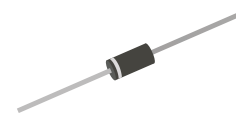


## A5KP-G Series

**Stand-off Voltage: 6.8V ~ 440V**

**Power Dissipation: 5000 Watts**

**RoHS Device**

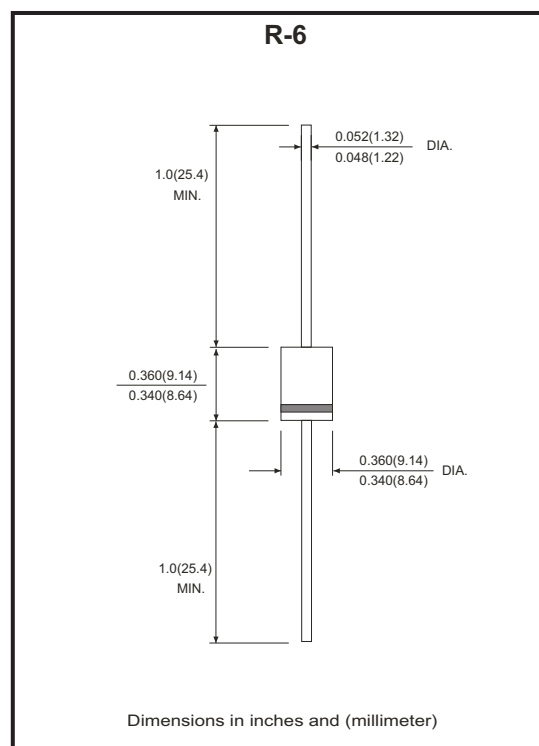


### Features

- Glass passivated chip.
- Low leakage.
- Uni and Bidirection unit.
- Excellent clamping capability.
- The plastic material has UL recognition 94V-0.
- Very fast response time.
- Comply with AEC-Q101

### Mechanical Data

- Case: Molded plastic R-6
- Lead: Solderable per MIL-STD-202, method 208 guaranteed.
- Polarity: Color band denotes cathode end except Bipolar.
- Mounting position: Any
- Weight: 2.1 grams



### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive loaded.

For capacitive load, derated current by 20%.

| Parameter                                                                               | Symbol                            | Value          | Unit |
|-----------------------------------------------------------------------------------------|-----------------------------------|----------------|------|
| Peak power dissipation with a 10/1000μs waveform (Note 1)                               | P <sub>PP</sub>                   | 5000           | W    |
| Peak pulse current with a 10/1000μs waveform (Note 1)                                   | I <sub>PP</sub>                   | See Next Table | W    |
| Power dissipation on infinite heatsink at T <sub>L</sub> =75°C                          | P <sub>D</sub>                    | 8.0            | W    |
| Peak forward surge current, 8.3ms single half sine-wave unidirectional only (Note 2)    | I <sub>FSM</sub>                  | 500            | A    |
| Maximum instantaneous forward voltage at 100A for uni-directional devices only (Note 3) | V <sub>F</sub>                    | 3.5 / 5.0      | V    |
| Operating junction and storage temperature range                                        | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150    | °C   |

NTOES:

(1) Non-repetitive current pulse, per fig.5 and derated above T<sub>A</sub>=25 °C per fig. 1.

(2) Measured on 8.3 ms single half sine wave of equivalent square wave, duty cycle=4 pulses per minute maximum.

(3) V<sub>F</sub><3.5V for devices of V<sub>BR</sub><200V and V<sub>F</sub><5.0V for devices of V<sub>BR</sub>>201V

Company reserves the right to improve product design , functions and reliability without notice.

