

5KP SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE - 5.0 TO 110 Volts 5000 Watt Peak Pulse Power

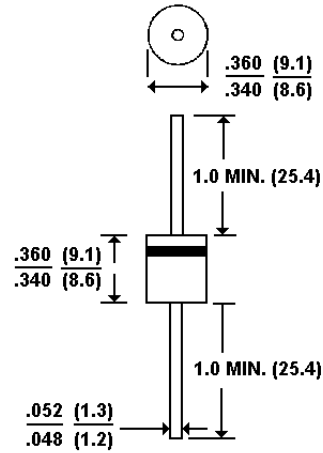
FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated junction
- 5000W Peak Pulse Power capability on 10/1000 μ S waveform
- Excellent clamping capability
- Repetition rate(Duty Cycle): 0.05%
- Low incremental surge resistance
- Fast response time: typically less than 1.0 ps from 0 volts to BV
- Typical I_D less than 1 μ A above 10V
- High temperature soldering guaranteed: 300 μ J/10 seconds/.375", (9.5mm) lead length/5lbs., (2.3kg) tension

MECHANICAL DATA

Case: Molded plastic over glass passivated junction
 Terminals: Plated Axial leads, solderable per MIL-STD-750, Method 2026
 Polarity: Color band denotes positive end(cathode) Except Bipolar
 Mounting Position: Any
 Weight: 0.07 ounce, 2.1 grams

P-600



Dimensions in inches and (millimeters)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types
 Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25 μ J ambient temperature unless otherwise specified.

| RATING | SYMBOL | VALUE | UNITS |
|---|----------------|--------------|---------|
| Peak Pulse Power Dissipation on 10/1000 μ S waveform (Note 1, FIG.1) | P_{PPM} | Minimum 5000 | Watts |
| Peak Pulse Current on 10/1000 μ S waveform (Note 1, FIG.3) | I_{PPM} | SEE TABLE 1 | Amps |
| Steady State Power Dissipation at $T_L=75 \mu$ J Lead Lengths .375", (9.5mm) (Note 2) | $P_{M(AV)}$ | 8.0 | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JECED Method) (Note 3) | I_{FSM} | 400 | Amps |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +175 | μ J |

NOTES:

- 1.Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25 \mu$ J per Fig. 2.
- 2.Mounted on Copper Leaf area of 0.79in²(20mm²).
- 3.Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle= 4 pulses per minutes maximum.

