

## GLASS PASSIVAED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

### Features

- ◆ 600w peak pulse power capability
- ◆ Excellent clamping capability
- ◆ Low incremental surge resistance
- ◆ Fast response time:typically less than 1.0ps from 0v to VBR for unidirectional and 5.0ns for bidirectional types.
- ◆ High temperature soldering guaranteed:  
265°C/10S/9.5mm lead length at 5 lbs tension

### Mechanical Data

**Case** : JEDEC DO-15 Molded plastic body

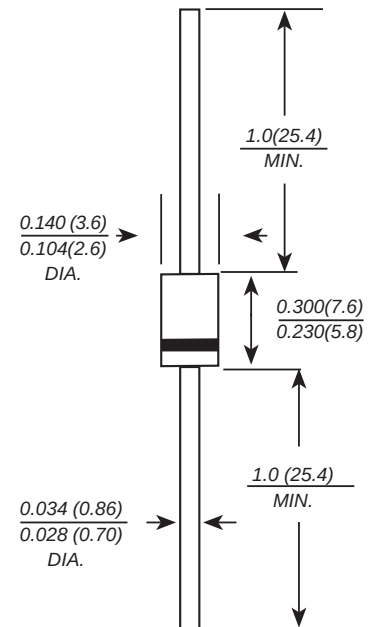
**Terminals** : Solder plated, solderable per MIL-STD-750,Method 2026

**Polarity** : Polarity symbol marking on body

**Mounting Position** : Any

**Weight** : 0.014 ounce, 0.40 grams

DO-15



Unipolar



Bipolar

Dimensions in inches and (millimeters)

### Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

|                                                                                  | SYMBOLS                           | VALUE        | UNITS |
|----------------------------------------------------------------------------------|-----------------------------------|--------------|-------|
| Peak power dissipation                                                           | P <sub>ppm</sub>                  | Minimum 600  | W     |
| peak power dissipation (Note 1)                                                  | I <sub>ppm</sub>                  | See Table 1  | A     |
| Steady state power dissipation (Note 2)                                          | P <sub>M(AV)</sub>                | 5.0          | W     |
| Peak forward surge current(Note 3)                                               | I <sub>FSM</sub>                  | 100          | A     |
| Maximum instantaneous forward voltage at 50A<br>for unidirectional only (Note 4) | V <sub>F</sub>                    | 3.5/5.0      | V     |
| Operating junction and storage temperature range                                 | T <sub>STG</sub> , T <sub>J</sub> | -55 to + 175 | °C    |

#### Notes:

1. 10/1000μs waveform non-repetitive current pulse, per Fig.3 and derated above T<sub>a</sub>=25°C per Fig.2
2. T<sub>L</sub>=75°C, lead lengths 9.5mm, Mounted on copper pad area of (40x40mm) Fig.5
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
4. V<sub>F</sub>=3.5V max. for devices of V<sub>(BR)</sub>≤200V, and V<sub>F</sub>=5.0V max. for devices of V<sub>(BR)</sub>>200V



