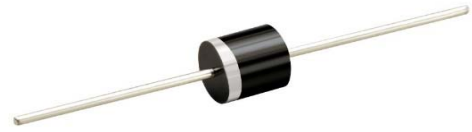


### »Features

- Excellent clamping capability
- Low leakage current
- Low capacitance
- High surge capability
- Glass passivated chip
- Epoxy resin package
- Built-in strain relief
- Will not fatigue
- RoHS Compliant
- Fast response time:  
typically less than 1.0ps from 0 Volts to  $V_{BR}$  min



P600 (R6)

### »Mechanical Characteristics

- Package: P600 plastic package.
- Lead Finish: Matte Tin
- Case Material: Epoxy Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020

### »Applications

- Telecom
- Computer
- Industrial electronic
- Consumer electronic

### »Electrical Parameters

| Parameter | Definition   |
|-----------|--|
| $C_J$     | Junction Capacitance - typical capacitance measured with 0V or $V_R$ bias                                      |
| $I_{PP}$  | Peak Pulse Current - maximum rated peak impulse current  |
| $V_C$     | Clamping Voltage - Peak voltage measured across the suppressor at a specified $I_{ppm}$ (peak impulse current) |
| $V_{BR}$  | Breakdown Voltage - Maximum voltage that flows through the TVS at a specified test current ( $I_T$ )           |
| $I_R$     | Leakage Current - maximum peak off-state current measured at $V_R$   |
| $V_R$     | Peak Off-state Voltage - maximum voltage that can be applied while maintaining off state                       |



### »Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| P600    | Tape/Box, Box       | 300              | BORN SPEC         |
|         | Tape/Reel, 13" reel | 800              | EIA STD RS-296    |

**»Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

| Parameter                                      | Symbol          | Value      | Units                     | Remarks |
|--|-----------------|------------|---------------------------|---------|
| Peak Pulse Power Dissipation                   | $P_{PPM}$       | 8000       | W                         | (Note1) |
| Steady State Power Dissipation                 | $P_D$           | 8          | W                         | (Note2) |
| Peak Forward Surge Current                     | $I_{FSM}$       | 400        | A                         | (Note3) |
| Maximum Instantaneous Forward Voltage at 100A  | $V_{FM}$        | 3.5/5      | V                         | (Note4) |
| Typical Thermal Resistance Junction to Lead    | $R_{\theta JL}$ | 8          | $^\circ\text{C}/\text{W}$ |         |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 40         | $^\circ\text{C}/\text{W}$ |         |
| Operating Temperature Range                    | $T_J$           | -55 to 150 | $^\circ\text{C}$          |         |
| Storage Temperature Range                      | $T_{STG}$       | -55 to 150 | $^\circ\text{C}$          |         |

Notes1: Non-repetitive current pulse , 10/1000us Waveform.

Notes2: Infinite Heat Sink at  $T_L=75^\circ\text{C}$ , at 0.375"(9.5mm) lead length, P.C.B. mounted.

Notes3: Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 perminute maximum.

Notes4: For Unidirectional Only,  $V_{FM}<3.5\text{V}$  for  $V_{BR}\leq 200\text{V}$  and  $V_{FM}<5.0\text{V}$  for  $V_{BR}\geq 201\text{V}$ .

