



Micro Commercial Components



Micro Commercial Components  
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**5KP5.0(C)  
THRU  
5KP250(C)A**

## Features

- Unidirectional And Bidirectional
- UL Recognized File # E331408
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- For Bidirectional Devices Add "C" To The Suffix Of The Part Number: i.e. 5KP6.5C or 5KP6.5CA for 5% Tolerance Devices
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking : Cathode band and type number
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

## Maximum Ratings

- Operating Temperature: -55°C to +175°C
- Storage Temperature: -55°C to +175°C
- 5000 Watt Peak Power
- Response Time  $1 \times 10^{-12}$  Seconds For Unidirectional and  $5 \times 10^{-9}$  For Bidirectional
- Halogen free available upon request by adding suffix "-HF"

Figure 1

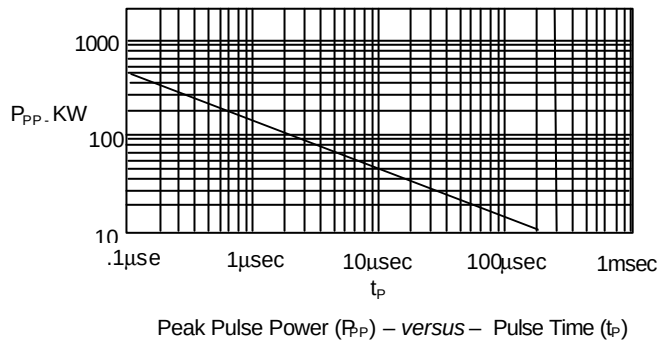
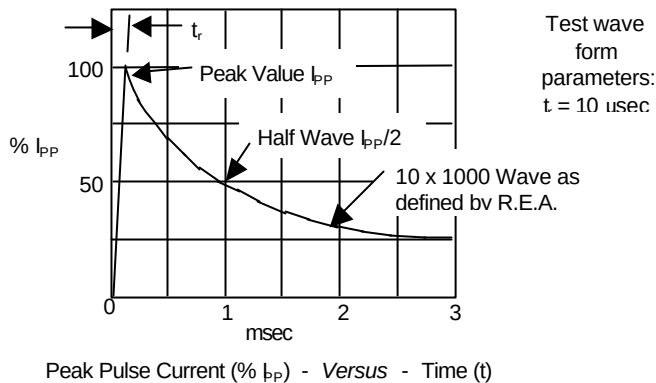


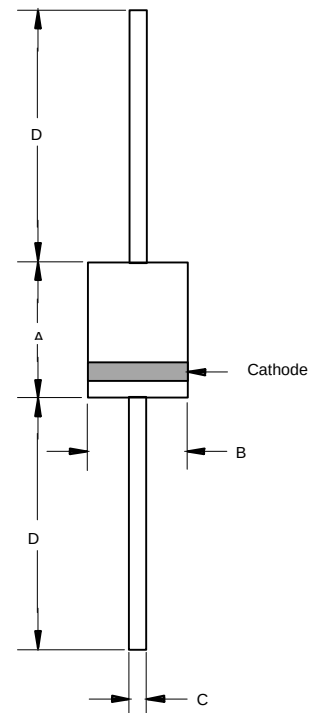
Figure 2 - Pulse Waveform



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

**5000 Watt  
Transient Voltage  
Suppressors  
5.0 to 250 Volts**

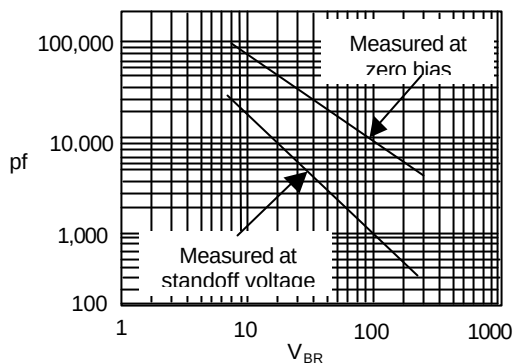
R-6



| DIMENSIONS |        |      |       |      |      |
|------------|--------|------|-------|------|------|
| DIM        | INCHES |      | MM    |      | NOTE |
|            | MIN    | MAX  | MIN   | MAX  |      |
| A          | .340   | .360 | 8.60  | 9.10 |      |
| B          | .340   | .360 | 8.60  | 9.10 |      |
| C          | .048   | .052 | 1.20  | 1.30 |      |
| D          | 1.000  | ---  | 25.40 | ---  |      |

