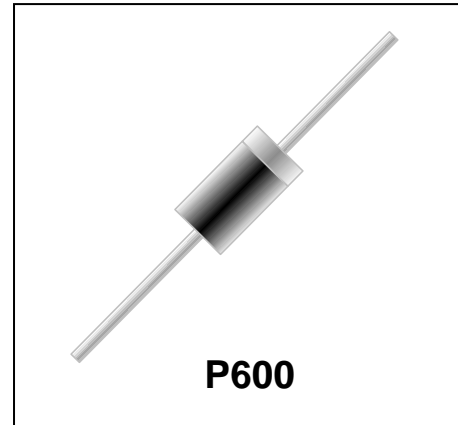


Features

- 15000 watts Peak Pulse Power (10/1000 μ s)
- Unidirectional and Bidirectional Protection
- Fast Response Time :Typically < 1ns
- Excellent Clamping Capability
- Glass Passivated Junction in P600 Package
- Low incremental surge resistance
- Plastic package has Underwriters Laboratory Flammability classification 94V-0
- High temperature soldering guaranteed:260° C /10 seconds/.375” ,(9.5mm) lead length/5lbs.,(2.3kg) tension



Mechanical Characteristics

- JEDEC P600 molded plastic
- Polarity: Color band denoted cathode except Bipolar
- Marking : Marking Code
- Mounting Position: Any
- RoHS &UL497B Compliant

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Signal lines of sensor units for consumer
- Industrial Electronics
- Computer

| Absolute Maximum Rating | | | |
|---|-----------------|--------------------------------|--------------|
| Rating | Symbol | Value | Units |
| Peak Pulse Power ($t_p = 10/1000\mu s$) (see Note1) | P_{PPM} | 15000 | W |
| Peak pulse current (10/1000 μ s) (see Note1) | I_{PPM} | See Electrical Characteristics | A |
| Power Dissipation on infinite heat sink $T_L = 50^\circ C$ (Fig4) | P_D | 10.0 | W |
| Operating Junction Temperature range | T_J | -55 to + 175 | $^\circ C$ |
| Typical Thermal Resistance Junction to Lead | $R_{\theta JL}$ | 8.0 | $^\circ C/W$ |

Note1: Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ C$ per Fig.2.