RATING AND CHARACTERISTIC CURVES 5KP SERIES

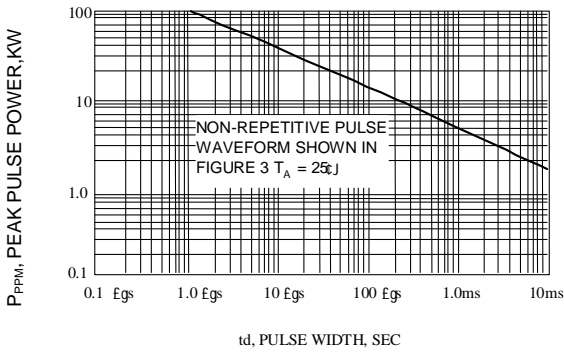


Fig. 1-PEAK PULSE POWER RATING CURVE

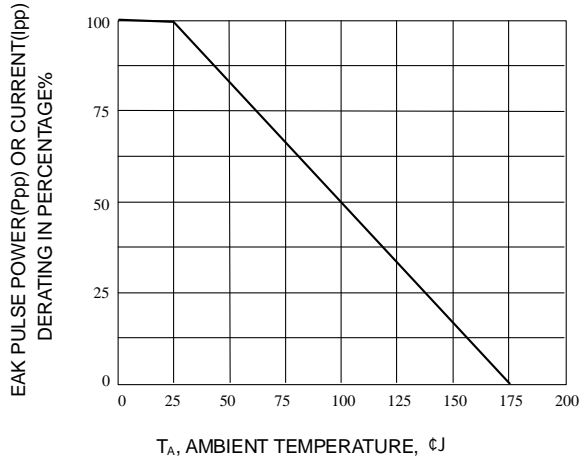


Fig. 2-PULSE DERATING CURVE

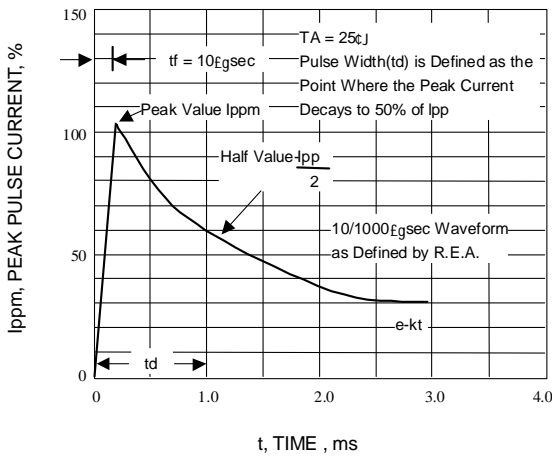


Fig. 3-PULSE WAVEFORM

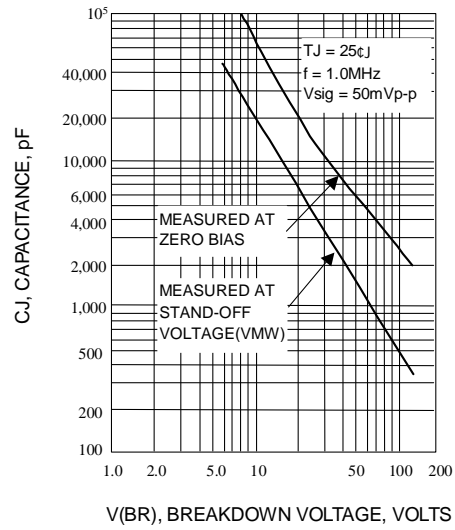


Fig. 4-TYPICAL JUNCTION CAPACITANCE

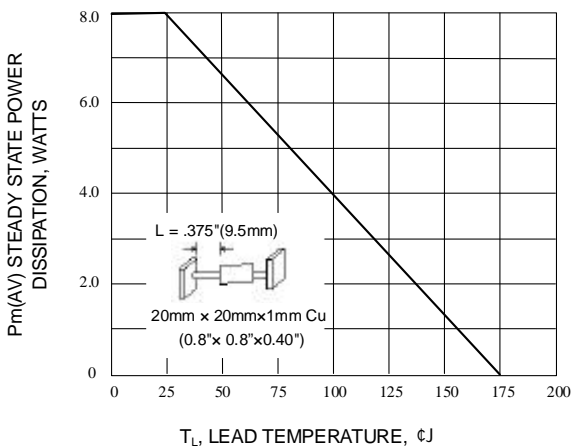


Fig. 5-STeady State Power Derating

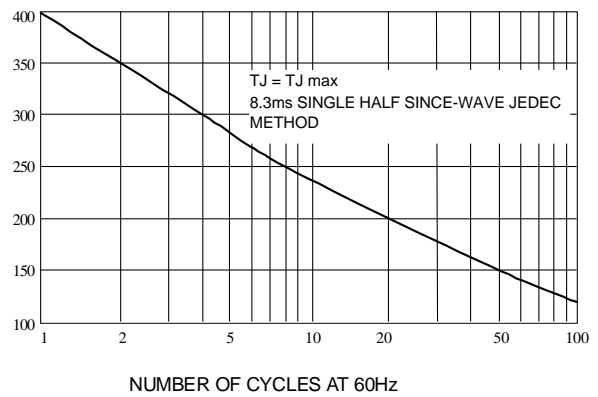


Fig. 6-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

UNI-DIRECTIONAL 5000 Watt Axial Lead TVS

| UNI-DIRECTIONAL PART NUMBER | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @I _{PP} VC (V) | PEAK PULSE CURRENT I _{PP} (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|-----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--|--|-------------------------------|
| 5KP5.0 | 5.00 | 6.40 | 7.30 | 50 | 9.6 | 520 | 2000 |
| 5KP5.0A | 6.00 | 7.40 | 8.00 | 50 | 10.2 | 543 | 2000 |
| 5KP6.0 | 7.00 | 8.67 | 9.15 | 50 | 11.4 | 439 | 5000 |
| 5KP6.0A | 6.00 | 6.67 | 7.37 | 50 | 10.3 | 485 | 5000 |
| 5KP6.5 | 6.50 | 7.22 | 8.82 | 50 | 12.3 | 407 | 2000 |
| 5KP6.5A | 7.50 | 8.22 | 9.98 | 50 | 13.2 | 447 | 2000 |
| 5KP7.0 | 8.00 | 9.78 | 10.51 | 50 | 14.3 | 378 | 1000 |
| 5KP7.0A | 7.00 | 7.78 | 8.60 | 50 | 12.0 | 417 | 1000 |
| 5KP7.5 | 7.50 | 8.33 | 10.20 | 5 | 14.3 | 350 | 250 |
| 5KP7.5A | 8.50 | 9.33 | 11.21 | 5 | 15.9 | 388 | 250 |
| 5KP8.0 | 9.00 | 10.89 | 12.90 | 5 | 16.0 | 333 | 150 |