REV:A

## RATING AND CHARACTERISTIC (A5KP-G Series)

Fig.1- Pulse Derating Curve

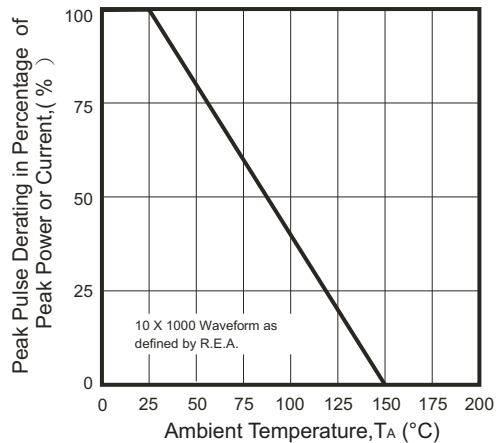


Fig.2- Maximum Non-Repetitive Surge Current

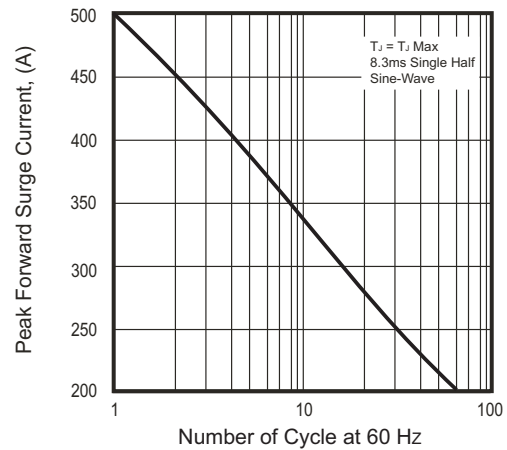


Fig.3- Steady State Power Derating Curve

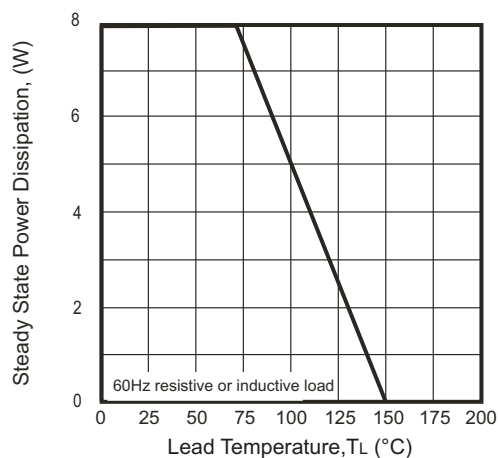


Fig.4- Peak Pulse Power Rating Curve

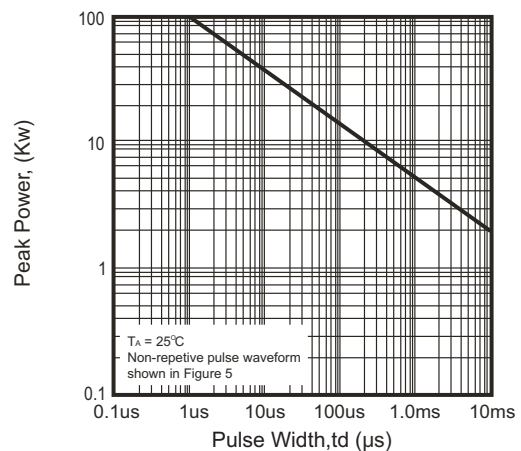


Fig.5- Pulse Waveform

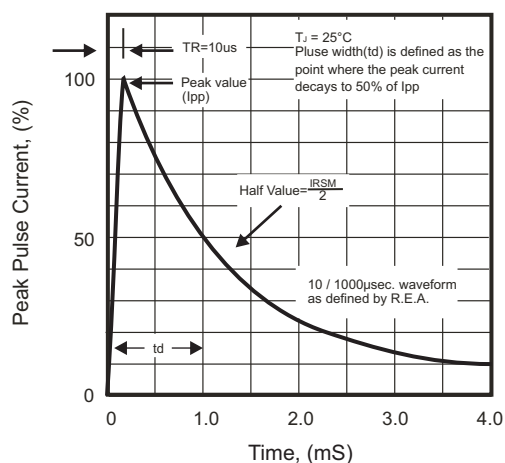
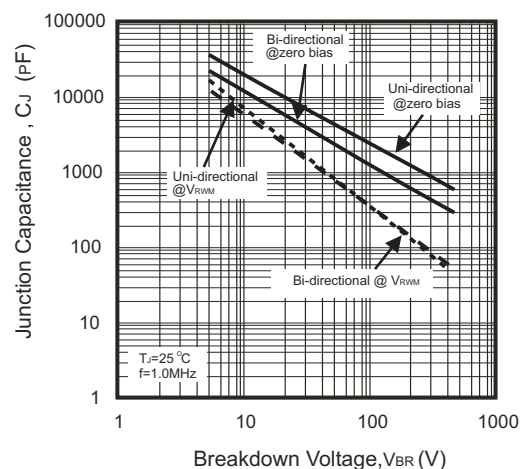


