

# GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

## STAND-OFF VOLTAGE - 5.0 TO 220 Volts

### 3000 Watt Peak Pulse Power

| 3KP<br>PART NUMBER |          | REVERSE<br>STAND-<br>OFF<br>VOLTAGE<br>$V_{RWM}(V)$ | BREAKDOWN<br>VOLTAGE<br>$V_{BR}(V)$<br>MIN.@ $I_T$ | BREAKDOWN<br>VOLTAGE<br>$V_{BR}(V)$<br>MAX.@ $I_T$ | TEST<br>CURRENT<br>$I_T$ (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>@ $V_{RWM}$ $I_R(\mu A)$ |
|--------------------|----------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------|-------------------------------------------------------|------------------------------------------|------------------------------------------------|
| UNI-POLAR          | BI-POLAR |                                                     |                                                    |                                                    |                               |                                                       |                                          |                                                |
| 3KP5.0A            | 3KP5.0CA | 5.0                                                 | 6.40                                               | 7.00                                               | 50                            | 9.2                                                   | 326.1                                    | 800                                            |
| 3KP6.0A            | 3KP6.0CA | 6.0                                                 | 6.67                                               | 7.37                                               | 50                            | 10.3                                                  | 291.3                                    | 800                                            |
| 3KP6.5A            | 3KP6.5CA | 6.5                                                 | 7.22                                               | 7.98                                               | 50                            | 11.2                                                  | 267.9                                    | 500                                            |
| 3KP7.0A            | 3KP7.0CA | 7.0                                                 | 7.78                                               | 8.60                                               | 50                            | 12.0                                                  | 250.0                                    | 200                                            |
| 3KP7.5A            | 3KP7.5CA | 7.5                                                 | 8.33                                               | 9.21                                               | 5                             | 12.9                                                  | 232.6                                    | 100                                            |
| 3KP8.0A            | 3KP8.0CA | 8.0                                                 | 8.89                                               | 9.83                                               | 5                             | 13.6                                                  | 220.6                                    | 50                                             |
| 3KP8.5A            | 3KP8.5CA | 8.5                                                 | 9.44                                               | 10.40                                              | 5                             | 14.4                                                  | 208.3                                    | 20                                             |
| 3KP9.0A            | 3KP9.0CA | 9.0                                                 | 10.00                                              | 11.10                                              | 5                             | 15.4                                                  | 194.8                                    | 10                                             |
| 3KP10A             | 3KP10CA  | 10.0                                                | 11.10                                              | 12.30                                              | 5                             | 17.0                                                  | 176.5                                    | 5                                              |
| 3KP11A             | 3KP11CA  | 11.0                                                | 12.20                                              | 13.50                                              | 5                             | 18.2                                                  | 164.8                                    | 2                                              |
| 3KP12A             | 3KP12CA  | 12.0                                                | 13.30                                              | 14.70                                              | 5                             | 19.9                                                  | 150.8                                    | 2                                              |
| 3KP13A             | 3KP13CA  | 13.0                                                | 14.40                                              | 15.90                                              | 5                             | 21.5                                                  | 139.5                                    | 2                                              |
| 3KP14A             | 3KP14CA  | 14.0                                                | 15.60                                              | 17.20                                              | 5                             | 23.2                                                  | 129.3                                    | 2                                              |
| 3KP15A             | 3KP15CA  | 15.0                                                | 16.70                                              | 18.50                                              | 5                             | 24.4                                                  | 123.0                                    | 2                                              |
| 3KP16A             | 3KP16CA  | 16.0                                                | 17.80                                              | 19.70                                              | 5                             | 26.0                                                  | 115.4                                    | 2                                              |
| 3KP17A             | 3KP17CA  | 17.0                                                | 18.90                                              | 20.90                                              | 5                             | 27.6                                                  | 108.7                                    | 2                                              |
| 3KP18A             | 3KP18CA  | 18.0                                                | 20.00                                              | 22.10                                              | 5                             | 29.2                                                  | 102.7                                    | 2                                              |
| 3KP20A             | 3KP20CA  | 20.0                                                | 22.20                                              | 24.50                                              | 5                             | 32.4                                                  | 92.6                                     | 2                                              |
| 3KP22A             | 3KP22CA  | 22.0                                                | 24.40                                              | 26.90                                              | 5                             | 35.5                                                  | 84.5                                     | 2                                              |
| 3KP24A             | 3KP24CA  | 24.0                                                | 26.70                                              | 29.50                                              | 5                             | 38.9                                                  | 77.1                                     | 2                                              |
| 3KP26A             | 3KP26CA  | 26.0                                                | 28.90                                              | 31.90                                              | 5                             | 42.1                                                  | 71.3                                     | 2                                              |
| 3KP28A             | 3KP28CA  | 28.0                                                | 31.10                                              | 34.40                                              | 5                             | 45.4                                                  | 66.1                                     | 2                                              |
| 3KP30A             | 3KP30CA  | 30.0                                                | 33.30                                              | 36.80                                              | 5                             | 48.4                                                  | 62.0                                     | 2                                              |
| 3KP33A             | 3KP33CA  | 33.0                                                | 36.70                                              | 40.60                                              | 5                             | 53.3                                                  | 56.3                                     | 2                                              |