| 5KP8.0A | 8.00 | 8.89 | 9.83 | 5 | 13.6 | 367 | 150 |
| 5KP8.5 | 8.50 | 9.44 | 11.50 | 5 | 15.9 | 314 | 50 |
| 5KP8.5A | 9.50 | 10.44 | 12.40 | 5 | 16.4 | 347 | 50 |
| 5KP9.0 | 10.00 | 11.00 | 13.20 | 5 | 17.9 | 295 | 20 |
| 5KP9.0A | 9.00 | 10.00 | 11.10 | 5 | 15.4 | 325 | 20 |
| 5KP10 | 10.00 | 11.10 | 13.60 | 5 | 18.8 | 266 | 10 |
| 5KP10A | 11.00 | 12.10 | 14.30 | 5 | 19.0 | 294 | 10 |
| 5KP11 | 12.00 | 13.20 | 15.90 | 5 | 20.1 | 249 | 10 |
| 5KP11A | 11.00 | 12.20 | 13.50 | 5 | 18.2 | 274 | 10 |
| 5KP12 | 12.00 | 13.30 | 16.30 | 5 | 22.0 | 227 | 10 |
| 5KP12A | 13.00 | 14.30 | 17.70 | 5 | 23.9 | 251 | 10 |
| 5KP13 | 14.00 | 15.40 | 18.60 | 5 | 24.8 | 210 | 10 |
| 5KP13A | 13.00 | 14.40 | 15.90 | 5 | 21.5 | 232 | 10 |
| 5KP14 | 14.00 | 15.60 | 19.10 | 5 | 25.8 | 194 | 10 |
| 5KP14A | 15.00 | 16.60 | 20.20 | 5 | 26.2 | 215 | 10 |
| 5KP15 | 16.00 | 17.70 | 21.40 | 5 | 27.9 | 188 | 10 |
| 5KP15A | 15.00 | 16.70 | 18.50 | 5 | 24.4 | 206 | 10 |
| 5KP16 | 16.00 | 17.80 | 21.80 | 5 | 28.8 | 176 | 10 |
| 5KP16A | 17.00 | 18.80 | 22.70 | 5 | 29.0 | 192 | 10 |
| 5KP17 | 18.00 | 19.90 | 23.10 | 5 | 30.5 | 164 | 10 |
| 5KP17A | 17.00 | 18.90 | 20.90 | 5 | 27.6 | 181 | 10 |
| 5KP18 | 18.00 | 20.00 | 24.40 | 5 | 32.2 | 155 | 10 |
| 5KP18A | 19.00 | 21.00 | 25.10 | 5 | 33.2 | 172 | 10 |
| 5KP20 | 20.00 | 22.20 | 26.10 | 5 | 34.8 | 139 | 10 |
| 5KP20A | 20.00 | 22.20 | 24.50 | 5 | 32.4 | 154 | 10 |
| 5KP22 | 22.00 | 24.40 | 29.80 | 5 | 39.4 | 127 | 10 |
