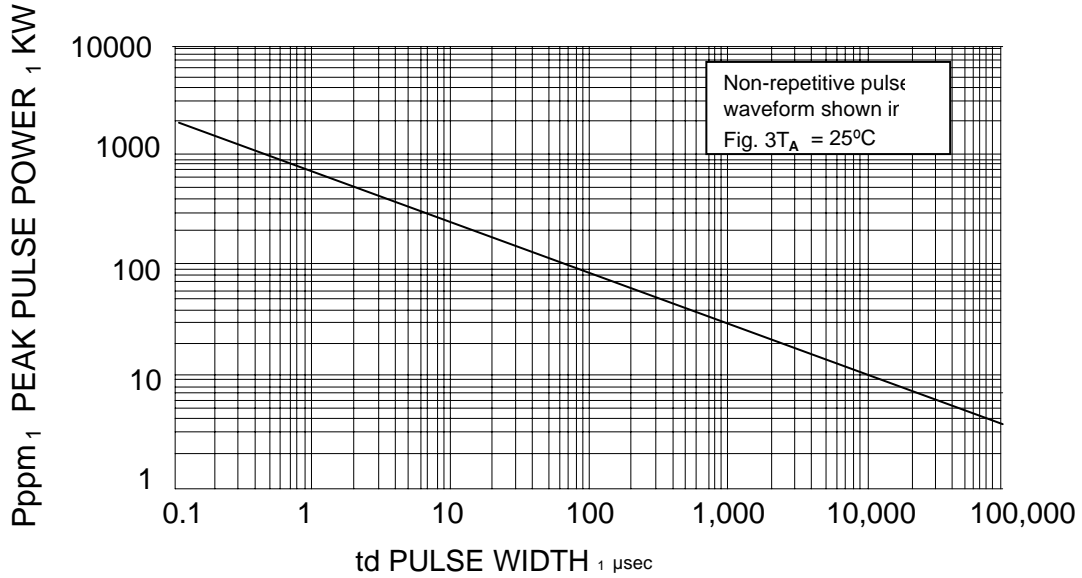


FIG. 1 PEAK PULSE POWER RATING

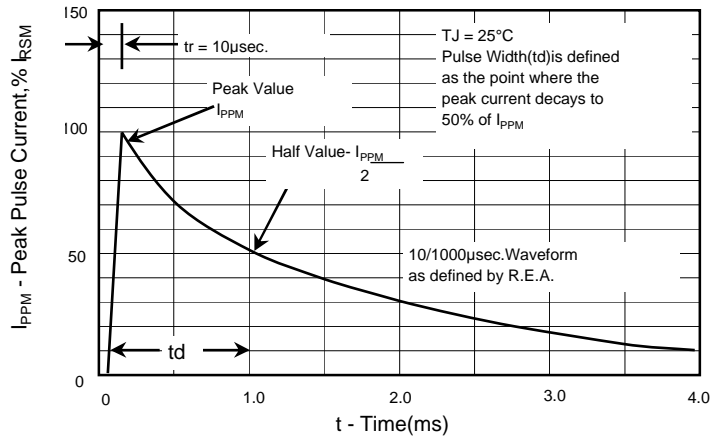
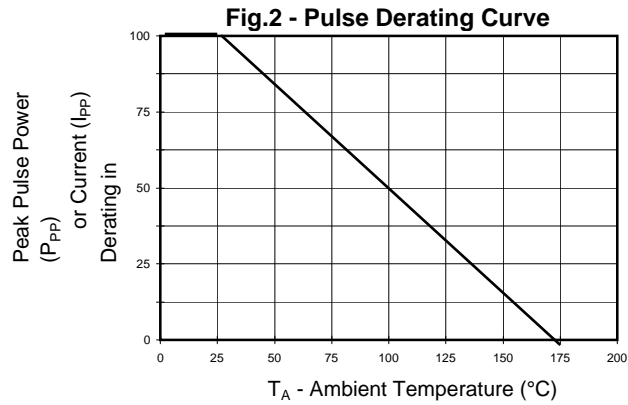


Fig.3 - Pulse Waveform

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## 30000 Watt TVS

| UNI-POLAR | BI-POLAR   | REVERSE<br>STANDOFF<br>VOLTAGE<br>$V_{RWM}$ (V) | BREAKDOWN<br>VOLTAGE<br>$V_{BR}$ (V)<br>MIN. @ $I_T$ | TEST<br>CURRENT<br>( $I_T$ )<br>mA | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@ $I_{PP}$ $V_C$ (V) | PEAK<br>PULSE<br>CURRENT<br>$I_{PP}$ (A) | REVERSE<br>LEAKAGE<br>@ $V_{RWM}$ $I_R$<br>( $\mu$ 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