| 3KP36A             | 3KP36CA  | 36.0                                                | 40.00                                              | 44.20                                              | 5                             | 58.1                                                  | 51.6                                     | 2                                              |
| 3KP40A             | 3KP40CA  | 40.0                                                | 44.40                                              | 49.10                                              | 5                             | 64.5                                                  | 46.5                                     | 2                                              |
| 3KP43A             | 3KP43CA  | 43.0                                                | 47.80                                              | 52.80                                              | 5                             | 69.4                                                  | 43.2                                     | 2                                              |
| 3KP45A             | 3KP45CA  | 45.0                                                | 50.00                                              | 55.30                                              | 5                             | 72.7                                                  | 41.3                                     | 2                                              |
| 3KP48A             | 3KP48CA  | 48.0                                                | 53.30                                              | 58.90                                              | 5                             | 77.4                                                  | 38.8                                     | 2                                              |
| 3KP51A             | 3KP51CA  | 51.0                                                | 56.70                                              | 62.70                                              | 5                             | 82.4                                                  | 36.4                                     | 2                                              |
| 3KP54A             | 3KP54CA  | 54.0                                                | 60.00                                              | 66.30                                              | 5                             | 87.1                                                  | 34.4                                     | 2                                              |
| 3KP58A             | 3KP58CA  | 58.0                                                | 64.40                                              | 71.20                                              | 5                             | 93.6                                                  | 32.1                                     | 2                                              |
| 3KP60A             | 3KP60CA  | 60.0                                                | 66.70                                              | 73.70                                              | 5                             | 96.8                                                  | 31.0                                     | 2                                              |
| 3KP64A             | 3KP64CA  | 64.0                                                | 71.10                                              | 78.60                                              | 5                             | 103.0                                                 | 29.1                                     | 2                                              |
| 3KP70A             | 3KP70CA  | 70.0                                                | 77.80                                              | 86.00                                              | 5                             | 113.0                                                 | 26.5                                     | 2                                              |
| 3KP75A             | 3KP75CA  | 75.0                                                | 83.30                                              | 92.10                                              | 5                             | 121.0                                                 | 24.8                                     | 2                                              |
| 3KP78A             | 3KP78CA  | 78.0                                                | 86.70                                              | 95.80                                              | 5                             | 126.0                                                 | 23.8                                     | 2                                              |
| 3KP85A             | 3KP85CA  | 85.0                                                | 94.40                                              | 104.00                                             | 5                             | 137.0                                                 | 21.9                                     | 2                                              |
| 3KP90A             | 3KP90CA  | 90.0                                                | 100.00                                             | 111.00                                             | 5                             | 146.0                                                 | 20.5                                     | 2                                              |
| 3KP100A            | 3KP100CA | 100.0                                               | 111.00                                             | 123.00                                             | 5                             | 162.0                                                 | 18.5                                     | 2                                              |
| 3KP110A            | 3KP110CA | 110.0                                               | 122.00                                             | 135.00                                             | 5                             | 177.0                                                 | 16.9                                     | 2                                              |
| 3KP120A            | 3KP120CA | 120.0                                               | 133.00                                             | 147.00                                             | 5                             | 193.0                                                 | 15.5                                     | 2                                              |
| 3KP130A            | 3KP130CA | 130.0                                               | 144.00                                             | 159.00                                             | 5                             | 209.0                                                 | 14.4                                     | 2                                              |
| 3KP150A            | 3KP150CA | 150.0                                               | 167.00                                             | 185.00                                             | 5                             | 243.0                                                 | 12.3                                     | 2                                              |
| 3KP160A            | 3KP160CA | 160.0                                               | 178.00                                             | 197.00                                             | 5                             | 259.0                                                 | 11.6                                     | 2                                              |
| 3KP170A            | 3KP170CA | 170.0                                               | 189.00                                             | 209.00                                             | 5                             | 275.0                                                 | 10.9                                     | 2                                              |
| 3KP180A            | 3KP180CA | 180.0                                               | 200.00                                             | 221.00                                             | 5                             | 289.0                                                 | 10.4                                     | 2                                              |
| 3KP190A            | 3KP190CA | 190.0                                               | 211.00                                             | 233.00                                             | 5                             | 310.0                                                 | 9.7                                      | 2                                              |
| 3KP200A            | 3KP200CA | 200.0                                               | 222.00                                             | 246.00                                             | 5                             | 329.2                                                 | 9.1                                      | 2                                              |
| 3KP210A            | 3KP210CA | 210.0                                               | 233.00                                             | 258.00                                             | 5                             | 349.5                                                 | 8.6                                      | 2                                              |
| 3KP220A            | 3KP220CA | 220.0                                               | 244.00                                             | 270.00                                             | 5                             | 371.1                                                 | 8.1                                      | 2                                              |