# P6KE6.8(C)A THRU P6KE440(C)A

Breakdown Voltage:6.8-440 Volts Peak Pulse Power:600 Watts

## ELECTRICAL CHARACTERISTICS (at TA=25°C unless otherwise noted)

| Device Type | Breakdown Voltage<br>V <sub>(BR)</sub><br>(Volts)(NOTES 1) |      | Test<br>Current<br>I <sub>T</sub> (mA) | Stand-off<br>Voltage<br>V <sub>WM</sub><br>(Volts) | Maximum<br>Reverse<br>Leakage<br>at V <sub>WM</sub><br>I <sub>D</sub> (NOTE3)(μA) | Maximum<br>Peak Pulse<br>Reverse Current<br>I <sub>PPM</sub> (NOTE2)<br>(Amps) | Maximum<br>Clamping<br>Voltage at<br>I <sub>PPM</sub><br>V <sub>C</sub> (Volts) | Maximum<br>Temperature<br>Coefficient<br>of V <sub>(BR)</sub><br>(%/°C) |
|-------------|------------------------------------------------------------|------|----------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------|
|             | MIN                                                        | MAX  |                                        |                                                    |                                                                                   |                                                                                |                                                                                 |                                                                         |
| P6KE6.8A    | 6.45                                                       | 7.14 | 10.0                                   | 5.80                                               | 1000.0                                                                            | 57.1                                                                           | 10.5                                                                            | 0.057                                                                   |
| P6KE6.8CA   | 6.45                                                       | 7.14 | 10.0                                   | 5.80                                               | 1000.0                                                                            | 57.1                                                                           | 10.5                                                                            | 0.057                                                                   |
| P6KE7.5A    | 7.13                                                       | 7.88 | 1.0                                    | 6.40                                               | 500.0                                                                             | 53.1                                                                           | 11.3                                                                            | 0.061                                                                   |
| P6KE7.5CA   | 7.13                                                       | 7.88 | 1.0                                    | 6.40                                               | 500.0                                                                             | 53.1                                                                           | 11.3                                                                            | 0.061                                                                   |
| P6KE8.2A    | 7.79                                                       | 8.61 | 1.0                                    | 7.02                                               | 200.0                                                                             | 49.6                                                                           | 12.1                                                                            | 0.065                                                                   |
| P6KE8.2CA   | 7.79                                                       | 8.61 | 1.0                                    | 7.02                                               | 200.0                                                                             | 49.6                                                                           | 12.1                                                                            | 0.065                                                                   |
| P6KE9.1A    | 8.65                                                       | 9.55 | 1.0                                    | 7.78                                               | 50.0                                                                              | 44.8                                                                           | 13.4                                                                            | 0.068                                                                   |
| P6KE9.1CA   | 8.65                                                       | 9.55 | 1.0                                    | 7.78                                               | 50.0                                                                              | 44.8                                                                           | 13.4                                                                            | 0.068                                                                   |
| P6KE10A     | 9.50                                                       | 10.5 | 1.0                                    | 8.55                                               | 10.0                                                                              | 41.4                                                                           | 14.5                                                                            | 0.073                                                                   |
| P6KE10CA    | 9.50                                                       | 10.5 | 1.0                                    | 8.55                                               | 10.0                                                                              | 41.4                                                                           | 14.5                                                                            | 0.073                                                                   |
| P6KE11A     | 10.5                                                       | 11.6 | 1.0                                    | 9.40                                               | 5.0                                                                               | 38.5                                                                           | 15.6                                                                            | 0.075                                                                   |
| P6KE11CA    | 10.5                                                       | 11.6 | 1.0                                    | 9.40                                               | 5.0                                                                               | 38.5                                                                           | 15.6                                                                            | 0.075                                                                   |
| P6KE12A     | 11.4                                                       | 12.6 | 1.0                                    | 10.2                                               | 5.0                                                                               | 35.9                                                                           | 16.7                                                                            | 0.078                                                                   |
| P6KE12CA    | 11.4                                                       | 12.6 | 1.0                                    | 10.2                                               | 5.0                                                                               | 35.9                                                                           | 16.7                                                                            | 0.078                                                                   |