Electrical Characteristics

| Part Number | | Reverse Stand off Voltage V_{RWM} | Breakdown Voltage $V_{BR}(\text{Volts})@I_T$ | | Test Current I_T (mA) | Maximum Clamping Voltage $V_C@I_{PP}$ | Maximum Peak Pulse Current I_{PP} | Maximum Reverse Leakage $I_R@V_{RWM}$ |
|-------------|-----------|--|---|-------|-----------------------------------|--|--|--|
| UNI-POLAR | BI-POLAR | | (V) | MIN | | | | |
| 15KP17A | 15KP17CA | 17 | 18.9 | 20.8 | 50 | 29.3 | 512 | 5000 |
| 15KP18A | 15KP18CA | 18 | 20.0 | 22.1 | 50 | 30.9 | 485 | 5000 |
| 15KP20A | 15KP20CA | 20 | 22.2 | 24.5 | 20 | 34.3 | 437 | 1500 |
| 15KP22A | 15KP22CA | 22 | 24.4 | 27.0 | 10 | 37.1 | 404 | 500 |
| 15KP24A | 15KP24CA | 24 | 26.7 | 29.4 | 5 | 40.5 | 369 | 150 |
| 15KP26A | 15KP26CA | 26 | 28.9 | 31.8 | 5 | 44.0 | 347 | 50 |
| 15KP28A | 15KP28CA | 28 | 31.1 | 34.3 | 5 | 47.5 | 316 | 25 |
| 15KP30A | 15KP30CA | 30 | 33.3 | 36.7 | 5 | 50.7 | 296 | 15 |
| 15KP33A | 15KP33CA | 33 | 36.7 | 40.4 | 5 | 54.8 | 274 | 10 |
| 15KP36A | 15KP36CA | 36 | 40.0 | 44.0 | 5 | 59.7 | 251 | 10 |
| 15KP40A | 15KP40CA | 40 | 44.4 | 48.9 | 5 | 65.8 | 228 | 10 |
| 15KP43A | 15KP43CA | 43 | 47.8 | 52.6 | 5 | 69.7 | 215 | 10 |
| 15KP45A | 15KP45CA | 45 | 50.0 | 55.0 | 5 | 73.0 | 205 | 10 |
| 15KP48A | 15KP48CA | 48 | 53.3 | 58.7 | 5 | 77.7 | 193 | 10 |
| 15KP51A | 15KP51CA | 51 | 56.7 | 62.4 | 5 | 82.8 | 181 | 10 |
| 15KP54A | 15KP54CA | 54 | 60.0 | 66.0 | 5 | 87.5 | 171 | 10 |
| 15KP58A | 15KP58CA | 15 | 64.4 | 70.9 | 5 | 94.0 | 160 | 10 |
| 15KP60A | 15KP60CA | 60 | 66.7 | 73.4 | 5 | 97.3 | 154 | 10 |
| 15KP64A | 15KP64CA | 64 | 71.1 | 78.3 | 5 | 104.0 | 144 | 10 |
| 15KP70A | 15KP70CA | 70 | 77.8 | 85.6 | 5 | 114.0 | 132 | 10 |
| 15KP75A | 15KP75CA | 75 | 83.3 | 91.7 | 5 | 122.0 | 123 | 10 |
| 15KP78A | 15KP78CA | 78 | 86.7 | 95.4 | 5 | 126.0 | 119 | 10 |
| 15KP85A | 15KP85CA | 85 | 94.4 | 104.0 | 5 | 137.0 | 109 | 10 |
| 15KP90A | 15KP90CA | 90 | 100 | 110.1 | 5 | 146.0 | 103 | 10 |
| 15KP100A | 15KP100CA | 100 | 111 | 122.3 | 5 | 162.0 | 93 | 10 |
| 15KP110A | 15KP110CA | 110 | 122 | 134.5 | 5 | 178.0 | 84 | 10 |
| 15KP120A | 15KP120CA | 120 | 133 | 146.8 | 5 | 193.0 | 78 | 10 |

Electrical Characteristics (Cont.)

| Part Number | | Reverse Stand off Voltage V_{RWM} (V) | Breakdown Voltage V_{BR} (Volts)@ I_T | | Test Current I_T (mA) | Maximum Clamping Voltage V_C @ I_{PP} (V) | Maximum Peak Pulse Current I_{PP} (A) | Maximum Reverse Leakage I_R @ V_{RWM} (μ A) |
|-------------|-----------|---|--|-------|-------------------------------|---|---|--|
| UNI-POLAR | BI-POLAR | | MIN | MAX | | | | |
| 15KP130A | 15KP130CA | 130 | 144 | 159.0 | 5 | 209.0 | 72 | 10 |
| 15KP150A | 15KP150CA | 150 | 167 | 183.5 | 5 | 243.0 | 62 | 10 |
| 15KP160A | 15KP160CA | 160 | 178 | 195.7 | 5 | 259.0 | 58 | 10 |
| 15KP170A | 15KP170CA | 170 | 189 | 207.9 | 5 | 275.0 | 55 | 10 |
| 15KP180A | 15KP180CA | 180 | 200 | 220.1 | 5 | 291.0 | 52 | 10 |
| 15KP200A | 15KP200CA | 200 | 209 | 244.6 | 5 | 322.0 | 47 | 10 |
| 15KP220A | 15KP220CA | 220 | 222 | 269.1 | 5 | 356.0 | 42 | 10 |
| 15KP240A | 15KP240CA | 240 | 267 | 293.5 | 5 | 388.0 | 39 | 10 |
| 15KP260A | 15KP260CA | 260 | 289 | 318.0 | 5 | 419.0 | 36 | 10 |
| 15KP280A | 15KP280CA | 280 | 311 | 342.4 | 5 | 452.0 | 33 | 10 |

For bidirectional type V_R of 10 volts and less, the I_R limit is double.

For parts without A, the V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts.

