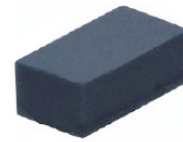


# CPDQR12V

## RoHS Device

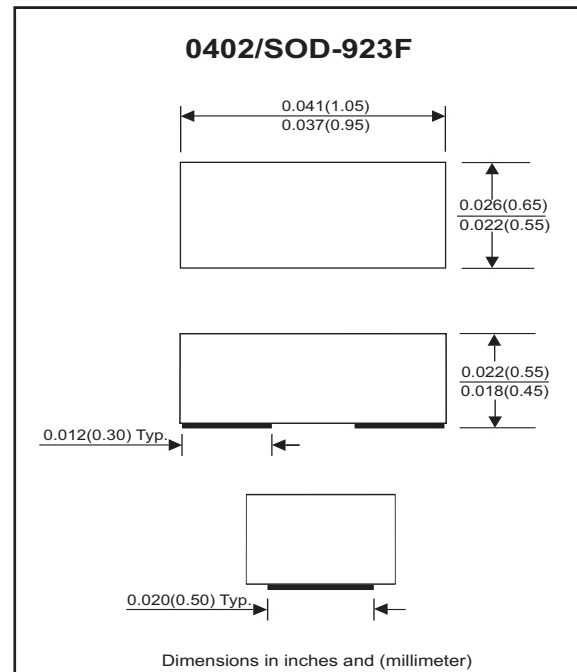


### Features

- Bi-directional ESD protection.
- Surface mount package.
- Ultra small SMD package:0402.
- High component density.

### Mechanical data

- Case: 0402/SOD-923F 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 <sub>R</sub> = 1mA                         | V <sub>BD</sub>  | 13  | 17  |         | V    |
| Leakage current         | V <sub>R</sub> = 12V                         | I <sub>L</sub>   |     | 0.1 | 2.0     | uA   |
| Junction capacitance    | V <sub>R</sub> = 0V,f =1MHz                  | C <sub>T</sub>   |     | 12  |         | pF   |
| ESD capability          | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD              |     |     | 16<br>8 | kV   |
| Clamping voltage        | I <sub>PP</sub> = 1A,T <sub>P</sub> =8/20us  | V <sub>C</sub>   |     |     | 25      | V    |
| Peak pulse power        | T <sub>P</sub> =8/20us                       | P <sub>PP</sub>  |     |     | 25      | W    |
| Operation temperature   |                                              | T <sub>j</sub>   |     |     | 125     | °C   |
| Storage temperature     |                                              | T <sub>STG</sub> | -55 |     | 150     | °C   |

RATING AND CHARACTERISTIC CURVES (CPDQR12V)

