



Micro Commercial Components  
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# P5KE5.0 THRU P5KE170A

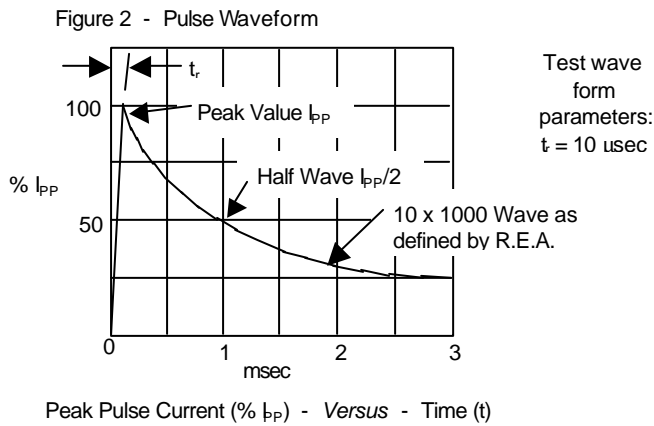
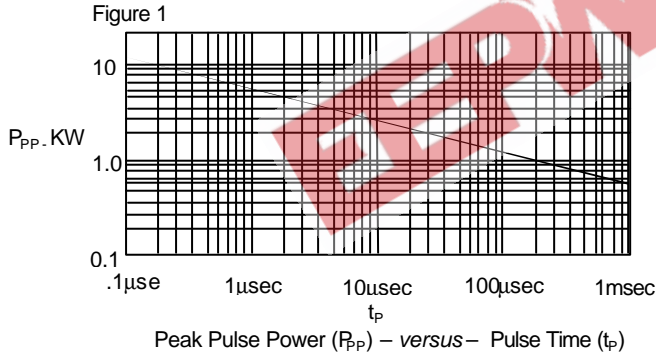
## Features

- 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. P5KE5.0C or P6KE5.0CA for 5% Tolerance Devices

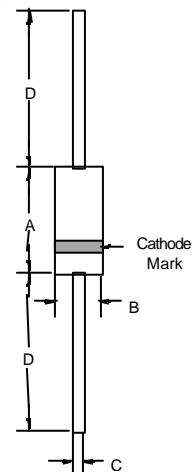
## 500 Watt Transient Voltage Suppressors 5.0 to 170 Volts

## Maximum Ratings

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



## DO-41

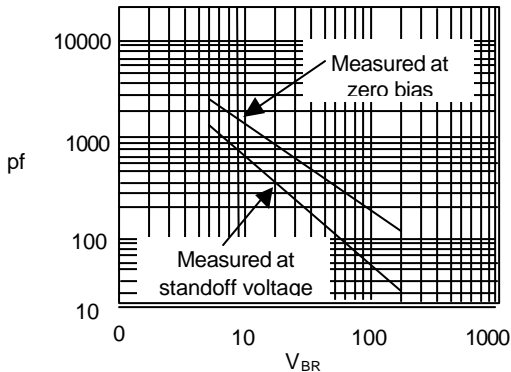


| DIM | DIMENSIONS |      |       |      | NOTE |
|-----|------------|------|-------|------|------|
|     | INCHES     |      | MM    |      |      |
| A   | .166       | .205 | 4.10  | 5.20 |      |
| B   | .080       | .107 | 2.00  | 2.70 |      |
| C   | .028       | .034 | .70   | .90  |      |
|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