Typical Characteristics

Figure 1. Peak Pulse Power Rating Curve

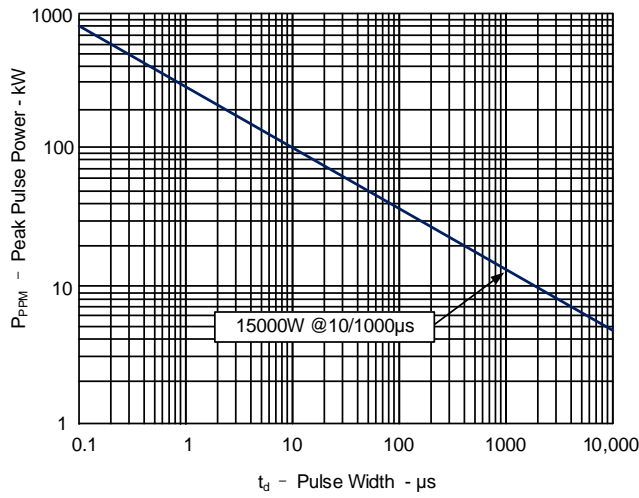


Figure 2. Pulse Derating Curve

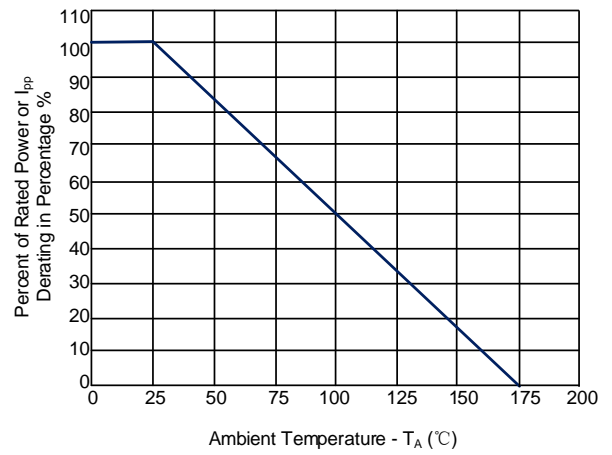


Figure 3. Pulse Waveform

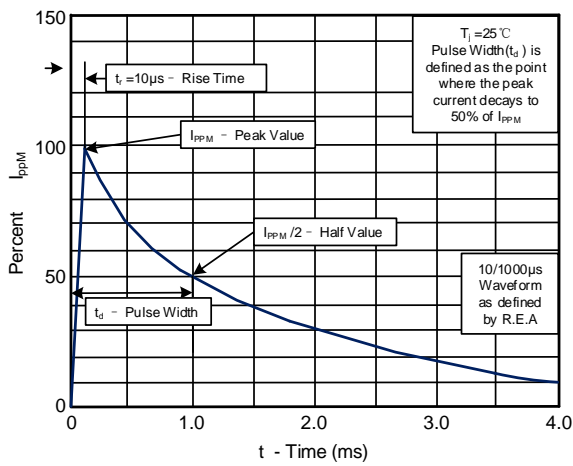
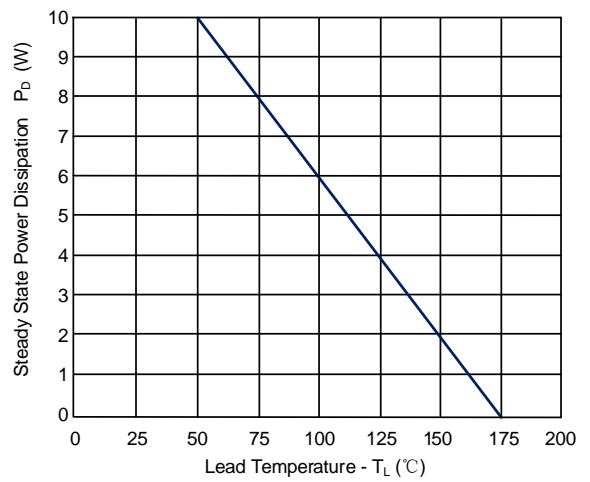
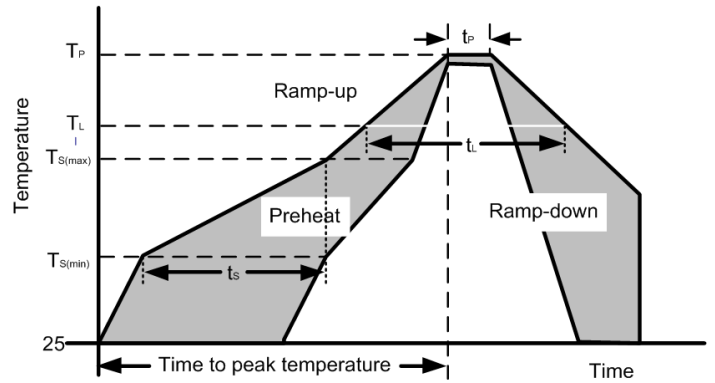