| 5KP22A | 23.00 | 25.40 | 30.90 | 5 | 40.5 | 141 | 10 |
| 5KP24 | 24.00 | 26.70 | 31.60 | 5 | 41.0 | 116 | 10 |
| 5KP24A | 24.00 | 26.70 | 29.50 | 5 | 38.9 | 128 | 10 |
| 5KP26 | 26.00 | 28.90 | 35.30 | 5 | 46.6 | 107 | 10 |
| 5KP26A | 27.00 | 29.90 | 36.90 | 5 | 47.1 | 119 | 10 |
| 5KP28 | 28.00 | 30.10 | 37.00 | 5 | 48.0 | 99 | 10 |
| 5KP28A | 28.00 | 31.10 | 34.40 | 5 | 45.4 | 110 | 10 |
| 5KP30 | 30.00 | 33.30 | 40.70 | 5 | 53.5 | 93 | 10 |
| 5KP30A | 31.00 | 34.30 | 41.80 | 5 | 54.4 | 103 | 10 |
| 5KP33 | 32.00 | 35.70 | 42.90 | 5 | 55.0 | 85 | 10 |
| 5KP33A | 33.00 | 36.70 | 40.60 | 5 | 53.3 | 94 | 10 |
| 5KP36 | 36.00 | 40.00 | 48.90 | 5 | 64.3 | 78 | 10 |
| 5KP36A | 37.00 | 41.00 | 49.20 | 5 | 65.1 | 85 | 10 |
| 5KP40 | 38.00 | 42.40 | 50.30 | 5 | 66.4 | 70 | 10 |
| 5KP40A | 40.00 | 44.40 | 49.10 | 5 | 64.5 | 78 | 10 |
| 5KP43 | 43.00 | 47.80 | 58.40 | 5 | 76.7 | 65 | 10 |
| 5KP43A | 44.00 | 48.80 | 59.80 | 5 | 77.4 | 72 | 10 |
| 5KP45 | 45.00 | 49.00 | 60.10 | 5 | 78.3 | 62 | 10 |
| 5KP45A | 45.00 | 50.00 | 55.30 | 5 | 72.7 | 69 | 10 |
| 5KP48 | 48.00 | 53.30 | 65.10 | 5 | 85.5 | 58 | 10 |
| 5KP48A | 49.00 | 54.30 | 66.90 | 5 | 86.4 | 65 | 10 |
| 5KP51 | 50.00 | 55.70 | 67.30 | 5 | 87.1 | 55 | 10 |
| 5KP51A | 51.00 | 56.70 | 62.70 | 5 | 82.4 | 61 | 10 |
| 5KP54 | 54.00 | 60.00 | 73.30 | 5 | 96.3 | 52 | 10 |
| 5KP54A | 55.00 | 61.00 | 74.30 | 5 | 97.1 | 57 | 10 |
| 5KP58 | 56.00 | 62.40 | 75.70 | 5 | 98.0 | 49 | 10 |
| 5KP58A | 58.00 | 64.40 | 71.20 | 5 | 93.6 | 53 | 10 |

