

Description

The 12KP series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- Halogen free and RoHS compliant
- Glass passivated junction
- Low incremental surge resistance
- Excellent clamping capability
- 12000W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.05%
- Fast response time
- High Temperature soldering guaranteed: 265 $^{\circ}$ C/10 seconds/.375", (9.5mm) lead length, 5lbs (2.3kg) tension
- Plastic package has underwriters laboratory flammability 94V-0
- Meet MSL level1, per J-STD-020
- IEC-61000-4-2 ESD 30kV(Air), 30kV (Contact)
- Unit Weight: 2.1g

Applications

TVS components are ideal for the protection of I/O Interfaces, VCC bus and other vulnerable circuits used in telecom, computer, Industrial and consumer electronic applications.

Maximum Ratings and Characteristics ($T_A=25^{\circ}$ C)

| Rating | Symbol | Value |
|---|-----------------|---------------------------------------|
| Peak pulse power dissipation at 10/1000 μ s waveform (Note1, Fig.1) | P_{PPM} | 12000W |
| Peak pulse current of at 10/1000 μ s waveform (Note 1) | I_{PPM} | See Table(A) |
| Steady state power dissipation at $T_L=75^{\circ}$ C (Fig.4) | $P_{M(AV)}$ | 8.0W |
| Operating junction and Storage Temperature Ranges | T_J, T_{STG} | -55 $^{\circ}$ C to +150 $^{\circ}$ C |
| Typical thermal resistance junction to lead | $R_{\theta JL}$ | 8 $^{\circ}$ C/W |
| Typical thermal resistance junction to ambient | $R_{\theta JA}$ | 40 $^{\circ}$ C/W |

Notes:1. Non-repetitive current pulse, per Fig.3 and derating above $T_A=25^{\circ}$ C per Fig.2.

Electrical Characteristics ($T_A=25^\circ\text{C}$)

| Part Number | Reverse Stand-Off Voltage | Breakdown Voltage @ I_T | | Test Current | Maximum Clamping Voltage @ I_{PP} | Peak Pulse Current | Reverse Leakage @ V_R |
|-------------|---------------------------|---------------------------|-----------------|--------------|-------------------------------------|--------------------|-------------------------|
| | $V_R(V)$ | $V_{B Min.}(V)$ | $V_{B Max.}(V)$ | $I_T(mA)$ | $V_C(V)$ | $I_{PP}(A)$ | $I_R(\mu A)$ |
| 12KP36CA | 36 | 40 | 44.2 | 5 | 58.1 | 206.5 | 2 |

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$)