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

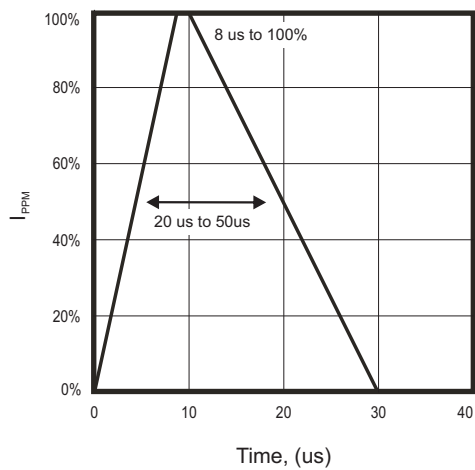


Fig. 2 - Reverse characteristics

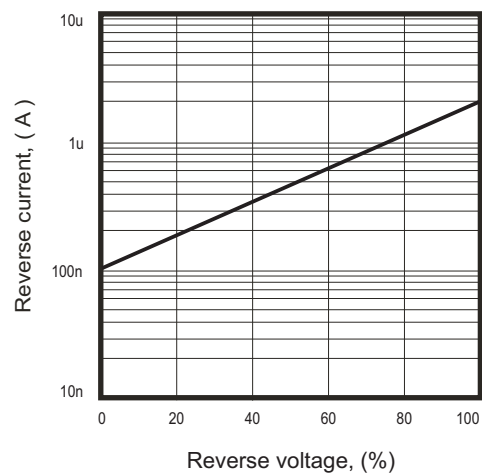


Fig. 3 - Capacitance between terminals characteristics

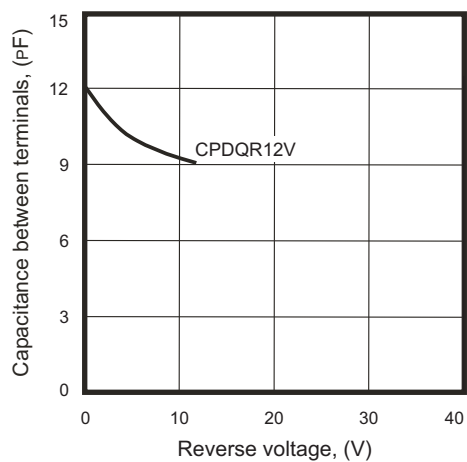
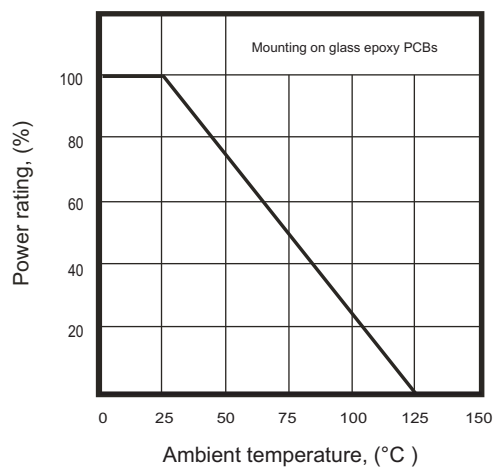
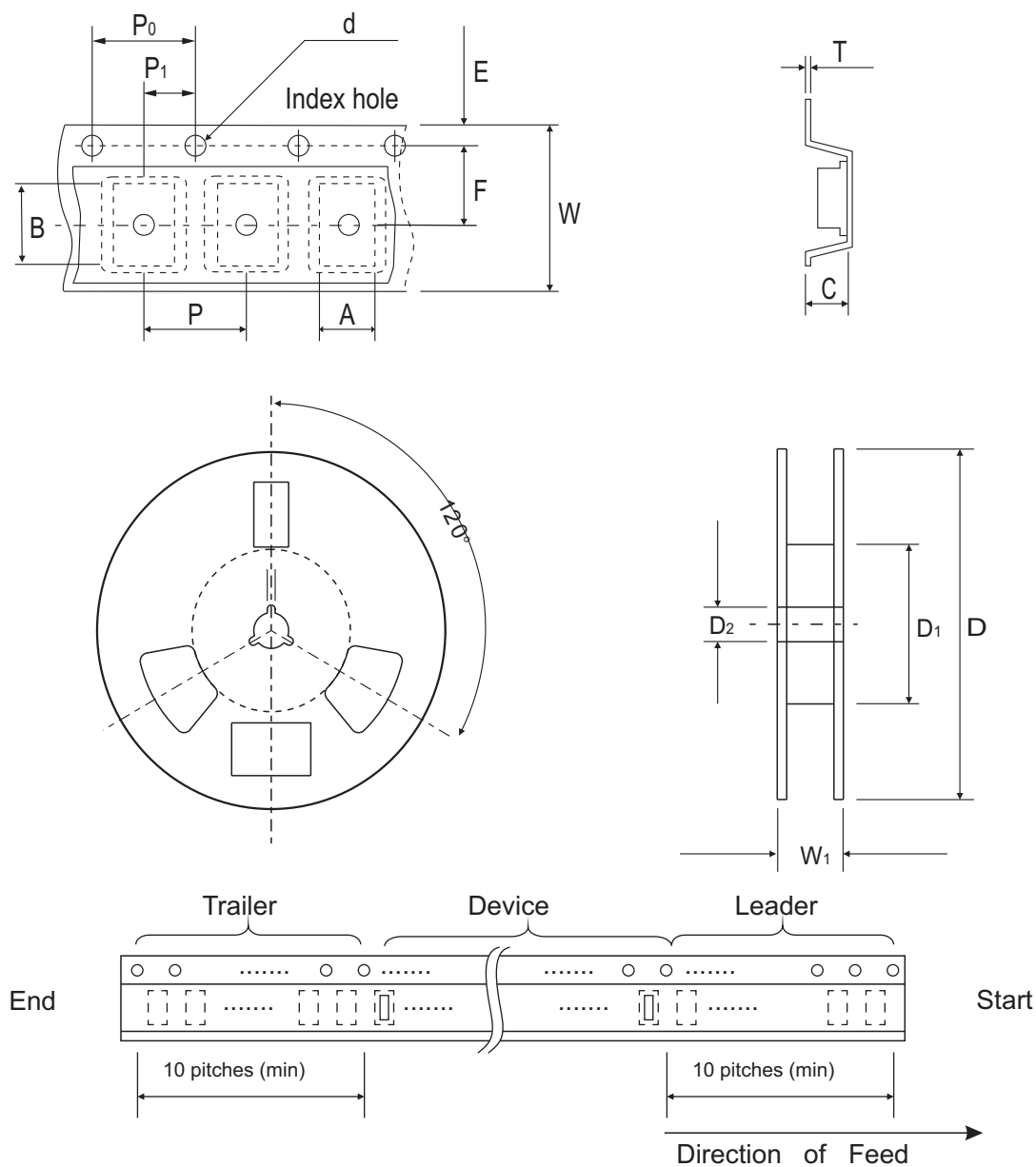


Fig. 4 - Power rating derating curve



Reel Taping Specification



|                    |        |               |               |               |               |              |                |                |
|--------------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| 0402<br>(SOD-923F) | SYMBOL | A             | B             | C             | d             | D            | D <sub>1</sub> | D <sub>2</sub> |
|                    | (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  |

|                    |        |               |               |               |                |                |               |               |                |
|--------------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| 0402<br>(SOD-923F) | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | T             | W             | W <sub>1</sub> |
|                    | (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

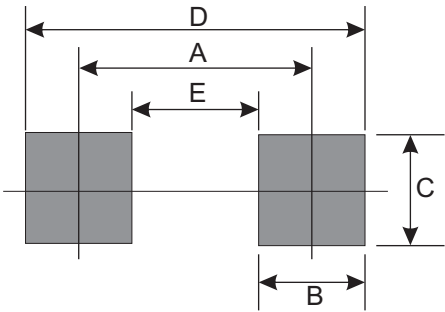
| Part Number | Marking Code |
|-------------|--------------|
| CPDQR12V    | E2           |



xx = Product type marking code

Suggested PAD Layout

| SIZE | 0402/SOD-923F |        |
|------|---------------|--------|
|      | (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 Packaging

| Case Type     | Qty Per Reel | Reel Size |
|---------------|--------------|-----------|
|               | (Pcs)        | (inch)    |
| 0402/SOD-923F | 5,000        | 7         |