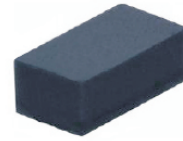


CPDQR12V (RoHS Device)

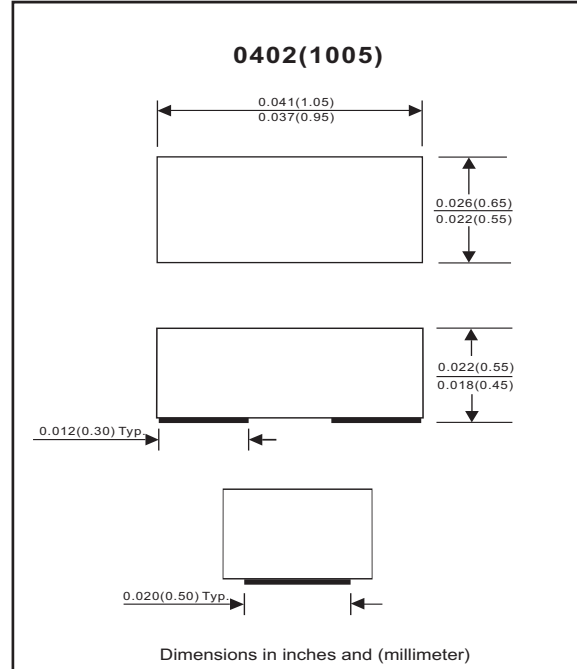


Features

- Bi-directional ESD protection.
- (16kV) IEC 61000-4-2 rating.
- Surface mount package.
- Ultra small SMD package:0402.
- High component density.

Mechanical data

- Case: 0402(1005) standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750,method 2026.
- Marking Code:
CPDQR12V: E2
- Mounting position: Any.
- Weight: 0.001 gram(approx.).



Electrical Characteristics (at TA=25°C unless otherwise noted)

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|-------------------------|--|------------------|-----|-----|---------|------|
| Diode breakdown voltage | I _R = 1mA | V _{BD} | 13 | 17 | | V |
| Leakage current | V _R = 12V | I _L | | 0.1 | 2.0 | uA |
| Junction capacitance | V _R = 0V, f = 1MHz | C _T | | 12 | | pF |
| ESD capability | IEC 61000-4-2(air) IEC 61000-4-2(contact) | ESD | | | 16 8 | kV |
| Clamping voltage | I _{PP} = 1A, T _P =8/20us | V _C | | | 25 | V |
| Peak pulse power | T _P =8/20us | P _{PP} | | | 25 | W |
| Operation temperature | | T _J | | | 125 | °C |
| Storage temperature | | T _{STG} | -55 | | 150 | °C |

RATING AND CHARACTERISTIC CURVES (CPDQR12V)