Fig.4- Typical Junction Capacitance



# 5000W Transient Voltage Suppressor

## RATING AND CHARACTERISTIC (A5KP-G Series)

| Part No.   |             | Absolute Maximum Rating (Ta=25°C) |                      |                      |                |                  | Electrical Characteristics (Ta=25°C)  |                      |                                       | Marking Code. |          |
|------------|-------------|-----------------------------------|----------------------|----------------------|----------------|------------------|---------------------------------------|----------------------|---------------------------------------|---------------|----------|
| Uni        | Bi          | V <sub>RWM</sub>                  | V <sub>BR</sub> Min. | V <sub>BR</sub> Max. | I <sub>T</sub> | I <sub>FSM</sub> | Max. V <sub>C</sub> @I <sub>PPM</sub> |                      | Max. I <sub>R</sub> @V <sub>RWM</sub> | Uni           | Bi       |
|            |             | (V)                               | (V)                  | (V)                  | (mA)           | (A)@8.3ms        | (V)                                   | I <sub>PPM</sub> (A) | uA                                    |               |          |
| A5KP5.0A-G | A5KP5.0CA-G | 5.0                               | 6.40                 | 7.00                 | 50             | 500              | 9.2                                   | 543.48               | 5000                                  | 5KP5.0A       | 5KP5.0CA |
| A5KP6.0A-G | A5KP6.0CA-G | 6.0                               | 6.67                 | 7.37                 | 50             | 500              | 10.3                                  | 485.44               | 5000                                  | 5KP6.0A       | 5KP6.0CA |
| A5KP6.5A-G | A5KP6.5CA-G | 7.0                               | 7.22                 | 7.98                 | 50             | 500              | 11.2                                  | 446.43               | 2000                                  | 5KP6.5A       | 5KP6.5CA |
| A5KP7.0A-G | A5KP7.0CA-G | 7.0                               | 7.78                 | 8.60                 | 50             | 500              | 12.0                                  | 416.67               | 1000                                  | 5KP7.0A       | 5KP7.0CA |
| A5KP7.5A-G | A5KP7.5CA-G | 8.0                               | 8.33                 | 9.21                 | 5              | 500              | 12.9                                  | 387.60               | 250                                   | 5KP7.5A       | 5KP7.5CA |
| A5KP8.0A-G | A5KP8.0CA-G | 8.0                               | 8.89                 | 9.83                 | 5              | 500              | 13.6                                  | 367.65               | 150                                   | 5KP8.0A       | 5KP8.0CA |
| A5KP8.5A-G | A5KP8.5CA-G | 9.0                               | 9.44                 | 10.40                | 5              | 500              | 14.4                                  | 347.22               | 50                                    | 5KP8.5A       | 5KP8.5CA |
| A5KP9.0A-G | A5KP9.0CA-G | 9.0                               | 10.00                | 11.10                | 5              | 500              | 15.4                                  | 324.68               | 20                                    | 5KP9.0A       | 5KP9.0CA |
| A5KP10A-G  | A5KP10CA-G  | 10.0                              | 11.10                | 12.30                | 5              | 500              | 17.0                                  | 294.12               | 15                                    | 5KP10A        | 5KP10CA  |
| A5KP11A-G  | A5KP11CA-G  | 11.0                              | 12.20                | 13.50                | 5              | 500              | 18.2                                  | 274.73               | 2                                     | 5KP11A        | 5KP11CA  |