UNI-DIRECTIONAL 5000 Watt Axial Lead TVS

| UNI-DIRECTIONAL PART NUMBER | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @I _{PP} VC (V) | PEAK PULSE CURRENT I _{PP} (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|-----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--|--|-------------------------------|
| 5KP60 | 60.00 | 66.70 | 81.50 | 5 | 107.0 | 47 | 10 |
| 5KP60A | 60.00 | 66.70 | 73.70 | 5 | 96.8 | 52 | 10 |
| 5KP64 | 64.00 | 71.10 | 86.90 | 5 | 114.0 | 44 | 10 |
| 5KP64A | 64.00 | 71.10 | 78.60 | 5 | 103.0 | 49 | 10 |
| 5KP70 | 70.00 | 77.80 | 95.10 | 5 | 125.0 | 40 | 10 |
| 5KP70A | 70.00 | 77.80 | 86.00 | 5 | 113.0 | 44 | 10 |
| 5KP75 | 75.00 | 83.30 | 102.00 | 5 | 134.0 | 37 | 10 |
| 5KP75A | 75.00 | 83.30 | 92.10 | 5 | 121.0 | 41 | 10 |
| 5KP78 | 78.00 | 86.70 | 106.00 | 5 | 139.0 | 36 | 10 |
| 5KP78A | 78.00 | 86.70 | 95.80 | 5 | 126.0 | 40 | 10 |
| 5KP85 | 85.00 | 94.40 | 115.00 | 5 | 151.0 | 33 | 10 |
| 5KP85A | 85.00 | 94.40 | 104.00 | 5 | 137.0 | 36 | 10 |
| 5KP90 | 90.00 | 100.00 | 122.00 | 5 | 160.0 | 31 | 10 |
| 5KP90A | 90.00 | 100.00 | 111.00 | 5 | 146.0 | 34 | 10 |
| 5KP100 | 100.00 | 111.00 | 136.00 | 5 | 179.0 | 28 | 10 |
| 5KP100A | 100.00 | 111.00 | 123.00 | 5 | 162.0 | 31 | 10 |
| 5KP110 | 110.00 | 122.00 | 149.00 | 5 | 196.0 | 26 | 10 |
| 5KP110A | 110.00 | 122.00 | 135.00 | 5 | 177.0 | 28 | 10 |

