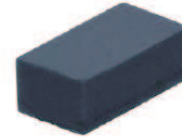


## CPDQR5V0H-HF

**RoHS Device**  
**Halogen Free**

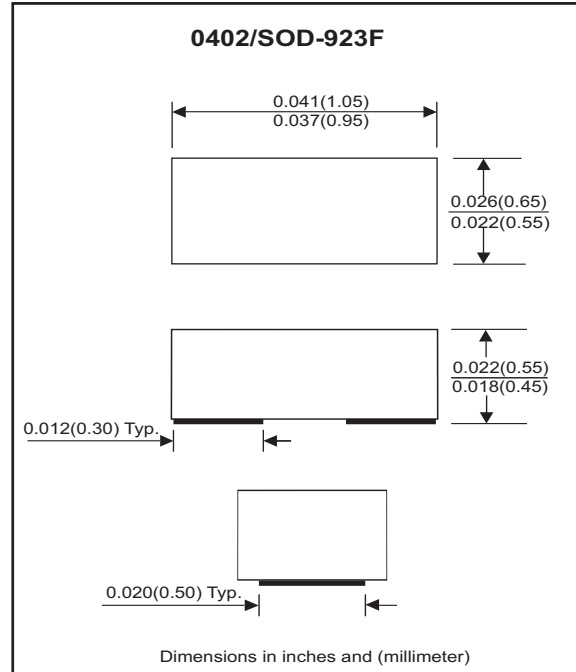


### Features

- Bi-directional ESD protection
- IEC 61000-4-5 (surge) ; IPP=7A
- IEC 61000-4-2 (ESD) ; ±30KV(contact)
- Low clamping voltage
- Low leakage current

### Mechanical data

- Case: 0402/SOD-923F Standard package ,  
molded plastic.
- Terminals: Gold plated, solderable per  
MIL-STD-750, method 2026.
- Marking Code: E5
- Mounting position: Any.
- Weight: 0.001 gram (approx.).



### Maximum Rating and 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>  | 5.5 | 7.0 |     | V    |
| Leakage current         | V <sub>R</sub> = 5V                           | I <sub>L</sub>   |     |     | 1.0 | uA   |
| Junction capacitance    | V <sub>R</sub> = 0V, f = 1MHz                 | C <sub>T</sub>   |     |     | 20  | pF   |
| ESD capability          | IEC 61000-4-2(air)                            | ESD              |     |     | 30  | kV   |
|                         | IEC 61000-4-2(contact)                        | ESD              |     |     | 30  | kV   |
| Clamping Voltage        | I <sub>PP</sub> = 1 A, t <sub>p</sub> =8/20us | V <sub>c</sub>   |     |     | 11  | V    |
|                         | I <sub>PP</sub> = 7 A, t <sub>p</sub> =8/20us | V <sub>c</sub>   |     |     | 20  | V    |
| Peak Pulse Power        | T <sub>P</sub> =8/20us                        | P <sub>PP</sub>  |     |     | 140 | W    |
| Operation temperature   |   | T <sub>j</sub>   |     |     | 125 | °C   |
| Storage temperature     |   | T <sub>STG</sub> | -55 |     | 150 | °C   |