**»Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

| Part Number (Uni) | Part Number (Bi) | Reverse Stand off Voltage $V_R$ (Volts) | Breakdown Voltage $V_{BR} @ I_T$ (Volts) |      | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C @ I_{PP}$ (Volts) | Maximum Peak Pulse Current $I_{PP}$ (A) | Maximun Reverse Leakage $I_R @ V_R$ ( $\mu\text{A}$ ) |
|-------------------|------------------|---|--|------|-------------------------|---|---|---|
|                   |                  |   | MIN                                      | MAX  |                         |   |   |   |
| 8KP5.0A           | 8KP5.0CA         | 5                                       | 6.4                                      | 7    | 50                      | 9.2   | 887                                     | 5000  |
| 8KP6.0A           | 8KP6.0CA         | 6                                       | 6.67                                     | 7.37 | 50                      | 10.3  | 792                                     | 5000  |
| 8KP6.5A           | 8KP6.5CA         | 6.5                                     | 7.22                                     | 7.98 | 50                      | 11.2  | 729                                     | 2000  |
| 8KP7.0A           | 8KP7.0CA         | 7                                       | 7.78                                     | 8.6  | 50                      | 12  | 680                                     | 1000  |
| 8KP7.5A           | 8KP7.5CA         | 7.5                                     | 8.33                                     | 9.21 | 5                       | 12.9  | 632                                     | 250   |
| 8KP8.0A           | 8KP8.0CA         | 8                                       | 8.89                                     | 9.83 | 5                       | 13.6  | 600                                     | 150   |
| 8KP8.5A           | 8KP8.5CA         | 8.5                                     | 9.44                                     | 10.4 | 5                       | 14.4  | 567                                     | 50  |
| 8KP9.0A           | 8KP9.0CA         | 9                                       | 10                                       | 11.1 | 5                       | 15.4  | 530                                     | 20  |
| 8KP10A            | 8KP10CA          | 10                                      | 11.1                                     | 12.3 | 5                       | 17  | 480                                     | 15  |
| 8KP11A            | 8KP11CA          | 11                                      | 12.2                                     | 13.5 | 5                       | 18.2  | 448                                     | 2   |
| 8KP12A            | 8KP12CA          | 12                                      | 13.3                                     | 14.7 | 5                       | 19.9  | 410                                     | 2   |
| 8KP13A            | 8KP13CA          | 13                                      | 14.4                                     | 15.9 | 5                       | 21.5  | 380                                     | 2   |
| 8KP14A            | 8KP14CA          | 14                                      | 15.6                                     | 17.2 | 5                       | 23.2  | 352                                     | 2   |
| 8KP15A            | 8KP15CA          | 15                                      | 16.7                                     | 18.5 | 5                       | 24.4  | 334                                     | 2   |
| 8KP16A            | 8KP16CA          | 16                                      | 17.8                                     | 19.7 | 5                       | 26  | 314                                     | 2   |
| 8KP17A            | 8KP17CA          | 17                                      | 18.9                                     | 20.9 | 5                       | 27.6  | 296                                     | 2   |
| 8KP18A            | 8KP18CA          | 18                                      | 20                                       | 22.1 | 5                       | 29.2  | 280                                     | 2   |
| 8KP20A            | 8KP20CA          | 20                                      | 22.2                                     | 24.5 | 5                       | 32.4  | 252                                     | 2   |
| 8KP22A            | 8KP22CA          | 22                                      | 24                                       | 26.9 | 5                       | 35.5  | 230                                     | 2   |
| 8KP24A            | 8KP24CA          | 24                                      | 26.7                                     | 29.5 | 5                       | 38.9  | 210                                     | 2   |
| 8KP26A            | 8KP26CA          | 26                                      | 28.9                                     | 31.9 | 5                       | 42.1  | 194                                     | 2   |

