



Micro Commercial Components



Micro Commercial Components  
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## P4KE6.8(C)A THRU P4KE550(C)A

### Features

- Halogen free available upon request by adding suffix "-HF"
- Unidirectional And Bidirectional
- Low Zener Imdepance
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- For Bidirectional Devices Add "C" To The Suffix Of The Part Number: i.e. P4KE6.8C or P4KE6.8CA for 5% Tolerance Devices
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)

### Maximum Ratings

- Operating Temperature: -55°C to +175°C
- Storage Temperature: -55°C to +175°C
- P<sub>PPM</sub>=400 Watt (Peak Pulse Power Dissipation at Ta=25 °C)
- Response Time  $1 \times 10^{-12}$  Seconds For Unidirectional and  $5 \times 10^{-9}$  For Bidirectional
- P<sub>M(AV)</sub>=1W (Steady state Power Dissipation at TL=75°C)

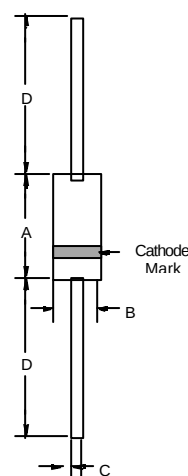
### Mechanical Data

- UL Recognized File # E331408
- Polarity :Color band denotes cathodes except Bipolar
- Mounting position :Any
- Weight :0.012ounce,0.3grams

Note: 1. High Temperature Solder Exemption Applied, see EU Directive Annex 7.

## 400 Watt Transient Voltage Suppressors 6.8 to 550 Volts

### DO-41



| DIMENSIONS |        |      |       |      |      |
|------------|--------|------|-------|------|------|
| DIM        | INCHES |      | MM    |      | NOTE |
|            | MIN    | MAX  | MIN   | MAX  |      |
| A          | .166   | .205 | 4.10  | 5.20 |      |
| B          | .080   | .107 | 2.00  | 2.70 |      |
| C          | .028   | .034 | .70   | .90  |      |
| D          | 1.000  | ---  | 25.40 | ---  |      |

## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating Curve

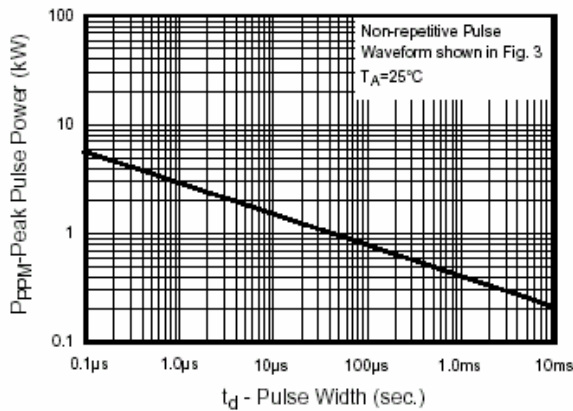


Fig.2 - Pulse Derating Curve

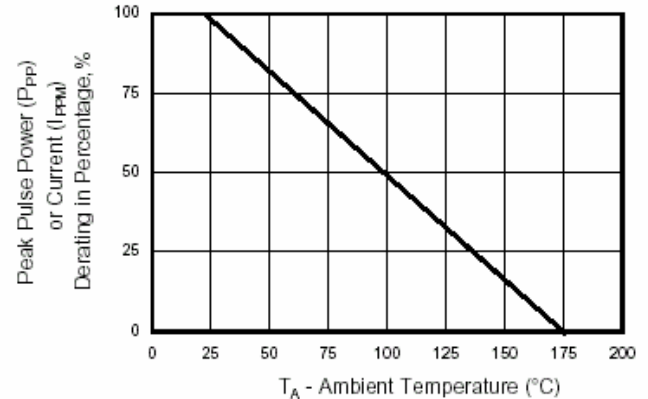


Fig.3 - Pulse Waveform

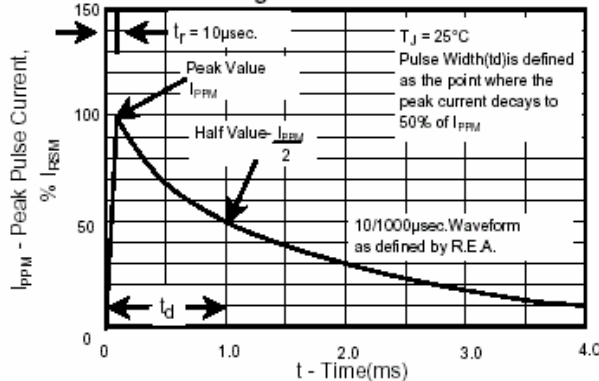


Fig.4 - Typ. Junction Capacitance Uni-Directional

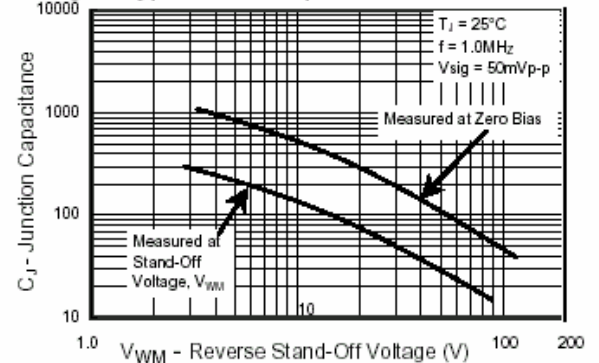


Fig.5 - steady State Power Derating Curve

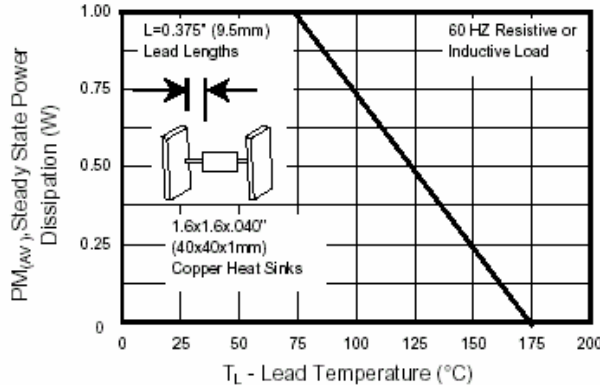


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

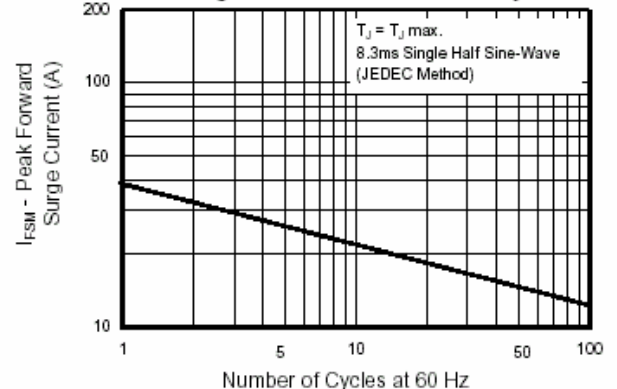


Fig.7 - Typical Reverse Leakage Characteristics

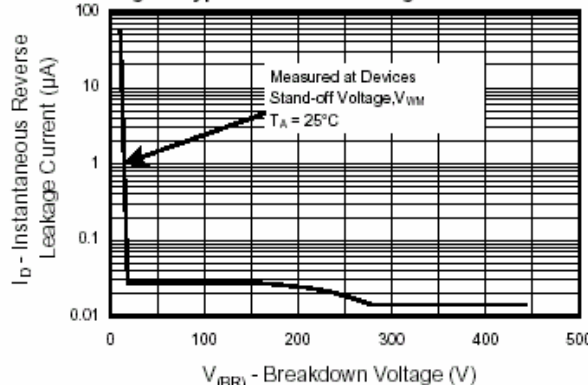
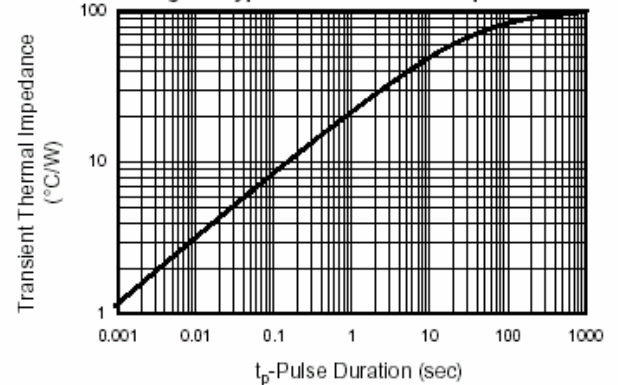