Figure 1. Peak Pulse Power Rating Curve

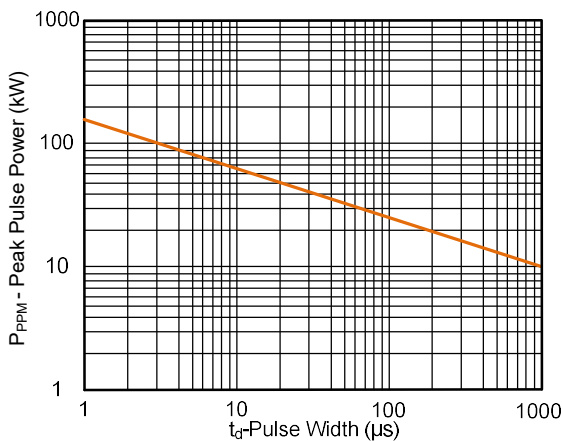


Figure 2. Pulse Derating Curve

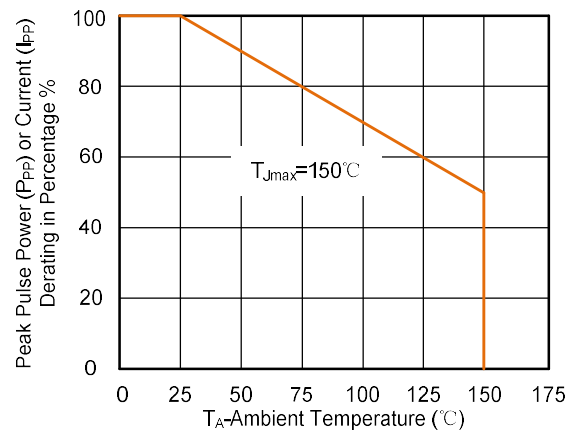


Figure 3. Pulse Waveform

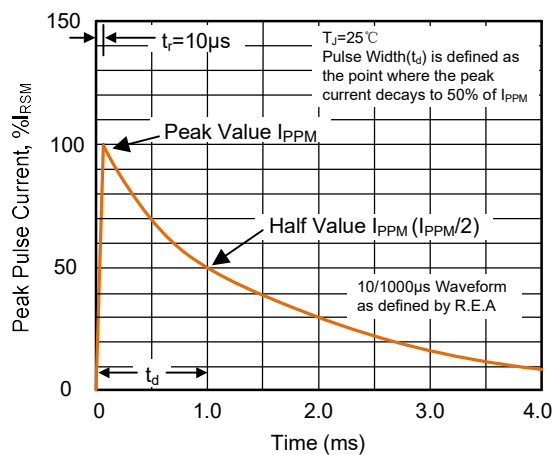
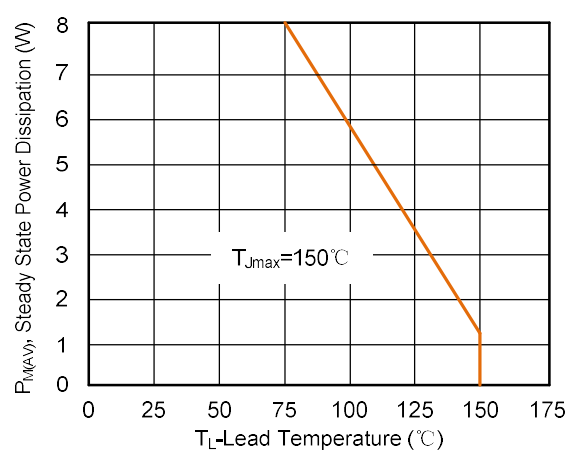
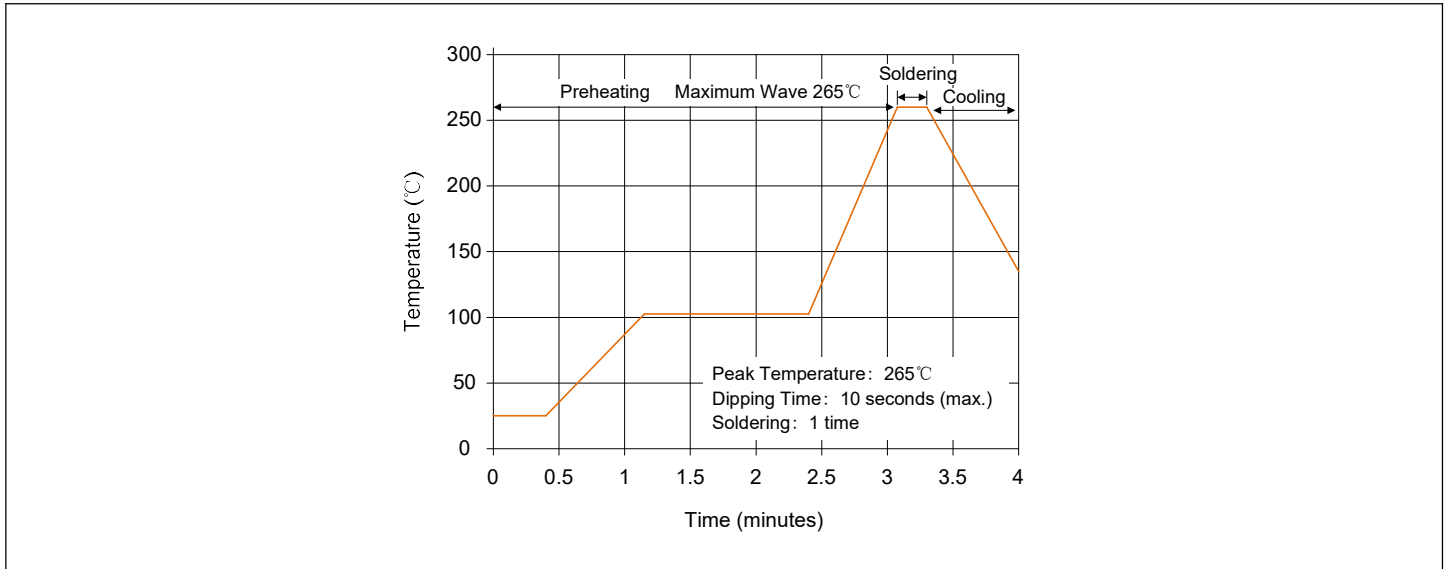