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| BI-DIRECTIONAL PART NUMBER | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @I _{pp} VC (V) | PEAK PULSE CURRENT I _{pp} (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--|--|-------------------------------|
| 5KP5.0C | 5.00 | 6.40 | 7.30 | 50 | 9.6 | 520 | 4000 |
| 5KP5.0CA | 5.00 | 6.40 | 7.00 | 50 | 9.2 | 543 | 4000 |
| 5KP6.0C | 6.00 | 6.67 | 8.15 | 50 | 11.4 | 439 | 10000 |
| 5KP6.0CA | 6.00 | 6.67 | 7.37 | 50 | 10.3 | 485 | 10000 |
| 5KP6.5C | 6.50 | 7.22 | 8.82 | 50 | 12.3 | 407 | 4000 |
| 5KP6.5CA | 6.50 | 7.22 | 7.98 | 50 | 11.2 | 447 | 4000 |
| 5KP7.0C | 7.00 | 7.78 | 9.51 | 50 | 13.3 | 378 | 2000 |
| 5KP7.0CA | 7.00 | 7.78 | 8.60 | 50 | 12.0 | 417 | 2000 |
| 5KP7.5C | 7.50 | 8.33 | 10.20 | 5 | 14.3 | 350 | 500 |
| 5KP7.5CA | 7.50 | 8.33 | 9.21 | 5 | 12.9 | 388 | 500 |
| 5KP8.0C | 8.00 | 8.89 | 10.90 | 5 | 15.0 | 333 | 300 |
| 5KP8.0CA | 8.00 | 8.89 | 9.83 | 5 | 13.6 | 367 | 300 |
| 5KP8.5C | 8.50 | 9.44 | 11.50 | 5 | 15.9 | 314 | 100 |
| 5KP8.5CA | 8.50 | 9.44 | 10.40 | 5 | 14.4 | 347 | 100 |
| 5KP9.0C | 9.00 | 10.00 | 12.20 | 5 | 16.9 | 295 | 40 |
| 5KP9.0CA | 9.00 | 10.00 | 11.10 | 5 | 15.4 | 325 | 40 |
| 5KP10C | 10.00 | 11.10 | 13.60 | 5 | 18.8 | 266 | 10 |
| 5KP10CA | 10.00 | 11.10 | 12.30 | 5 | 17.0 | 294 | 10 |
| 5KP11C | 11.00 | 12.20 | 14.90 | 5 | 20.1 | 249 | 10 |
| 5KP11CA | 11.00 | 12.20 | 13.50 | 5 | 18.2 | 274 | 10 |
| 5KP12C | 12.00 | 13.30 | 16.30 | 5 | 22.0 | 227 | 10 |
| 5KP12CA | 12.00 | 13.30 | 14.70 | 5 | 19.9 | 251 | 10 |
| 5KP13C | 13.00 | 14.40 | 17.60 | 5 | 23.8 | 210 | 10 |
| 5KP13CA | 13.00 | 14.40 | 15.90 | 5 | 21.5 | 232 | 10 |
| 5KP14C | 14.00 | 15.60 | 19.10 | 5 | 25.8 | 194 | 10 |
| 5KP14CA | 14.00 | 15.60 | 17.20 | 5 | 23.2 | 215 | 10 |
| 5KP15C | 15.00 | 16.70 | 20.40 | 5 | 26.9 | 188 | 10 |
| 5KP15CA | 15.00 | 16.70 | 18.50 | 5 | 24.4 | 206 | 10 |
| 5KP16C | 16.00 | 17.80 | 21.80 | 5 | 28.8 | 176 | 10 |
| 5KP16CA | 16.00 | 17.80 | 19.70 | 5 | 26.0 | 192 | 10 |
| 5KP17C | 17.00 | 18.90 | 23.10 | 5 | 30.5 | 164 | 10 |
| 5KP17CA | 17.00 | 18.90 | 20.90 | 5 | 27.6 | 181 | 10 |
| 5KP18C | 18.00 | 20.00 | 24.40 | 5 | 32.2 | 155 | 10 |
| 5KP18CA | 18.00 | 20.00 | 22.10 | 5 | 29.2 | 172 | 10 |
| 5KP20C | 20.00 | 22.20 | 27.10 | 5 | 35.8 | 139 | 10 |
| 5KP20CA | 20.00 | 22.20 | 24.50 | 5 | 32.4 | 154 | 10 |
| 5KP22C | 22.00 | 24.40 | 29.80 | 5 | 39.4 | 127 | 10 |
| 5KP22CA | 22.00 | 24.40 | 26.90 | 5 | 35.5 | 141 | 10 |
| 5KP24C | 24.00 | 26.70 | 32.60 | 5 | 43.0 | 116 | 10 |
| 5KP24CA | 24.00 | 26.70 | 29.50 | 5 | 38.9 | 128 | 10 |
| 5KP26C | 26.00 | 28.90 | 35.30 | 5 | 46.6 | 107 | 10 |
| 5KP26CA | 26.00 | 28.90 | 31.90 | 5 | 42.1 | 119 | 10 |
| 5KP28C | 28.00 | 31.10 | 38.00 | 5 | 50.0 | 99 | 10 |
| 5KP28CA | 28.00 | 31.10 | 34.40 | 5 | 45.4 | 110 | 10 |
| 5KP30C | 30.00 | 33.30 | 40.70 | 5 | 53.5 | 93 | 10 |
| 5KP30CA | 30.00 | 33.30 | 36.80 | 5 | 48.4 | 103 | 10 |
| 5KP33C | 33.00 | 36.70 | 44.90 | 5 | 59.0 | 85 | 10 |
| 5KP33CA | 33.00 | 36.70 | 40.60 | 5 | 53.3 | 94 | 10 |
| 5KP36C | 36.00 | 40.00 | 48.90 | 5 | 64.3 | 78 | 10 |
| 5KP36CA | 36.00 | 40.00 | 44.20 | 5 | 58.1 | 85 | 10 |
| 5KP40C | 40.00 | 44.40 | 54.30 | 5 | 71.4 | 70 | 10 |
| 5KP40CA | 40.00 | 44.40 | 49.10 | 5 | 64.5 | 78 | 10 |
| 5KP43C | 43.00 | 47.80 | 58.40 | 5 | 76.7 | 65 | 10 |
| 5KP43CA | 43.00 | 47.80 | 52.80 | 5 | 69.4 | 72 | 10 |
| 5KP45C | 45.00 | 50.00 | 61.10 | 5 | 80.3 | 62 | 10 |
| 5KP45CA | 45.00 | 50.00 | 55.30 | 5 | 72.7 | 69 | 10 |
| 5KP48C | 48.00 | 53.30 | 65.10 | 5 | 85.5 | 58 | 10 |
| 5KP48CA | 48.00 | 53.30 | 58.90 | 5 | 77.4 | 65 | 10 |
| 5KP51C | 51.00 | 56.70 | 69.30 | 5 | 91.1 | 55 | 10 |
| 5KP51CA | 51.00 | 56.70 | 62.70 | 5 | 82.4 | 61 | 10 |
| 5KP54C | 54.00 | 60.00 | 73.30 | 5 | 96.3 | 52 | 10 |
| 5KP54CA | 54.00 | 60.00 | 66.30 | 5 | 87.1 | 57 | 10 |
| 5KP58C | 58.00 | 64.40 | 78.70 | 5 | 103.0 | 49 | 10 |
| 5KP58CA | 58.00 | 64.40 | 71.20 | 5 | 93.6 | 53 | 10 |

