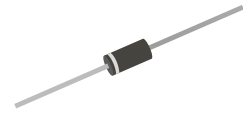


5KP-G Series

Stand-off Voltage: 6.8V ~ 220V

Power Dissipation: 5000 Watts

RoHS Device

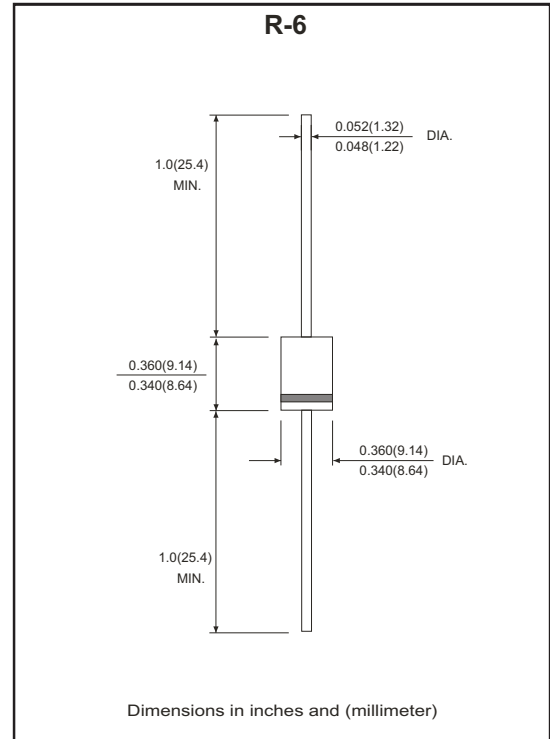


Features

- Glass passivated chip.
- Low leakage.
- Uni and Bidirection unit.
- Excellent clamping capability.
- The plastic material has UL recognition 94V-0.
- Fast response time.

Mechanical Data

- Case: Molded plastic R-6
- Polarity: By cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- 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 _{PP} | 5000 | W |
| Peak pulse current with a 10/1000µs waveform (Note 1) | I _{PP} | See Next Table | W |
| Power dissipation on infinite heatsink at T _L =75°C | P _D | 8.0 | W |
| Peak forward surge current, 8.3ms single half sine-wave unidirectional only (Note 2) | I _{FSM} | 500 | A |
| Maximum instantaneous forward voltage at 100A for uni-directional devices only (Note 3) | V _F | 3.5 / 5.0 | V |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 to +150 | °C |

NTOES:

(1) Non-repetitive current pulse, per fig.5 and derated above T_A=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_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

5000W Transient Voltage Suppressor



RATING AND CHARACTERISTIC (5KP-G Series)

