·M·C·C·™
Micro Commercial Components
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Micro Commercial Components
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# 3KP5.0(C)(A) THRU 3KP220(C)(A)

## 3000Watts Transient Voltage Suppressor 5.0 to 220 Volts

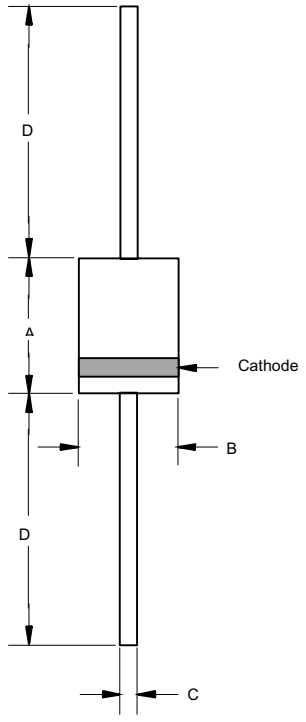
## Features

- 3000 Watts Peak Power
- Low Inductance
- Unidirectional and Bidirectional unit
- Voltage Range: 5.0 to 220 Volts.
- UL Recognized File # E331408
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix designates RoHS Compliant. See ordering information)

## Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Marking : Cathode band(For Uni-directional ) and type number
- Suffix "C" of part number denotes Bi-directional unit.

R-6




| DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| | INCHES | | MM | | |
| DIM | MIN | MAX | MIN | MAX | NOTE |
| 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 | --- | |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| RATING | SYMBOL | VALUE | UNITS |
|---|---|---|---|
| Peak Pulse Power Dissipation on 10/1000us waveform (Note 2,FIG.1) | $P_{PPM}$ | Minimum 3000 | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 4) | $I_{FSM}$ | 300 | Amps |
| Steady State Power Dissipation at $T_L$ = 75°C , Lead lengths.375", (9.5mm) (Note 3) | $P_{M(AV)}$ | 8 | Watts |
| Operating junction and Storage Temperature Range | $P_J$ , $T_{STG}$ | -55 to + 175 | °C |

Notes :

1.High Temperature Solder Exemption Applied, see EU Directive Annex 7.
2.Non-repetitive current pulse , per Fig. 3 and derated above $T_A$ = 25 per Fig. 2 .
3.Mounted on Copper Pad area of 1.6¡Á1.6" (40¡Á40mm) per Fig. 5.
4.8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

