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# P4KE6.8 THRU P4KE400A

## Features

- Unidirectional And Bidirectional
- Low Inductance
- High Temp Soldering: 250°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

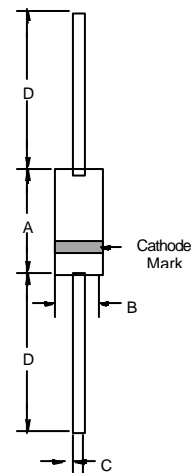
## 400 Watt Transient Voltage Suppressors 6.8 to 400 Volts

## Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- 400 Watt Peak Power
- Response Time  $1 \times 10^{-12}$  Seconds For Unidirectional and  $5 \times 10^{-9}$  For Bidirectional



## DO-41



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

# P4KE6.8 thru P4KE400A



Figure 3 - Typical Capacitance



Typical Capacitance (pf) – versus – Breakdown voltage ( $V_{BR}$ )

Figure 4 - Derating Curve



Peak Pulse Power (%  $P_{PP}$ ) - Versus - Temperature °C

## ELECTRICAL CHARACTERISTICS @25°C

| MCC PART NUMBER | BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_T$ (VOLTS) |     |      | TEST CURRENT $I_T$ | RATED STANDOFF VOLTAGE $V_{WM}$ | MAXIMUM REVERSE LEAKAGE $I_D$ @ $V_{WM}$ | MAXIMUM CLAMPING VOLTAGE $V_C$ @ $I_{PP}$ | MAXIMUM PEAK PULSE CURRENT $I_{PP}$ | MAX. TEMP COEFFICIENT OF $V_{BR}$ $V_{(BR)}$ (TA) -55°C TO 100°C |
|-----------------|--|-----|------|--------------------|---------------------------------|--|---|-------------------------------------|--|
|                 | MIN  | NOM | MAX  |                    |                                 |  |   |                                     |  |
| P4KE6.8         | 6.12   | 6.8 | 7.48 | 10                 | 5.50                            | 500                                      | 10.8                                      | 37                                  | .057   |
| P4KE6.8A        | 6.45   | 6.8 | 7.14 | 10                 | 5.80                            | 500                                      | 10.5                                      | 38                                  | .057   |
| P4KE7.5         | 6.75   | 7.5 | 8.25 | 10                 | 6.05                            | 200                                      | 11.7                                      | 34                                  | .061   |
| P4KE7.5A        | 7.13   | 7.5 | 7.88 | 10                 | 6.40                            | 200                                      | 11.3                                      | 35                                  | .061   |
| P4KE8.2         | 7.38   | 8.2 | 9.02 | 10                 | 6.63                            | 100                                      | 12.5                                      | 32                                  | .065   |
| P4KE8.2A        | 7.79   | 8.2 | 8.61 | 10                 | 7.02                            | 100                                      | 12.1                                      | 33                                  | .065   |
| P4KE9.1         | 8.19   | 9.1 | 10.0 | 1                  | 7.37                            | 20                                       | 13.8                                      | 29                                  | .068   |
| P4KE9.1A        | 8.65   | 9.1 | 9.55 | 1                  | 7.78                            | 20                                       | 13.4                                      | 30                                  | .068   |
| P4KE10          | 9.00   | 10  | 11.0 | 1                  | 8.10                            | 20                                       | 15.0                                      | 27                                  | .073   |
| P4KE10A         | 9.50   | 10  | 10.5 | 1                  | 8.55                            | 5  | 14.5                                      | 28                                  | .073   |
| P4KE11          | 9.90   | 11  | 12.1 | 1                  | 8.92                            | 2  | 16.2                                      | 25                                  | .075   |
| P4KE11A         | 10.5   | 11  | 11.6 | 1                  | 9.40                            | 2  | 15.6                                      | 26                                  | .075   |
| P4KE12          | 10.8   | 12  | 13.2 | 1                  | 9.72                            | 2  | 17.3                                      | 23                                  | .078   |