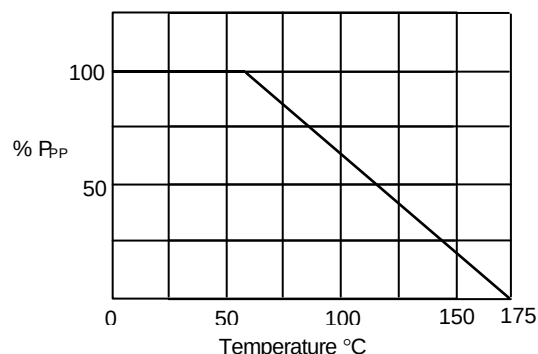
# 5KP5.0(C) thru 5KP250(C)A

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 |          | REVERSE STAND-OFF VOLTAGE<br>V <sub>WM</sub><br>(VOLTS) | BREAKDOWN VOLTAGE<br>V <sub>(BR)</sub> @ I <sub>T</sub><br>(VOLTS) |      |                     | MAXIMUM CLAMPING VOLTAGE @ I <sub>PP</sub><br>(VOLTS) | PEAK PULSE CURRENT<br>I <sub>PP</sub><br>(AMPS) | MAXIMUM REVERSE LEAKAGE @ V <sub>WM</sub><br>I <sub>D</sub><br>(μA) |
|-----------------|----------|---------------------------------------------------------|--------------------------------------------------------------------|------|---------------------|-------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------|
| UNI-POLAR       | BI-POLAR | (VOLTS)                                                 | MIN                                                                | MAX  | I <sub>T</sub> (mA) | (VOLTS)                                               | (AMPS)                                          | (μA)                                                                |
| 5KP5.0          | 5KP5.0C  | 5.0                                                     | 6.40                                                               | 7.30 | 50                  | 9.6                                                   | 520                                             | 5000                                                                |
| 5KP5.0A         | 5KP5.0CA | 5.0                                                     | 6.40                                                               | 7.00 | 50                  | 9.2                                                   | 543                                             | 5000                                                                |
| 5KP6.0          | 5KP6.0C  | 6.0                                                     | 6.67                                                               | 8.15 | 50                  | 11.4                                                  | 439                                             | 5000                                                                |
| 5KP6.0A         | 5KP6.0CA | 6.0                                                     | 6.67                                                               | 7.37 | 50                  | 10.3                                                  | 485                                             | 5000                                                                |
| 5KP6.5          | 5KP6.5C  | 6.5                                                     | 7.22                                                               | 8.82 | 50                  | 12.3                                                  | 407                                             | 2000                                                                |
| 5KP6.5A         | 5KP6.5CA | 6.5                                                     | 7.22                                                               | 7.98 | 50                  | 11.2                                                  | 447                                             | 2000                                                                |
| 5KP7.0          | 5KP7.0C  | 7.0                                                     | 7.78                                                               | 9.51 | 50                  | 13.3                                                  | 378                                             | 1000                                                                |
| 5KP7.0A         | 5KP7.0CA | 7.0                                                     | 7.78                                                               | 8.60 | 50                  | 12.0                                                  | 417                                             | 1000                                                                |
| 5KP7.5          | 5KP7.5C  | 7.5                                                     | 8.33                                                               | 10.2 | 5                   | 14.3                                                  | 350                                             | 250                                                                 |
| 5KP7.5A         | 5KP7.5CA | 7.5                                                     | 8.33                                                               | 9.21 | 5                   | 12.9                                                  | 388                                             | 250                                                                 |
| 5KP8.0          | 5KP8.0C  | 8.0                                                     | 8.89                                                               | 10.9 | 5                   | 15.0                                                  | 333                                             | 150                                                                 |
| 5KP8.0A         | 5KP8.0CA | 8.0                                                     | 8.89                                                               | 9.83 | 5                   | 13.6                                                  | 367                                             | 150                                                                 |
| 5KP8.5          | 5KP8.5C  | 8.5                                                     | 9.44                                                               | 11.5 | 5                   | 15.9                                                  | 314                                             | 50                                                                  |
| 5KP8.5A         | 5KP8.5CA | 8.5                                                     | 9.44                                                               | 10.4 | 5                   | 14.4                                                  | 347                                             | 50                                                                  |
| 5KP9.0          | 5KP9.0C  | 9.0                                                     | 10.0                                                               | 12.2 | 5                   | 16.9                                                  | 295                                             | 20                                                                  |
| 5KP9.0A         | 5KP9.0CA | 9.0                                                     | 10.0                                                               | 11.1 | 5                   | 15.4                                                  | 325                                             | 20                                                                  |
| 5KP10           | 5KP10C   | 10                                                      | 11.1                                                               | 13.6 | 5                   | 18.8                                                  | 266                                             | 15                                                                  |
| 5KP10A          | 5KP10CA  | 10                                                      | 11.1                                                               | 12.3 | 5                   | 17.0                                                  | 294                                             | 15                                                                  |
