

| | |
|---|----------------|
|  | E480232 |
|---|----------------|

Features

- For Bidirectional Devices Add "C" To The Suffix of The Part Number: i.e. 5KP6.5C or 5KP6.5CA for 5% Tolerance Devices
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Unidirectional and Bidirectional Unit
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant (Note1) ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +175°C
- Storage Temperature Range: -55°C to +175°C
- Typical Thermal Resistance, Junction to Lead: 8.0°C/W
- Typical Thermal Resistance, Junction to Ambient: 40°C/W

| | | | |
|------------------------------|--|-------|--|
| Peak Pulse Power Dissipation | P _{PPM} | 5000W | |
| Response Time | Unidirectional 1×10^{-12} Seconds; | | |
| | Bidirectional 5×10^{-9} Seconds | | |

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

Device Marking:

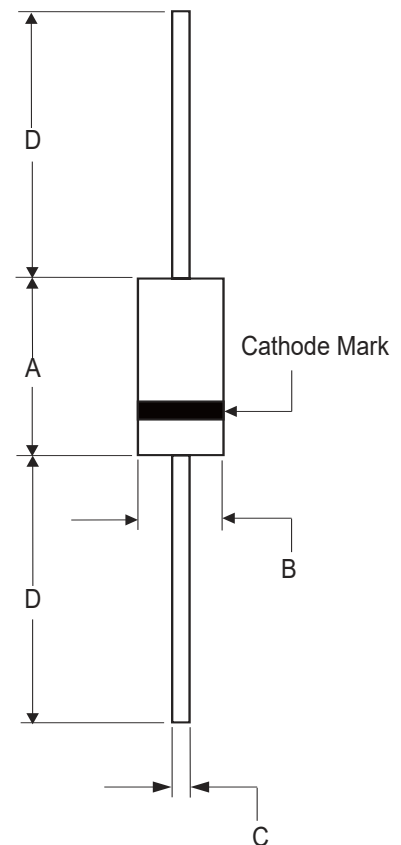
Unidirectional - Type Number and Cathode Band
Bidirectional - Type Number Only

Pin Configuration



**5000Watts TVS
5.0 to 250 Volts**

R-6



| DIM | INCHES | | MM | | NOTE |
|-----|--------|-------|-------|-------|------|
| | MIN | MAX | MIN | MAX | |
| A | 0.340 | 0.360 | 8.60 | 9.10 | |
| B | 0.340 | 0.360 | 8.60 | 9.10 | |
| C | 0.048 | 0.052 | 1.20 | 1.30 | |
| D | 1.000 | ----- | 25.40 | ----- | |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC PART NUMBER | | REVERSE STAND-OFF VOLTAGE V_{WM} | BREAKDOWN VOLTAGE $V(BR) @ I_T$ (VOLTS) | | | MAXIMUM CLAMPING VOLTAGE @ I_{PP} | PEAK PULSE CURRENT I_{PP} | MAXIMUM REVERSE LEAKAGE @ V_{WM} I_D |
|-----------------|----------|------------------------------------|---|------|------------|-------------------------------------|-----------------------------|--|
| UNI-POLAR | BI-POLAR | (VOLTS) | MIN | MAX | I_T (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 |
| 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 |

Electrical Characteristics @ 25°C Unless Otherwise Specified

| MCC PART NUMBER | | REVERSE STAND-OFF VOLTAGE V_{WM} | BREAKDOWN VOLTAGE $V(BR) @ I_T$ (VOLTS) | | | MAXIMUM CLAMPING VOLTAGE @ I_{PP} | PEAK PULSE CURRENT I_{PP} | MAXIMUM REVERSE LEAKAGE @ V_{WM} I_D |
|-----------------|----------|------------------------------------|---|------|------------|-------------------------------------|-----------------------------|--|
| UNI-POLAR | BI-POLAR | (VOLTS) | MIN | MAX | I_T (mA) | (VOLTS) | (AMPS) | (μA) |
| 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 |

