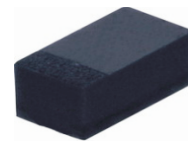


# CPDQR5V0UP-HF

RoHS Device  
Halogen Free

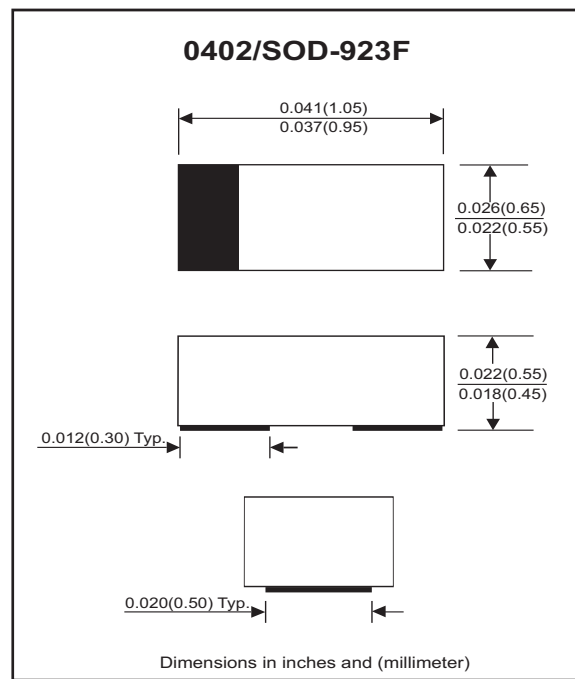


## Features

- Uni-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: 5P
- Mounting position: Any.
- Weight: 0.001 gram(approx.).



## Maximum Ratings (at TA=25°C unless otherwise noted)

| Parameter                                                    | Symbol | Value       | Unit |
|--------------------------------------------------------------|--------|-------------|------|
| Peak pulse power ( tp = 8/20 us)                             | PPp    | 25          | W    |
| Peak pulse current ( tp = 8/20 us)                           | IPP    | 2           | A    |
| ESD per IEC 61000-4-2(Air)<br>ESD per IEC 61000-4-2(Contact) | ESD    | 20<br>15    | kV   |
| Operating temperature                                        | TJ     | -55 to +125 | °C   |
| Storage temperature                                          | TSTG   | -55 to +150 | °C   |

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

| Parameter                 | Conditions          | Symbol | Min | Typ  | Max  | Unit |
|---------------------------|---------------------|--------|-----|------|------|------|
| Reverse stand-Off voltage |                     | VRWM   |     |      | 5    | V    |
| Diode breakdown voltage   | IR = 1mA            | VBD    | 6   | 7.1  | 8    | V    |
| Reverse leakage current   | VR = 5V             | IR     |     | 0.06 | 0.25 | uA   |
| Forward voltage           | IF = 10mA           | VF     |     | 1    | 1.2  | V    |
| Clamping voltage          | IPP = 2A, TP=8/20us | VC     |     |      | 12.5 | V    |
| Junction capacitance      | VR = 0V, f=1MHz     | CT     |     |      | 10   | pF   |
|                           | VR = 3.3V, f=1MHz   |        |     | 4.5  |      |      |

Company reserves the right to improve product design , functions and reliability without notice.