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|----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--|--|-------------------------------|
| 5KP60C | 60.00 | 66.70 | 81.50 | 5 | 107.0 | 47 | 10 |
| 5KP60CA | 60.00 | 66.70 | 73.70 | 5 | 96.8 | 52 | 10 |
| 5KP64C | 64.00 | 71.10 | 86.90 | 5 | 114.0 | 44 | 10 |
| 5KP64CA | 64.00 | 71.10 | 78.60 | 5 | 103.0 | 49 | 10 |
| 5KP70 | 70.00 | 77.80 | 95.10 | 5 | 125.0 | 40 | 10 |
| 5KP70A | 70.00 | 77.80 | 86.00 | 5 | 113.0 | 44 | 10 |
| 5KP75 | 75.00 | 83.30 | 102.00 | 5 | 134.0 | 37 | 10 |
| 5KP75A | 75.00 | 83.30 | 92.10 | 5 | 121.0 | 41 | 10 |
| 5KP78 | 78.00 | 86.70 | 106.00 | 5 | 139.0 | 36 | 10 |
| 5KP78A | 78.00 | 86.70 | 95.80 | 5 | 126.0 | 40 | 10 |
| 5KP85 | 85.00 | 94.40 | 115.00 | 5 | 151.0 | 33 | 10 |
| 5KP85A | 85.00 | 94.40 | 104.00 | 5 | 137.0 | 36 | 10 |
| 5KP90 | 90.00 | 100.00 | 122.00 | 5 | 160.0 | 31 | 10 |
| 5KP90A | 90.00 | 100.00 | 111.00 | 5 | 146.0 | 34 | 10 |
| 5KP100 | 100.00 | 111.00 | 136.00 | 5 | 179.0 | 28 | 10 |
| 5KP100A | 100.00 | 111.00 | 123.00 | 5 | 162.0 | 31 | 10 |
| 5KP110 | 110.00 | 122.00 | 149.00 | 5 | 196.0 | 26 | 10 |
| 5KP110A | 110.00 | 122.00 | 135.00 | 5 | 177.0 | 28 | 10 |