| P6KE13A     | 12.4                                                       | 13.7 | 1.0                                    | 11.1                                               | 5.0                                                                               | 33.0                                                                           | 18.2                                                                            | 0.081                                                                   |
| P6KE13CA    | 12.4                                                       | 13.7 | 1.0                                    | 11.1                                               | 5.0                                                                               | 33.0                                                                           | 18.2                                                                            | 0.081                                                                   |
| P6KE15A     | 14.3                                                       | 15.8 | 1.0                                    | 12.8                                               | 5.0                                                                               | 28.3                                                                           | 21.2                                                                            | 0.084                                                                   |
| P6KE15CA    | 14.3                                                       | 15.8 | 1.0                                    | 12.8                                               | 5.0                                                                               | 28.3                                                                           | 21.2                                                                            | 0.084                                                                   |
| P6KE16A     | 15.2                                                       | 16.8 | 1.0                                    | 13.6                                               | 5.0                                                                               | 26.7                                                                           | 22.5                                                                            | 0.086                                                                   |
| P6KE16CA    | 15.2                                                       | 16.8 | 1.0                                    | 13.6                                               | 5.0                                                                               | 26.7                                                                           | 22.5                                                                            | 0.086                                                                   |
| P6KE18A     | 17.1                                                       | 18.9 | 1.0                                    | 15.3                                               | 5.0                                                                               | 23.8                                                                           | 25.2                                                                            | 0.088                                                                   |
| P6KE18CA    | 17.1                                                       | 18.9 | 1.0                                    | 15.3                                               | 5.0                                                                               | 23.8                                                                           | 25.2                                                                            | 0.088                                                                   |
| P6KE20A     | 19.0                                                       | 21.0 | 1.0                                    | 17.1                                               | 5.0                                                                               | 21.7                                                                           | 27.7                                                                            | 0.090                                                                   |
| P6KE20CA    | 19.0                                                       | 21.0 | 1.0                                    | 17.1                                               | 5.0                                                                               | 21.7                                                                           | 27.7                                                                            | 0.090                                                                   |
| P6KE22A     | 20.9                                                       | 23.1 | 1.0                                    | 18.8                                               | 5.0                                                                               | 19.6                                                                           | 30.6                                                                            | 0.092                                                                   |
| P6KE22CA    | 20.9                                                       | 23.1 | 1.0                                    | 18.8                                               | 5.0                                                                               | 19.6                                                                           | 30.6                                                                            | 0.092                                                                   |
| P6KE24A     | 22.8                                                       | 25.2 | 1.0                                    | 20.5                                               | 5.0                                                                               | 18.1                                                                           | 33.2                                                                            | 0.094                                                                   |
| P6KE24CA    | 22.8                                                       | 25.2 | 1.0                                    | 20.5                                               | 5.0                                                                               | 18.1                                                                           | 33.2                                                                            | 0.094                                                                   |
| P6KE27A     | 25.7                                                       | 28.4 | 1.0                                    | 23.1                                               | 5.0                                                                               | 16.0                                                                           | 37.5                                                                            | 0.096                                                                   |
| P6KE27CA    | 25.7                                                       | 28.4 | 1.0                                    | 23.1                                               | 5.0                                                                               | 16.0                                                                           | 37.5                                                                            | 0.096                                                                   |