| P4KE12A         | 11.4   | 12  | 12.6 | 1                  | 10.2                            | 2  | 16.7                                      | 24                                  | .078   |
| P4KE13          | 11.7   | 13  | 14.3 | 1                  | 10.5                            | 2  | 19.0                                      | 21                                  | .081   |
| P4KE13A         | 12.4   | 13  | 13.7 | 1                  | 11.1                            | 2  | 18.2                                      | 22                                  | .081   |
| P4KE15          | 13.5   | 15  | 16.5 | 1                  | 12.1                            | 2  | 22.0                                      | 18                                  | .084   |
| P4KE15A         | 14.3   | 15  | 15.8 | 1                  | 12.8                            | 2  | 21.2                                      | 19                                  | .084   |
| P4KE16          | 14.4   | 16  | 17.6 | 1                  | 12.9                            | 2  | 23.5                                      | 17                                  | .086   |
| P4KE16A         | 15.2   | 16  | 16.8 | 1                  | 13.6                            | 2  | 22.5                                      | 18                                  | .086   |
| P4KE18          | 16.2   | 18  | 19.8 | 1                  | 14.5                            | 2  | 26.5                                      | 15                                  | .088   |
| P4KE18A         | 17.1   | 18  | 18.0 | 1                  | 15.3                            | 2  | 25.2                                      | 16                                  | .088   |
| P4KE20          | 18.0   | 20  | 22.0 | 1                  | 16.2                            | 2  | 29.1                                      | 14                                  | .090   |
| P4KE20A         | 19.0   | 20  | 21.0 | 1                  | 17.1                            | 2  | 27.7                                      | 14.5                                | .090   |
| P4KE22          | 19.8   | 22  | 24.2 | 1                  | 17.8                            | 2  | 31.9                                      | 12.5                                | .092   |
| P4KE22A         | 20.9   | 22  | 23.1 | 1                  | 18.8                            | 2  | 30.6                                      | 13                                  | .092   |
| P4KE24          | 21.6   | 24  | 26.4 | 1                  | 19.4                            | 2  | 34.7                                      | 11.5                                | .094   |
| P4KE24A         | 22.8   | 24  | 25.2 | 1                  | 20.5                            | 2  | 33.2                                      | 12                                  | .094   |
| P4KE27          | 24.3   | 27  | 29.7 | 1                  | 21.8                            | 2  | 39.1                                      | 10                                  | .096   |
| P4KE27A         | 25.7   | 27  | 28.4 | 1                  | 23.1                            | 2  | 37.5                                      | 11                                  | .096   |
| P4KE30          | 27.0   | 30  | 33.0 | 1                  | 24.3                            | 2  | 43.5                                      | 9.0                                 | .097   |
| P4KE30A         | 28.5   | 30  | 31.5 | 1                  | 25.6                            | 2  | 41.4                                      | 9.5                                 | .097   |
| P4KE33          | 29.7   | 33  | 36.3 | 1                  | 26.8                            | 2  | 47.7                                      | 8.5                                 | .098   |
| P4KE33A         | 31.4   | 33  | 34.7 | 1                  | 28.2                            | 2  | 45.7                                      | 9.0                                 | .098   |
| P4KE36          | 32.4   | 36  | 39.6 | 1                  | 29.1                            | 2  | 52.0                                      | 7.5                                 | .099   |
| P4KE36A         | 34.2   | 36  | 37.8 | 1                  | 30.8                            | 2  | 49.9                                      | 8.0                                 | .099   |

