

# **MDE Semiconductor, Inc.**

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## **15KP SERIES**

### **GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-17.0 TO 280 Volts 15000 Watt Peak Pulse Power**

#### **FEATURES**

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 15000W 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
- 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

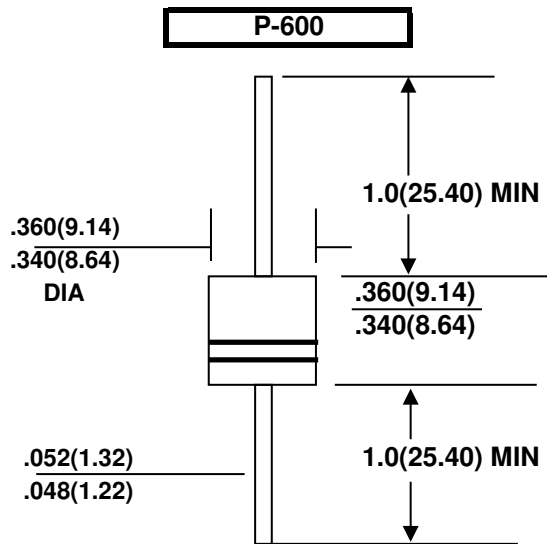
Terminals: Plated Axial leads, solderable per

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 15KP17 thru types 15KP280

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 $\mu$ s waveform (NOTE 1)                               | P <sub>PPM</sub>                  | Minimum 15000 | Watts |
| Peak Pulse Current of on 10-1000 $\mu$ s waveform (NOTE 1)                                      | I <sub>PPM</sub>                  | SEE TABLE 1   | Amps  |
| Steady State Power Dissipation at T <sub>I</sub> =75 °C Lead Lengths.375", (9.5mm)(NOTE 2)      | P <sub>M(AV)</sub>                | 8.0           | Watts |
| Peak Forward Surge Current, 8.3ms Sine-Wave Superimposed on Rated Load, (JEDEC Method) (NOTE 3) | I <sub>FSM</sub>                  | 400.0         | Amps  |
| Operatings and Storage Temperature Range                                                        | T <sub>J</sub> , T <sub>STG</sub> | -55 to +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

Certified RoHS Compliant

UL File # E223026

8/11/2020

## 15KP Series Rating and Characteristics

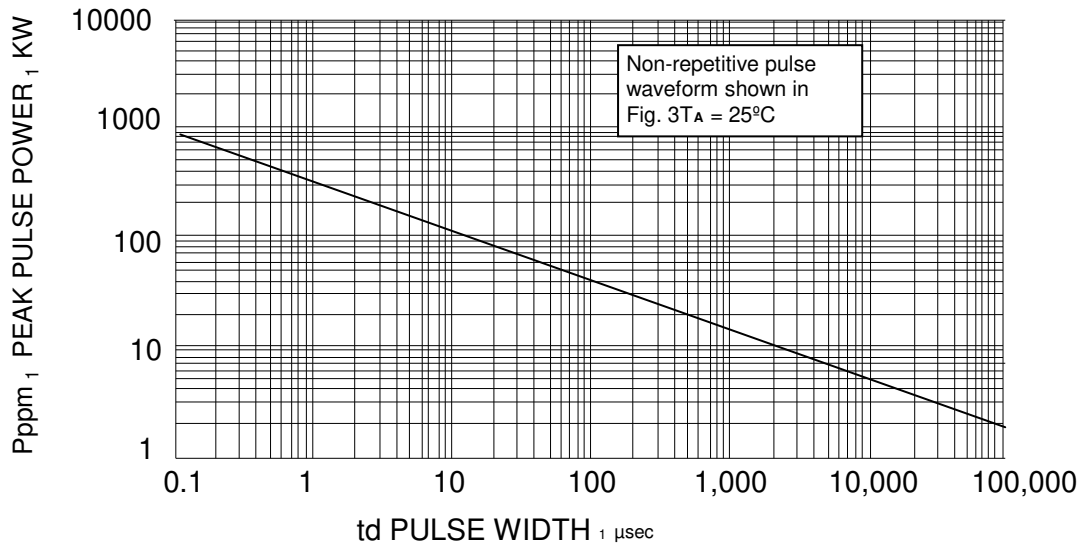
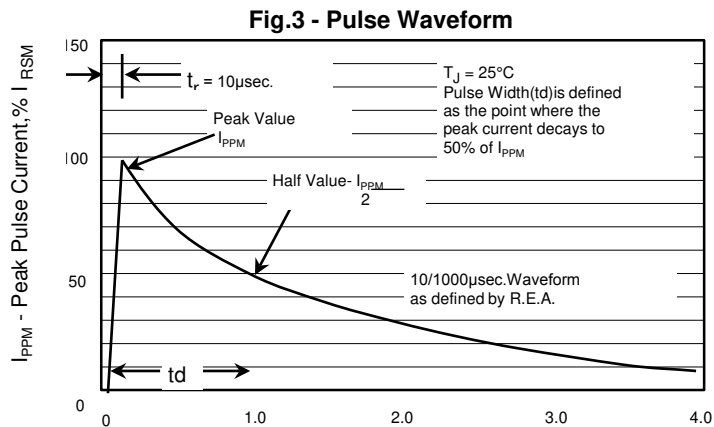
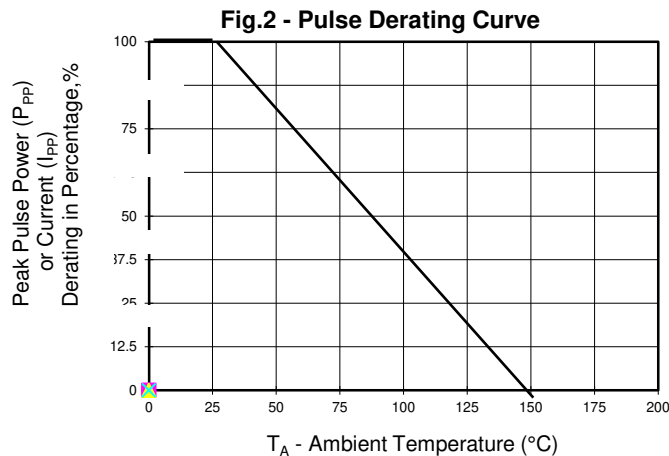