For bidirectional type having  $V_{RWM}$  of 10 volts and less, the IR limit is double.

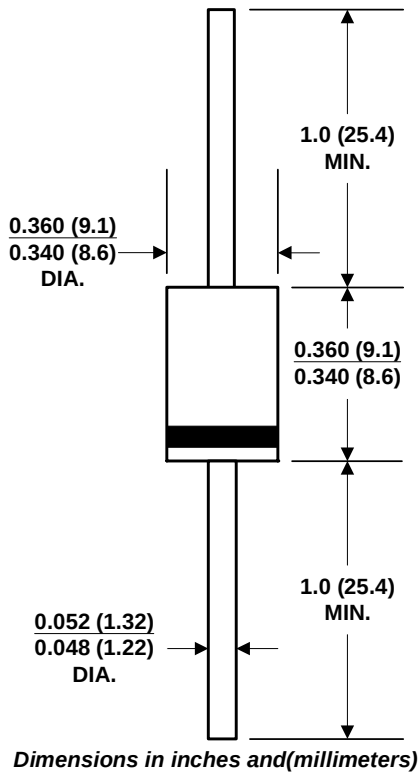
For parts with A , the VBR is  $\pm 5\%$

# GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

## STAND-OFF VOLTAGE - 5.0 TO 220 Volts

### 3000 Watt Peak Pulse Power

#### Case Style P600



#### FEATURES

- ⊙ Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- ⊙ Glass passivated junction
- ⊙ 3000W Peak Pulse Power capability on 10/1000μs waveform
- ⊙ Excellent clamping capability
- ⊙ Repetition rate (duty cycle):0.05%
- ⊙ Low incremental surge resistance
- ⊙ Fast response time: typically less than 1.0ps from 0 Volts to BV min.
- ⊙ Typical IR less than 2μA above 10V
- ⊙ High temperature soldering guaranteed: 265°C/10 seconds/.375" (9.5mm) lead length, 5lbs., (2.3kg) tension
- ⊙ Pb-free plated