REV:A

## RATING AND CHARACTERISTIC CURVES (CPDQR5V0UP-HF)

Fig. 1 - Non-Repetitive Peak Pulse Power vs. Pulse Time

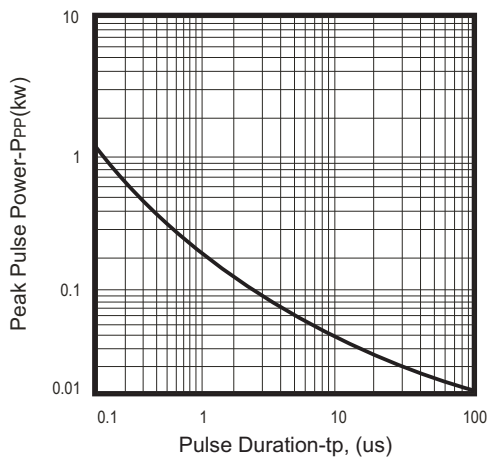


Fig. 2 - Power rating derating curve

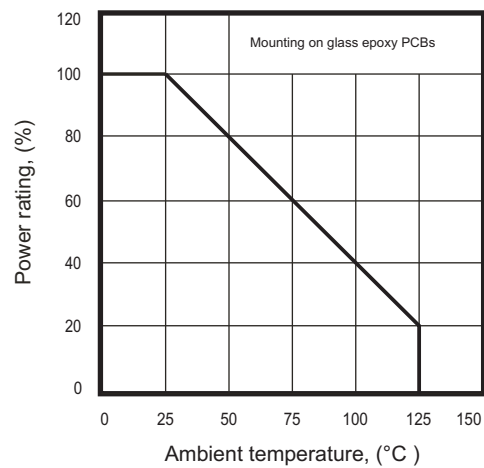


Fig. 3 - Clamping voltage vs. peak pulse current

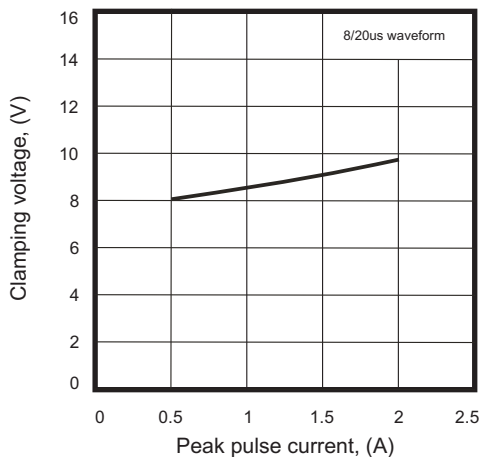


Fig. 4 - Forward voltage vs. forward current

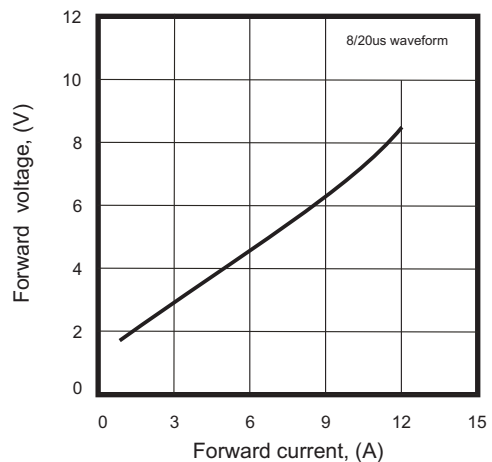