| Part No. | | Absolute Maximum Rating (Ta=25 °C) | | | | | Electrical Characteristics (Ta=25 | | | | |
|-----------|------------|------------------------------------|----------------------|----------------------|----------------|------------------|---------------------------------------|----------------------|---------------------------------------|---------|----------|
| Uni | Bi | V _{RWM} | V _{BR} Min. | V _{BR} Max. | I _T | I _{FSM} | Max. V _c @I _{PPM} | | Max. I _R @V _{RWM} | Uni | Bi |
| | | (V) | (V) | (V) | (mA) | (A)@8.3mS | (V) | I _{PPM} (A) | uA | | |
| 5KP5.0-G | 5KP5.0C-G | 5.0 | 6.40 | 7.30 | 10 | 500 | 9.6 | 520.83 | 800 | 5KP5.0 | 5KP5.0C |
| 5KP5.0A-G | 5KP5.0CA-G | 5.0 | 6.40 | 7.00 | 10 | 500 | 9.2 | 543.48 | 800 | 5KP5.0A | 5KP5.0CA |
| 5KP6.0-G | 5KP6.0C-G | 6.0 | 6.67 | 8.15 | 10 | 500 | 11.4 | 438.60 | 800 | 5KP6.0 | 5KP6.0C |
| 5KP6.0A-G | 5KP6.0CA-G | 6.0 | 6.67 | 7.37 | 10 | 500 | 10.3 | 485.44 | 800 | 5KP6.0A | 5KP6.0CA |
| 5KP6.5-G | 5KP6.5C-G | 6.5 | 7.22 | 8.82 | 10 | 500 | 12.3 | 406.50 | 500 | 5KP6.5 | 5KP6.5C |
| 5KP6.5A-G | 5KP6.5CA-G | 6.5 | 7.22 | 7.98 | 10 | 500 | 11.2 | 446.43 | 500 | 5KP6.5A | 5KP6.5CA |
| 5KP7.0-G | 5KP7.0C-G | 7.0 | 7.78 | 9.51 | 10 | 500 | 13.3 | 375.94 | 200 | 5KP7.0 | 5KP7.0C |
| 5KP7.0A-G | 5KP7.0CA-G | 7.0 | 7.78 | 8.60 | 10 | 500 | 12.0 | 416.67 | 200 | 5KP7.0A | 5KP7.0CA |
| 5KP7.5-G | 5KP7.5C-G | 7.5 | 8.33 | 10.20 | 1.0 | 500 | 14.3 | 349.65 | 100 | 5KP7.5 | 5KP7.5C |
| 5KP7.5A-G | 5KP7.5CA-G | 7.5 | 8.33 | 9.21 | 1.0 | 500 | 12.9 | 387.60 | 100 | 5KP7.5A | 5KP7.5CA |
| 5KP8.0-G | 5KP8.0C-G | 8.0 | 8.89 | 10.90 | 1.0 | 500 | 15.0 | 333.33 | 50 | 5KP8.0 | 5KP8.0C |
| 5KP8.0A-G | 5KP8.0CA-G | 8.0 | 8.89 | 9.83 | 1.0 | 500 | 13.6 | 367.65 | 50 | 5KP8.0A | 5KP8.0CA |
| 5KP8.5-G | 5KP8.5C-G | 8.5 | 9.44 | 11.50 | 1.0 | 500 | 15.9 | 314.47 | 20 | 5KP8.5 | 5KP8.5C |
| 5KP8.5A-G | 5KP8.5CA-G | 8.5 | 9.44 | 10.40 | 1.0 | 500 | 14.4 | 347.22 | 20 | 5KP8.5A | 5KP8.5CA |
| 5KP9.0-G | 5KP9.0C-G | 9.0 | 10.00 | 12.20 | 1.0 | 500 | 16.9 | 295.86 | 10 | 5KP9.0 | 5KP9.0C |
| 5KP9.0A-G | 5KP9.0CA-G | 9.0 | 10.00 | 11.10 | 1.0 | 500 | 15.4 | 324.68 | 10 | 5KP9.0A | 5KP9.0CA |
| 5KP10-G | 5KP10C-G | 10.0 | 11.10 | 13.60 | 1.0 | 500 | 18.8 | 265.96 | 5 | 5KP10 | 5KP10C |
| 5KP10A-G | 5KP10CA-G | 10.0 | 11.10 | 12.30 | 1.0 | 500 | 17.0 | 294.12 | 5 | 5KP10A | 5KP10CA |
| 5KP11-G | 5KP11C-G | 11.0 | 12.20 | 14.90 | 1.0 | 500 | 20.1 | 248.76 | 5 | 5KP11 | 5KP11C |