| A5KP12A-G  | A5KP12CA-G  | 12.0                              | 13.30                | 14.70                | 5              | 500              | 19.9                                  | 251.26               | 2                                     | 5KP12A        | 5KP12CA  |
| A5KP13A-G  | A5KP13CA-G  | 13.0                              | 14.40                | 15.90                | 5              | 500              | 21.5                                  | 232.56               | 2                                     | 5KP13A        | 5KP13CA  |
| A5KP14A-G  | A5KP14CA-G  | 14.0                              | 15.60                | 17.20                | 5              | 500              | 23.2                                  | 215.52               | 2                                     | 5KP14A        | 5KP14CA  |
| A5KP15A-G  | A5KP15CA-G  | 15.0                              | 16.70                | 18.50                | 5              | 500              | 24.4                                  | 204.92               | 2                                     | 5KP15A        | 5KP15CA  |
| A5KP16A-G  | A5KP16CA-G  | 16.0                              | 17.80                | 19.70                | 5              | 500              | 26.0                                  | 192.31               | 2                                     | 5KP16A        | 5KP16CA  |
| A5KP17A-G  | A5KP17CA-G  | 17.0                              | 18.90                | 20.90                | 5              | 500              | 27.6                                  | 181.16               | 2                                     | 5KP17A        | 5KP17CA  |
| A5KP18A-G  | A5KP18CA-G  | 18.0                              | 20.00                | 22.10                | 5              | 500              | 29.2                                  | 171.23               | 2                                     | 5KP18A        | 5KP18CA  |
| A5KP19A-G  | A5KP19CA-G  | 19.0                              | 21.10                | 23.30                | 5              | 500              | 30.8                                  | 162.44               | 2                                     | 5KP19A        | 5KP19CA  |
| A5KP20A-G  | A5KP20CA-G  | 20.0                              | 22.20                | 24.5                 | 5              | 500              | 32.4                                  | 154.32               | 2                                     | 5KP20A        | 5KP20CA  |
| A5KP22A-G  | A5KP22CA-G  | 22.0                              | 24.40                | 26.90                | 5              | 500              | 35.5                                  | 140.85               | 2                                     | 5KP22A        | 5KP22CA  |
| A5KP24A-G  | A5KP24CA-G  | 24.0                              | 26.70                | 29.50                | 5              | 500              | 38.9                                  | 128.53               | 2                                     | 5KP24A        | 5KP24CA  |
| A5KP26A-G  | A5KP26CA-G  | 26.0                              | 28.90                | 31.90                | 5              | 500              | 42.1                                  | 118.76               | 2                                     | 5KP26A        | 5KP26CA  |
| A5KP28A-G  | A5KP28CA-G  | 28.0                              | 31.10                | 34.40                | 5              | 500              | 45.4                                  | 110.13               | 2                                     | 5KP28A        | 5KP28CA  |
| A5KP30A-G  | A5KP30CA-G  | 30.0                              | 33.30                | 36.80                | 5              | 500              | 48.4                                  | 103.31               | 2                                     | 5KP30A        | 5KP30CA  |
| A5KP33A-G  | A5KP33CA-G  | 33.0                              | 36.70                | 40.60                | 5              | 500              | 53.3                                  | 93.81                | 2                                     | 5KP33A        | 5KP33CA  |