**»Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

| Part Number (Uni) | Part Number (Bi) | Reverse Stand off Voltage $V_R$ (Volts) | Breakdown Voltage $V_{BR} @ I_T$ (Volts) |      | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C @ I_{PP}$ (Volts) | Maximum Peak Pulse Current $I_{PP}$ (A) | Maximun Reverse Leakage $I_R @ V_R$ ( $\mu\text{A}$ ) |
|-------------------|------------------|---|--|------|-------------------------|---|---|---|
|                   |                  |   | MIN                                      | MAX  |                         |   |   |   |
| 8KP28A            | 8KP28CA          | 28                                      | 31.1                                     | 34.4 | 5                       | 45.4  | 180                                     | 2   |
| 8KP30A            | 8KP30CA          | 30                                      | 33.3                                     | 36.8 | 5                       | 48.4  | 169                                     | 2   |
| 8KP33A            | 8KP33CA          | 33                                      | 36.7                                     | 40.6 | 5                       | 53.3  | 153                                     | 2   |
| 8KP36A            | 8KP36CA          | 36                                      | 40                                       | 44.2 | 5                       | 58.1  | 140                                     | 2   |
| 8KP40A            | 8KP40CA          | 40                                      | 44.4                                     | 49.1 | 5                       | 64.5  | 127                                     | 2   |
| 8KP43A            | 8KP43CA          | 43                                      | 47.8                                     | 52.8 | 5                       | 69.4  | 118                                     | 2   |
| 8KP45A            | 8KP45CA          | 45                                      | 50                                       | 55.3 | 5                       | 72.7  | 112                                     | 2   |
| 8KP48A            | 8KP48CA          | 48                                      | 53.3                                     | 58.9 | 5                       | 77.4  | 105                                     | 2   |
| 8KP51A            | 8KP51CA          | 51                                      | 56.7                                     | 62.7 | 5                       | 82.4  | 99                                      | 2   |
| 8KP54A            | 8KP54CA          | 54                                      | 60                                       | 66.3 | 5                       | 87.1  | 94                                      | 2   |
| 8KP58A            | 8KP58CA          | 58                                      | 64.4                                     | 71.2 | 5                       | 93.6  | 87                                      | 2   |
| 8KP60A            | 8KP60CA          | 60                                      | 66.7                                     | 73.7 | 5                       | 96.8  | 84                                      | 2   |
| 8KP64A            | 8KP64CA          | 64                                      | 71.1                                     | 78.6 | 5                       | 103   | 79                                      | 2   |
| 8KP70A            | 8KP70CA          | 70                                      | 77.8                                     | 86   | 5                       | 113   | 72                                      | 2   |
| 8KP75A            | 8KP75CA          | 75                                      | 83.3                                     | 92.1 | 5                       | 121   | 67                                      | 2   |
| 8KP78A            | 8KP78CA          | 78                                      | 86.7                                     | 95.8 | 5                       | 126   | 65                                      | 2   |
| 8KP85A            | 8KP85CA          | 85                                      | 94.4                                     | 104  | 5                       | 137   | 60                                      | 2   |
| 8KP90A            | 8KP90CA          | 90                                      | 100                                      | 111  | 5                       | 146   | 56                                      | 2   |
| 8KP100A           | 8KP100CA         | 100                                     | 110                                      | 123  | 5                       | 162   | 50                                      | 2   |
| 8KP110A           | 8KP110CA         | 110                                     | 122                                      | 135  | 5                       | 177   | 46                                      | 2   |
| 8KP120A           | 8KP120CA         | 120                                     | 133                                      | 147  | 5                       | 193   | 42                                      | 2   |
| 8KP130A           | 8KP130CA         | 130                                     | 144                                      | 159  | 5                       | 209   | 39.0                                    | 2   |
| 8KP150A           | 8KP150CA         | 150                                     | 167                                      | 185  | 5                       | 243   | 33.6                                    | 2   |
| 8KP160A           | 8KP160CA         | 160                                     | 178                                      | 197  | 5                       | 259   | 31.5                                    | 2   |
| 8KP170A           | 8KP170CA         | 170                                     | 189                                      | 209  | 5                       | 275   | 29.6                                    | 2   |
| 8KP180A           | 8KP180CA         | 180                                     | 200                                      | 221  | 5                       | 292   | 28.0                                    | 2   |
| 8KP190A           | 8KP190CA         | 190                                     | 211                                      | 233  | 5                       | 310   | 26.4                                    | 2   |
| 8KP200A           | 8KP200CA         | 200                                     | 222                                      | 246  | 5                       | 329.2   | 24.8                                    | 2   |
| 8KP210A           | 8KP210CA         | 210                                     | 233                                      | 258  | 5                       | 349.5   | 23.4                                    | 2   |
| 8KP220A           | 8KP220CA         | 220                                     | 244                                      | 270  | 5                       | 371.1   | 21.9                                    | 2   |
| 8KP250A           | 8KP250CA         | 250                                     | 277                                      | 306  | 5                       | 425   | 19.2                                    | 2   |