| 5KP11           | 5KP11C   | 11                                                      | 12.2                                                               | 14.9 | 5                   | 20.1                                                  | 249                                             | 10                                                                  |
| 5KP11A          | 5KP11CA  | 11                                                      | 12.2                                                               | 13.5 | 5                   | 18.2                                                  | 274                                             | 10                                                                  |
| 5KP12           | 5KP12C   | 12                                                      | 13.3                                                               | 16.3 | 5                   | 22.0                                                  | 227                                             | 10                                                                  |
| 5KP12A          | 5KP12CA  | 12                                                      | 13.3                                                               | 14.7 | 5                   | 19.9                                                  | 251                                             | 10                                                                  |
| 5KP13           | 5KP13C   | 13                                                      | 14.4                                                               | 17.6 | 5                   | 23.8                                                  | 210                                             | 10                                                                  |
| 5KP13A          | 5KP13CA  | 13                                                      | 14.4                                                               | 15.9 | 5                   | 21.5                                                  | 232                                             | 10                                                                  |
| 5KP14           | 5KP14C   | 14                                                      | 15.6                                                               | 19.1 | 5                   | 25.8                                                  | 194                                             | 10                                                                  |
| 5KP14A          | 5KP14CA  | 14                                                      | 15.6                                                               | 17.2 | 5                   | 23.2                                                  | 215                                             | 10                                                                  |
| 5KP15           | 5KP15C   | 15                                                      | 16.7                                                               | 20.4 | 5                   | 26.9                                                  | 188                                             | 10                                                                  |
| 5KP15A          | 5KP15CA  | 15                                                      | 16.7                                                               | 18.5 | 5                   | 24.4                                                  | 206                                             | 10                                                                  |
| 5KP16           | 5KP16C   | 16                                                      | 17.8                                                               | 21.8 | 5                   | 28.8                                                  | 176                                             | 10                                                                  |
| 5KP16A          | 5KP16CA  | 16                                                      | 17.8                                                               | 19.7 | 5                   | 26.0                                                  | 192                                             | 10                                                                  |
| 5KP17           | 5KP17C   | 17                                                      | 18.9                                                               | 23.1 | 5                   | 30.5                                                  | 164                                             | 10                                                                  |
| 5KP17A          | 5KP17CA  | 17                                                      | 18.9                                                               | 20.9 | 5                   | 27.6                                                  | 181                                             | 10                                                                  |
| 5KP18           | 5KP18C   | 18                                                      | 20.0                                                               | 24.4 | 5                   | 32.2                                                  | 155                                             | 10                                                                  |
| 5KP18A          | 5KP18CA  | 18                                                      | 20.0                                                               | 22.1 | 5                   | 29.2                                                  | 172                                             | 10                                                                  |
| 5KP20           | 5KP20C   | 20                                                      | 22.2                                                               | 27.1 | 5                   | 35.8                                                  | 139                                             | 10                                                                  |
| 5KP20A          | 5KP20CA  | 20                                                      | 22.2                                                               | 24.5 | 5                   | 32.4                                                  | 154                                             | 10                                                                  |
| 5KP22           | 5KP22C   | 22                                                      | 24.4                                                               | 29.8 | 5                   | 39.4                                                  | 127                                             | 10                                                                  |
| 5KP22A          | 5KP22CA  | 22                                                      | 24.4                                                               | 26.9 | 5                   | 35.5                                                  | 141                                             | 10                                                                  |