| A5KP36A-G  | A5KP36CA-G  | 36.0                              | 40.00                | 44.20                | 5              | 500              | 58.1                                  | 86.06                | 2                                     | 5KP36A        | 5KP36CA  |
| A5KP40A-G  | A5KP40CA-G  | 40.0                              | 44.40                | 49.10                | 5              | 500              | 64.5                                  | 77.52                | 2                                     | 5KP40A        | 5KP40CA  |
| A5KP43A-G  | A5KP43CA-G  | 43.0                              | 47.80                | 52.80                | 5              | 500              | 69.4                                  | 72.05                | 2                                     | 5KP43A        | 5KP43CA  |
| A5KP45A-G  | A5KP45CA-G  | 45.0                              | 50.00                | 55.30                | 5              | 500              | 72.7                                  | 68.78                | 2                                     | 5KP45A        | 5KP45CA  |
| A5KP48A-G  | A5KP48CA-G  | 48.0                              | 53.30                | 58.90                | 5              | 500              | 77.4                                  | 64.60                | 2                                     | 5KP48A        | 5KP48CA  |
| A5KP51A-G  | A5KP51CA-G  | 51.0                              | 56.70                | 62.70                | 5              | 500              | 82.4                                  | 60.68                | 2                                     | 5KP51A        | 5KP51CA  |
| A5KP54A-G  | A5KP54CA-G  | 54.0                              | 60.00                | 66.30                | 5              | 500              | 87.1                                  | 57.41                | 2                                     | 5KP54A        | 5KP54CA  |
| A5KP58A-G  | A5KP58CA-G  | 58.0                              | 64.40                | 71.20                | 5              | 500              | 93.6                                  | 53.42                | 2                                     | 5KP58A        | 5KP58CA  |
| A5KP60A-G  | A5KP60CA-G  | 60.0                              | 66.70                | 73.70                | 5              | 500              | 96.8                                  | 51.65                | 2                                     | 5KP60A        | 5KP60CA  |
| A5KP64A-G  | A5KP64CA-G  | 64.0                              | 71.10                | 78.60                | 5              | 500              | 103.0                                 | 48.54                | 2                                     | 5KP64A        | 5KP64CA  |
| A5KP70A-G  | A5KP70CA-G  | 70.0                              | 77.80                | 86.00                | 5              | 500              | 113.0                                 | 44.25                | 2                                     | 5KP70A        | 5KP70CA  |
| A5KP75A-G  | A5KP75CA-G  | 75.0                              | 83.30                | 92.10                | 5              | 500              | 121.0                                 | 41.32                | 2                                     | 5KP75A        | 5KP75CA  |
| A5KP78A-G  | A5KP78CA-G  | 78.0                              | 86.70                | 95.80                | 5              | 500              | 126.0                                 | 39.68                | 2                                     | 5KP78A        | 5KP78CA  |
| A5KP80A-G  | A5KP80CA-G  | 80.0                              | 88.80                | 97.60                | 5              | 500              | 129.6                                 | 38.58                | 2                                     | 5KP80A        | 5KP80CA  |
| A5KP85A-G  | A5KP85CA-G  | 85.0                              | 94.40                | 104.00               | 5              | 500              | 137.0                                 | 36.50                | 2                                     | 5KP85A        | 5KP85CA  |

