



E480232

## Features

- Low Zener Impepance
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Unidirectional And Bidirectional
- For Bidirectional Devices Add "C" To The Suffix Of The Part Number: i.e. P4KE6.8CA for 5% Tolerance Devices
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Mechanical Data

- Polarity :Color Band Denotes Cathodes Except Bipolar
- Mounting Position :Any
- Weight :0.012ounce,0.3grams

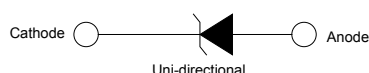
## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C

|                                |                                              |      |                          |
|--------------------------------|----------------------------------------------|------|--------------------------|
| Peak Pulse Power Dissipation   | $P_{PPM}$                                    | 400W | $T_A=25^{\circ}\text{C}$ |
| Steady State Power Dissipatoin | $P_{M(AV)}$                                  | 1 W  | $T_L=75^{\circ}\text{C}$ |
| Response Time                  | Unidirectional $<1 \times 10^{-12}$ Seconds; |      |                          |
|                                | Bidirectoinal $<5 \times 10^{-9}$ Seconds    |      |                          |

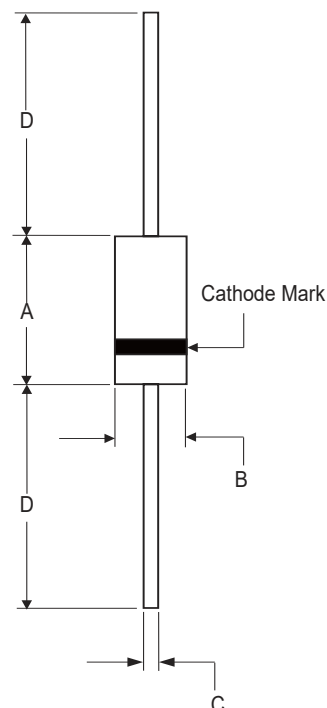
Note:1.High Temperature Solder Exemption Applied, see EU Directive Annex 7a.

Pin Configuration:



**400WATTS TVS**  
**6.8 to 550 VOLTS**

DO-41



| DIM | INCHES |       | MM    |       | NOTE   |
|-----|--------|-------|-------|-------|--------|
|     | MIN    | MAX   | MIN   | MAX   |        |
| A   | 0.160  | 0.205 | 4.10  | 5.20  |        |
| B   | 0.080  | 0.107 | 2.00  | 2.70  | $\phi$ |
| C   | 0.028  | 0.035 | 0.71  | 0.90  | $\phi$ |
| D   | 1.000  | ----- | 25.40 | ----- |        |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC<br>Part Number |           | Breakdown<br>Voltage<br>$V_{(BR)}@I_T$<br>(Volts) |       | TEST<br>Current $I_T$ | Reverse<br>Standoff<br>Voltage<br>$V_{WM}$ | Maximun<br>Reverse<br>Leakage<br>$I_R@V_{WM}$ | Maximum<br>Clamping<br>Voltage<br>$V_C@I_{PP}$ | Maximum Peak<br>Pluse<br>Current ( $I_{PP}$ ) | Maximum<br>Temperature<br>Coefficient<br>Of $V_{(BR)}$ |
|--------------------|-----------|---------------------------------------------------|-------|-----------------------|--------------------------------------------|-----------------------------------------------|------------------------------------------------|-----------------------------------------------|--------------------------------------------------------|
| Uni-Polar          | Bi-Polar  | Min                                               | Max   | mA(DC)                | V                                          | μA                                            | 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                                                  |

Note: For bidirectional type having  $V_{WM}$  of 10 volts and less, the  $I_R$  limit is double.  
For parts without A, the  $V_{BR}$  is  $\pm 10\%$

## Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

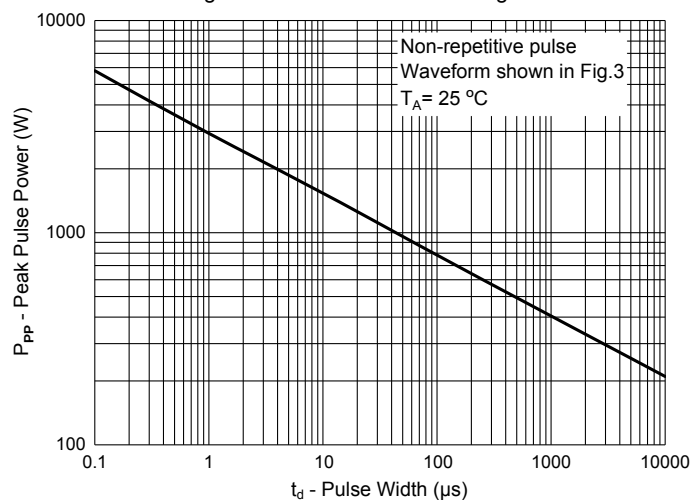


Fig. 2 - Typical Junction Capacitance

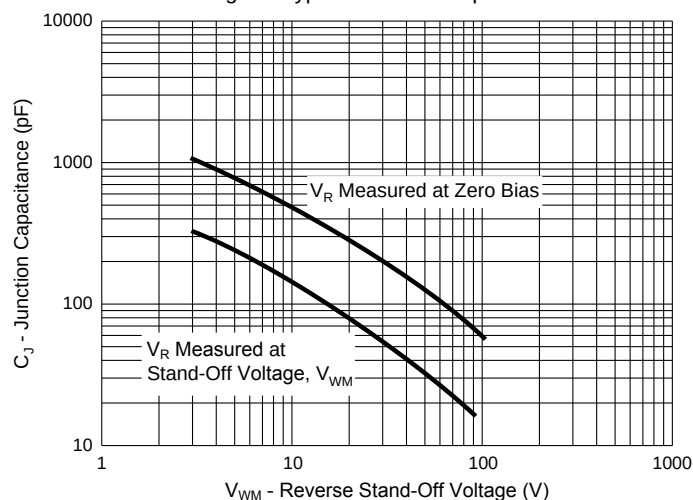


Fig. 3 - Pulse Waveform

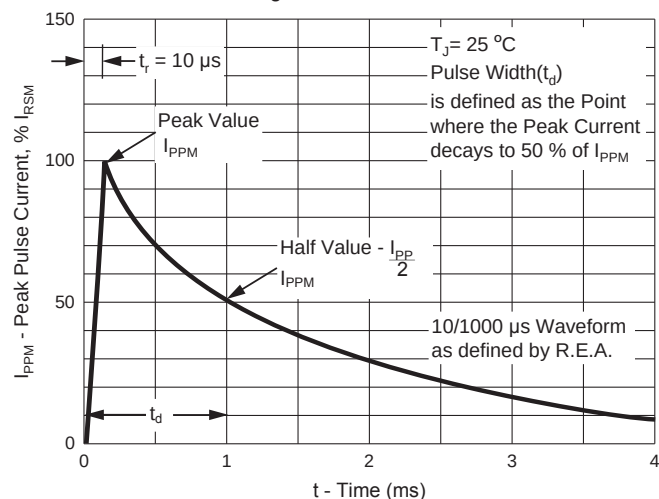
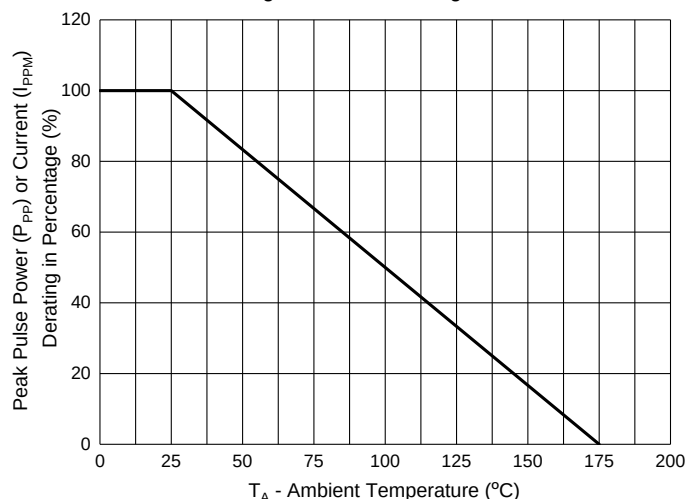


Fig. 4 - Pulse Derating Curve



## Ordering Information

| Device           | Packing                        |
|------------------|--------------------------------|
| (Part Number)-TP | Tape&Reel: 5Kpcs/Reel          |
| (Part Number)-AP | Ammo Packing: 5Kpcs/Ammo Box   |
| (Part Number)-BP | Bulk: 1Kpcs/Box, 50Kpcs/Carton |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-TP-HF

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