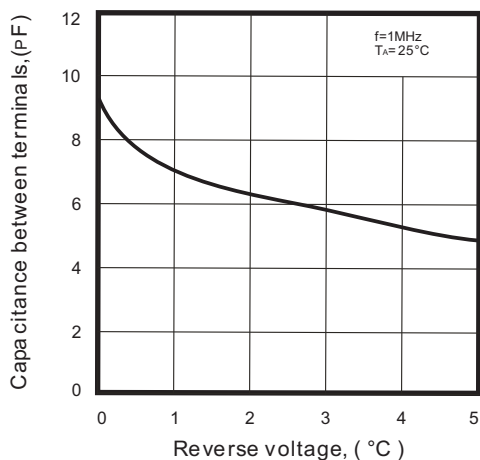
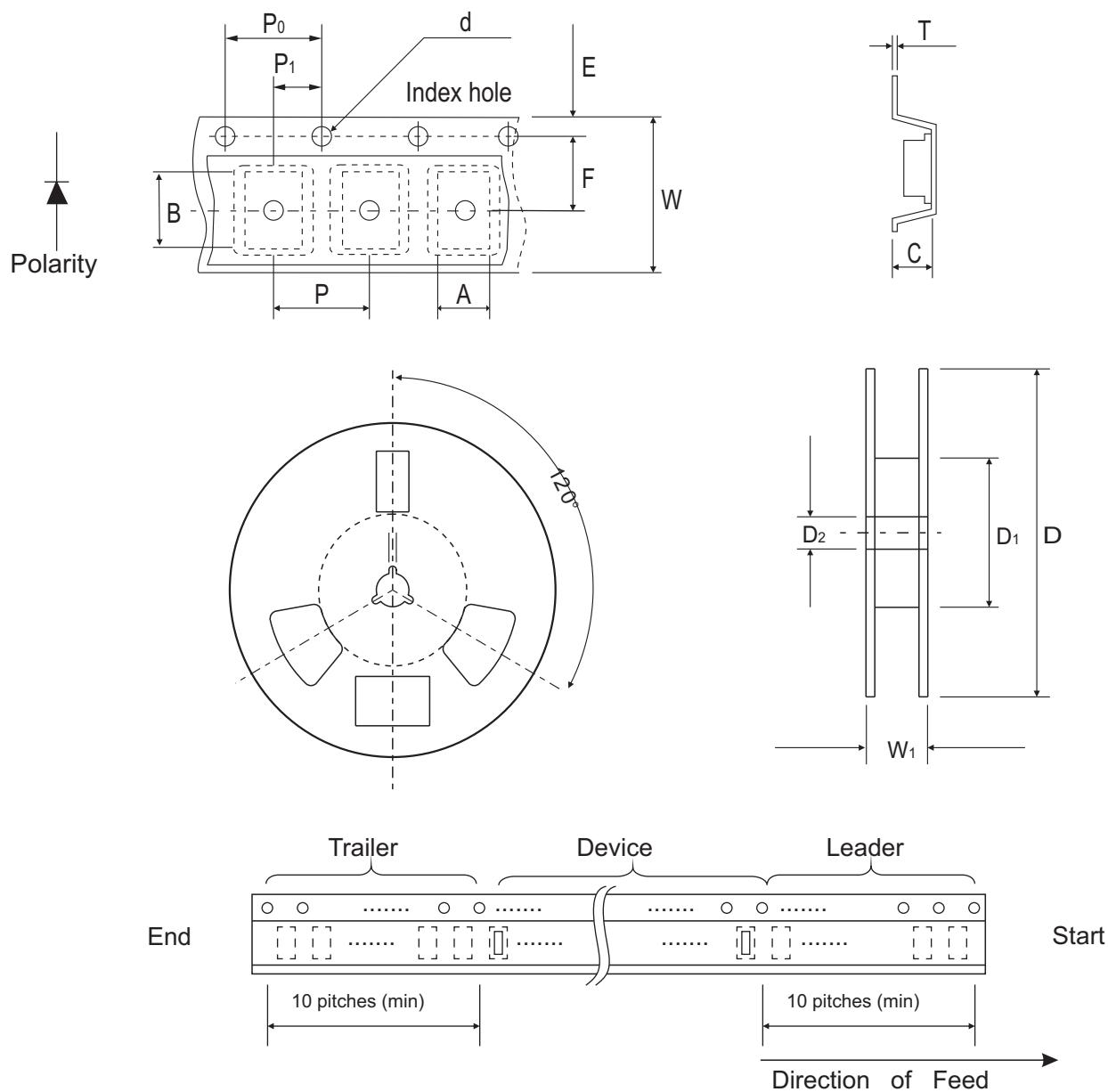


Fig. 5 - Capacitance between terminals characteristics



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.     |

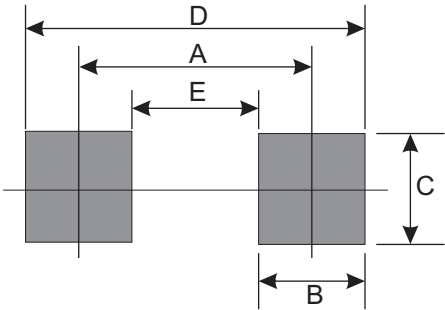
Marking Code

| Part Number   | Marking Code |
|---------------|--------------|
| CPDQR5V0UP-HF | 5P           |



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         |