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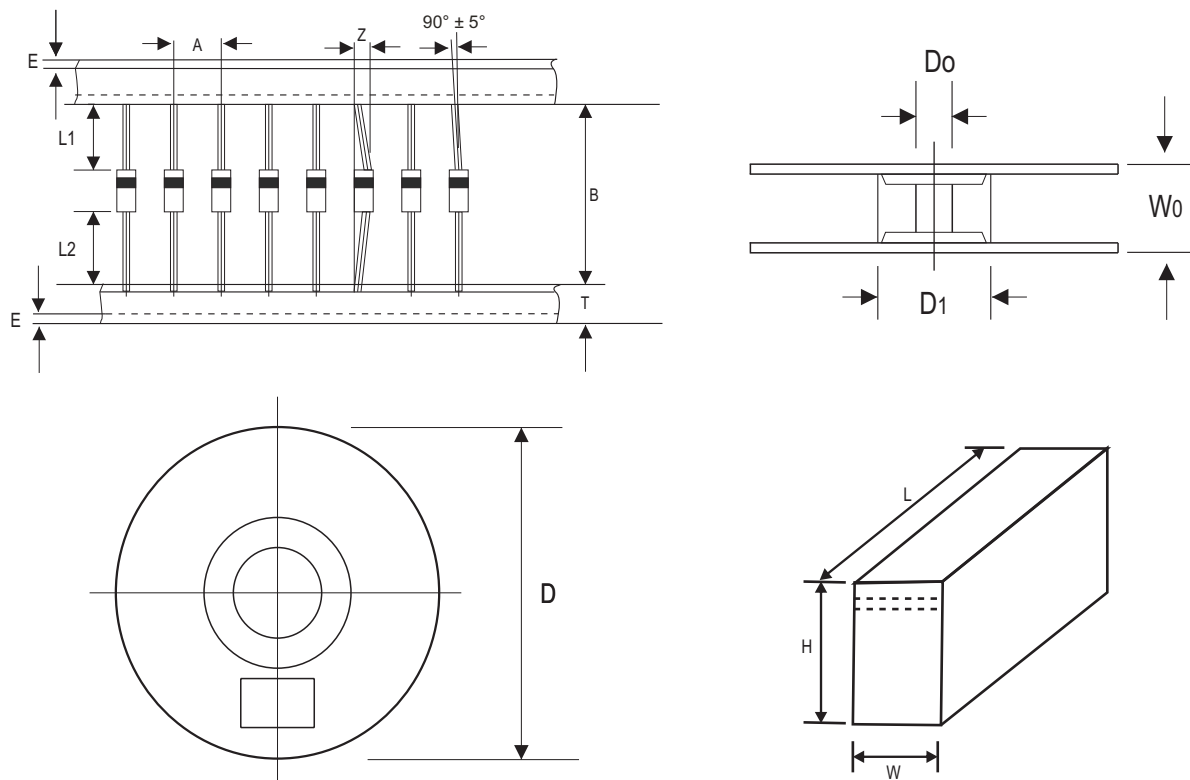
## RATING AND CHARACTERISTIC (A5KP-G Series)