FIG. 1 PEAK PULSE POWER RATING



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## **15000 Watt TVS**

| UNI-POLAR | BI-POLAR  | REVERSE<br>STANDOFF<br>VOLTAGE<br>V <sub>RWM</sub> (V) | BREAKDOWN<br>VOLTAGE<br>V <sub>BR</sub> (V)<br>MIN. @ I <sub>T</sub> | TEST<br>CURRENT<br>(I <sub>T</sub> )<br>mA | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@I <sub>PP</sub> V <sub>C</sub> (V) | PEAK<br>PULSE<br>CURRENT I <sub>PP</sub><br>(A) | REVERSE<br>LEAKAGE<br>@ V <sub>RWM</sub> I <sub>R</sub><br>(μA) |
|-----------|-----------|--------------------------------------------------------|----------------------------------------------------------------------|--------------------------------------------|-----------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------|
| 15KP17A   | 15KP17CA  | 17                                                     | 18.99                                                                | 50                                         | 29.3                                                                  | 515.4                                           | 5000                                                            |
| 15KP18A   | 15KP18CA  | 18                                                     | 20.11                                                                | 50                                         | 30.9                                                                  | 488.7                                           | 5000                                                            |
| 15KP20A   | 15KP20CA  | 20                                                     | 22.34                                                                | 20                                         | 34.3                                                                  | 440.2                                           | 1500                                                            |
| 15KP22A   | 15KP22CA  | 22                                                     | 24.57                                                                | 10                                         | 37.1                                                                  | 407.0                                           | 500                                                             |
| 15KP24A   | 15KP24CA  | 24                                                     | 26.81                                                                | 5                                          | 40.7                                                                  | 371.0                                           | 150                                                             |
| 15KP26A   | 15KP26CA  | 26                                                     | 29.04                                                                | 5                                          | 44.0                                                                  | 343.2                                           | 50                                                              |
| 15KP28A   | 15KP28CA  | 28                                                     | 31.28                                                                | 5                                          | 47.5                                                                  | 317.9                                           | 25                                                              |
| 15KP30A   | 15KP30CA  | 30                                                     | 33.51                                                                | 5                                          | 50.7                                                                  | 297.8                                           | 15                                                              |
| 15KP33A   | 15KP33CA  | 33                                                     | 36.90                                                                | 5                                          | 54.7                                                                  | 276.1                                           | 5                                                               |
| 15KP36A   | 15KP36CA  | 36                                                     | 40.20                                                                | 5                                          | 59.8                                                                  | 252.5                                           | 5                                                               |
| 15KP40A   | 15KP40CA  | 40                                                     | 44.70                                                                | 5                                          | 65.8                                                                  | 229.5                                           | 5                                                               |
| 15KP43A   | 15KP43CA  | 43                                                     | 48.00                                                                | 5                                          | 69.8                                                                  | 216.3                                           | 5                                                               |
| 15KP45A   | 15KP45CA  | 45                                                     | 50.30                                                                | 5                                          | 72.8                                                                  | 207.4                                           | 5                                                               |
| 15KP48A   | 15KP48CA  | 48                                                     | 53.60                                                                | 5                                          | 77.7                                                                  | 194.3                                           | 5                                                               |
| 15KP51A   | 15KP51CA  | 51                                                     | 57.00                                                                | 5                                          | 82.8                                                                  | 182.1                                           | 5                                                               |
| 15KP54A   | 15KP54CA  | 54                                                     | 60.30                                                                | 5                                          | 87.7                                                                  | 172.2                                           | 5                                                               |
| 15KP58A   | 15KP58CA  | 58                                                     | 64.80                                                                | 5                                          | 93.8                                                                  | 161.0                                           | 5                                                               |
| 15KP60A   | 15KP60CA  | 60                                                     | 67.00                                                                | 5                                          | 97.4                                                                  | 155.0                                           | 5                                                               |