»Rating And Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

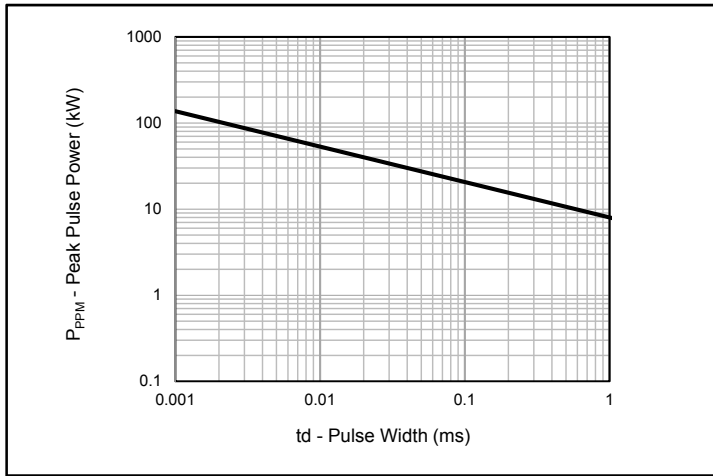


Fig.1 - Peak Pulse Power Rating

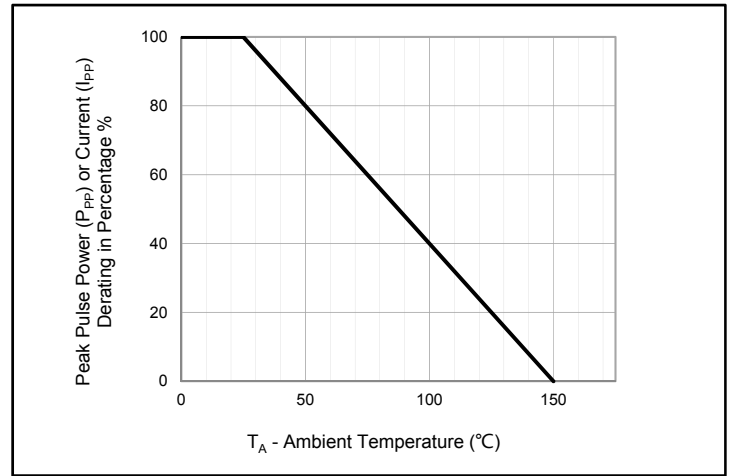


Fig.2 - Pulse Derating Curve

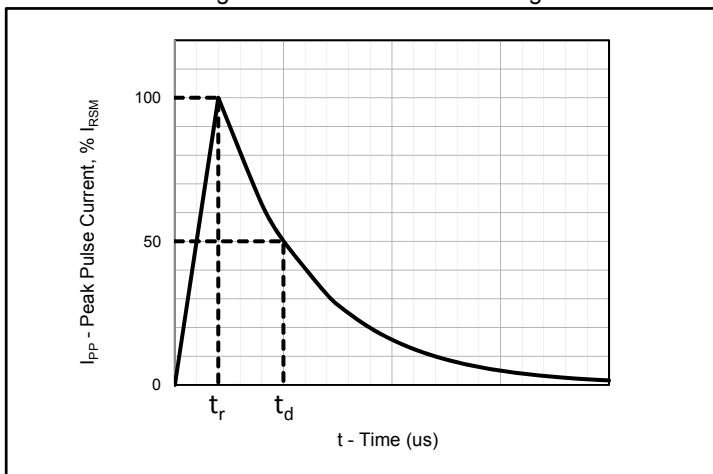


Fig.3 - Pulse Waveform

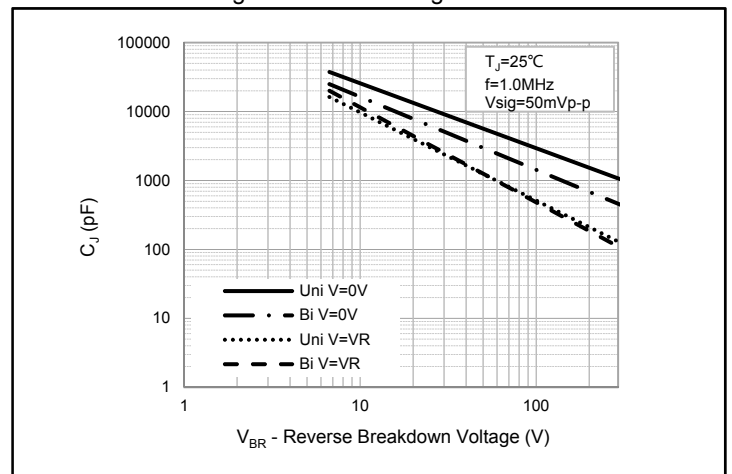


Fig.4 - Typical Junction Capacitance

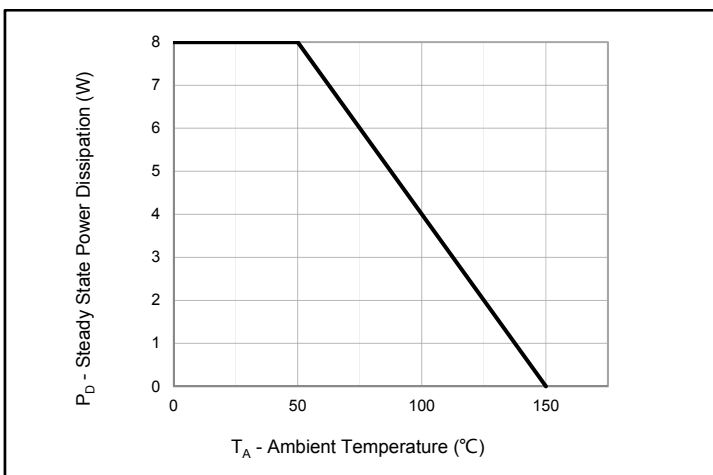


Fig.5 - Steady State Power Dissipation Derating Curve

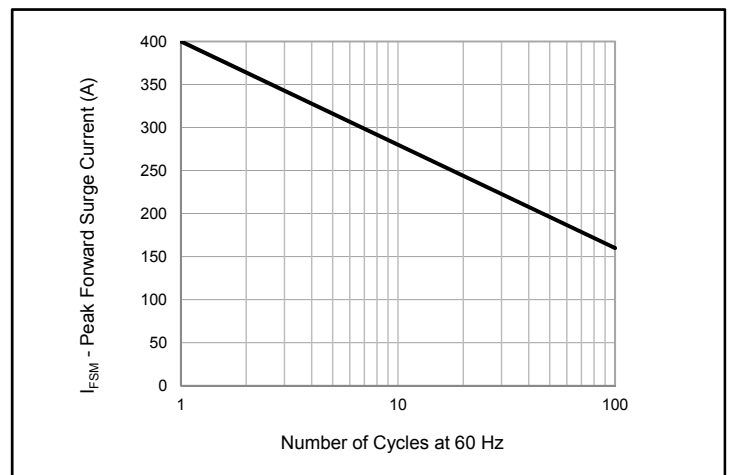
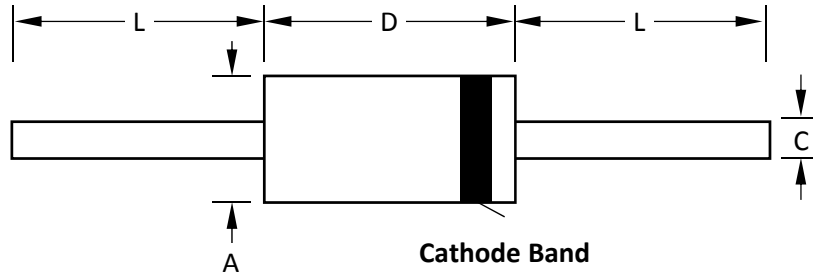


Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current  
Uni-Directional Only

»Package Dimensions



| P600      |        |     |       |             |     |      |
|-----------|--------|-----|-------|-------------|-----|------|
| Dimension | Inches |     |       | Millimeters |     |      |
|           | MIN    | NOM | MAX   | MIN         | NOM | MAX  |
| A         | 0.339  |     | 0.358 | 8.6         |     | 9.1  |
| C         | 0.048  |     | 0.052 | 1.22        |     | 1.32 |
| D         | 0.339  |     | 0.358 | 8.6         |     | 9.1  |
| L         | 1      |     | -     | 25.4        |     | -    |