| Part No.   |             | Absolute Maximum Rating (Ta=25°C) |                      |                      |                |                  | Electrical Characteristics (Ta=25°C)  |                      |                                       | Marking Code. |          |
|------------|-------------|-----------------------------------|----------------------|----------------------|----------------|------------------|---------------------------------------|----------------------|---------------------------------------|---------------|----------|
| Uni        | Bi          | V <sub>RWM</sub>                  | V <sub>BR</sub> Min. | V <sub>BR</sub> Max. | I <sub>T</sub> | I <sub>FSM</sub> | Max. V <sub>C</sub> @I <sub>PPM</sub> |                      | Max. I <sub>R</sub> @V <sub>RWM</sub> | Uni           | Bi       |
|            |             | ( V )                             | ( V )                | ( V )                | ( mA )         | (A)@8.3mS        | ( V )                                 | I <sub>PPM</sub> (A) | uA                                    |               |          |
| A5KP90A-G  | A5KP90CA-G  | 90.0                              | 100.00               | 111.00               | 5              | 500              | 146.0                                 | 34.25                | 2                                     | 5KP90A        | 5KP90CA  |
| A5KP100A-G | A5KP100CA-G | 100.0                             | 111.00               | 123.00               | 5              | 500              | 162.0                                 | 30.86                | 2                                     | 5KP100A       | 5KP100CA |
| A5KP110A-G | A5KP110CA-G | 110.0                             | 122.00               | 135.00               | 5              | 500              | 177.0                                 | 28.25                | 2                                     | 5KP110A       | 5KP110CA |
| A5KP120A-G | A5KP120CA-G | 120.0                             | 133.00               | 147.00               | 5              | 500              | 193.0                                 | 25.91                | 2                                     | 5KP120A       | 5KP120CA |
| A5KP130A-G | A5KP130CA-G | 130.0                             | 144.00               | 159.00               | 5              | 500              | 209.0                                 | 23.92                | 2                                     | 5KP130A       | 5KP130CA |
| A5KP140A-G | A5KP140CA-G | 140.0                             | 155.00               | 171.00               | 5              | 500              | 226.8                                 | 22.05                | 2                                     | 5KP140A       | 5KP140CA |
| A5KP150A-G | A5KP150CA-G | 150.0                             | 167.00               | 185.00               | 5              | 500              | 243.0                                 | 20.58                | 2                                     | 5KP150A       | 5KP150CA |
| A5KP160A-G | A5KP160CA-G | 160.0                             | 178.00               | 197.00               | 5              | 500              | 259.0                                 | 19.31                | 2                                     | 5KP160A       | 5KP160CA |
| A5KP170A-G | A5KP170CA-G | 170.0                             | 189.00               | 209.00               | 5              | 500              | 275.0                                 | 18.18                | 2                                     | 5KP170A       | 5KP170CA |
| A5KP180A-G | A5KP180CA-G | 180.0                             | 200.00               | 220.00               | 5              | 500              | 291.6                                 | 17.15                | 2                                     | 5KP180A       | 5KP180CA |
| A5KP190A-G | A5KP190CA-G | 190.0                             | 211.00               | 232.00               | 5              | 500              | 307.8                                 | 16.24                | 2                                     | 5KP190A       | 5KP190CA |
| A5KP200A-G | A5KP200CA-G | 200.0                             | 224.00               | 247.00               | 5              | 500              | 324.0                                 | 15.43                | 2                                     | 5KP200A       | 5KP200CA |
| A5KP210A-G | A5KP210CA-G | 210.0                             | 233.00               | 258.00               | 5              | 500              | 349.5                                 | 42.10                | 2                                     | 5KP210A       | 5KP210CA |
| A5KP220A-G | A5KP220CA-G | 220.0                             | 246.00               | 272.00               | 5              | 500              | 356.0                                 | 50.00                | 2                                     | 5KP220A       | 5KP220CA |
| A5KP250A-G | A5KP250CA-G | 250.0                             | 279.00               | 309.00               | 5              | 500              | 405.0                                 | 45.40                | 2                                     | 5KP250A       | 5KP250CA |
| A5KP300A-G | A5KP300CA-G | 300.0                             | 335.00               | 371.00               | 5              | 500              | 486.0                                 | 53.50                | 2                                     | 5KP300A       | 5KP300CA |
| A5KP350A-G | A5KP350CA-G | 350.0                             | 391.00               | 432.00               | 5              | 500              | 567.0                                 | 48.4                 | 2                                     | 5KP350A       | 5KP350CA |
| A5KP400A-G | A5KP400CA-G | 400.0                             | 447.00               | 494.00               | 5              | 500              | 648.0                                 | 7.72                 | 2                                     | 5KP400A       | 5KP400CA |
| A5KP440A-G | A5KP440CA-G | 440.0                             | 492.00               | 543.00               | 5              | 500              | 713.0                                 | 7.01                 | 2                                     | 5KP440A       | 5KP440CA |