# 5KP5.0(C) thru 5KP250(C)A

## ELECTRICAL CHARACTERISTICS @25°C

| MCC PART NUMBER |          | REVERSE STAND-OFF VOLTAGE $V_{WM}$ (VOLTS) | BREAKDOWN VOLTAGE $V_{(BR)}$ @ $I_T$ (VOLTS) |      |            | MAXIMUM CLAMPING VOLTAGE @ $I_{PP}$ (VOLTS) | PEAK PULSE CURRENT $I_{PP}$ (AMPS) | MAXIMUM REVERSE LEAKAGE @ $V_{WM}$ $I_D$ (μA) |
|-----------------|----------|--------------------------------------------|----------------------------------------------|------|------------|---------------------------------------------|------------------------------------|-----------------------------------------------|
| UNI-POLAR       | BI-POLAR |                                            | MIN                                          | MAX  | $I_T$ (mA) |                                             |                                    |                                               |
| 5KP24           | 5KP24C   | 24                                         | 26.7                                         | 32.6 | 5          | 43.0                                        | 116                                | 10                                            |
| 5KP24A          | 5KP24CA  | 24                                         | 26.7                                         | 29.5 | 5          | 38.9                                        | 128                                | 10                                            |
| 5KP26           | 5KP26C   | 26                                         | 28.9                                         | 35.3 | 5          | 46.6                                        | 107                                | 10                                            |
| 5KP26A          | 5KP26CA  | 26                                         | 28.9                                         | 31.9 | 5          | 42.1                                        | 119                                | 10                                            |
| 5KP28           | 5KP28C   | 28                                         | 31.1                                         | 38.0 | 5          | 50.0                                        | 99                                 | 10                                            |
| 5KP28A          | 5KP28CA  | 28                                         | 31.1                                         | 34.4 | 5          | 45.4                                        | 110                                | 10                                            |
| 5KP30           | 5KP30C   | 30                                         | 33.3                                         | 40.7 | 5          | 53.5                                        | 93                                 | 10                                            |
| 5KP30A          | 5KP30CA  | 30                                         | 33.3                                         | 36.8 | 5          | 48.4                                        | 103                                | 10                                            |
| 5KP33           | 5KP33C   | 33                                         | 36.7                                         | 44.9 | 5          | 59.0                                        | 85                                 | 10                                            |
| 5KP33A          | 5KP33CA  | 33                                         | 36.7                                         | 40.6 | 5          | 53.3                                        | 94                                 | 10                                            |
| 5KP36           | 5KP36C   | 36                                         | 40.0                                         | 48.9 | 5          | 64.3                                        | 78                                 | 10                                            |
| 5KP36A          | 5KP36CA  | 36                                         | 40.0                                         | 44.2 | 5          | 58.1                                        | 86                                 | 10                                            |
| 5KP40           | 5KP40C   | 40                                         | 44.4                                         | 54.3 | 5          | 71.4                                        | 70                                 | 10                                            |
| 5KP40A          | 5KP40CA  | 40                                         | 44.4                                         | 49.1 | 5          | 64.5                                        | 78                                 | 10                                            |
| 5KP43           | 5KP43C   | 43                                         | 47.8                                         | 58.4 | 5          | 76.7                                        | 65                                 | 10                                            |
| 5KP43A          | 5KP43CA  | 43                                         | 47.8                                         | 52.8 | 5          | 69.4                                        | 72                                 | 10                                            |
| 5KP45           | 5KP45C   | 45                                         | 50.0                                         | 61.1 | 5          | 80.3                                        | 62                                 | 10                                            |
| 5KP45A          | 5KP45CA  | 45                                         | 50.0                                         | 55.3 | 5          | 72.7                                        | 69                                 | 10                                            |
| 5KP48           | 5KP48C   | 48                                         | 53.3                                         | 65.1 | 5          | 85.5                                        | 58                                 | 10                                            |
| 5KP48A          | 5KP48CA  | 48                                         | 53.3                                         | 58.9 | 5          | 77.4                                        | 65                                 | 10                                            |
| 5KP 51          | 5KP 51C  | 51                                         | 56.7                                         | 69.3 | 5          | 91.1                                        | 55                                 | 10                                            |
| 5KP51A          | 5KP51CA  | 51                                         | 56.7                                         | 62.7 | 5          | 82.4                                        | 61                                 | 10                                            |
| 5KP54           | 5KP54C   | 54                                         | 60.0                                         | 73.3 | 5          | 96.3                                        | 52                                 | 10                                            |
| 5KP54A          | 5KP54CA  | 54                                         | 60.0                                         | 66.3 | 5          | 87.1                                        | 57                                 | 10                                            |
| 5KP58           | 5KP58C   | 58                                         | 64.4                                         | 78.7 | 5          | 103                                         | 49                                 | 10                                            |
| 5KP58A          | 5KP58CA  | 58                                         | 64.4                                         | 71.2 | 5          | 93.6                                        | 53                                 | 10                                            |
| 5KP60           | 5KP60C   | 60                                         | 66.7                                         | 81.5 | 5          | 107                                         | 47                                 | 10                                            |