| 5KP11A-G | 5KP11CA-G | 11.0 | 12.20 | 13.50 | 1.0 | 500 | 18.2 | 274.73 | 5 | 5KP11A | 5KP11CA |
| 5KP12-G | 5KP12C-G | 12.0 | 13.30 | 16.30 | 1.0 | 500 | 22.0 | 227.27 | 5 | 5KP12 | 5KP12C |
| 5KP12A-G | 5KP12CA-G | 12.0 | 13.30 | 14.70 | 1.0 | 500 | 19.9 | 251.26 | 5 | 5KP12A | 5KP12CA |
| 5KP13-G | 5KP13C-G | 13.0 | 14.40 | 17.60 | 1.0 | 500 | 23.8 | 210.08 | 5 | 5KP13 | 5KP13C |
| 5KP13A-G | 5KP13CA-G | 13.0 | 14.40 | 15.90 | 1.0 | 500 | 21.5 | 232.56 | 5 | 5KP13A | 5KP13CA |
| 5KP14-G | 5KP14C-G | 14.0 | 15.60 | 19.10 | 1.0 | 500 | 25.8 | 193.80 | 5 | 5KP14 | 5KP14C |
| 5KP14A-G | 5KP14CA-G | 14.0 | 15.60 | 17.20 | 1.0 | 500 | 23.2 | 215.52 | 5 | 5KP14A | 5KP14CA |
| 5KP15-G | 5KP15C-G | 15.0 | 16.70 | 20.40 | 1.0 | 500 | 26.9 | 185.87 | 5 | 5KP15 | 5KP15C |
| 5KP15A-G | 5KP15CA-G | 15.0 | 16.70 | 18.50 | 1.0 | 500 | 24.4 | 204.92 | 5 | 5KP15A | 5KP15CA |
| 5KP16-G | 5KP16C-G | 16.0 | 17.80 | 21.80 | 1.0 | 500 | 28.8 | 173.61 | 5 | 5KP16 | 5KP16C |
| 5KP16A-G | 5KP16CA-G | 16.0 | 17.80 | 19.70 | 1.0 | 500 | 26.0 | 192.31 | 5 | 5KP16A | 5KP16CA |
| 5KP17-G | 5KP17C-G | 17.0 | 18.90 | 23.10 | 1.0 | 500 | 30.5 | 163.93 | 5 | 5KP17 | 5KP17C |
| 5KP17A-G | 5KP17CA-G | 17.0 | 18.90 | 20.90 | 1.0 | 500 | 27.6 | 181.16 | 5 | 5KP17A | 5KP17CA |
| 5KP18-G | 5KP18C-G | 18.0 | 20.00 | 24.40 | 1.0 | 500 | 32.2 | 155.28 | 5 | 5KP18 | 5KP18C |
| 5KP18A-G | 5KP18CA-G | 18.0 | 20.00 | 22.10 | 1.0 | 500 | 29.2 | 171.23 | 5 | 5KP18A | 5KP18CA |
| 5KP20-G | 5KP20C-G | 20.0 | 22.20 | 27.10 | 1.0 | 500 | 35.8 | 139.66 | 5 | 5KP20 | 5KP20C |
| 5KP20A-G | 5KP20CA-G | 20.0 | 22.20 | 24.50 | 1.0 | 500 | 32.4 | 154.32 | 5 | 5KP20A | 5KP20CA |
| 5KP22-G | 5KP22C-G | 22.0 | 24.40 | 29.80 | 1.0 | 500 | 39.4 | 126.90 | 5 | 5KP22 | 5KP22C |
| 5KP22A-G | 5KP22CA-G | 22.0 | 24.40 | 26.90 | 1.0 | 500 | 35.5 | 140.85 | 5 | 5KP22A | 5KP22CA |
| 5KP24-G | 5KP24C-G | 24.0 | 26.70 | 32.60 | 1.0 | 500 | 43.0 | 116.28 | 5 | 5KP24 | 5KP24C |
| 5KP24A-G | 5KP24CA-G | 24.0 | 26.70 | 29.50 | 1.0 | 500 | 38.9 | 128.53 | 5 | 5KP24A | 5KP24CA |
| 5KP26-G | 5KP26C-G | 26.0 | 28.90 | 35.30 | 1.0 | 500 | 46.6 | 107.30 | 5 | 5KP26 | 5KP26C |
| 5KP26A-G | 5KP26CA-G | 26.0 | 28.90 | 31.90 | 1.0 | 500 | 42.1 | 118.76 | 5 | 5KP26A | 5KP26CA |
| 5KP28-G | 5KP28C-G | 28.0 | 31.10 | 38.00 | 1.0 | 500 | 50.1 | 100.00 | 5 | 5KP28 | 5KP28C |
| 5KP28A-G | 5KP28CA-G | 28.0 | 31.10 | 34.40 | 1.0 | 500 | 45.4 | 110.13 | 5 | 5KP28A | 5KP28CA |