Figure 4. Steady State Power Dissipation Derating Curve



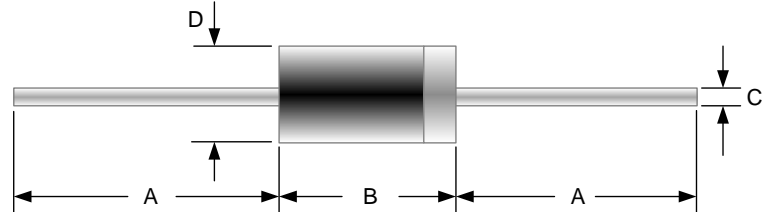
Soldering Parameters

| Condition | | |
|--|----------------------------------|-------------------------|
| Pre-Heat | Temperature Min ($T_{s(min)}$) | 150°C |
| | Temperature Max ($T_{s(max)}$) | 200°C |
| | Time (min to max) (t_s) | 60-190 s |
| Average ramp up rate (Liquidus Temp) (T_L) to peak | | 3°C/s max |
| Ts(max) to TL - Ramp-up Rate | | 3°C/s max |
| Reflow | Temperature (T_L) (Liquidus) | 217°C |
| | Temperature (t_L) | 60-150 s |
| Peak Temperature (T_P) | | 260 ^{+0/-5} °C |
| Time within actual peak Temperature (t_p) | | 20-40 s |
| Ramp-down Rate | | 5°C/s max |
| Time 25°C to peak Temperature (T_P) | | 8 minutes max |
| Do not exceed | | 260°C |

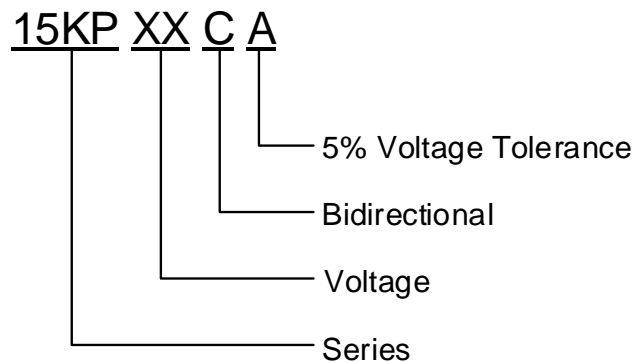


Outline Drawing - P600

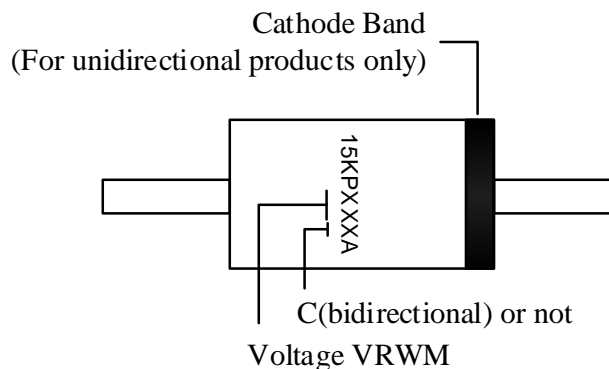
| Ref.(mm) | Millimeters | |
|----------|-------------|------|
| | Min. | Max. |
| A | 25.40 | - |
| B | 8.60 | 9.10 |
| C | 1.22 | 1.32 |
| D | 8.60 | 9.10 |



Part Numbering System



Part Marking System



Package Information

| Package Type | Description | Quantity (pcs) |
|--------------|-------------|----------------|
| P-600 | Tape & Box | 300 |

Contact Information

No.1001, Shiwan(7) Road, Pudong District, Shanghai, P.R.China.201207

Tel: +86-21-68969993 Fax: 86-21-50757680 Email: market@way-on.com

WAYON website: <http://www.way-on.com>

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