| P6KE30A     | 28.5                                                       | 31.5 | 1.0                                    | 25.6                                               | 50.                                                                               | 14.5                                                                           | 41.4                                                                            | 0.097                                                                   |
| P6KE30CA    | 28.5                                                       | 31.5 | 1.0                                    | 25.6                                               | 50.                                                                               | 14.5                                                                           | 41.4                                                                            | 0.097                                                                   |
| P6KE33A     | 31.4                                                       | 34.7 | 1.0                                    | 28.2                                               | 5.0                                                                               | 13.1                                                                           | 45.7                                                                            | 0.098                                                                   |
| P6KE33CA    | 31.4                                                       | 34.7 | 1.0                                    | 28.2                                               | 5.0                                                                               | 13.1                                                                           | 45.7                                                                            | 0.098                                                                   |
| P6KE36A     | 34.2                                                       | 37.8 | 1.0                                    | 30.8                                               | 5.0                                                                               | 12.0                                                                           | 49.9                                                                            | 0.099                                                                   |
| P6KE36CA    | 34.2                                                       | 37.8 | 1.0                                    | 30.8                                               | 5.0                                                                               | 12.0                                                                           | 49.9                                                                            | 0.099                                                                   |
| P6KE39A     | 37.1                                                       | 41.0 | 1.0                                    | 33.3                                               | 5.0                                                                               | 11.1                                                                           | 53.9                                                                            | 0.100                                                                   |
| P6KE39CA    | 37.1                                                       | 41.0 | 1.0                                    | 33.3                                               | 5.0                                                                               | 11.1                                                                           | 53.9                                                                            | 0.100                                                                   |
| P6KE43A     | 40.9                                                       | 45.2 | 1.0                                    | 36.8                                               | 5.0                                                                               | 10.1                                                                           | 59.3                                                                            | 0.101                                                                   |
| P6KE43CA    | 40.9                                                       | 45.2 | 1.0                                    | 36.8                                               | 5.0                                                                               | 10.1                                                                           | 59.3                                                                            | 0.101                                                                   |
| P6KE47A     | 44.7                                                       | 49.4 | 1.0                                    | 40.2                                               | 5.0                                                                               | 9.3                                                                            | 64.8                                                                            | 0.101                                                                   |
| P6KE47CA    | 44.7                                                       | 49.4 | 1.0                                    | 40.2                                               | 5.0                                                                               | 9.3                                                                            | 64.8                                                                            | 0.101                                                                   |
| P6KE51A     | 48.5                                                       | 53.6 | 1.0                                    | 43.6                                               | 5.0                                                                               | 8.6                                                                            | 70.1                                                                            | 0.102                                                                   |
| P6KE51CA    | 48.5                                                       | 53.6 | 1.0                                    | 43.6                                               | 5.0                                                                               | 8.6                                                                            | 70.1                                                                            | 0.102                                                                   |
| P6KE56A     | 53.2                                                       | 58.8 | 1.0                                    | 47.8                                               | 5.0                                                                               | 7.8                                                                            | 77.0                                                                            | 0.103                                                                   |
| P6KE56CA    | 53.2                                                       | 58.8 | 1.0                                    | 47.8                                               | 5.0                                                                               | 7.8                                                                            | 77.0                                                                            | 0.103                                                                   |