Fig. 1 - 8/20us Peak pulse current wave form acc. IEC 61000-4-5

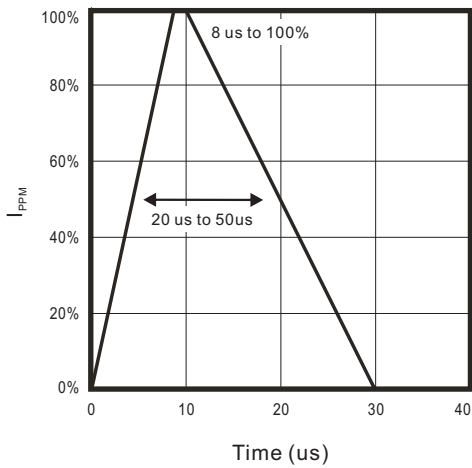


Fig. 2 - Reverse characteristics

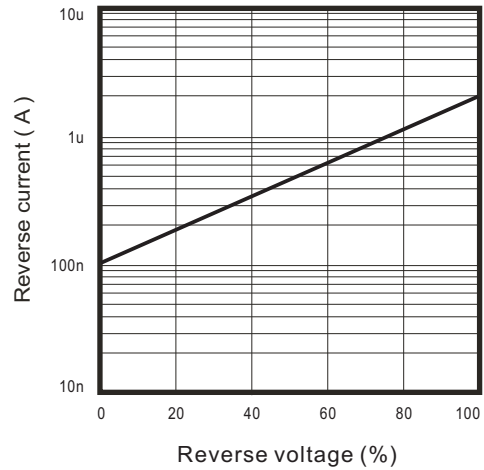


Fig. 3 - Capacitance between terminals characteristics

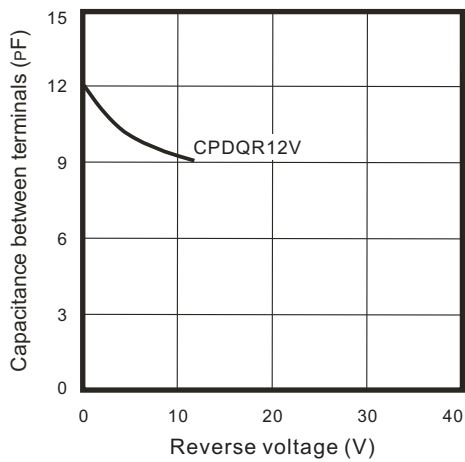
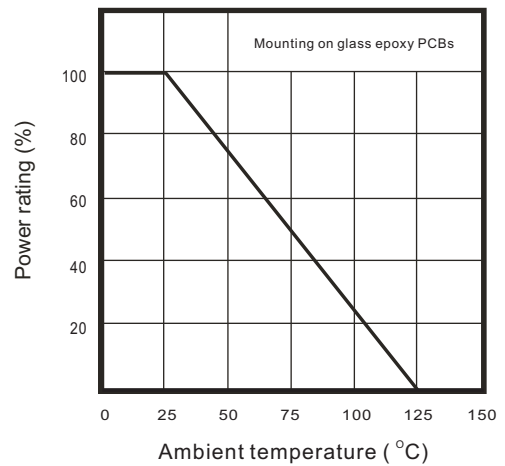
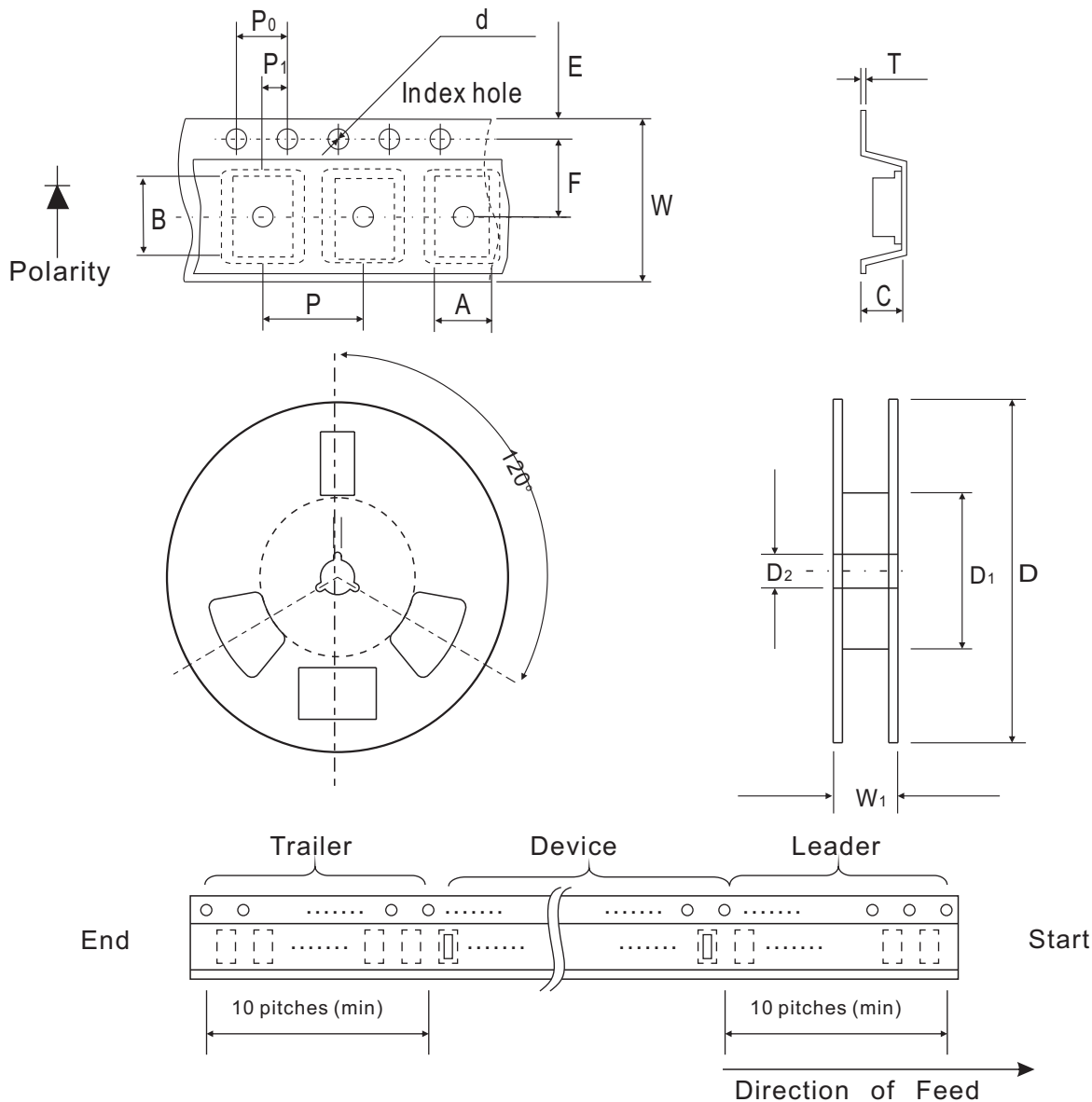