### NOTES:

- Suffix 'A' denotes 5% tolerance device.
- Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
- For Bi-Directional devices having V<sub>R</sub> of 10 Volts and under, the I<sub>R</sub> Limit is double.

## Taping Specification For Axial Lead Diodes



| R-6 | SYMBOL | A                 | B                 | Z           | T                 | E           | L1          | L2          |
|-----|--------|-------------------|-------------------|-------------|-------------------|-------------|-------------|-------------|
|     | (mm)   | $10.00 \pm 0.50$  | $52.00 \pm 0.50$  | 1.20 (max)  | $6.00 \pm 0.40$   | 1.00 (max)  | 1.00 (max)  | 1.00 (max)  |
|     | (inch) | $0.394 \pm 0.020$ | $2.047 \pm 0.020$ | 0.047 (max) | $0.236 \pm 0.016$ | 0.039 (max) | 0.039 (max) | 0.039 (max) |

| R-6 | SYMBOL | D1                | D0                | D      | W0                | L      | W     | H      |
|-----|--------|-------------------|-------------------|--------|-------------------|--------|-------|--------|
|     | (mm)   | $85.70 \pm 0.30$  | $16.60 \pm 0.40$  | 330.00 | $72.00 \pm 3.00$  | 260.00 | 75.00 | 145.00 |
|     | (inch) | $3.374 \pm 0.012$ | $0.654 \pm 0.016$ | 13.000 | $2.835 \pm 0.118$ | 10.236 | 2.953 | 5.709  |

## Standard Packaging

| Case Type | AMMO PACK      |                   |
|-----------|----------------|-------------------|
|           | BOX<br>( pcs ) | CARTON<br>( pcs ) |
| R-6       | 250            | 3,750             |

# Mouser Electronics

Authorized Distributor

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## Comchip Technology:

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[A5KP10CA-G](#) [A5KP45A-G](#) [A5KP190A-G](#) [A5KP6.0CA-G](#) [A5KP90A-G](#) [A5KP28A-G](#) [A5KP7.0A-G](#) [A5KP250CA-G](#)  
[A5KP100A-G](#) [A5KP140CA-G](#) [A5KP8.5CA-G](#) [A5KP190CA-G](#) [A5KP120CA-G](#) [A5KP75CA-G](#) [A5KP200A-G](#)  
[A5KP43CA-G](#) [A5KP400CA-G](#) [A5KP220A-G](#) [A5KP70A-G](#) [A5KP78A-G](#) [A5KP200CA-G](#) [A5KP7.0CA-G](#) [A5KP75A-G](#)  
[A5KP78CA-G](#) [A5KP160CA-G](#) [A5KP8.5A-G](#) [A5KP10A-G](#) [A5KP20A-G](#) [A5KP6.0A-G](#) [A5KP54CA-G](#) [A5KP33A-G](#)  
[A5KP210CA-G](#) [A5KP19CA-G](#) [A5KP300CA-G](#) [A5KP48A-G](#) [A5KP43A-G](#) [A5KP14A-G](#) [A5KP51A-G](#) [A5KP350CA-G](#)  
[A5KP5.0CA-G](#) [A5KP15A-G](#) [A5KP180CA-G](#) [A5KP140A-G](#) [A5KP48CA-G](#) [A5KP16CA-G](#) [A5KP250A-G](#) [A5KP36A-G](#)  
[A5KP7.5CA-G](#) [A5KP180A-G](#) [A5KP36CA-G](#) [A5KP16A-G](#) [A5KP40CA-G](#) [A5KP64A-G](#) [A5KP22A-G](#) [A5KP60CA-G](#)  
[A5KP12A-G](#) [A5KP210A-G](#) [A5KP110CA-G](#) [A5KP18A-G](#) [A5KP45CA-G](#) [A5KP33CA-G](#) [A5KP17A-G](#) [A5KP170CA-G](#)  
[A5KP11CA-G](#) [A5KP85CA-G](#) [A5KP440CA-G](#) [A5KP70CA-G](#) [A5KP28CA-G](#) [A5KP150A-G](#) [A5KP5.0A-G](#) [A5KP400A-G](#)  
[A5KP58CA-G](#) [A5KP120A-G](#) [A5KP6.5CA-G](#) [A5KP22CA-G](#) [A5KP6.5A-G](#) [A5KP110A-G](#) [A5KP130CA-G](#)  
[A5KP9.0CA-G](#) [A5KP17CA-G](#) [A5KP64CA-G](#) [A5KP170A-G](#) [A5KP18CA-G](#) [A5KP8.0CA-G](#) [A5KP12CA-G](#) [A5KP40A-G](#)  
[A5KP90CA-G](#) [A5KP54A-G](#) [A5KP100CA-G](#) [A5KP26CA-G](#) [A5KP80CA-G](#) [A5KP8.0A-G](#)