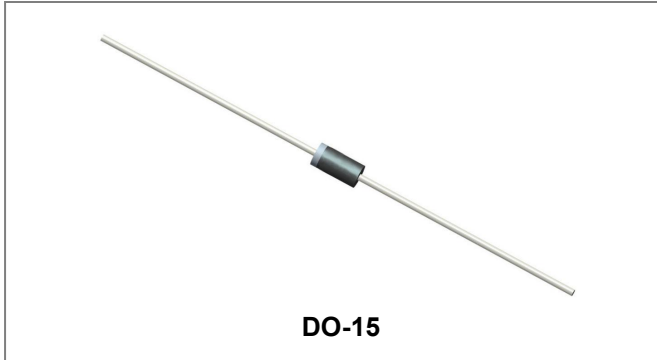


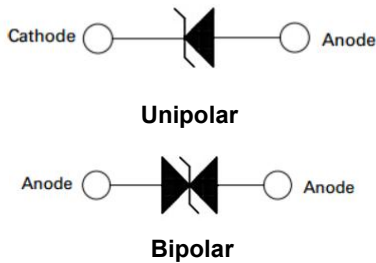
## P6KE SERIES TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 600W Peak Pulse Power Dissipation
- 5.8V- 376V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- This is a Pb – Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- Case: JEDEC DO-15 Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.41 grams(approx.)

### Maximum Ratings and Thermal Characteristics@ $T_A=25^{\circ}\text{C}$ unless otherwise specified

| Parameter  | Symbol          | Value        | Unit                 |
|--|-----------------|--------------|----------------------|
| Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ (Fig.1)(Note 1, 2, 5) | $P_{PPM}$       | Minimum 600  | W                    |
| Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)               | $I_{FSM}$       | 100          | A                    |
| Steady State Power Dissipation( Note 2, 4)                                     | $P_{M(AV)}$     | 5.0          | W                    |
| Typical Thermal Resistance Junction to Lead                                    | $R_{\theta JL}$ | 20           | $^{\circ}\text{C/W}$ |
| Typical Thermal Resistance Junction to Ambient                                 | $R_{\theta JA}$ | 75           | $^{\circ}\text{C/W}$ |
| Operating Junction and Storage Temperature Range                               | $T_J, T_{STG}$  | -55 to + 175 | $^{\circ}\text{C}$   |

- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^{\circ}\text{C}$  per Fig. 2.
  2. Mounted on 40mm<sup>2</sup> copper pad.
  3. 8.3ms Single Half Sine Wave duty cycle = 4 pulses per minutes maximum
  4. Lead temperature at 75 $^{\circ}\text{C}$ =  $T_L$
  3. Peak pulse power waveform is 10/1000 $\mu\text{s}$ .