#### MECHANICAL DATA

**Case:** Molded plastic over glass passivated junction

**Terminal:** Solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes positive end (cathode) except Bipolar

**Mounting Position :** Any

**Weight:** 0.07ounce, 2.1gram

#### DEVICES FOR BIPOLAR APPLICATION

For Bidirectional use C or CA Suffix for types 3KP5.0 thru types 3KP220 (e.g. 3KP5.0C , 3KP220CA)  
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 10/1000μs waveform (Note 1,FIG.1)                                         | P <sub>PPM</sub>                  | Minimum 3000 | Watts |
| Peak Pulse Current of on 10/1000μs waveform (Note 1,FIG.3)                                                | I <sub>PPM</sub>                  | SEE TABLE 1  | Amps  |
| Steady State Power Dissipation at T <sub>L</sub> = 75°C , Lead lengths.375", (9.5mm) (Note 2)             | P <sub>M(AV)</sub>                | 7            | Watts |
| Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note 3) | I <sub>FSM</sub>                  | 300          | Amps  |
| Operating junction 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 T<sub>A</sub> = 25°C per Fig. 2 .
- 2.Mounted on Copper Pad area of 1.6×1.6" (40×40mm) per Fig. 5.
- 3.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

## RATINGS AND CHARACTERISTIC CURVES

Fig. 1 - Peak Pulse Power Rating Curve

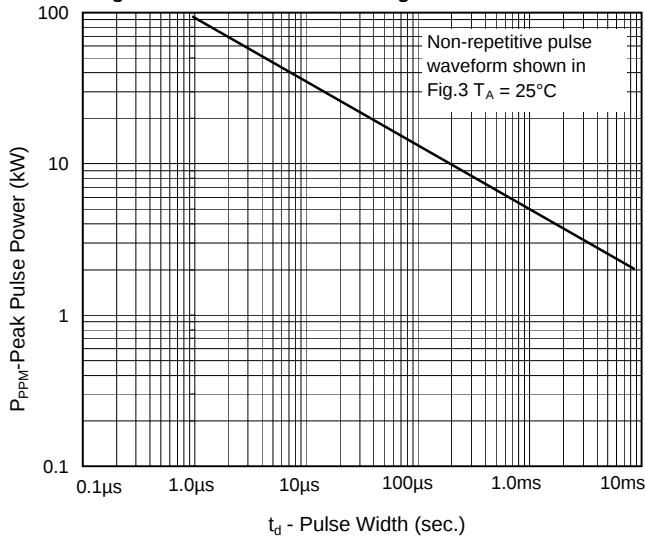


Fig.2 - Pulse Derating Curve

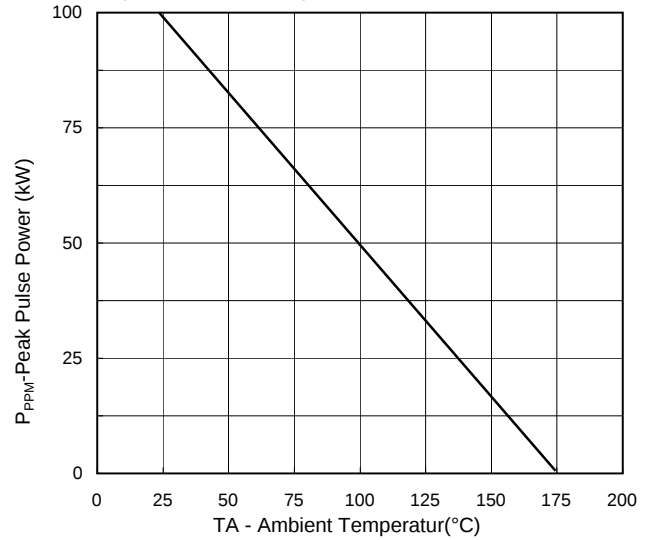


Fig.3 - Pulse Waveform

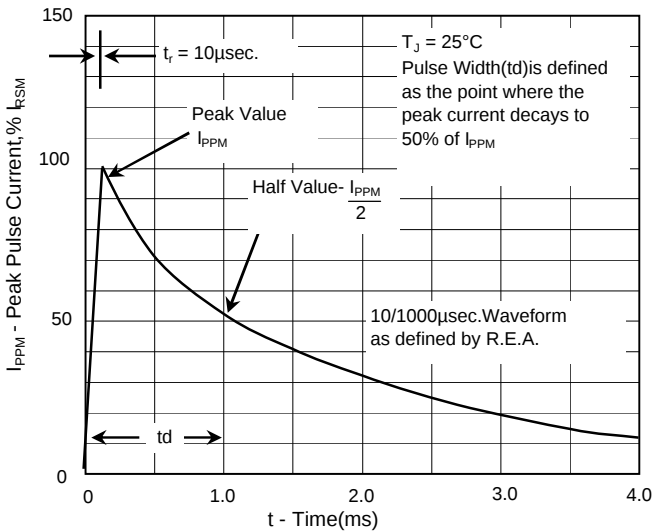


Fig. 4 - Typical Junction Capacitance

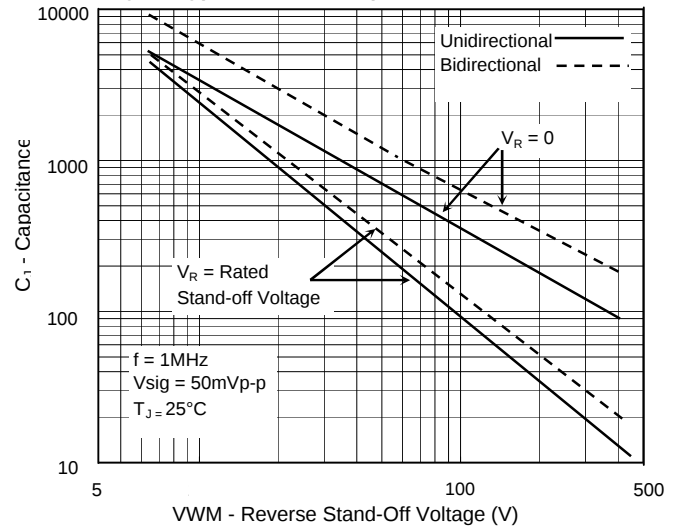


Fig. 5 - Steady State Power Derating Curve

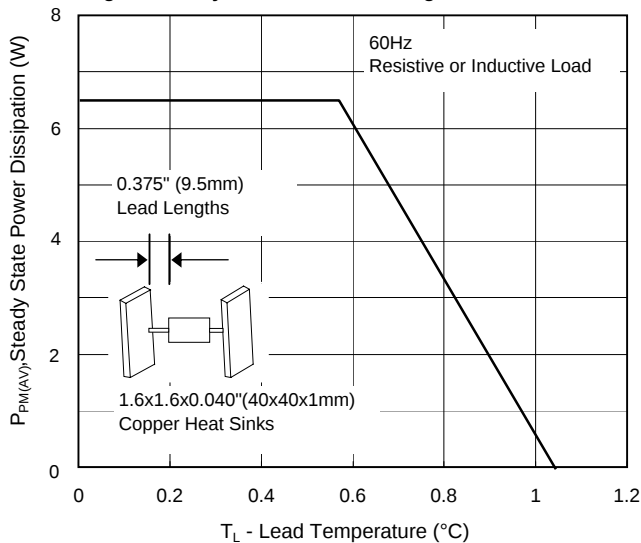


Fig.6 - Maximum Non-repetitive Forward Surge