## RATING AND CHARACTERISTIC CURVES (CPDQR5V0H-HF)

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

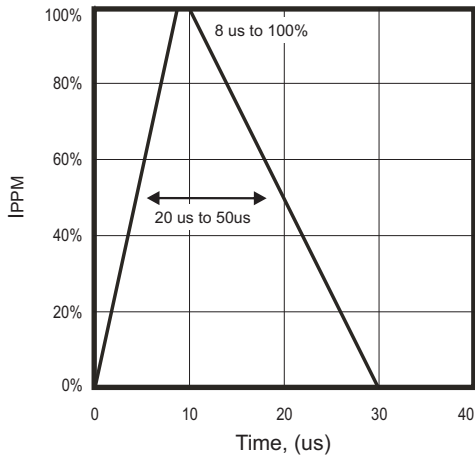


Fig. 2 - Capacitance between terminals characteristics

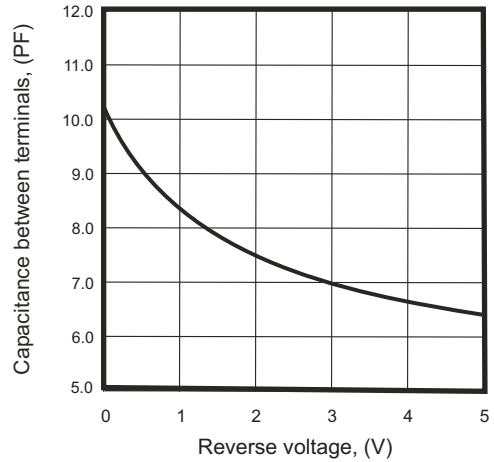


Fig.3 - Clamping voltage vs. peak pulse current

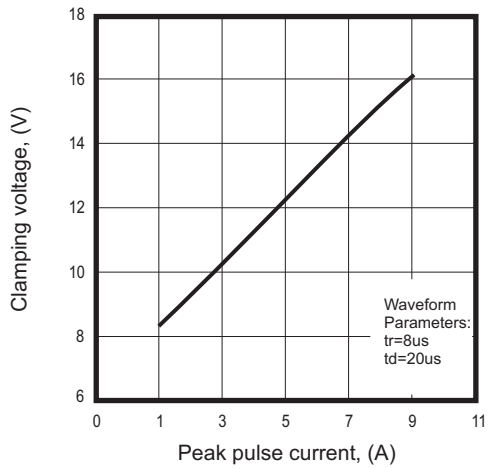
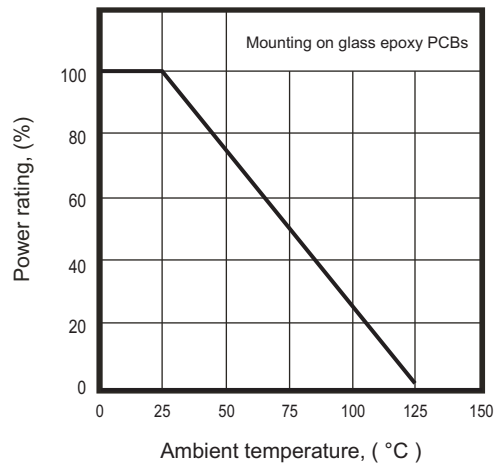
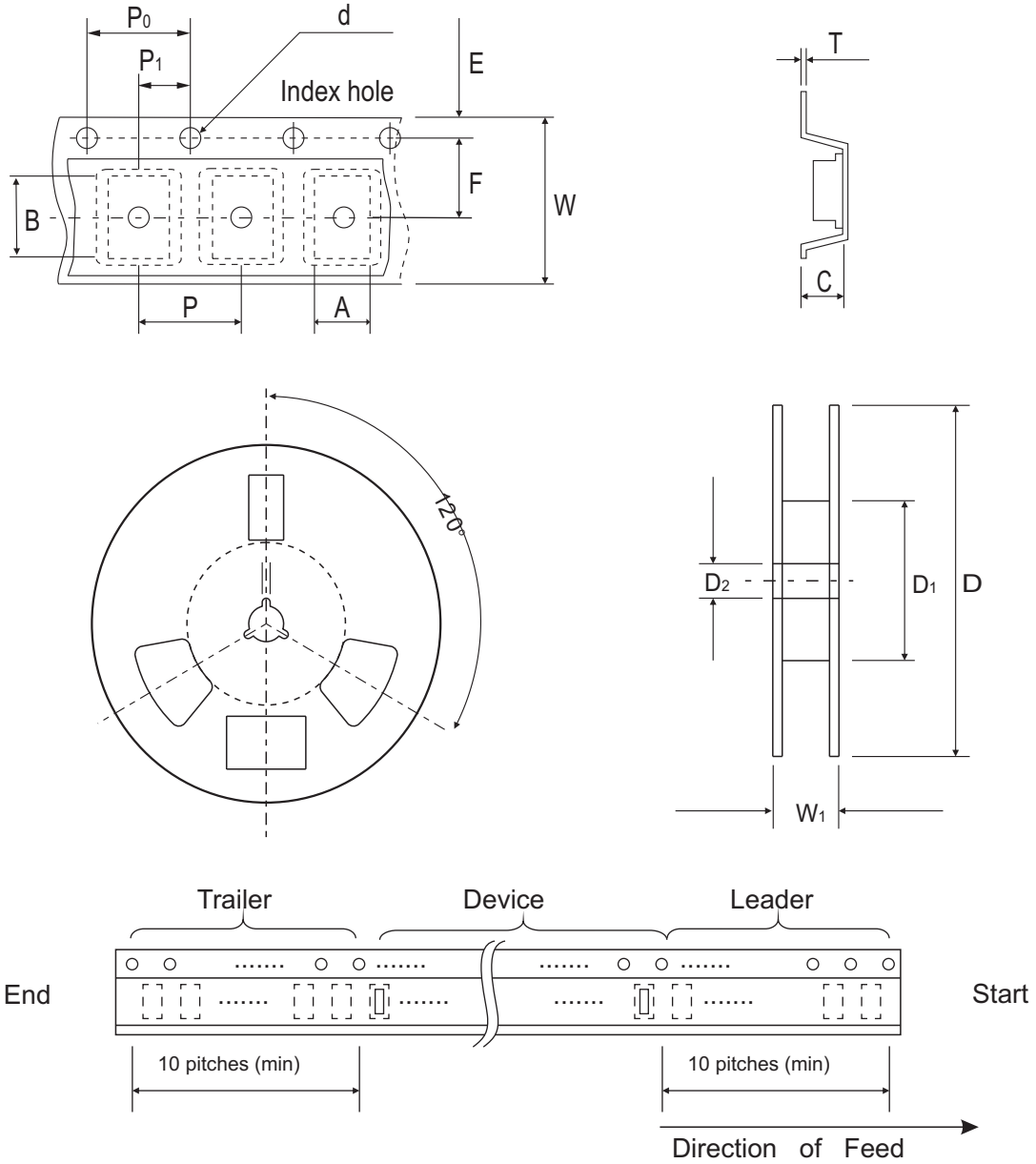