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

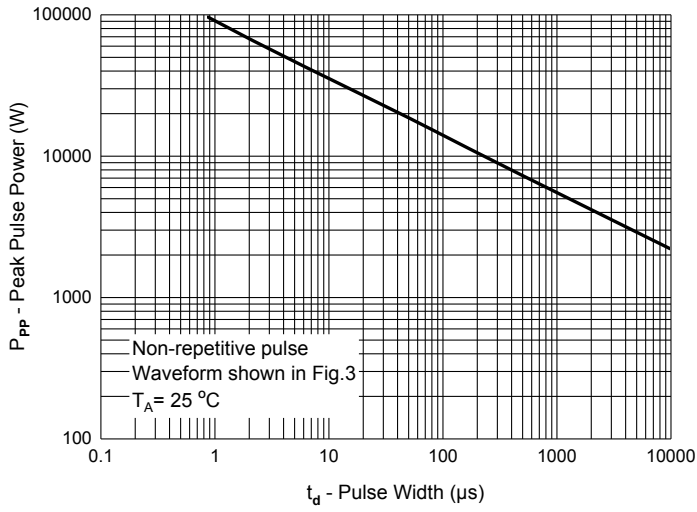


Fig. 2 - Typical Junction Capacitance

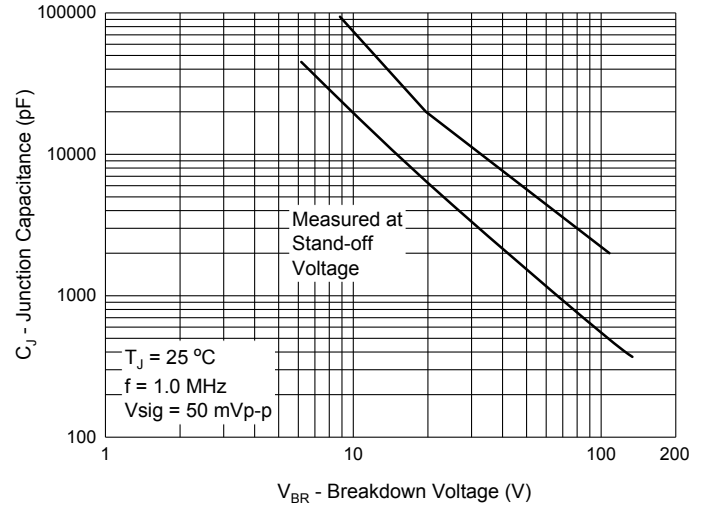


Fig. 3 - Pulse Waveform

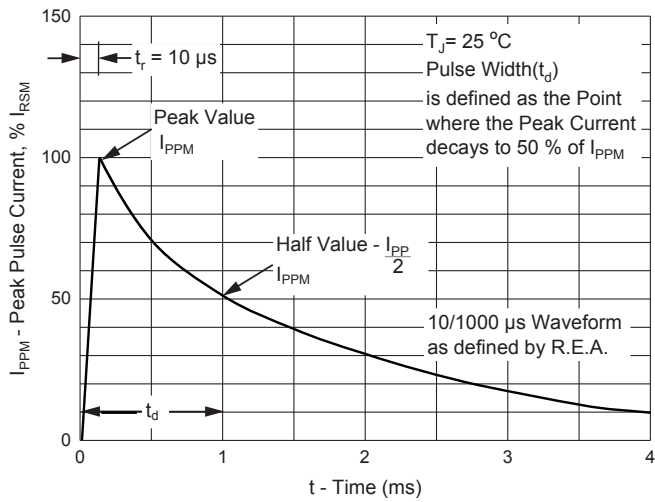
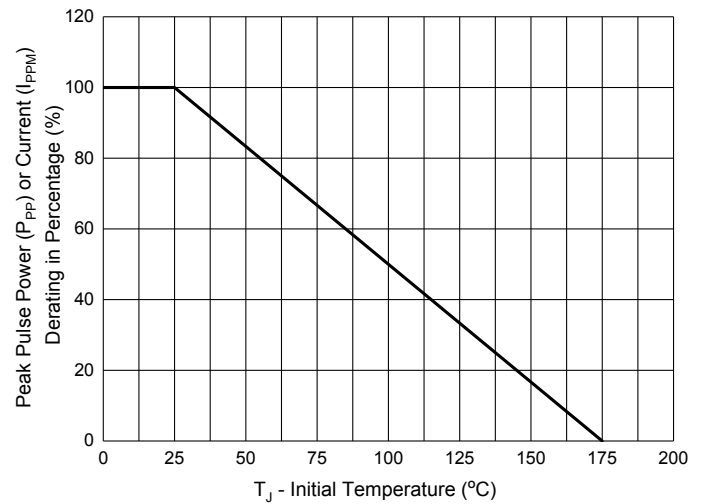


Fig. 4 - Pulse Derating Curve



Ordering Information

| Device | Packing |
|------------------|-------------------------------|
| (Part Number)-TP | Tape&Reel: 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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