| 15KP64A   | 15KP64CA  | 64                                                     | 71.50                                                                | 5                                          | 104.2                                                                 | 144.9                                           | 5                                                               |
| 15KP70A   | 15KP70CA  | 70                                                     | 78.20                                                                | 5                                          | 113.6                                                                 | 132.9                                           | 5                                                               |
| 15KP75A   | 15KP75CA  | 75                                                     | 83.80                                                                | 5                                          | 122.0                                                                 | 123.8                                           | 5                                                               |
| 15KP78A   | 15KP78CA  | 78                                                     | 87.10                                                                | 5                                          | 126.1                                                                 | 119.7                                           | 5                                                               |
| 15KP85A   | 15KP85CA  | 85                                                     | 94.90                                                                | 5                                          | 137.6                                                                 | 109.7                                           | 5                                                               |
| 15KP90A   | 15KP90CA  | 90                                                     | 100.50                                                               | 5                                          | 145.6                                                                 | 103.7                                           | 5                                                               |
| 15KP100A  | 15KP100CA | 100                                                    | 111.70                                                               | 5                                          | 161.3                                                                 | 93.6                                            | 5                                                               |
| 15KP110A  | 15KP110CA | 110                                                    | 122.90                                                               | 5                                          | 178.6                                                                 | 84.5                                            | 5                                                               |
| 15KP120A  | 15KP120CA | 120                                                    | 134.00                                                               | 5                                          | 192.3                                                                 | 78.5                                            | 5                                                               |
| 15KP130A  | 15KP130CA | 130                                                    | 145.20                                                               | 5                                          | 208.3                                                                 | 72.5                                            | 5                                                               |
| 15KP150A  | 15KP150CA | 150                                                    | 167.60                                                               | 5                                          | 241.9                                                                 | 62.4                                            | 5                                                               |
| 15KP160A  | 15KP160CA | 160                                                    | 178.70                                                               | 5                                          | 258.6                                                                 | 58.4                                            | 5                                                               |
| 15KP170A  | 15KP170CA | 170                                                    | 189.90                                                               | 5                                          | 272.7                                                                 | 55.4                                            | 5                                                               |
| 15KP180A  | 15KP180CA | 180                                                    | 201.10                                                               | 5                                          | 288.5                                                                 | 52.3                                            | 5                                                               |
| 15KP200A  | 15KP200CA | 200                                                    | 223.40                                                               | 5                                          | 319.1                                                                 | 47.3                                            | 5                                                               |
| 15KP220A  | 15KP220CA | 220                                                    | 245.70                                                               | 5                                          | 356.0                                                                 | 42.0                                            | 5                                                               |
| 15KP240A  | 15KP240CA | 240                                                    | 268.10                                                               | 5                                          | 384.6                                                                 | 39.3                                            | 5                                                               |
| 15KP260A  | 15KP260CA | 260                                                    | 290.40                                                               | 5                                          | 416.7                                                                 | 36.2                                            | 5                                                               |
| 15KP280A  | 15KP280CA | 280                                                    | 312.80                                                               | 5                                          | 454.5                                                                 | 33.2                                            | 5                                                               |

BLANK INDICATES UNIPOLAR DEVICE ±10% ON VBR

A INDICATES UNIPOLAR DEVICE ±5% ON VBR

C INDICATES BIPOLAR DEVICE ±10% ON VBR

CA INDICATES BIPOLAR DEVICE ±5% ON VBR

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