# P5KE5.0 thru P5KE170A

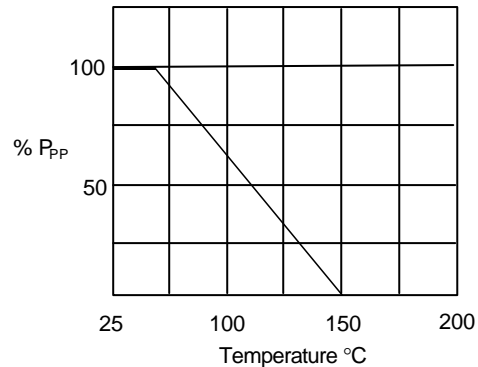


Figure 3 - Typical Capacitance



Typical Capacitance (pf) – versus – Breakdown voltage

Figure 4 - Derating Curve



Peak Pulse Power (% P<sub>PP</sub>) - Versus - Temperature °C

## ELECTRICAL CHARACTERISTICS @25°C

| MCC PART NUMBER | BREAKDOWN VOLTAGE V <sub>(BR)</sub> @ I <sub>T</sub> (VOLTS) |     |      | TEST CURRENT I <sub>T</sub> mADC | RATED STANDOFF VOLTAGE V <sub>WM</sub> V | MAXIMUM REVERSE LEAKAGE I <sub>b</sub> @ V <sub>WM</sub> (μA) | MAXIMUM CLAMPING VOLTAGE V <sub>C</sub> @ I <sub>PP</sub> V | MAXIMUM PEAK PULSE CURRENT I <sub>PP</sub> A | MAX. TEMP COEFFICIENT OF V <sub>(BR)</sub> (TA) -55°C TO 100°C %/°C |
|-----------------|--|-----|------|----------------------------------|--|---|---|--|---|
|                 | MIN  | NOM | MAX  |                                  |  |   |   |  |   |
| P5KE5.0         | 6.4  | 5.0 | 7.3  | 10                               | 5.0                                      | 600   | 9.6   | 52   | .057  |
| P5KE5.0A        | 6.4  | 5.0 | 7.0  | 10                               | 5.0                                      | 600   | 9.2   | 54.3   | .057  |
| P5KE6.0         | 6.67   | 6.0 | 8.15 | 10                               | 6.0                                      | 600   | 11.4  | 43.9   | .059  |
| P5KE6.0A        | 6.67   | 6.0 | 7.37 | 10                               | 6.0                                      | 600   | 10.3  | 48.5   | .059  |
| P5KE6.5         | 7.22   | 6.5 | 8.82 | 10                               | 6.5                                      | 400   | 12.3  | 40.7   | .061  |
| P5KE6.5A        | 7.22   | 6.5 | 7.98 | 10                               | 6.5                                      | 400   | 11.2  | 44.7   | .061  |
| P5KE7.0         | 7.78   | 7.0 | 9.51 | 10                               | 7.0                                      | 150   | 13.3  | 37.8   | .065  |
| P5KE7.0A        | 7.78   | 7.0 | 8.6  | 10                               | 7.0                                      | 150   | 12.0  | 41.7   | .065  |
| P5KE7.5         | 8.33   | 7.5 | 10.2 | 1                                | 7.5                                      | 50  | 14.3  | 35.0   | .067  |
| P5KE7.5A        | 8.33   | 7.5 | 9.21 | 1                                | 7.5                                      | 50  | 12.9  | 38.8   | .067  |
| P5KE8.0         | 8.89   | 8.0 | 10.9 | 1                                | 8.0                                      | 25  | 15.0  | 33.3   | .070  |
| P5KE8.0A        | 8.89   | 8.0 | 9.8  | 1                                | 8.0                                      | 25  | 13.6  | 36.7   | .070  |
| P5KE8.5         | 9.44   | 8.5 | 11.5 | 1                                | 8.5                                      | 5   | 15.9  | 31.4   | .073  |
| P5KE8.5A        | 9.44   | 8.5 | 10.4 | 1                                | 8.5                                      | 5   | 14.4  | 34.7   | .073  |
| P5KE9.0         | 10.0   | 9.0 | 12.2 | 1                                | 9.0                                      | 1   | 16.9  | 29.5   | .076  |
| P5KE9.0A        | 10.0   | 9.0 | 11.1 | 1                                | 9.0                                      | 1   | 15.4  | 32.5   | .076  |
| P5KE10          | 11.1   | 10  | 13.6 | 1                                | 10                                       | 1   | 18.8  | 26.6   | .078  |
| P5KE10A         | 11.1   | 10  | 12.3 | 1                                | 10                                       | 1   | 17.0  | 29.4   | .078  |
| P5KE11          | 12.2   | 11  | 14.9 | 1                                | 11                                       | 1   | 20.1  | 24.9   | .081  |
| P5KE11A         | 12.2   | 11  | 13.5 | 1                                | 11                                       | 1   | 18.2  | 27.4   | .081  |
| P5KE12          | 13.3   | 12  | 16.3 | 1                                | 12                                       | 1   | 22.0  | 22.7   | .082  |
| P5KE12A         | 13.3   | 12  | 14.7 | 1                                | 12                                       | 1   | 19.9  | 25.1   | .082  |
| P5KE13          | 14.4   | 13  | 17.6 | 1                                | 13                                       | 1   | 23.8  | 21.0   | .084  |
| P5KE13A         | 14.4   | 13  | 15.9 | 1                                | 13                                       | 1   | 21.5  | 23.2   | .084  |
| P5KE14          | 15.6   | 14  | 19.1 | 1                                | 14                                       | 1   | 25.8  | 19.4   | .086  |
| P5KE14A         | 15.6   | 14  | 17.2 | 1                                | 14                                       | 1   | 23.2  | 21.5   | .086  |
| P5KE15          | 16.7   | 15  | 20.4 | 1                                | 15                                       | 1   | 26.9  | 18.8   | .087  |
| P5KE15A         | 16.7   | 15  | 18.5 | 1                                | 15                                       | 1   | 24.4  | 20.6   | .087  |
| P5KE16          | 17.8   | 16  | 21.8 | 1                                | 16                                       | 1   | 28.8  | 17.6   | .088  |
| P5KE16A         | 17.8   | 16  | 19.7 | 1                                | 16                                       | 1   | 26.0  | 19.2   | .088  |
| P5KE17          | 18.9   | 17  | 23.1 | 1                                | 17                                       | 1   | 30.5  | 16.4   | .090  |
| P5KE17A         | 18.9   | 17  | 20.9 | 1                                | 17                                       | 1   | 27.6  | 18.1   | .090  |
| P5KE18          | 20.0   | 18  | 24.4 | 1                                | 18                                       | 1   | 32.2  | 15.5   | .092  |
| P5KE18A         | 20.0   | 18  | 22.1 | 1                                | 18                                       | 1   | 29.2  | 17.2   | .092  |
| P5KE20          | 22.2   | 20  | 27.1 | 1                                | 20                                       | 1   | 35.8  | 13.9   | .093  |
| P5KE20A         | 22.2   | 20  | 24.5 | 1                                | 20                                       | 1   | 32.4  | 15.4   | .093  |

