

## A5KP-G Series

**Breakdown Voltage: 6.8 to 440 Volts**

**Peak Pulse Power: 5000 Watts**

**RoHS Device**



### Features

- Glass passivated chip.
- 5000W peak pulse power capability with a 10/1000 $\mu$ s waveform, repetitive rate (duty cycle):0.01%
- Low leakage.
- Uni and Bidirectional unit.
- Excellent clamping capability.
- Very fast response time.
- Comply with AEC-Q101
- UL recognized file # E349157  Range: A5KP5.0(C)A thru. A5KP190(C)A

### Mechanical Data

- Case: Molded plastic.
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-202, method 208 guaranteed.
- Polarity: Color band denotes cathode end except Bipolar.
- Mounting position: Any



### 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 10/1000 $\mu$ s waveform (Note 1)                         | P <sub>PP</sub>                   | 5000           | W    |
| Peak pulse current with a 10/1000 $\mu$ s waveform (Note 1)                             | I <sub>PP</sub>                   | See Next Table | A    |
| 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 TA=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:B

## 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

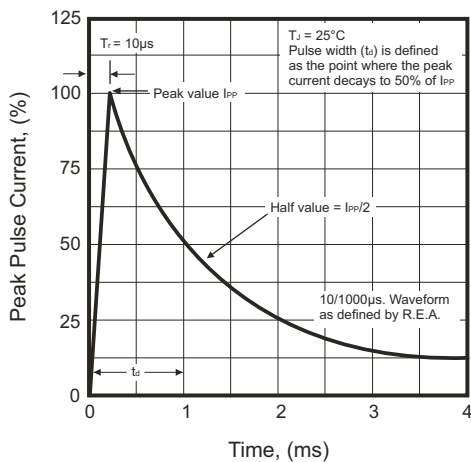


Fig.6 - Typical Junction Capacitance



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# 5000W Transient Voltage Suppressor