5000W Transient Voltage Suppressor



RATING AND CHARACTERISTIC (5KP-G Series)

| Part No. | | Absolute Maximum Rating (Ta=25 °C) | | | | | Electrical Characteristics (Ta=25 °C) | | | Marking Code. | |
|-----------|------------|------------------------------------|----------------------|----------------------|----------------|------------------|---------------------------------------|----------------------|--------------------------------------|---------------|----------|
| Uni | Bi | V _{VRWM} | V _{BR Min.} | V _{BR Max.} | I _T | I _{FSM} | Max. V _c @I _{PPM} | | Max. I _R @V _{WM} | Uni | Bi |
| | | (V) | (V) | (V) | (mA) | (A)@8.3ms | (V) | I _{PPM} (A) | uA | | |
| 5KP30-G | 5KP30C-G | 30.0 | 33.30 | 40.70 | 1.0 | 500 | 53.5 | 93.46 | 5 | 5KP30 | 5KP30C |
| 5KP30A-G | 5KP30CA-G | 30.0 | 33.30 | 36.80 | 1.0 | 500 | 48.4 | 103.31 | 5 | 5KP30A | 5KP30CA |
| 5KP33-G | 5KP33C-G | 33.0 | 36.70 | 44.90 | 1.0 | 500 | 59.0 | 84.75 | 5 | 5KP33 | 5KP33C |
| 5KP33A-G | 5KP33CA-G | 33.0 | 36.70 | 40.60 | 1.0 | 500 | 53.3 | 93.81 | 5 | 5KP33A | 5KP33CA |
| 5KP36-G | 5KP36C-G | 36.0 | 40.00 | 48.90 | 1.0 | 500 | 64.3 | 77.76 | 5 | 5KP36 | 5KP36C |
| 5KP36A-G | 5KP36CA-G | 36.0 | 40.00 | 44.20 | 1.0 | 500 | 58.1 | 86.06 | 5 | 5KP36A | 5KP36CA |
| 5KP40-G | 5KP40C-G | 40.0 | 44.40 | 54.30 | 1.0 | 500 | 71.4 | 70.03 | 5 | 5KP40 | 5KP40C |
| 5KP40A-G | 5KP40CA-G | 40.0 | 44.40 | 49.10 | 1.0 | 500 | 64.5 | 77.52 | 5 | 5KP40A | 5KP40CA |
| 5KP43-G | 5KP43C-G | 43.0 | 47.80 | 58.40 | 1.0 | 500 | 76.7 | 65.19 | 5 | 5KP43 | 5KP43C |
| 5KP43A-G | 5KP43CA-G | 43.0 | 47.80 | 52.80 | 1.0 | 500 | 69.4 | 72.05 | 5 | 5KP43A | 5KP43CA |
| 5KP45-G | 5KP45C-G | 45.0 | 50.00 | 61.10 | 1.0 | 500 | 80.3 | 62.27 | 5 | 5KP45 | 5KP45C |
| 5KP45A-G | 5KP45CA-G | 45.0 | 50.00 | 55.30 | 1.0 | 500 | 72.7 | 68.78 | 5 | 5KP45A | 5KP45CA |
| 5KP48-G | 5KP48C-G | 48.0 | 53.30 | 65.10 | 1.0 | 500 | 85.5 | 58.48 | 5 | 5KP48 | 5KP48C |
| 5KP48A-G | 5KP48CA-G | 48.0 | 53.30 | 58.90 | 1.0 | 500 | 77.4 | 64.60 | 5 | 5KP48A | 5KP48CA |
| 5KP51-G | 5KP51C-G | 51.0 | 56.70 | 69.30 | 1.0 | 500 | 91.1 | 54.88 | 5 | 5KP51 | 5KP51C |
| 5KP51A-G | 5KP51CA-G | 51.0 | 56.70 | 62.70 | 1.0 | 500 | 82.4 | 60.68 | 5 | 5KP51A | 5KP51CA |
| 5KP54-G | 5KP54C-G | 54.0 | 60.00 | 73.30 | 1.0 | 500 | 96.3 | 51.92 | 5 | 5KP54 | 5KP54C |
| 5KP54A-G | 5KP54CA-G | 54.0 | 60.00 | 66.30 | 1.0 | 500 | 87.1 | 57.41 | 5 | 5KP54A | 5KP54CA |
| 5KP58-G | 5KP58C-G | 58.0 | 64.40 | 78.70 | 1.0 | 500 | 103.0 | 48.54 | 5 | 5KP58 | 5KP58C |