# 3KP Series

| 3KP PART NUMBER | | REVERSE STAND-OFF VOLTAGE $V_{RWM}$(V) | BREAKDOWN VOLTAGE $V_{BR}$(V) MIN.@$I_T$ | BREAKDOWN VOLTAGE $V_{BR}$(V) MAX.@$I_T$ | TEST CURRENT $I_T$ (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @ $V_{RWM}$ $I_R$(μA) |
|---|---|---|---|---|---|---|---|---|
| UNI-POLAR | BI-POLAR | | | | | | | |
| 3KP5.0A | 3KP5.0CA | 5.0 | 6.40 | 7.00 | 50 | 9.2 | 326.1 | 5000 |
| 3KP6.0A | 3KP6.0CA | 6.0 | 6.67 | 7.37 | 50 | 10.3 | 291.3 | 5000 |
| 3KP6.5A | 3KP6.5CA | 6.5 | 7.22 | 7.98 | 50 | 11.2 | 267.9 | 2000 |
| 3KP7.0A | 3KP7.0CA | 7.0 | 7.78 | 8.60 | 50 | 12.0 | 250.0 | 1000 |
| 3KP7.5A | 3KP7.5CA | 7.5 | 8.33 | 9.21 | 5 | 12.9 | 232.6 | 250 |
| 3KP8.0A | 3KP8.0CA | 8.0 | 8.89 | 9.83 | 5 | 13.6 | 220.6 | 150 |
| 3KP8.5A | 3KP8.5CA | 8.5 | 9.44 | 10.40 | 5 | 14.4 | 208.3 | 50 |
| 3KP9.0A | 3KP9.0CA | 9.0 | 10.00 | 11.10 | 5 | 15.4 | 194.8 | 20 |
| 3KP10A | 3KP10CA | 10.0 | 11.10 | 12.30 | 5 | 17.0 | 176.5 | 15 |
| 3KP11A | 3KP11CA | 11.0 | 12.20 | 13.50 | 5 | 18.2 | 164.8 | 10 |
| 3KP12A | 3KP12CA | 12.0 | 13.30 | 14.70 | 5 | 19.9 | 150.8 | 10 |
| 3KP13A | 3KP13CA | 13.0 | 14.40 | 15.90 | 5 | 21.5 | 139.5 | 10 |
| 3KP14A | 3KP14CA | 14.0 | 15.60 | 17.20 | 5 | 23.2 | 129.3 | 10 |
| 3KP15A | 3KP15CA | 15.0 | 16.70 | 18.50 | 5 | 24.4 | 123.0 | 10 |
| 3KP16A | 3KP16CA | 16.0 | 17.80 | 19.70 | 5 | 26.0 | 115.4 | 10 |
| 3KP17A | 3KP17CA | 17.0 | 18.90 | 20.90 | 5 | 27.6 | 108.7 | 10 |
| 3KP18A | 3KP18CA | 18.0 | 20.00 | 22.10 | 5 | 29.2 | 102.7 | 10 |
| 3KP20A | 3KP20CA | 20.0 | 22.20 | 24.50 | 5 | 32.4 | 92.6 | 10 |
| 3KP22A | 3KP22CA | 22.0 | 24.40 | 26.90 | 5 | 35.5 | 84.5 | 10 |
| 3KP24A | 3KP24CA | 24.0 | 26.70 | 29.50 | 5 | 38.9 | 77.1 | 10 |
| 3KP26A | 3KP26CA | 26.0 | 28.90 | 31.90 | 5 | 42.1 | 71.3 | 10 |
| 3KP28A | 3KP28CA | 28.0 | 31.10 | 34.40 | 5 | 45.4 | 66.1 | 10 |
| 3KP30A | 3KP30CA | 30.0 | 33.30 | 36.80 | 5 | 48.4 | 62.0 | 10 |