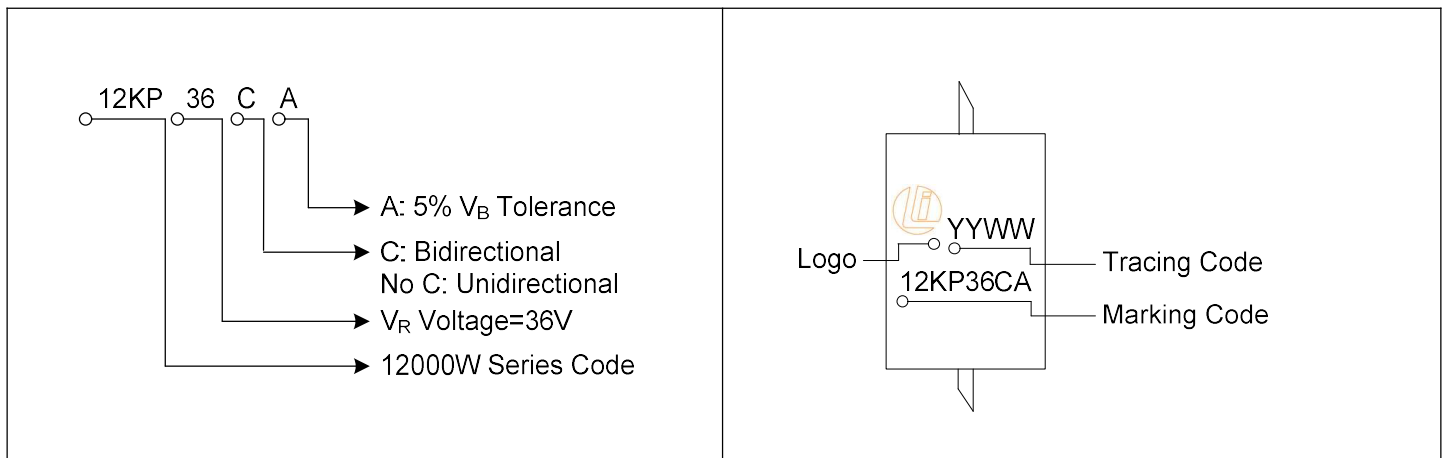
Figure 4. Steady State Power Dissipation Derating Curve



Wave Soldering



Part Number Code and Marking Code



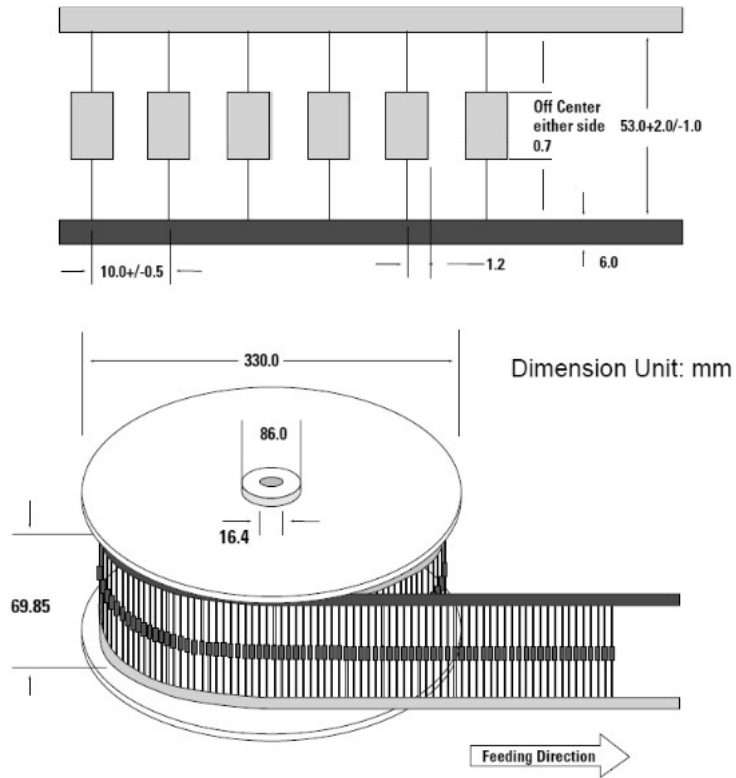
Dimensions (P600)

The diagram shows the dimensions of the diode: A (lead length), B (body length), C (body height), and d (lead thickness).

| Symbol | Millimeters | | Inches | |
|--------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 25.40 | - | 1.000 | - |
| B | 8.60 | 9.10 | 0.340 | 0.360 |
| C | 8.60 | 9.10 | 0.340 | 0.360 |
| d | 1.19 | 1.35 | 0.047 | 0.053 |

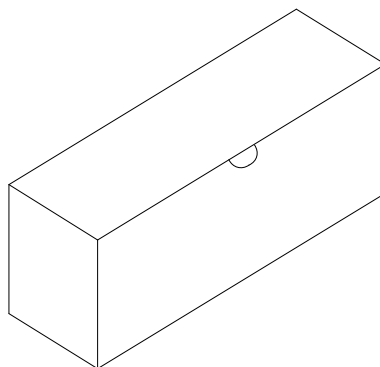
Packaging Specification

Tape



Quantity: 800pcs/reel

Box



Quantity: 300pcs/box

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