| 5KP58A-G | 5KP58CA-G | 58.0 | 64.40 | 71.20 | 1.0 | 500 | 93.6 | 53.42 | 5 | 5KP58A | 5KP58CA |
| 5KP60-G | 5KP60C-G | 60.0 | 66.70 | 81.50 | 1.0 | 500 | 107.0 | 46.73 | 5 | 5KP60 | 5KP60C |
| 5KP60A-G | 5KP60CA-G | 60.0 | 66.70 | 73.70 | 1.0 | 500 | 96.8 | 51.65 | 5 | 5KP60A | 5KP60CA |
| 5KP64-G | 5KP64C-G | 64.0 | 71.10 | 86.90 | 1.0 | 500 | 114.0 | 43.86 | 5 | 5KP64 | 5KP64C |
| 5KP64A-G | 5KP64CA-G | 64.0 | 71.10 | 78.60 | 1.0 | 500 | 103.0 | 48.54 | 5 | 5KP64A | 5KP64CA |
| 5KP70-G | 5KP70C-G | 70.0 | 77.80 | 95.10 | 1.0 | 500 | 125.0 | 40.00 | 5 | 5KP70 | 5KP70C |
| 5KP70A-G | 5KP70CA-G | 70.0 | 77.80 | 86.00 | 1.0 | 500 | 113.0 | 44.25 | 5 | 5KP70A | 5KP70CA |
| 5KP75-G | 5KP75C-G | 75.0 | 83.30 | 102.00 | 1.0 | 500 | 134.0 | 37.31 | 5 | 5KP75 | 5KP75C |
| 5KP75A-G | 5KP75CA-G | 75.0 | 83.30 | 92.10 | 1.0 | 500 | 121.0 | 41.32 | 5 | 5KP75A | 5KP75CA |
| 5KP78-G | 5KP78C-G | 78.0 | 86.70 | 106.00 | 1.0 | 500 | 139.0 | 35.97 | 5 | 5KP78 | 5KP78C |
| 5KP78A-G | 5KP78CA-G | 78.0 | 86.70 | 95.80 | 1.0 | 500 | 126.0 | 39.68 | 5 | 5KP78A | 5KP78CA |
| 5KP85-G | 5KP85C-G | 85.0 | 94.40 | 115.00 | 1.0 | 500 | 151.0 | 33.11 | 5 | 5KP85 | 5KP85C |
| 5KP85A-G | 5KP85CA-G | 85.0 | 94.40 | 104.00 | 1.0 | 500 | 137.0 | 36.50 | 5 | 5KP85A | 5KP85CA |
| 5KP90-G | 5KP90C-G | 90.0 | 100.00 | 122.00 | 1.0 | 500 | 160.0 | 31.25 | 5 | 5KP90 | 5KP90C |
| 5KP90A-G | 5KP90CA-G | 90.0 | 100.00 | 111.00 | 1.0 | 500 | 146.0 | 34.25 | 5 | 5KP90A | 5KP90CA |
| 5KP100-G | 5KP100C-G | 100.0 | 111.00 | 136.00 | 1.0 | 500 | 179.0 | 27.93 | 5 | 5KP100 | 5KP100C |
| 5KP100A-G | 5KP100CA-G | 100.0 | 111.00 | 123.00 | 1.0 | 500 | 162.0 | 30.86 | 5 | 5KP100A | 5KP100CA |
| 5KP110-G | 5KP110C-G | 110.0 | 122.00 | 149.00 | 1.0 | 500 | 196.0 | 25.51 | 5 | 5KP110 | 5KP110C |
| 5KP110A-G | 5KP110CA-G | 110.0 | 122.00 | 135.00 | 1.0 | 500 | 177.0 | 28.25 | 5 | 5KP110A | 5KP110CA |
| 5KP120-G | 5KP120C-G | 120.0 | 133.00 | 163.00 | 1.0 | 500 | 214.0 | 23.36 | 5 | 5KP120 | 5KP120C |
| 5KP120A-G | 5KP120CA-G | 120.0 | 133.00 | 147.00 | 1.0 | 500 | 193.0 | 25.91 | 5 | 5KP120A | 5KP120CA |
| 5KP130-G | 5KP130C-G | 130.0 | 144.00 | 176.00 | 1.0 | 500 | 230.0 | 21.65 | 5 | 5KP130 | 5KP130C |
| 5KP130A-G | 5KP130CA-G | 130.0 | 144.00 | 159.00 | 1.0 | 500 | 209.0 | 23.92 | 5 | 5KP130A | 5KP130CA |
| 5KP150-G | 5KP150C-G | 150.0 | 167.00 | 204.00 | 1.0 | 500 | 268.0 | 18.66 | 5 | 5KP150 | 5KP150C |
| 5KP150A-G | 5KP150CA-G | 150.0 | 167.00 | 185.00 | 1.0 | 500 | 243.0 | 20.58 | 5 | 5KP150A | 5KP150CA |