The electrical characteristics above is for reference only.

## ELECTRICAL CHARACTERISTICS (at TA=25°C unless otherwise noted)

| Device Type | Breakdown Voltage<br>V <sub>(BR)</sub><br>(Volts)(NOTES 1) |      | Test<br>Current<br>I <sub>T</sub> (mA) | Stand-off<br>Voltage<br>V <sub>WM</sub><br>(Volts) | Maximum<br>Reverse<br>Leakage<br>at V <sub>WM</sub><br>I <sub>D</sub> (NOTE3)(μA) | Maximum<br>Peak Pulse<br>Reverse Current<br>I <sub>PPM</sub> (NOTE2)<br>(Amps) | Maximum<br>Clamping<br>Voltage at<br>I <sub>PPM</sub><br>V <sub>C</sub> (Volts) | Maximum<br>Temperature<br>Coefficient<br>of V <sub>(BR)</sub><br>(%/ °C) |
|-------------|------------------------------------------------------------|------|----------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------|
|             | MIN                                                        | MAX  |                                        |                                                    |                                                                                   |                                                                                |                                                                                 |                                                                          |
| P6KE62A     | 58.9                                                       | 65.1 | 1.0                                    | 53.0                                               | 5.0                                                                               | 7.1                                                                            | 85.0                                                                            | 0.104                                                                    |
| P6KE62CA    | 58.9                                                       | 65.1 | 1.0                                    | 53.0                                               | 5.0                                                                               | 7.1                                                                            | 85.0                                                                            | 0.104                                                                    |
| P6KE68A     | 64.6                                                       | 71.4 | 1.0                                    | 58.1                                               | 5.0                                                                               | 6.5                                                                            | 92.0                                                                            | 0.104                                                                    |
| P6KE68CA    | 64.6                                                       | 71.4 | 1.0                                    | 58.1                                               | 5.0                                                                               | 6.5                                                                            | 92.0                                                                            | 0.104                                                                    |
| P6KE75A     | 71.3                                                       | 78.8 | 1.0                                    | 64.1                                               | 5.0                                                                               | 5.8                                                                            | 103                                                                             | 0.105                                                                    |
| P6KE75CA    | 71.3                                                       | 78.8 | 1.0                                    | 64.1                                               | 5.0                                                                               | 5.8                                                                            | 103                                                                             | 0.105                                                                    |
| P6KE82A     | 77.9                                                       | 86.1 | 1.0                                    | 70.1                                               | 5.0                                                                               | 5.3                                                                            | 113                                                                             | 0.105                                                                    |
| P6KE82CA    | 77.9                                                       | 86.1 | 1.0                                    | 70.1                                               | 5.0                                                                               | 5.3                                                                            | 113                                                                             | 0.105                                                                    |
| P6KE91A     | 86.5                                                       | 95.5 | 1.0                                    | 77.8                                               | 5.0                                                                               | 4.8                                                                            | 125                                                                             | 0.106                                                                    |
| P6KE91CA    | 86.5                                                       | 95.5 | 1.0                                    | 77.8                                               | 5.0                                                                               | 4.8                                                                            | 125                                                                             | 0.106                                                                    |
| P6KE100A    | 95.0                                                       | 105  | 1.0                                    | 85.5                                               | 5.0                                                                               | 4.4                                                                            | 137                                                                             | 0.106                                                                    |
| P6KE100CA   | 95.0                                                       | 105  | 1.0                                    | 85.5                                               | 5.0                                                                               | 4.4                                                                            | 137                                                                             | 0.106                                                                    |
| P6KE110A    | 105                                                        | 116  | 1.0                                    | 94.0                                               | 5.0                                                                               | 3.9                                                                            | 152                                                                             | 0.107                                                                    |
| P6KE110CA   | 105                                                        | 116  | 1.0                                    | 94.0                                               | 5.0                                                                               | 3.9                                                                            | 152                                                                             | 0.107                                                                    |
| P6KE120A    | 114                                                        | 126  | 1.0                                    | 102                                                | 5.0                                                                               | 3.6                                                                            | 165                                                                             | 0.107                                                                    |
| P6KE120CA   | 114                                                        | 126  | 1.0                                    | 102                                                | 5.0                                                                               | 3.6                                                                            | 165                                                                             | 0.107                                                                    |
| P6KE130A    | 124                                                        | 137  | 1.0                                    | 111                                                | 5.0                                                                               | 3.4                                                                            | 179                                                                             | 0.107                                                                    |
| P6KE130CA   | 124                                                        | 137  | 1.0                                    | 111                                                | 5.0                                                                               | 3.4                                                                            | 179                                                                             | 0.107                                                                    |
| P6KE150A    | 143                                                        | 158  | 1.0                                    | 128                                                | 5.0                                                                               | 2.9                                                                            | 207                                                                             | 0.108                                                                    |