# P5KE5.0 thru P5KE170A



## ELECTRICAL CHARACTERISTICS @25°C

| MCC<br>PART NUMBER | BREAKDOWN VOLTAGE<br>$V_{(BR)} @ I_T$<br>(VOLTS) |     |      | TEST<br>CURRENT<br>$I_T$<br>mADC | RATED<br>STANDOFF<br>VOLTAGE<br>$V_{WM}$<br>V | MAXIMUM<br>REVERSE<br>LEAKAGE<br>$I_b @ V_{WM}$<br>( $\mu$ A) | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>$V_C @ I_{PP}$<br>V | MAXIMUM<br>PEAK<br>PULSE<br>CURRENT<br>$I_{PP}$<br>A | MAX. TEMP<br>COEFFICIENT OF<br>$V_{BR}$<br>$V_{(BR)}$ (TA)<br>-55°C TO 100°C<br>% / °C |
|--------------------|--|-----|------|----------------------------------|---|---|---|--|--|
|                    | MIN  | NOM | MAX  |                                  |   |   |   |  |  |
| P5KE22             | 24.4   | 22  | 29.8 | 1                                | 22  | 1   | 39.4  | 12.7   | .094   |
| P5KE22A            | 24.4   | 22  | 26.9 | 1                                | 22  | 1   | 35.5  | 14.1   | .094   |
| P5KE24             | 26.7   | 24  | 32.6 | 1                                | 24  | 1   | 43.0  | 11.6   | .096   |
| P5KE24A            | 26.7   | 24  | 29.5 | 1                                | 24  | 1   | 38.9  | 12.8   | .096   |
| P5KE26             | 28.9   | 26  | 35.3 | 1                                | 26  | 1   | 46.6  | 10.7   | .097   |
| P5KE26A            | 28.9   | 26  | 31.9 | 1                                | 26  | 1   | 42.1  | 11.9   | .097   |
| P5KE28             | 31.1   | 28  | 38.0 | 1                                | 28  | 1   | 50.0  | 9.9  | .098   |
| P5KE28A            | 31.1   | 28  | 84.4 | 1                                | 28  | 1   | 45.4  | 11.0   | .098   |
| P5KE30             | 33.3   | 30  | 40.7 | 1                                | 30  | 1   | 53.5  | 9.3  | .099   |
| P5KE30A            | 33.3   | 30  | 36.8 | 1                                | 30  | 1   | 48.4  | 10.3   | .099   |
| P5KE33             | 36.7   | 33  | 44.9 | 1                                | 33  | 1   | 59.0  | 8.5  | .100   |
| P5KE33A            | 36.7   | 33  | 40.6 | 1                                | 33  | 1   | 53.3  | 9.4  | .100   |
| P5KE36             | 40.0   | 36  | 48.9 | 1                                | 36  | 1   | 64.3  | 7.8  | .101   |
| P5KE36A            | 40.0   | 36  | 44.2 | 1                                | 36  | 1   | 58.1  | 8.6  | .101   |
| P5KE40             | 44.4   | 40  | 54.3 | 1                                | 40  | 1   | 71.4  | 7.0  | .101   |
| P5KE40A            | 44.4   | 40  | 49.1 | 1                                | 40  | 1   | 64.5  | 7.8  | .101   |
| P5KE43             | 47.8   | 43  | 58.4 | 1                                | 43  | 1   | 76.7  | 6.5  | .102   |
| P5KE43A            | 47.8   | 43  | 52.8 | 1                                | 43  | 1   | 69.4  | 7.2  | .102   |
| P5KE45             | 50.0   | 45  | 61.1 | 1                                | 45  | 1   | 80.3  | 6.2  | .102   |
| P5KE45A            | 50.0   | 45  | 55.3 | 1                                | 45  | 1   | 72.7  | 6.9  | .102   |
| P5KE48             | 53.3   | 48  | 65.1 | 1                                | 48  | 1   | 85.5  | 5.8  | .103   |
| P5KE48A            | 53.3   | 48  | 58.9 | 1                                | 48  | 1   | 77.4  | 6.5  | .103   |
| P5KE51             | 56.7   | 51  | 69.3 | 1                                | 51  | 1   | 91.1  | 5.5  | .103   |
| P5KE51A            | 56.7   | 51  | 62.7 | 1                                | 51  | 1   | 82.4  | 6.1  | .103   |
| P5KE54             | 60.0   | 54  | 73.3 | 1                                | 54  | 1   | 96.3  | 5.2  | .104   |