| 3KP33A | 3KP33CA | 33.0 | 36.70 | 40.60 | 5 | 53.3 | 56.3 | 10 |
| 3KP36A | 3KP36CA | 36.0 | 40.00 | 44.20 | 5 | 58.1 | 51.6 | 10 |
| 3KP40A | 3KP40CA | 40.0 | 44.40 | 49.10 | 5 | 64.5 | 46.5 | 10 |
| 3KP43A | 3KP43CA | 43.0 | 47.80 | 52.80 | 5 | 69.4 | 43.2 | 10 |
| 3KP45A | 3KP45CA | 45.0 | 50.00 | 55.30 | 5 | 72.7 | 41.3 | 10 |
| 3KP48A | 3KP48CA | 48.0 | 53.30 | 58.90 | 5 | 77.4 | 38.8 | 10 |
| 3KP51A | 3KP51CA | 51.0 | 56.70 | 62.70 | 5 | 82.4 | 36.4 | 10 |
| 3KP54A | 3KP54CA | 54.0 | 60.00 | 66.30 | 5 | 87.1 | 34.4 | 10 |
| 3KP58A | 3KP58CA | 58.0 | 64.40 | 71.20 | 5 | 93.6 | 32.1 | 10 |
| 3KP60A | 3KP60CA | 60.0 | 66.70 | 73.70 | 5 | 96.8 | 31.0 | 10 |
| 3KP64A | 3KP64CA | 64.0 | 71.10 | 78.60 | 5 | 103.0 | 29.1 | 10 |
| 3KP70A | 3KP70CA | 70.0 | 77.80 | 86.00 | 5 | 113.0 | 26.5 | 10 |
| 3KP75A | 3KP75CA | 75.0 | 83.30 | 92.10 | 5 | 121.0 | 24.8 | 10 |
| 3KP78A | 3KP78CA | 78.0 | 86.70 | 95.80 | 5 | 126.0 | 23.8 | 10 |
| 3KP85A | 3KP85CA | 85.0 | 94.40 | 104.00 | 5 | 137.0 | 21.9 | 10 |
| 3KP90A | 3KP90CA | 90.0 | 100.00 | 111.00 | 5 | 146.0 | 20.5 | 10 |
| 3KP100A | 3KP100CA | 100.0 | 111.00 | 123.00 | 5 | 162.0 | 18.5 | 10 |
| 3KP110A | 3KP110CA | 110.0 | 122.00 | 135.00 | 5 | 177.0 | 16.9 | 10 |
| 3KP120A | 3KP120CA | 120.0 | 133.00 | 147.00 | 5 | 193.0 | 15.5 | 10 |
| 3KP130A | 3KP130CA | 130.0 | 144.00 | 159.00 | 5 | 209.0 | 14.4 | 10 |
| 3KP150A | 3KP150CA | 150.0 | 167.00 | 185.00 | 5 | 243.0 | 12.3 | 10 |
| 3KP160A | 3KP160CA | 160.0 | 178.00 | 197.00 | 5 | 259.0 | 11.6 | 10 |
| 3KP170A | 3KP170CA | 170.0 | 189.00 | 209.00 | 5 | 275.0 | 10.9 | 10 |
| 3KP180A | 3KP180CA | 180.0 | 200.00 | 221.00 | 5 | 289.0 | 10.4 | 10 |
| 3KP190A | 3KP190CA | 190.0 | 211.00 | 233.00 | 5 | 310.0 | 9.7 | 10 |
| 3KP200A | 3KP200CA | 200.0 | 222.00 | 246.00 | 5 | 329.2 | 9.1 | 10 |
| 3KP210A | 3KP210CA | 210.0 | 233.00 | 258.00 | 5 | 349.5 | 8.6 | 10 |
| 3KP220A | 3KP220CA | 220.0 | 244.00 | 270.00 | 5 | 371.1 | 8.1 | 10 |