**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

| UNI-POLAR | BI-POLAR  | REVERSE STAND-OFF VOLTAGE V <sub>RWM</sub> (V) | BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MIN. @I <sub>T</sub> | BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MAX. @I <sub>T</sub> | TEST CURRENT I <sub>T</sub> (MA) | MAXIMUM CLAMPING VOLTAGE @I <sub>PP</sub> V <sub>C</sub> (V) | PEAK PULSE CURRENT I <sub>PP</sub> (A) | REVERSE LEAKAGE @V <sub>RWM</sub> I <sub>R</sub> (uA) |
|-----------|-----------|--|--|--|----------------------------------|--|--|---|
| P6KE6.8A  | P6KE6.8CA | 5.8  | 6.45   | 7.14   | 10                               | 10.5   | 58.1                                   | 1000  |
| P6KE7.5A  | P6KE7.5CA | 6.4  | 7.13   | 7.88   | 10                               | 11.3   | 54                                     | 500   |
| P6KE8.2A  | P6KE8.2CA | 7.02   | 7.79   | 8.61   | 10                               | 12.1   | 50.4                                   | 200   |
| P6KE9.1A  | P6KE9.1CA | 7.78   | 8.65   | 9.55   | 10                               | 13.4   | 45.5                                   | 50  |
| P6KE10A   | P6KE10CA  | 8.55   | 9.5  | 10.5   | 1                                | 14.5   | 42.1                                   | 10  |
| P6KE11A   | P6KE11CA  | 9.4  | 10.5   | 11.6   | 1                                | 15.6   | 39.1                                   | 5   |
| P6KE12A   | P6KE12CA  | 10.2   | 11.4   | 12.6   | 1                                | 16.7   | 36.5                                   | 5   |
| P6KE13A   | P6KE13CA  | 11.1   | 12.4   | 13.7   | 1                                | 18.2   | 33.5                                   | 5   |
| P6KE15A   | P6KE15CA  | 12   | 14.3   | 15.8   | 1                                | 21.2   | 28.8                                   | 5   |
| P6KE16A   | P6KE16CA  | 12.9   | 15.2   | 16.8   | 1                                | 22.5   | 27.1                                   | 5   |
| P6KE18A   | P6KE18CA  | 14.5   | 17.1   | 18.9   | 1                                | 25.2   | 24.2                                   | 5   |
| P6KE20A   | P6KE20CA  | 17.1   | 19   | 21   | 1                                | 27.7   | 22                                     | 5   |
| P6KE22A   | P6KE22CA  | 18.8   | 20.9   | 23.1   | 1                                | 30.6   | 19.9                                   | 5   |
| P6KE24A   | P6KE24CA  | 20.5   | 22.8   | 25.2   | 1                                | 33.2   | 18.4                                   | 5   |
| P6KE27A   | P6KE27CA  | 23.1   | 25.7   | 28.4   | 1                                | 37.5   | 16.3                                   | 5   |
| P6KE30A   | P6KE30CA  | 25.6   | 28.5   | 31.5   | 1                                | 41.4   | 14.7                                   | 5   |
| P6KE33A   | P6KE33CA  | 28.2   | 31.4   | 34.7   | 1                                | 45.7   | 13.3                                   | 5   |
| P6KE36A   | P6KE36CA  | 30.8   | 34.2   | 37.8   | 1                                | 49.9   | 12.2                                   | 5   |
| P6KE39A   | P6KE39CA  | 33.3   | 37.1   | 41   | 1                                | 53.9   | 11.3                                   | 5   |
| P6KE43A   | P6KE43CA  | 36.8   | 40.9   | 45.2   | 1                                | 59.3   | 10.3                                   | 5   |
| P6KE47A   | P6KE47CA  | 40.2   | 44.7   | 49.4   | 1                                | 64.8   | 9.4                                    | 5   |
| P6KE51A   | P6KE51CA  | 43.6   | 48.5   | 53.6   | 1                                | 70.1   | 8.7                                    | 5   |
| P6KE56A   | P6KE56CA  | 47.8   | 53.2   | 58.8   | 1                                | 77   | 7.9                                    | 5   |
| P6KE62A   | P6KE62CA  | 53   | 58.9   | 65.1   | 1                                | 85   | 7.2                                    | 5   |
| P6KE68A   | P6KE68CA  | 58.1   | 64.6   | 71.4   | 1                                | 92   | 6.6                                    | 5   |
| P6KE75A   | P6KE75CA  | 64.1   | 71.3   | 78.8   | 1                                | 103  | 5.9                                    | 5   |
| P6KE82A   | P6KE82CA  | 70.1   | 77.9   | 86.1   | 1                                | 113  | 5.4                                    | 5   |
| P6KE91A   | P6KE91CA  | 77.8   | 86.5   | 95.5   | 1                                | 125  | 4.9                                    | 5   |
| P6KE100A  | P6KE100CA | 85.5   | 95   | 105  | 1                                | 137  | 4.5                                    | 5   |
| P6KE110A  | P6KE110CA | 94   | 105  | 116  | 1                                | 152  | 4                                      | 5   |
| P6KE120A  | P6KE120CA | 102  | 114  | 126  | 1                                | 165  | 3.7                                    | 5   |
| P6KE130A  | P6KE130CA | 111  | 124  | 137  | 1                                | 179  | 3.4                                    | 5   |
| P6KE150A  | P6KE150CA | 128  | 143  | 158  | 1                                | 207  | 2.9                                    | 5   |
| P6KE160A  | P6KE160CA | 136  | 152  | 168  | 1                                | 219  | 2.8                                    | 5   |
| P6KE170A  | P6KE170CA | 145  | 162  | 179  | 1                                | 234  | 2.6                                    | 5   |
| P6KE180A  | P6KE180CA | 154  | 171  | 189  | 1                                | 246  | 2.5                                    | 5   |
| P6KE200A  | P6KE200CA | 171  | 190  | 210  | 1                                | 274  | 2.2                                    | 5   |
| P6KE220A  | P6KE220CA | 185  | 209  | 231  | 1                                | 328  | 1.9                                    | 5   |
| P6KE250A  | P6KE250CA | 214  | 237  | 263  | 1                                | 344  | 1.8                                    | 5   |
| P6KE300A  | P6KE300CA | 256  | 285  | 315  | 1                                | 414  | 1.5                                    | 5   |
| P6KE350A  | P6KE350CA | 300  | 333  | 368  | 1                                | 482  | 1.3                                    | 5   |
| P6KE400A  | P6KE400CA | 342  | 380  | 420  | 1                                | 548  | 1.1                                    | 5   |
| P6KE440A  | P6KE440CA | 376  | 418  | 462  | 1                                | 602  | 1                                      | 5   |