| P5KE54A            | 60.0   | 54  | 66.3 | 1                                | 54  | 1   | 87.1  | 5.7  | .104   |
| P5KE58             | 64.4   | 58  | 78.7 | 1                                | 58  | 1   | 103   | 4.9  | .104   |
| P5KE58A            | 64.4   | 58  | 71.2 | 1                                | 58  | 1   | 93.6  | 5.3  | .104   |
| P5KE60             | 66.7   | 60  | 81.5 | 1                                | 60  | 1   | 107   | 4.7  | .104   |
| P5KE60A            | 66.7   | 60  | 73.7 | 1                                | 60  | 1   | 96.8  | 5.2  | .104   |
| P5KE64             | 71.1   | 64  | 86.9 | 1                                | 64  | 1   | 114   | 4.4  | .105   |
| P5KE64A            | 71.1   | 64  | 78.6 | 1                                | 64  | 1   | 103   | 4.9  | .105   |
| P5KE70             | 77.8   | 70  | 95.1 | 1                                | 70  | 1   | 125   | 4.0  | .105   |
| P5KE70A            | 77.8   | 70  | 86   | 1                                | 70  | 1   | 113   | 4.4  | .105   |
| P5KE75             | 83.3   | 75  | 102  | 1                                | 75  | 1   | 134   | 3.7  | .105   |
| P5KE75A            | 83.3   | 75  | 92.1 | 1                                | 75  | 1   | 121   | 4.1  | .105   |
| P5KE78             | 86.7   | 78  | 106  | 1                                | 78  | 1   | 139   | 3.6  | .106   |
| P5KE78A            | 86.7   | 78  | 95.8 | 1                                | 78  | 1   | 126   | 4.0  | .106   |
| P5KE85             | 94.4   | 85  | 115  | 1                                | 85  | 1   | 151   | 3.3  | .106   |
| P5KE85A            | 94.4   | 85  | 104  | 1                                | 85  | 1   | 137   | 3.6  | .106   |
| P5KE90             | 100  | 90  | 122  | 1                                | 90  | 1   | 160   | 3.1  | .107   |
| P5KE90A            | 100  | 90  | 111  | 1                                | 90  | 1   | 146   | 3.4  | .107   |
| P5KE100            | 111  | 100 | 136  | 1                                | 100   | 1   | 179   | 2.8  | .107   |
| P5KE100A           | 111  | 100 | 123  | 1                                | 100   | 1   | 162   | 3.1  | .107   |
| P5KE110            | 122  | 110 | 149  | 1                                | 110   | 1   | 196   | 2.6  | .107   |
| P5KE110A           | 122  | 110 | 135  | 1                                | 110   | 1   | 177   | 2.8  | .107   |
| P5KE120            | 133  | 120 | 163  | 1                                | 120   | 1   | 214   | 2.3  | .107   |
| P5KE120A           | 133  | 120 | 147  | 1                                | 120   | 1   | 193   | 2.0  | .107   |
| P5KE130            | 144  | 130 | 176  | 1                                | 130   | 1   | 231   | 2.2  | .108   |
| P5KE130A           | 144  | 130 | 159  | 1                                | 130   | 1   | 209   | 2.4  | .108   |
| P5KE150            | 167  | 150 | 204  | 1                                | 150   | 1   | 268   | 1.9  | .108   |
| P5KE150A           | 167  | 150 | 185  | 1                                | 150   | 1   | 243   | 2.1  | .108   |
| P5KE160            | 178  | 160 | 218  | 1                                | 160   | 1   | 287   | 1.7  | .108   |
| P5KE160A           | 178  | 160 | 197  | 1                                | 160   | 1   | 259   | 1.9  | .108   |
| P5KE170            | 189  | 170 | 231  | 1                                | 170   | 1   | 304   | 1.6  | .108   |
| P5KE170A           | 189  | 170 | 209  | 1                                | 170   | 1   | 275   | 1.8  | .108   |