Fig. 8 - Typ. Transient Thermal Impedance



# P4KE6.8A thru P4KE550A

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

| MCC         |           | Breakdown Voltage                         |       | TEST                   | Reverse Standoff Voltage | Maximum Reverse Leakage         | Maximum Clamping Voltage        | Maximum Peak Pulse Current (I <sub>PP</sub> ) | Maximum Temperature Coefficient Of V <sub>BR</sub> |
|-------------|-----------|-------------------------------------------|-------|------------------------|--------------------------|---------------------------------|---------------------------------|-----------------------------------------------|----------------------------------------------------|
| Part Number |           | V <sub>(BR)</sub> @I <sub>T</sub> (Volts) |       | Current I <sub>T</sub> | V <sub>WM</sub>          | I <sub>R</sub> @V <sub>WM</sub> | V <sub>c</sub> @I <sub>pp</sub> |                                               |                                                    |
| Uni-Polar   | Bi-Polar  | Min                                       | Max   | mA(DC)                 | V                        | uA                              | V                               | A                                             | (%/°C)                                             |
| P4KE6.8A    | P4KE6.8CA | 6.45                                      | 7.14  | 10                     | 5.8                      | 1000                            | 10.5                            | 39                                            | 0.057                                              |
| P4KE7.5A    | P4KE7.5CA | 7.13                                      | 7.88  | 10                     | 6.4                      | 500                             | 11.3                            | 36.3                                          | 0.061                                              |
| P4KE8.2A    | P4KE8.2CA | 7.79                                      | 8.61  | 10                     | 7.02                     | 200                             | 12.1                            | 33.9                                          | 0.060                                              |
| P4KE9.1A    | P4KE9.1CA | 8.65                                      | 9.55  | 1                      | 7.78                     | 50                              | 13.4                            | 30.6                                          | 0.068                                              |
| P4KE10A     | P4KE10CA  | 9.5                                       | 10.5  | 1                      | 8.55                     | 10                              | 14.5                            | 28.3                                          | 0.073                                              |
| P4KE11A     | P4KE11CA  | 10.5                                      | 11.6  | 1                      | 9.4                      | 5                               | 15.6                            | 26.3                                          | 0.075                                              |
| P4KE12A     | P4KE12CA  | 11.4                                      | 12.6  | 1                      | 10.2                     | 5                               | 16.7                            | 24.6                                          | 0.078                                              |
| P4KE13A     | P4KE13CA  | 12.4                                      | 13.7  | 1                      | 11.1                     | 1                               | 18.2                            | 22.5                                          | 0.081                                              |
| P4KE15A     | P4KE15CA  | 14.3                                      | 15.8  | 1                      | 12.8                     | 1                               | 21.2                            | 19.3                                          | 0.084                                              |
| P4KE16A     | P4KE16CA  | 15.2                                      | 16.8  | 1                      | 13.6                     | 1                               | 22.5                            | 18.2                                          | 0.086                                              |
| P4KE18A     | P4KE18CA  | 17.1                                      | 18.9  | 1                      | 15.3                     | 1                               | 25.5                            | 16.1                                          | 0.088                                              |
| P4KE20A     | P4KE20CA  | 19                                        | 21    | 1                      | 17.1                     | 1                               | 27.7                            | 14.8                                          | 0.090                                              |
| P4KE22A     | P4KE22CA  | 20.9                                      | 23.1  | 1                      | 18.8                     | 1                               | 30.6                            | 13.4                                          | 0.092                                              |
| P4KE24A     | P4KE24CA  | 22.8                                      | 25.2  | 1                      | 20.5                     | 1                               | 33.2                            | 12.3                                          | 0.094                                              |
| P4KE27A     | P4KE27CA  | 25.7                                      | 28.4  | 1                      | 23.1                     | 1                               | 37.5                            | 10.9                                          | 0.096                                              |
| P4KE30A     | P4KE30CA  | 28.5                                      | 31.5  | 1                      | 25.6                     | 1                               | 41.4                            | 9.9                                           | 0.097                                              |
| P4KE33A     | P4KE33CA  | 31.4                                      | 34.7  | 1                      | 28.2                     | 1                               | 45.7                            | 9                                             | 0.098                                              |
| P4KE36A     | P4KE36CA  | 34.2                                      | 37.8  | 1                      | 30.8                     | 1                               | 49.9                            | 8.2                                           | 0.099                                              |
| P4KE39A     | P4KE39CA  | 37.1                                      | 41    | 1                      | 33.3                     | 1                               | 53.9                            | 7.6                                           | 0.100                                              |
| P4KE43A     | P4KE43CA  | 40.9                                      | 45.2  | 1                      | 36.8                     | 1                               | 59.3                            | 6.9                                           | 0.101                                              |
| P4KE47A     | P4KE47CA  | 44.7                                      | 49.4  | 1                      | 40.2                     | 1                               | 64.8                            | 6.3                                           | 0.101                                              |
| P4KE51A     | P4KE51CA  | 48.5                                      | 53.6  | 1                      | 43.6                     | 1                               | 70.1                            | 5.8                                           | 0.102                                              |
| P4KE56A     | P4KE56CA  | 53.2                                      | 58.8  | 1                      | 47.8                     | 1                               | 77                              | 5.3                                           | 0.103                                              |