For bidirectional type having V<sub>RWM</sub> of 10 volts and less, the IR limit is double.  
For parts without A, the V<sub>BR</sub> is + 10% .

**Ratings and Characteristics Curves**

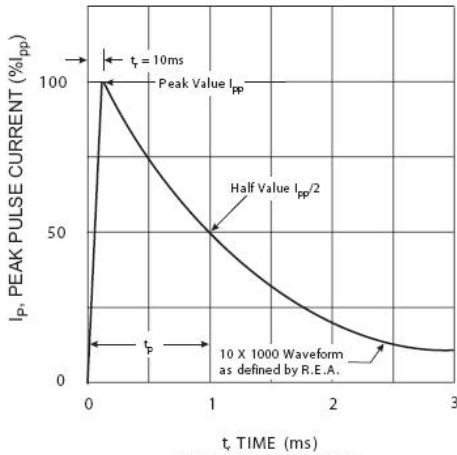


Fig. 1 Pulse Waveform

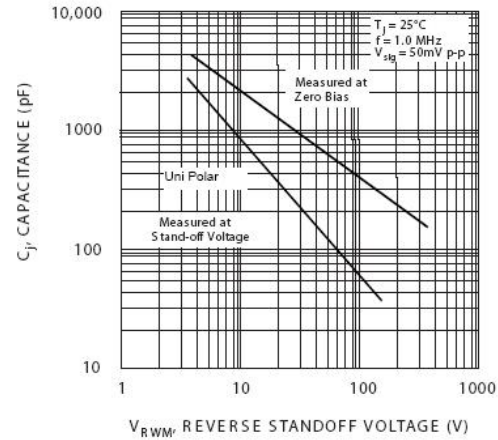


Fig. 2 Typical Junction Capacitance

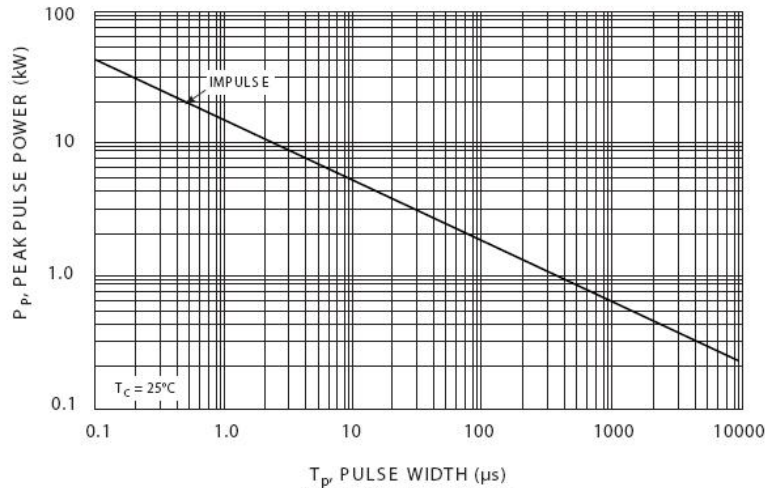


Fig. 3 Pulse Rating Curve

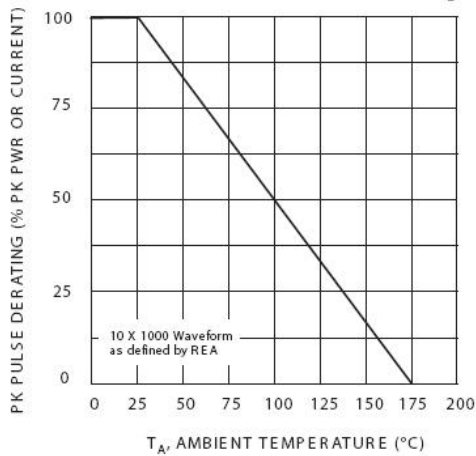


Fig. 4 Pulse Derating Curve

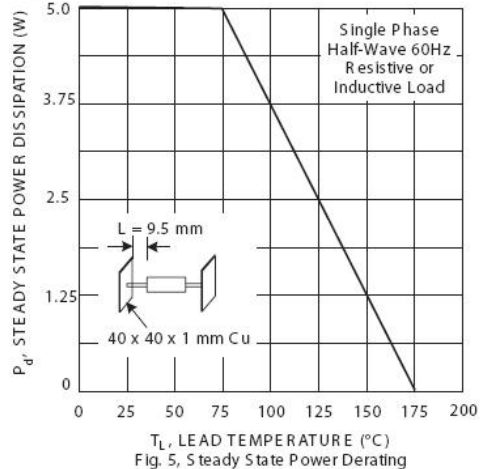
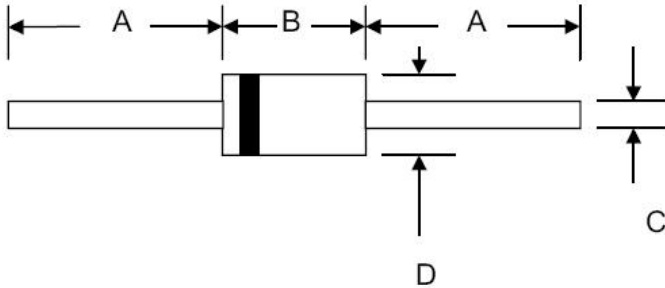


Fig. 5 Steady State Power Derating

**Mechanical Dimensions DO-15**



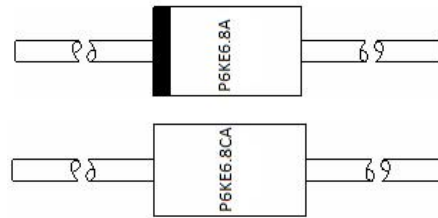
| SYMBOL | Millimeters |      | Inches |       |
|--------|-------------|------|--------|-------|
|        | Min.        | Max. | Min.   | Max.  |
| A      | 25.4        | -    | 1.000  | -     |
| B      | 5.5         | 7.62 | 0.217  | 0.300 |
| C      | 0.56        | 0.9  | 0.022  | 0.034 |
| D      | 2.6         | 3.6  | 0.104  | 0.140 |

**Ordering Information**

| Device         | Package         | Shipping       |