5000W Transient Voltage Suppressor



RATING AND CHARACTERISTIC (5KP-G Series)

| Part No. | | Absolute Maximum Rating (Ta=25 °C) | | | | | Electrical Characteristics (Ta=25 °C) | | | Marking Code. | |
|-----------|------------|------------------------------------|----------------------|----------------------|----------------|------------------|---------------------------------------|----------------------|---------------------------------------|---------------|----------|
| Uni | Bi | V _{RWM} | V _{BR} Min. | V _{BR} Max. | I _T | I _{FSM} | Max. V _C @I _{PPM} | | Max. I _R @V _{RWM} | Uni | Bi |
| | | (V) | (V) | (V) | (mA) | (A)@8.3mS | (V) | I _{PPM} (A) | uA | | |
| 5KP160-G | 5KP160C-G | 160.0 | 178.00 | 218.00 | 1.0 | 500 | 287.0 | 17.42 | 5 | 5KP160 | 5KP160C |
| 5KP160A-G | 5KP160CA-G | 160.0 | 178.00 | 197.00 | 1.0 | 500 | 259.0 | 19.31 | 5 | 5KP160A | 5KP160CA |
| 5KP170-G | 5KP170C-G | 170.0 | 189.00 | 231.00 | 1.0 | 500 | 304.0 | 16.45 | 5 | 5KP170 | 5KP170C |
| 5KP170A-G | 5KP170CA-G | 170.0 | 189.00 | 209.00 | 1.0 | 500 | 275.0 | 18.18 | 5 | 5KP170A | 5KP170CA |
| 5KP180-G | 5KP180C-G | 180.0 | 200.16 | 244.80 | 1.0 | 500 | 322.2 | 15.52 | 5 | 5KP180 | 5KP180C |
| 5KP180A-G | 5KP180CA-G | 180.0 | 200.00 | 220.00 | 1.0 | 500 | 291.6 | 17.15 | 5 | 5KP180A | 5KP180CA |
| 5KP190-G | 5KP190C-G | 190.0 | 211.28 | 258.40 | 1.0 | 500 | 340.1 | 14.70 | 5 | 5KP190 | 5KP190C |
| 5KP190A-G | 5KP190CA-G | 190.0 | 211.00 | 232.00 | 1.0 | 500 | 307.8 | 16.24 | 5 | 5KP190A | 5KP190CA |

NOTES:

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having V_R of 10 Volts and under, the I_R Limit is double

RATING AND CHARACTERISTIC (5KP-G Series)