## Electrical Characteristics (A5KP-G Series)

| Part No.      | Breakdown voltage<br>VBR @ IT |          |         | Maximum Reverse Leakage<br>@VRWM<br>IR (uA) | Working Peak Reverse Voltage<br>VRWM (V) | Maximum Reverse Surge Current<br>IPP (A) | Maximum Clamping Voltage<br>@IPP<br>Vc (V) | Marking Code |          |
|---------------|-------------------------------|----------|---------|---|--|--|--|--------------|----------|
|               | Min. (V)                      | Max. (V) | IT (mA) |   |  |  |  | UNI          | BI       |
| A5KP5.0(C)A-G | 6.40                          | 7.00     | 50      | 5000  | 5.0                                      | 543.48                                   | 9.2  | 5KP5.0A      | 5KP5.0CA |
| A5KP6.0(C)A-G | 6.67                          | 7.37     | 50      | 5000  | 6.0                                      | 485.44                                   | 10.3                                       | 5KP6.0A      | 5KP6.0CA |
| A5KP6.5(C)A-G | 7.22                          | 7.98     | 50      | 2000  | 7.0                                      | 446.43                                   | 11.2                                       | 5KP6.5A      | 5KP6.5CA |
| A5KP7.0(C)A-G | 7.78                          | 8.60     | 50      | 1000  | 7.0                                      | 416.67                                   | 12.0                                       | 5KP7.0A      | 5KP7.0CA |
| A5KP7.5(C)A-G | 8.33                          | 9.21     | 5       | 250   | 8.0                                      | 387.60                                   | 12.9                                       | 5KP7.5A      | 5KP7.5CA |
| A5KP8.0(C)A-G | 8.89                          | 9.83     | 5       | 150   | 8.0                                      | 367.65                                   | 13.6                                       | 5KP8.0A      | 5KP8.0CA |
| A5KP8.5(C)A-G | 9.44                          | 10.40    | 5       | 50  | 9.0                                      | 347.22                                   | 14.4                                       | 5KP8.5A      | 5KP8.5CA |
| A5KP9.0(C)A-G | 10.00                         | 11.10    | 5       | 20  | 9.0                                      | 324.68                                   | 15.4                                       | 5KP9.0A      | 5KP9.0CA |
| A5KP10(C)A-G  | 11.10                         | 12.30    | 5       | 15  | 10.0                                     | 294.12                                   | 17.0                                       | 5KP10A       | 5KP10CA  |
| A5KP11(C)A-G  | 12.20                         | 13.50    | 5       | 2   | 11.0                                     | 274.73                                   | 18.2                                       | 5KP11A       | 5KP11CA  |
| A5KP12(C)A-G  | 13.30                         | 14.70    | 5       | 2   | 12.0                                     | 251.26                                   | 19.9                                       | 5KP12A       | 5KP12CA  |
| A5KP13(C)A-G  | 14.40                         | 15.90    | 5       | 2   | 13.0                                     | 232.56                                   | 21.5                                       | 5KP13A       | 5KP13CA  |
| A5KP14(C)A-G  | 15.60                         | 17.20    | 5       | 2   | 14.0                                     | 215.52                                   | 23.2                                       | 5KP14A       | 5KP14CA  |
| A5KP15(C)A-G  | 16.70                         | 18.50    | 5       | 2   | 15.0                                     | 204.92                                   | 24.4                                       | 5KP15A       | 5KP15CA  |
| A5KP16(C)A-G  | 17.80                         | 19.70    | 5       | 2   | 16.0                                     | 192.31                                   | 26.0                                       | 5KP16A       | 5KP16CA  |
| A5KP17(C)A-G  | 18.90                         | 20.90    | 5       | 2   | 17.0                                     | 181.16                                   | 27.6                                       | 5KP17A       | 5KP17CA  |
| A5KP18(C)A-G  | 20.00                         | 22.10    | 5       | 2   | 18.0                                     | 171.23                                   | 29.2                                       | 5KP18A       | 5KP18CA  |
| A5KP19(C)A-G  | 21.10                         | 23.30    | 5       | 2   | 19.0                                     | 162.44                                   | 30.8                                       | 5KP19A       | 5KP19CA  |
| A5KP20(C)A-G  | 22.20                         | 24.50    | 5       | 2   | 20.0                                     | 154.32                                   | 32.4                                       | 5KP20A       | 5KP20CA  |