| P4KE62A     | P4KE62CA  | 58.9                                      | 65.1  | 1                      | 53                       | 1                               | 85                              | 4.8                                           | 0.104                                              |
| P4KE68A     | P4KE68CA  | 64.6                                      | 71.4  | 1                      | 58.1                     | 1                               | 92                              | 4.5                                           | 0.104                                              |
| P4KE75A     | P4KE75CA  | 71.3                                      | 78.8  | 1                      | 64.1                     | 1                               | 103                             | 4                                             | 0.105                                              |
| P4KE82A     | P4KE82CA  | 77.9                                      | 86.1  | 1                      | 70.1                     | 1                               | 113                             | 3.6                                           | 0.105                                              |
| P4KE91A     | P4KE91CA  | 86.5                                      | 95.5  | 1                      | 77.8                     | 1                               | 125                             | 3.3                                           | 0.106                                              |
| P4KE100A    | P4KE100CA | 95                                        | 105   | 1                      | 85.5                     | 1                               | 137                             | 3                                             | 0.106                                              |
| P4KE110A    | P4KE110CA | 105                                       | 116   | 1                      | 94                       | 1                               | 152                             | 2.7                                           | 0.107                                              |
| P4KE120A    | P4KE120CA | 114                                       | 126   | 1                      | 102                      | 1                               | 165                             | 2.5                                           | 0.107                                              |
| P4KE130A    | P4KE130CA | 124                                       | 137   | 1                      | 111                      | 1                               | 179                             | 2.3                                           | 0.107                                              |
| P4KE150A    | P4KE150CA | 143                                       | 158   | 1                      | 128                      | 1                               | 207                             | 2                                             | 0.108                                              |
| P4KE160A    | P4KE160CA | 152                                       | 168   | 1                      | 136                      | 1                               | 219                             | 1.9                                           | 0.108                                              |
| P4KE170A    | P4KE170CA | 162                                       | 179   | 1                      | 145                      | 1                               | 234                             | 1.8                                           | 0.108                                              |
| P4KE180A    | P4KE180CA | 171                                       | 189   | 1                      | 154                      | 1                               | 246                             | 1.7                                           | 0.108                                              |
| P4KE200A    | P4KE200CA | 190                                       | 210   | 1                      | 171                      | 1                               | 274                             | 1.5                                           | 0.108                                              |
| P4KE220A    | P4KE220CA | 209                                       | 231   | 1                      | 185                      | 1                               | 328                             | 1.3                                           | 0.108                                              |
| P4KE250A    | P4KE250CA | 237                                       | 263   | 1                      | 214                      | 1                               | 344                             | 1.2                                           | 0.110                                              |
| P4KE300A    | P4KE300CA | 285                                       | 315   | 1                      | 256                      | 1                               | 414                             | 1                                             | 0.110                                              |
| P4KE350A    | P4KE350CA | 332                                       | 368   | 1                      | 300                      | 1                               | 482                             | 0.85                                          | 0.110                                              |
| P4KE400A    | P4KE400CA | 380                                       | 420   | 1                      | 342                      | 1                               | 548                             | 0.75                                          | 0.110                                              |
| P4KE440A    | P4KE440CA | 418                                       | 462   | 1                      | 376                      | 1                               | 602                             | 0.68                                          | 0.110                                              |
| P4KE480A    | P4KE480CA | 456                                       | 504   | 1                      | 408                      | 1                               | 658                             | 0.61                                          | 0.110                                              |
| P4KE510A    | P4KE510CA | 485                                       | 535   | 1                      | 434                      | 1                               | 698                             | 0.57                                          | 0.110                                              |
| P4KE530A    | P4KE530CA | 503.5                                     | 556.5 | 1                      | 477                      | 1                               | 725                             | 0.55                                          | 0.110                                              |
| P4KE540A    | P4KE540CA | 513                                       | 567   | 1                      | 459                      | 1                               | 740                             | 0.54                                          | 0.110                                              |
| P4KE550A    | P4KE550CA | 522.5                                     | 577.5 | 1                      | 495                      | 1                               | 760                             | 0.52                                          | 0.110                                              |

Notes: For bidirectional types having V<sub>WM</sub> of 10 Volts and less, the I<sub>R</sub> limit is double.  
For parts without A, the V<sub>BR</sub> is +/- 10%.

## Ordering Information :

| Device         | Packing                      |
|----------------|------------------------------|
| Part Number-TP | Tape&Reel: 5Kpcs/Reel        |
| Part Number-AP | Ammo Packing: 5Kpcs/Ammo Box |
| Part Number-BP | Bulk: 50Kpcs/Carton          |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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