Fig.1 Pulse Derating Curve

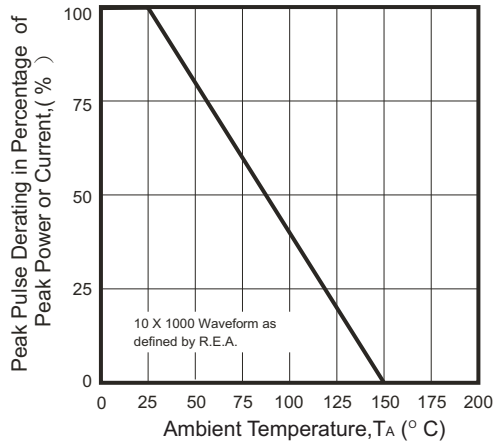


Fig.2 Maximum Non-Repetitive Surge Current

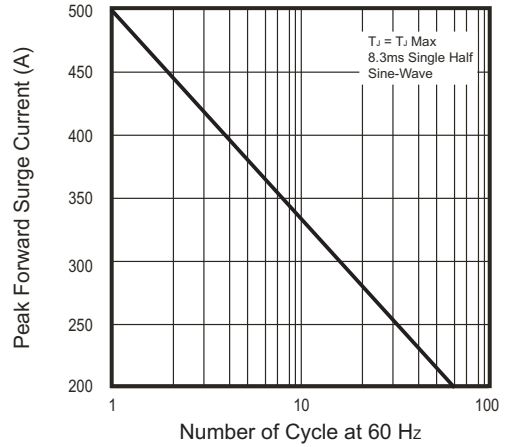


Fig.3 Steady State Power Derating Curve

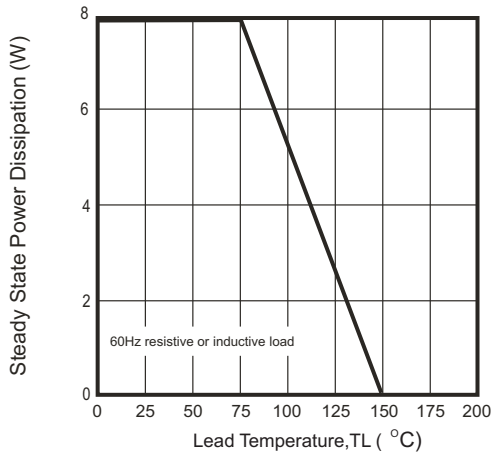


Fig.4 Peak Pulse Power Rating Curve

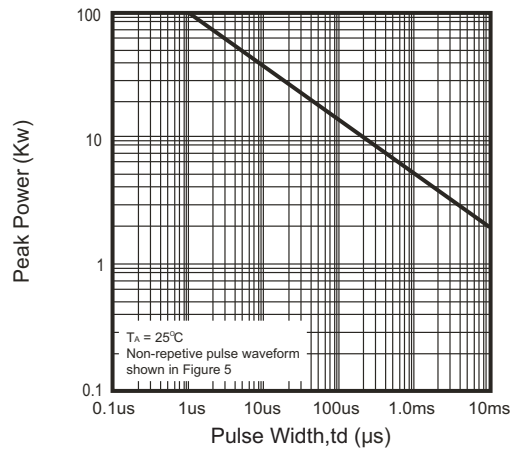


Fig.5 Pulse Waveform

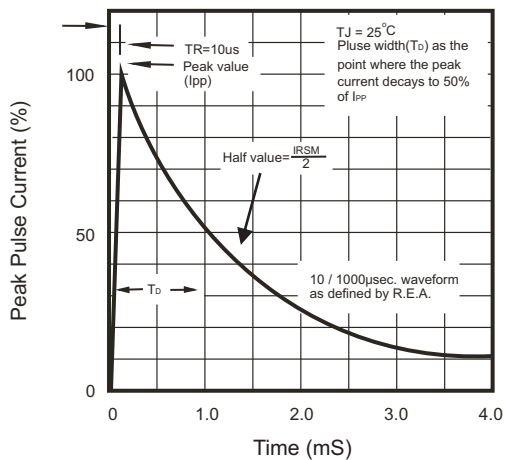
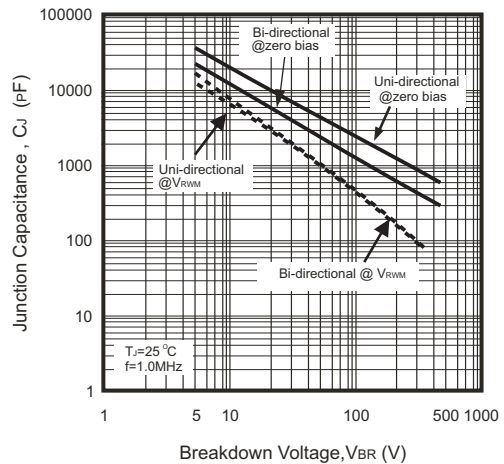


Fig.4 Typical Junction Capacitance



Comchip Technology:

5KP33A-HF