|----------------|-----------------|----------------|
| P6KE SERIES    | DO-15 (Pb-Free) | 3000pcs / tape |
| P6KE SERIES TA | DO-15 (Pb-Free) | 3000pcs / tape |

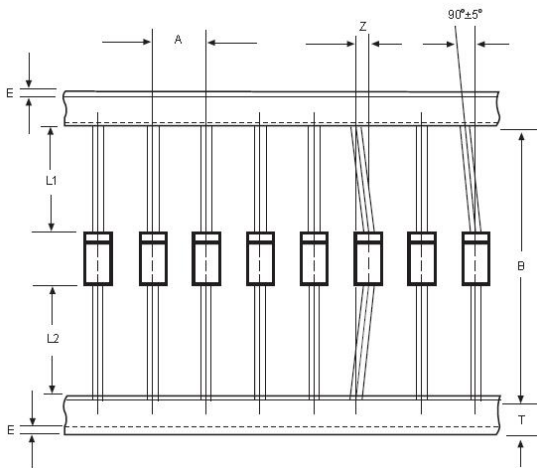
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**



P6KE6.8A/P6KE6.8CA = Part Name

**Carrier Tape Specification DO-15**



| SYMBOL  | Millimeters |      |
|---------|-------------|------|
|         | Min.        | Max. |
| A       | 4.50        | 5.50 |
| B       | 50.9        | 53.9 |
| Z       | -           | 1.20 |
| T       | 5.60        | 6.40 |
| E       | -           | 0.80 |
| IL1-L2I | -           | 1.0  |

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[CPDUR24V-HF](#) [CPDQC5V0USP-HF](#) [CPDQC5V0-HF](#) [MPLAD30KP45CAE3](#) [MMBZ27VCLQ-7-F](#) [MMAD1108/TR13](#) [MPLAD30KP24A](#)  
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[MPLAD30KP43CAE3](#) [SMAJ43A-TP](#) [D5V0F6U8LP33-7](#) [TVS5501V10MUT5G](#) [5.0SMLJ24CA-TP](#) [SMAJ110CA-TP](#) [MPLAD15KP75CAE3](#)  
[MMAD1103e3/TR13](#) [DFLT40AQ-7](#)