| A5KP22(C)A-G  | 24.40                         | 26.90    | 5       | 2   | 22.0                                     | 140.85                                   | 35.5                                       | 5KP22A       | 5KP22CA  |
| A5KP24(C)A-G  | 26.70                         | 29.50    | 5       | 2   | 24.0                                     | 128.53                                   | 38.9                                       | 5KP24A       | 5KP24CA  |
| A5KP26(C)A-G  | 28.90                         | 31.90    | 5       | 2   | 26.0                                     | 118.76                                   | 42.1                                       | 5KP26A       | 5KP26CA  |
| A5KP28(C)A-G  | 31.10                         | 34.40    | 5       | 2   | 28.0                                     | 110.13                                   | 45.4                                       | 5KP28A       | 5KP28CA  |
| A5KP30(C)A-G  | 33.30                         | 36.80    | 5       | 2   | 30.0                                     | 103.31                                   | 48.4                                       | 5KP30A       | 5KP30CA  |
| A5KP33(C)A-G  | 36.70                         | 40.60    | 5       | 2   | 33.0                                     | 93.81                                    | 53.3                                       | 5KP33A       | 5KP33CA  |
| A5KP36(C)A-G  | 40.00                         | 44.20    | 5       | 2   | 36.0                                     | 86.06                                    | 58.1                                       | 5KP36A       | 5KP36CA  |
| A5KP40(C)A-G  | 44.40                         | 49.10    | 5       | 2   | 40.0                                     | 77.52                                    | 64.5                                       | 5KP40A       | 5KP40CA  |
| A5KP43(C)A-G  | 47.80                         | 52.80    | 5       | 2   | 43.0                                     | 72.05                                    | 69.4                                       | 5KP43A       | 5KP43CA  |
| A5KP45(C)A-G  | 50.00                         | 55.30    | 5       | 2   | 45.0                                     | 68.78                                    | 72.7                                       | 5KP45A       | 5KP45CA  |
| A5KP48(C)A-G  | 53.30                         | 58.90    | 5       | 2   | 48.0                                     | 64.60                                    | 77.4                                       | 5KP48A       | 5KP48CA  |
| A5KP51(C)A-G  | 56.70                         | 62.70    | 5       | 2   | 51.0                                     | 60.68                                    | 82.4                                       | 5KP51A       | 5KP51CA  |
| A5KP54(C)A-G  | 60.00                         | 66.30    | 5       | 2   | 54.0                                     | 57.41                                    | 87.1                                       | 5KP54A       | 5KP54CA  |
| A5KP58(C)A-G  | 64.40                         | 71.20    | 5       | 2   | 58.0                                     | 53.42                                    | 93.6                                       | 5KP58A       | 5KP58CA  |
| A5KP60(C)A-G  | 66.70                         | 73.70    | 5       | 2   | 60.0                                     | 51.65                                    | 96.8                                       | 5KP60A       | 5KP60CA  |
| A5KP64(C)A-G  | 71.10                         | 78.60    | 5       | 2   | 64.0                                     | 48.54                                    | 103.0                                      | 5KP64A       | 5KP64CA  |
| A5KP70(C)A-G  | 77.80                         | 86.00    | 5       | 2   | 70.0                                     | 44.25                                    | 113.0                                      | 5KP70A       | 5KP70CA  |
| A5KP75(C)A-G  | 83.30                         | 92.10    | 5       | 2   | 75.0                                     | 41.32                                    | 121.0                                      | 5KP75A       | 5KP75CA  |
| A5KP78(C)A-G  | 86.70                         | 95.80    | 5       | 2   | 78.0                                     | 39.68                                    | 126.0                                      | 5KP78A       | 5KP78CA  |
| A5KP80(C)A-G  | 88.80                         | 97.60    | 5       | 2   | 80.0                                     | 38.58                                    | 129.6                                      | 5KP80A       | 5KP80CA  |
| A5KP85(C)A-G  | 94.40                         | 104.00   | 5       | 2   | 85.0                                     | 36.50                                    | 137.0                                      | 5KP85A       | 5KP85CA  |