| P6KE150CA   | 143                                                        | 158  | 1.0                                    | 128                                                | 5.0                                                                               | 2.9                                                                            | 207                                                                             | 0.108                                                                    |
| P6KE160A    | 152                                                        | 168  | 1.0                                    | 136                                                | 5.0                                                                               | 2.7                                                                            | 219                                                                             | 0.108                                                                    |
| P6KE160CA   | 152                                                        | 168  | 1.0                                    | 136                                                | 5.0                                                                               | 2.7                                                                            | 219                                                                             | 0.108                                                                    |
| P6KE170A    | 162                                                        | 179  | 1.0                                    | 145                                                | 5.0                                                                               | 2.6                                                                            | 234                                                                             | 0.108                                                                    |
| P6KE170CA   | 162                                                        | 179  | 1.0                                    | 145                                                | 5.0                                                                               | 2.6                                                                            | 234                                                                             | 0.108                                                                    |
| P6KE180A    | 171                                                        | 189  | 1.0                                    | 154                                                | 5.0                                                                               | 2.4                                                                            | 246                                                                             | 0.108                                                                    |
| P6KE180CA   | 171                                                        | 189  | 1.0                                    | 154                                                | 5.0                                                                               | 2.4                                                                            | 246                                                                             | 0.108                                                                    |
| P6KE200A    | 190                                                        | 210  | 1.0                                    | 171                                                | 5.0                                                                               | 2.2                                                                            | 274                                                                             | 0.108                                                                    |
| P6KE200CA   | 190                                                        | 210  | 1.0                                    | 171                                                | 5.0                                                                               | 2.2                                                                            | 274                                                                             | 0.108                                                                    |
| P6KE220A    | 209                                                        | 231  | 1.0                                    | 185                                                | 5.0                                                                               | 1.8                                                                            | 328                                                                             | 0.108                                                                    |
| P6KE220CA   | 209                                                        | 231  | 1.0                                    | 185                                                | 5.0                                                                               | 1.8                                                                            | 328                                                                             | 0.108                                                                    |
| P6KE250A    | 237                                                        | 263  | 1.0                                    | 214                                                | 5.0                                                                               | 1.7                                                                            | 344                                                                             | 0.110                                                                    |
| P6KE250CA   | 237                                                        | 263  | 1.0                                    | 214                                                | 5.0                                                                               | 1.7                                                                            | 344                                                                             | 0.110                                                                    |
| P6KE300A    | 285                                                        | 315  | 1.0                                    | 256                                                | 5.0                                                                               | 1.4                                                                            | 414                                                                             | 0.110                                                                    |
| P6KE300CA   | 285                                                        | 315  | 1.0                                    | 256                                                | 5.0                                                                               | 1.4                                                                            | 414                                                                             | 0.110                                                                    |
| P6KE350A    | 332                                                        | 368  | 1.0                                    | 300                                                | 5.0                                                                               | 1.2                                                                            | 482                                                                             | 0.110                                                                    |
| P6KE350CA   | 332                                                        | 368  | 1.0                                    | 300                                                | 5.0                                                                               | 1.2                                                                            | 482                                                                             | 0.110                                                                    |
| P6KE400A    | 380                                                        | 420  | 1.0                                    | 342                                                | 5.0                                                                               | 1.1                                                                            | 548                                                                             | 0.110                                                                    |
| P6KE400CA   | 380                                                        | 420  | 1.0                                    | 342                                                | 5.0                                                                               | 1.1                                                                            | 548                                                                             | 0.110                                                                    |
| P6KE440A    | 418                                                        | 462  | 1.0                                    | 376                                                | 5.0                                                                               | 1.0                                                                            | 602                                                                             | 0.110                                                                    |
| P6KE440CA   | 418                                                        | 462  | 1.0                                    | 376                                                | 5.0                                                                               | 1.0                                                                            | 602                                                                             | 0.110                                                                    |