Fig. 4 - Power rating derating curve



Reel Taping Specification



| QR/0402 | SYMBOL | A | B | C | d | D | D ₁ | D ₂ |
|---------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| | (mm) | 0.75 ± 0.10 | 1.15 ± 0.10 | 0.60 ± 0.10 | 1.55 ± 0.10 | 178 ± 1 | 60.0 MIN. | 13.0 ± 0.20 |
| | (inch) | 0.030 ± 0.004 | 0.045 ± 0.004 | 0.024 ± 0.004 | 0.061 ± 0.004 | 7.008 ± 0.04 | 2.362 MIN. | 0.512 ± 0.008 |

| QR/0402 | SYMBOL | E | F | P | P ₀ | P ₁ | T | W | W ₁ |
|---------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.10 | 0.22 ± 0.05 | 8.00 ± 0.20 | 13.5 MAX. |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX. |

Marking Code

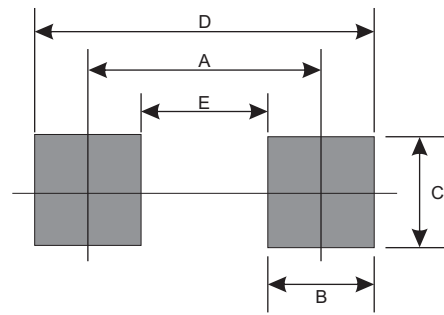
| Part Number | Marking Code |
|-------------|--------------|
| CPDQR12V | E2 |



xx = Product type marking code

Suggested PAD Layout

| SIZE | QR/0402 | |
|------|---------|--------|
| | (mm) | (inch) |
| A | 0.750 | 0.030 |
| B | 0.500 | 0.020 |
| C | 0.700 | 0.028 |
| D | 1.250 | 0.049 |
| E | 0.250 | 0.010 |



Standard Package

| Case Type | Qty per Reel | Reel Size |
|-----------|--------------|-----------|
| | (Pcs) | (inch) |
| QR/0402 | 5000 | 7 |