Fig. 4 - Power rating derating curve



## Reel Taping Specification



| 0402<br>(SOD-923F) | SYMBOL | A             | B             | C             | D            | D1        | D2            | d                   |
|--------------------|--------|---------------|---------------|---------------|--------------|-----------|---------------|---------------------|
|                    | (mm)   | 0.75 ± 0.05   | 1.17 ± 0.05   | 0.65 ± 0.05   | 178 ± 1      | 60.0 Min  | 13.0 ± 0.20   | 1.50 + 0.10/-0.00   |
|                    | (inch) | 0.030 ± 0.002 | 0.046 ± 0.002 | 0.026 ± 0.002 | 7.008 ± 0.04 | 2.362 Min | 0.512 ± 0.008 | 0.060 + 0.004/-0.00 |

| 0402<br>(SOD-923F) | SYMBOL | E             | F             | P             | P0            | P1            | W             | W1        | t                    |
|--------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|-----------|----------------------|
|                    | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.10   | 8.00 ± 0.20   | 13.50 Max | 0.20 + 0.02/-0.05    |
|                    | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.315 ± 0.008 | 0.531 Max | 0.008 + 0.001/-0.002 |

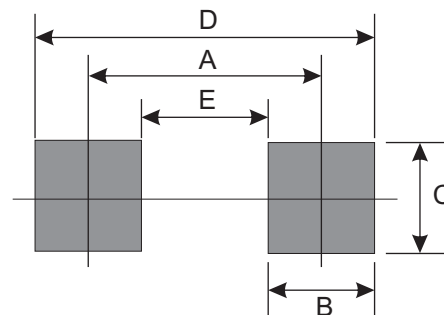
## Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| CPDQR5V0H-HF | E5           |



## 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         |