# P4KE6.8 thru P4KE400A



## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART NUMBER | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |     |      | TEST<br>CURRENT<br>$I_T$ | RATED<br>STANDOFF<br>VOLTAGE<br>$V_{WM}$ | MAXIMUM<br>REVERSE<br>LEAKAGE<br>$I_b @ V_{WM}$ | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>$V_C @ I_{PP}$ | MAXIMUM<br>PEAK<br>PULSE<br>CURRENT<br>$I_{PP}$ | MAX. TEMP<br>COEFFICIENT OF<br>$V_{BR}$<br>$V_{(BR)} (TA)$<br>-55°C TO 100°C |
|--------------------|--|-----|------|--------------------------|--|---|--|---|--|
|                    | MIN  | NOM | MAX  |                          |  |   |  |   |  |
| P4KE39             | 35.1   | 39  | 42.9 | 1                        | 31.6                                     | 2   | 56.4   | 7.0   | .100   |
| P4KE39A            | 37.1   | 39  | 41.0 | 1                        | 33.3                                     | 2   | 53.9   | 7.5   | .100   |
| P4KE43             | 38.7   | 43  | 47.3 | 1                        | 34.8                                     | 2   | 61.9   | 6.5   | .101   |
| P4KE43A            | 40.9   | 43  | 45.2 | 1                        | 36.8                                     | 2   | 59.3   | 7.0   | .101   |
| P4KE47             | 42.3   | 47  | 51.7 | 1                        | 38.1                                     | 2   | 67.8   | 5.9   | .101   |
| P4KE47A            | 44.7   | 47  | 49.4 | 1                        | 40.2                                     | 2   | 64.8   | 6.2   | .101   |
| P4KE51             | 45.9   | 51  | 56.1 | 1                        | 41.3                                     | 2   | 73.5   | 5.4   | .102   |
| P4KE51A            | 48.5   | 51  | 53.6 | 1                        | 43.6                                     | 2   | 70.1   | 5.7   | .102   |
| P4KE56             | 50.4   | 56  | 61.6 | 1                        | 45.4                                     | 2   | 80.5   | 5.0   | .103   |
| P4KE56A            | 53.2   | 56  | 58.8 | 1                        | 47.8                                     | 2   | 77.0   | 5.2   | .103   |
| P4KE62             | 55.8   | 62  | 68.2 | 1                        | 50.2                                     | 2   | 89.0   | 4.5   | .104   |
| P4KE62A            | 58.9   | 62  | 65.1 | 1                        | 53.0                                     | 2   | 85.0   | 4.7   | .104   |
| P4KE68             | 61.2   | 68  | 74.8 | 1                        | 55.1                                     | 2   | 98.0   | 4.1   | .104   |
| P4KE68A            | 64.6   | 68  | 71.4 | 1                        | 58.1                                     | 2   | 92.0   | 4.4   | .104   |
| P4KE75             | 67.5   | 75  | 82.5 | 1                        | 60.7                                     | 2   | 108  | 3.7   | .105   |
| P4KE75A            | 71.3   | 75  | 78.8 | 1                        | 64.1                                     | 2   | 103  | 3.9   | .105   |
| P4KE82             | 73.8   | 82  | 90.2 | 1                        | 66.4                                     | 2   | 118  | 3.4   | .105   |
| P4KE82A            | 77.9   | 82  | 86.1 | 1                        | 70.1                                     | 2   | 113  | 3.5   | .105   |
| P4KE91             | 81.9   | 91  | 100  | 1                        | 73.7                                     | 2   | 131  | 3.1   | .106   |
| P4KE91A            | 86.5   | 91  | 95.5 | 1                        | 77.8                                     | 2   | 125  | 3.2   | .106   |
| P4KE100            | 90.0   | 100 | 110  | 1                        | 81.0                                     | 2   | 144  | 2.8   | .106   |
| P4KE100A           | 95.0   | 100 | 105  | 1                        | 85.5                                     | 2   | 137  | 2.9   | .106   |
| P4KE110            | 99.0   | 110 | 121  | 1                        | 89.2                                     | 2   | 158  | 2.5   | .107   |
| P4KE110A           | 105  | 110 | 116  | 1                        | 94.0                                     | 2   | 152  | 2.6   | .107   |
| P4KE120            | 108  | 120 | 132  | 1                        | 97.2                                     | 2   | 173  | 2.3   | .107   |
| P4KE120A           | 114  | 120 | 126  | 1                        | 102                                      | 2   | 165  | 2.4   | .107   |
| P4KE130            | 117  | 130 | 143  | 1                        | 105                                      | 2   | 187  | 2.1   | .107   |
| P4KE130A           | 124  | 130 | 137  | 1                        | 111                                      | 2   | 179  | 2.2   | .107   |
| P4KE150            | 135  | 150 | 165  | 1                        | 121                                      | 2   | 215  | 1.9   | .108   |
| P4KE150A           | 143  | 150 | 158  | 1                        | 128                                      | 2   | 207  | 1.95  | .108   |
| P4KE160            | 144  | 160 | 176  | 1                        | 130                                      | 2   | 230  | 1.7   | .108   |
| P4KE160A           | 152  | 160 | 168  | 1                        | 136                                      | 2   | 219  | 1.8   | .108   |
| P4KE170            | 153  | 170 | 187  | 1                        | 138                                      | 2   | 244  | 1.6   | .108   |
| P4KE170A           | 162  | 170 | 179  | 1                        | 145                                      | 2   | 234  | 1.7   | .108   |
| P4KE180            | 162  | 180 | 198  | 1                        | 146                                      | 2   | 258  | 1.5   | .108   |
| P4KE180A           | 171  | 180 | 189  | 1                        | 154                                      | 2   | 246  | 1.6   | .108   |
| P4KE200            | 180  | 200 | 220  | 1                        | 162                                      | 2   | 287  | 1.4   | .108   |
| P4KE200A           | 190  | 200 | 210  | 1                        | 171                                      | 2   | 274  | 1.5   | .108   |
| P4KE220            | 198  | 220 | 242  | 1                        | 175                                      | 2   | 344  | 1.0   | .110   |
| P4KE220A           | 209  | 220 | 231  | 1                        | 185                                      | 2   | 328  | 1.0   | .110   |
| P4KE250            | 225  | 250 | 275  | 1                        | 202                                      | 2   | 360  | 1.0   | .110   |
| P4KE250A           | 237  | 250 | 263  | 1                        | 214                                      | 2   | 344  | 1.0   | .110   |
| P4KE300            | 270  | 300 | 330  | 1                        | 243                                      | 2   | 430  | 1.0   | .110   |
| P4KE300A           | 285  | 300 | 315  | 1                        | 256                                      | 2   | 414  | 1.0   | .110   |
| P4KE350            | 315  | 350 | 385  | 1                        | 284                                      | 2   | 504  | 1.0   | .110   |
| P4KE350A           | 333  | 350 | 368  | 1                        | 300                                      | 2   | 482  | 1.0   | .110   |
| P4KE400            | 360  | 400 | 440  | 1                        | 324                                      | 2   | 574  | 1.0   | .110   |
| P4KE400A           | 380  | 400 | 420  | 1                        | 342                                      | 2   | 548  | 1.0   | .110   |