**For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.**
**For parts without A , the $V_{BR}$ is ± 10%**

# 3KP Series

**RATINGS AND CHARACTERISTIC CURVES (TA=25°C unless otherwise noted)**

Micro Commercial Components

**Fig. 1 - Peak Pulse Power Rating Curve**

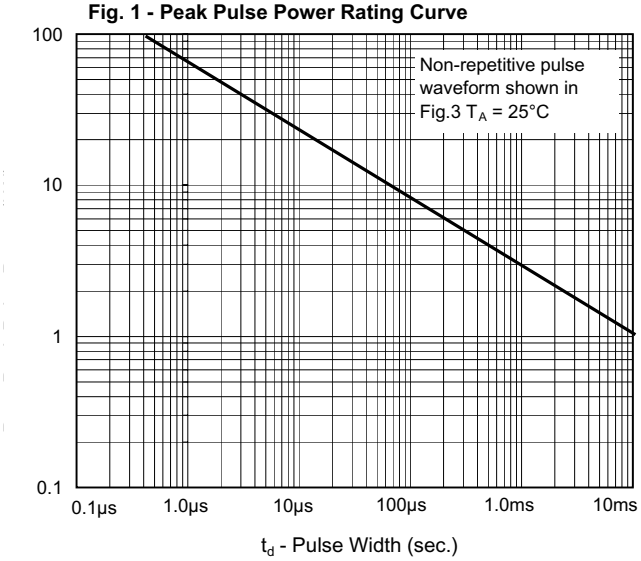



**Fig.2 - Pulse Derating Curve**

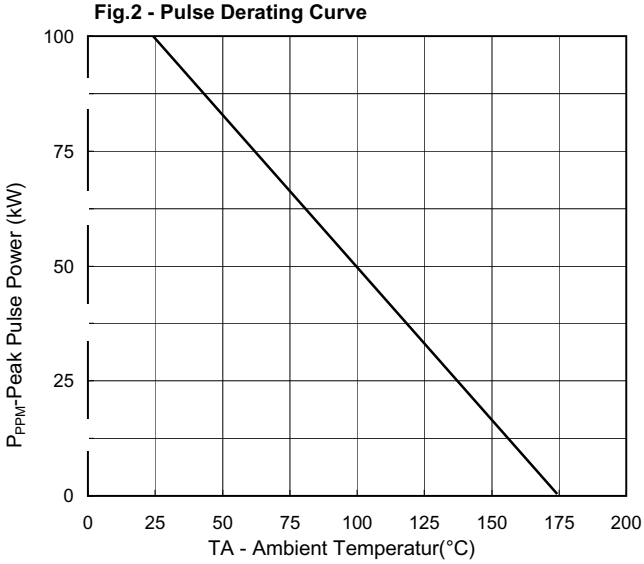



**Fig.3 - Pulse Waveform**

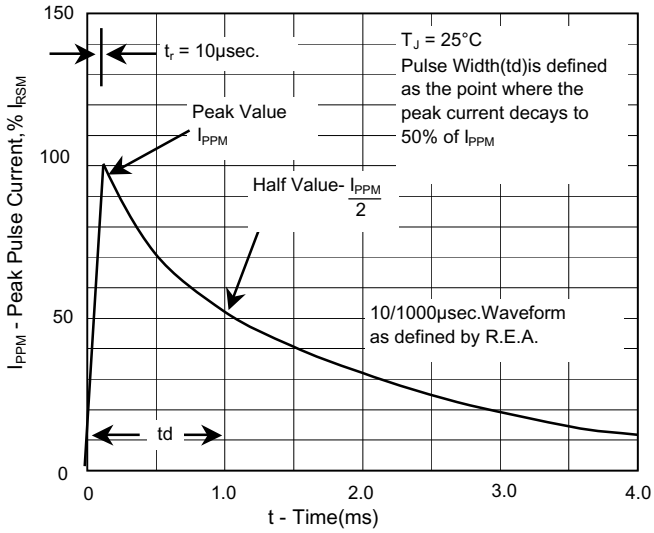



**Fig. 4 - Typical Junction Capacitance**

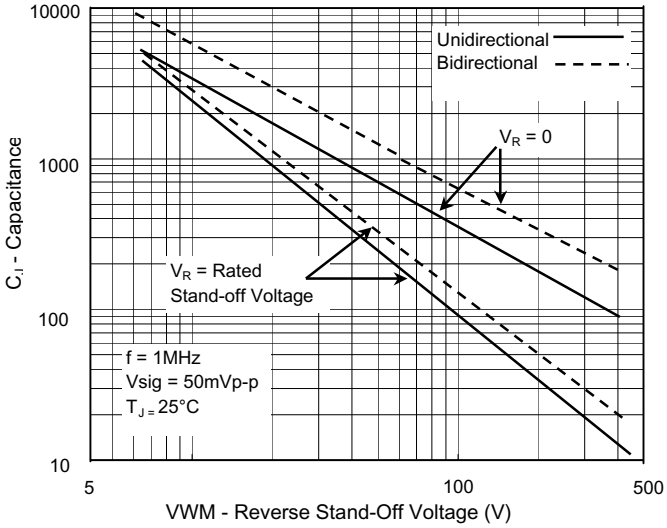



**Fig. 5 - Steady State Power Derating Curve**

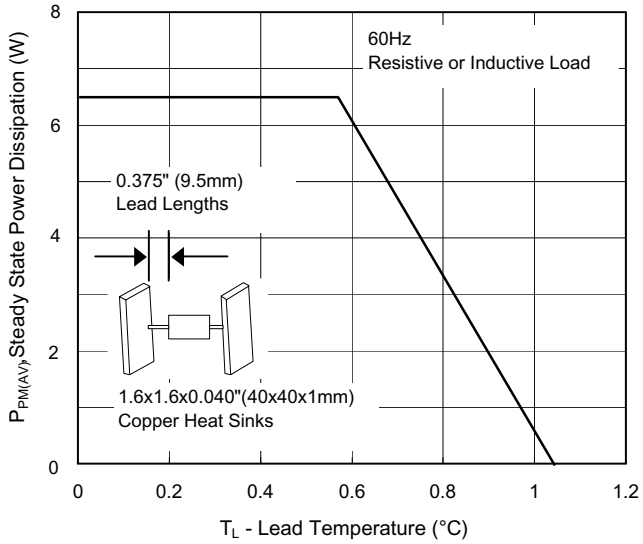
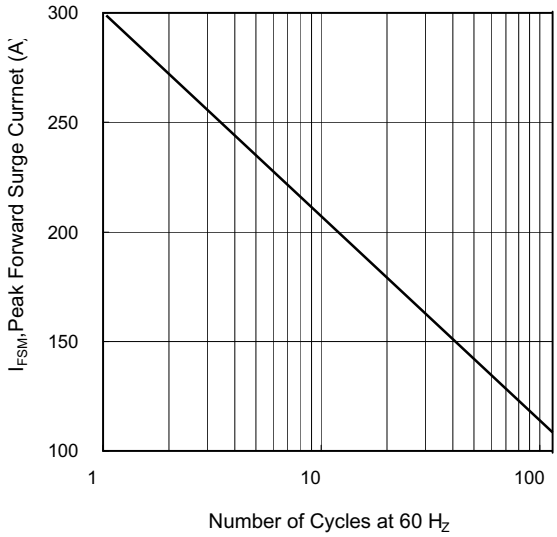



**Fig.6 - Maximum Non-repetitive Forward Surge current**



## 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 |

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