- Note: 1) Suffix A denotes 5% tolerance devices.  
 2) Add suffix "C" or "CA" after part number to specify Bi-directional devices.  
 3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double.

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# 5000W Transient Voltage Suppressor

## Electrical Characteristics (A5KP-G Series)

| Part No.      | Breakdown voltage<br>V <sub>BR</sub> @ I <sub>T</sub> |             |                        | Maximum<br>Reverse<br>Leakage<br>@V <sub>RWM</sub><br>I <sub>R</sub> (uA) | Working<br>Peak<br>Reverse<br>Voltage<br>V <sub>RWM</sub> (V) | Maximum<br>Reverse<br>Surge<br>Current<br>I <sub>PP</sub> (A) | Maximum<br>Clamping<br>Voltage<br>@I <sub>PP</sub><br>V <sub>c</sub> (V) | Marking Code |          |
|---------------|---|-------------|------------------------|---|---|---|--|--------------|----------|
|               | Min.<br>(V)   | Max.<br>(V) | I <sub>T</sub><br>(mA) |   |   |   |  | UNI          | BI       |
| A5KP90(C)A-G  | 100.00  | 111.00      | 5                      | 2   | 90.0  | 34.25   | 146.0  | 5KP90A       | 5KP90CA  |
| A5KP100(C)A-G | 111.00  | 123.00      | 5                      | 2   | 100.0   | 30.86   | 162.0  | 5KP100A      | 5KP100CA |
| A5KP110(C)A-G | 122.00  | 135.00      | 5                      | 2   | 110.0   | 28.25   | 177.0  | 5KP110A      | 5KP110CA |
| A5KP120(C)A-G | 133.00  | 147.00      | 5                      | 2   | 120.0   | 25.91   | 193.0  | 5KP120A      | 5KP120CA |
| A5KP130(C)A-G | 144.00  | 159.00      | 5                      | 2   | 130.0   | 23.92   | 209.0  | 5KP130A      | 5KP130CA |
| A5KP140(C)A-G | 155.00  | 171.00      | 5                      | 2   | 140.0   | 22.05   | 226.8  | 5KP140A      | 5KP140CA |
| A5KP150(C)A-G | 167.00  | 185.00      | 5                      | 2   | 150.0   | 20.58   | 243.0  | 5KP150A      | 5KP150CA |
| A5KP160(C)A-G | 178.00  | 197.00      | 5                      | 2   | 160.0   | 19.31   | 259.0  | 5KP160A      | 5KP160CA |
| A5KP170(C)A-G | 189.00  | 209.00      | 5                      | 2   | 170.0   | 18.18   | 275.0  | 5KP170A      | 5KP170CA |
| A5KP180(C)A-G | 200.00  | 220.00      | 5                      | 2   | 180.0   | 17.15   | 291.6  | 5KP180A      | 5KP180CA |
| A5KP190(C)A-G | 211.00  | 232.00      | 5                      | 2   | 190.0   | 16.24   | 307.8  | 5KP190A      | 5KP190CA |
| A5KP200(C)A-G | 224.00  | 247.00      | 5                      | 2   | 200.0   | 15.43   | 324.0  | 5KP200A      | 5KP200CA |
| A5KP210(C)A-G | 233.00  | 258.00      | 5                      | 2   | 210.0   | 14.31   | 349.5  | 5KP210A      | 5KP210CA |
| A5KP220(C)A-G | 246.00  | 272.00      | 5                      | 2   | 220.0   | 14.04   | 356.0  | 5KP220A      | 5KP220CA |
| A5KP250(C)A-G | 279.00  | 309.00      | 5                      | 2   | 250.0   | 12.35   | 405.0  | 5KP250A      | 5KP250CA |
| A5KP300(C)A-G | 335.00  | 371.00      | 5                      | 2   | 300.0   | 10.29   | 486.0  | 5KP300A      | 5KP300CA |
| A5KP350(C)A-G | 391.00  | 432.00      | 5                      | 2   | 350.0   | 8.82  | 567.0  | 5KP350A      | 5KP350CA |
| A5KP400(C)A-G | 447.00  | 494.00      | 5                      | 2   | 400.0   | 7.72  | 648.0  | 5KP400A      | 5KP400CA |
| A5KP440(C)A-G | 492.00  | 543.00      | 5                      | 2   | 440.0   | 7.01  | 713.0  | 5KP440A      | 5KP440CA |

- Note: 1) Suffix A denotes 5% tolerance devices.  
 2) Add suffix "C" or "CA" after part number to specify Bi-directional devices.  
 3) 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           |
|-----|--------|-------------------|-------------------|-------------|-------------------|-------------|
|     | (mm)   | $10.00 \pm 0.50$  | $52.00 \pm 0.50$  | 1.20 (max)  | $6.00 \pm 0.40$   | 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) |

| R-6 | SYMBOL | L1          | L2          | L      | W     | H      |
|-----|--------|-------------|-------------|--------|-------|--------|
|     | (mm)   | 1.00 (max)  | 1.00 (max)  | 260.00 | 75.00 | 145.00 |
|     | (inch) | 0.039 (max) | 0.039 (max) | 10.236 | 2.953 | 5.709  |

## Standard Packaging

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



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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