| 5KP60A          | 5KP60CA  | 60                                         | 66.7                                         | 73.7 | 5          | 96.8                                        | 52                                 | 10                                            |
| 5KP64           | 5KP64C   | 64                                         | 71.1                                         | 86.9 | 5          | 114                                         | 44                                 | 10                                            |
| 5KP64A          | 5KP64CA  | 64                                         | 71.1                                         | 78.6 | 5          | 103                                         | 49                                 | 10                                            |
| 5KP70           | 5KP70C   | 70                                         | 77.8                                         | 95.1 | 5          | 125                                         | 40                                 | 10                                            |
| 5KP70A          | 5KP70CA  | 70                                         | 77.8                                         | 86.0 | 5          | 113                                         | 44                                 | 10                                            |
| 5KP75           | 5KP75C   | 75                                         | 83.3                                         | 102  | 5          | 134                                         | 37                                 | 10                                            |
| 5KP75A          | 5KP75CA  | 75                                         | 83.3                                         | 92.1 | 5          | 121                                         | 41                                 | 10                                            |
| 5KP78           | 5KP78C   | 78                                         | 86.7                                         | 106  | 5          | 139                                         | 36                                 | 10                                            |
| 5KP78A          | 5KP78CA  | 78                                         | 86.7                                         | 95.8 | 5          | 126                                         | 40                                 | 10                                            |
| 5KP85           | 5KP85C   | 85                                         | 94.4                                         | 115  | 5          | 151                                         | 33                                 | 10                                            |
| 5KP85A          | 5KP85CA  | 85                                         | 94.4                                         | 104  | 5          | 137                                         | 36                                 | 10                                            |
| 5KP90           | 5KP90C   | 90                                         | 100                                          | 122  | 5          | 160                                         | 31                                 | 10                                            |
| 5KP90A          | 5KP90CA  | 90                                         | 100                                          | 111  | 5          | 146                                         | 34                                 | 10                                            |
| 5KP100          | 5KP100C  | 100                                        | 111                                          | 136  | 5          | 179                                         | 28                                 | 10                                            |
| 5KP100A         | 5KP100CA | 100                                        | 111                                          | 123  | 5          | 162                                         | 31                                 | 10                                            |
| 5KP110          | 5KP110C  | 110                                        | 122                                          | 149  | 5          | 196                                         | 26                                 | 10                                            |
| 5KP110A         | 5KP110CA | 110                                        | 122                                          | 135  | 5          | 177                                         | 28                                 | 10                                            |
| 5KP120A         | 5KP120CA | 120                                        | 133                                          | 147  | 5          | 193                                         | 26.4                               | 10                                            |
| 5KP130A         | 5KP130CA | 130                                        | 144                                          | 159  | 5          | 209                                         | 24.4                               | 10                                            |
| 5KP150A         | 5KP150CA | 150                                        | 167                                          | 185  | 5          | 243                                         | 21.0                               | 10                                            |
| 5KP160A         | 5KP160CA | 160                                        | 178                                          | 197  | 5          | 259                                         | 19.7                               | 10                                            |
| 5KP170A         | 5KP170CA | 170                                        | 189                                          | 209  | 5          | 275                                         | 18.5                               | 10                                            |
| 5KP180A         | 5KP180CA | 180                                        | 200                                          | 221  | 5          | 292                                         | 17.5                               | 10                                            |
| 5KP190A         | 5KP190CA | 190                                        | 211                                          | 233  | 5          | 310                                         | 16.5                               | 10                                            |
| 5KP200A         | 5KP200CA | 200                                        | 222                                          | 246  | 5          | 329.2                                       | 15.5                               | 10                                            |
| 5KP210A         | 5KP210CA | 210                                        | 233                                          | 258  | 5          | 349.5                                       | 14.6                               | 10                                            |
| 5KP220A         | 5KP220CA | 220                                        | 244                                          | 270  | 5          | 371.1                                       | 13.7                               | 10                                            |
| 5KP250A         | 5KP250CA | 250                                        | 277                                          | 306  | 5          | 425                                         | 12.0                               | 10                                            |

## Ordering Information :

| Device         | Packing                       |
|----------------|-------------------------------|
| Part Number-TP | Tape&Reel: 500pcs/Reel        |
| Part Number-AP | Ammo Packing: 450pcs/Ammo Box |
| Part Number-BP | Bulk: 4.8Kpcs/Carton          |

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

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