### NOTES:

1. V<sub>(BR)</sub> measured after I<sub>T</sub> applied for 300μs, I<sub>T</sub>=square wave pulse or equivalent
2. Surge current waveform per Fig.3 and derated per Fig.2
3. For bidirectional types having V<sub>WM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled
4. All items and symbols are consistent with ANSI/IEEE C62.35

The electrical characteristics above is for reference only.

FIG. 1-PEAK PULSE POWER RATING CURVE

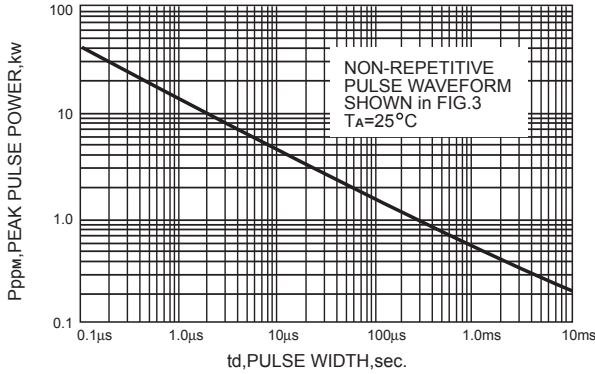


FIG. 2-PULSE DERATING CURVE

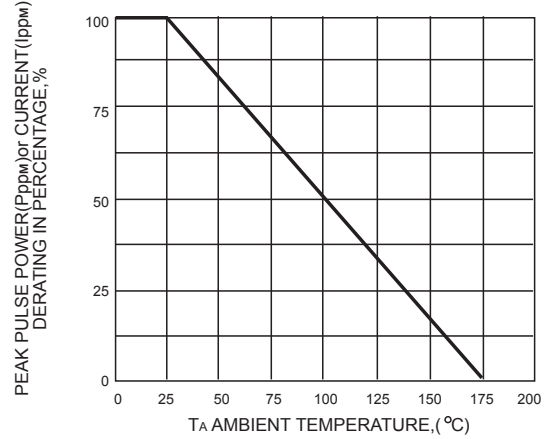


FIG.3-PULSE WAVEFORM

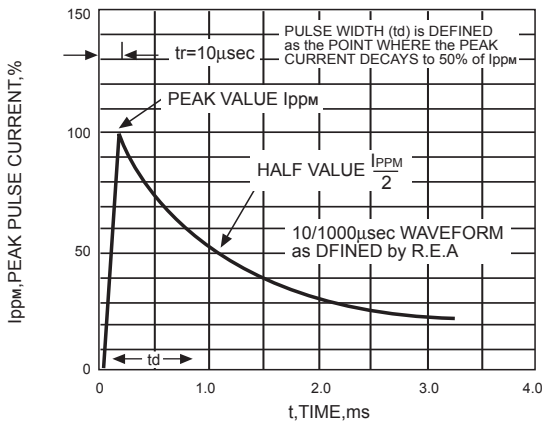


FIG.5-STEADY STATE POWER DERATING CURVE

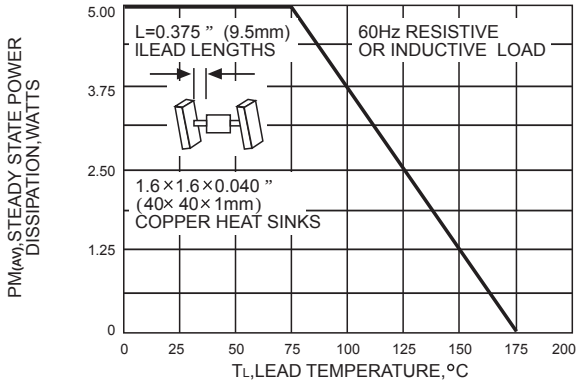


FIG. 4-TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

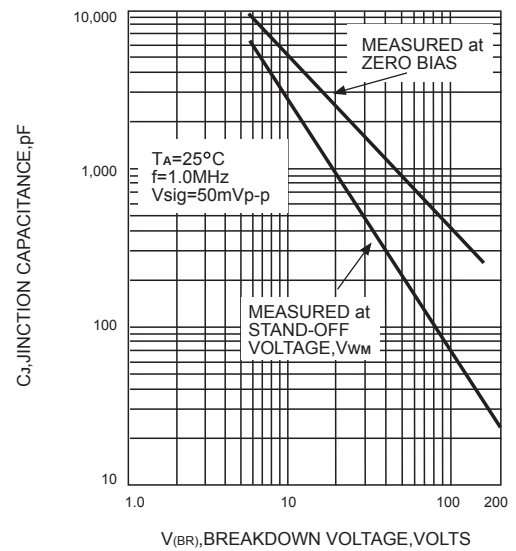


FIG.7-TYPICAL REVERSE LEAKAGE CHARACTERISTICS

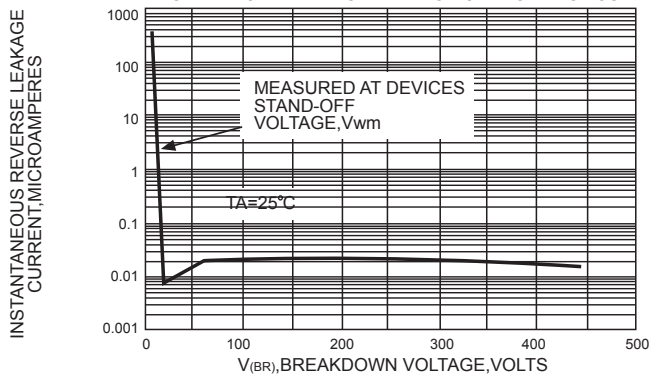
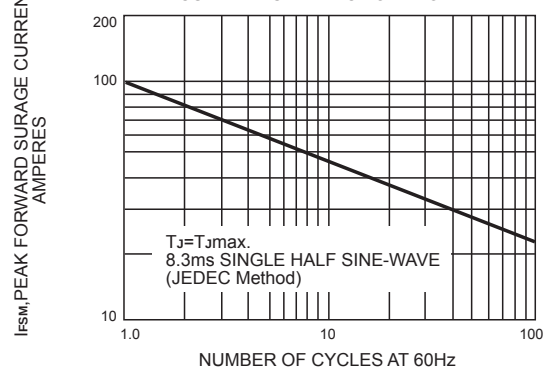


FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY



The curve characteristics above is for reference only.