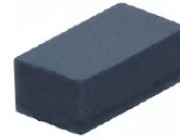


# CPDQR5V0H-HF

RoHS Device  
Halogen Free

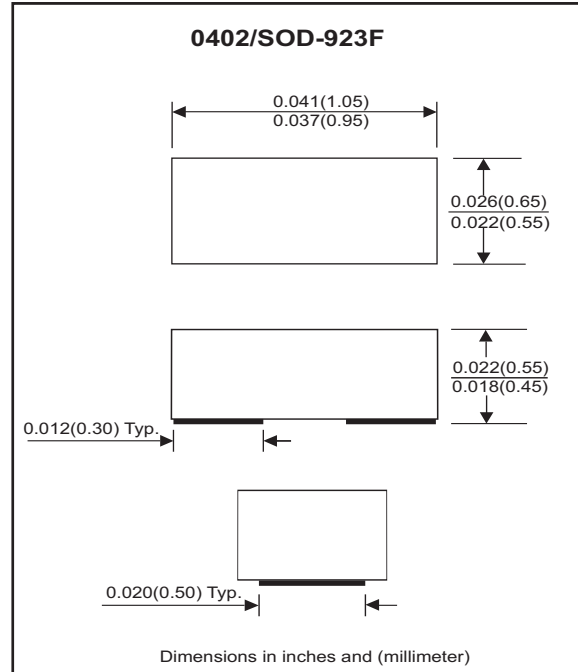


## Features

- Bi-directional ESD protection
- IEC 61000-4-5 (surge) ; IPP=7A
- IEC 61000-4-2 (ESD) ;  $\pm 30\text{KV}$ (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 | $I_R = 1\text{mA}$                          | $V_{BD}$  | 5.5 | 7.0 |     | V                  |
| Leakage current         | $V_R = 5\text{V}$                           | $I_L$     |     |     | 1.0 | $\mu\text{A}$      |
| Junction capacitance    | $V_R = 0\text{V}, f = 1\text{MHz}$          | $C_T$     |     |     | 20  | pF                 |
| ESD capability          | IEC 61000-4-2(air)                          | ESD       |     |     | 30  | kV                 |
|                         | IEC 61000-4-2(contact)                      | ESD       |     |     | 30  | kV                 |
| Clamping Voltage        | $I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$ | $V_c$     |     |     | 11  | V                  |
|                         | $I_{PP} = 7\text{A}, t_p = 8/20\mu\text{s}$ | $V_c$     |     |     | 20  | V                  |
| Peak Pulse Power        | $T_P = 8/20\mu\text{s}$                     | $P_{PP}$  |     |     | 140 | W                  |
| Operation temperature   |                                             | $T_j$     |     |     | 125 | $^{\circ}\text{C}$ |
| Storage temperature     |                                             | $T_{STG}$ | -55 |     | 150 | $^{\circ}\text{C}$ |

RATING AND CHARACTERISTIC CURVES (CPDQR5V0H-HF)

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

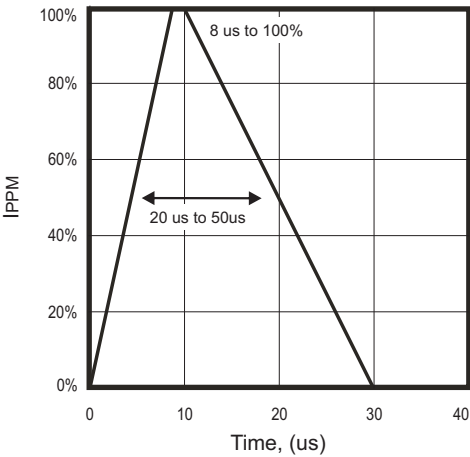


Fig. 2 - Capacitance between terminals characteristics

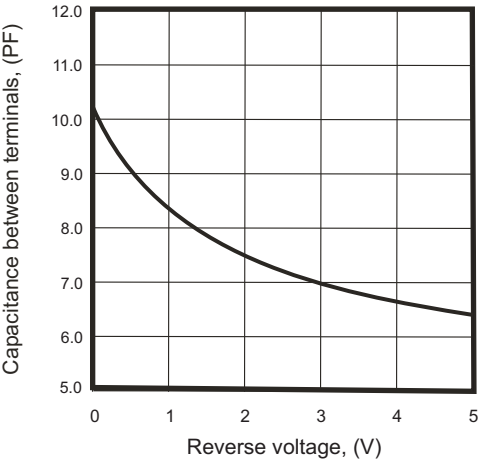


Fig.3 - Clamping voltage vs. peak pulse current

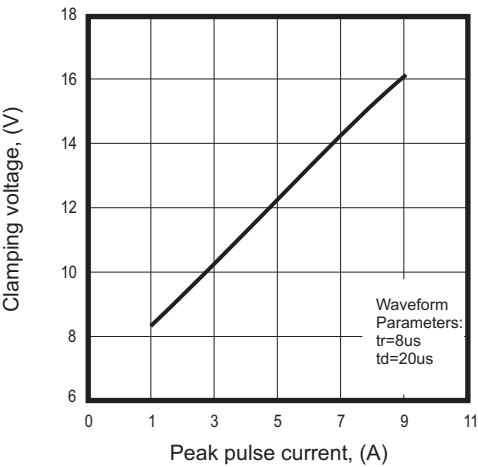
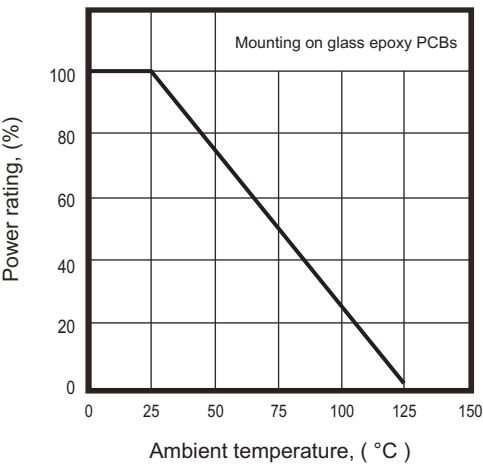
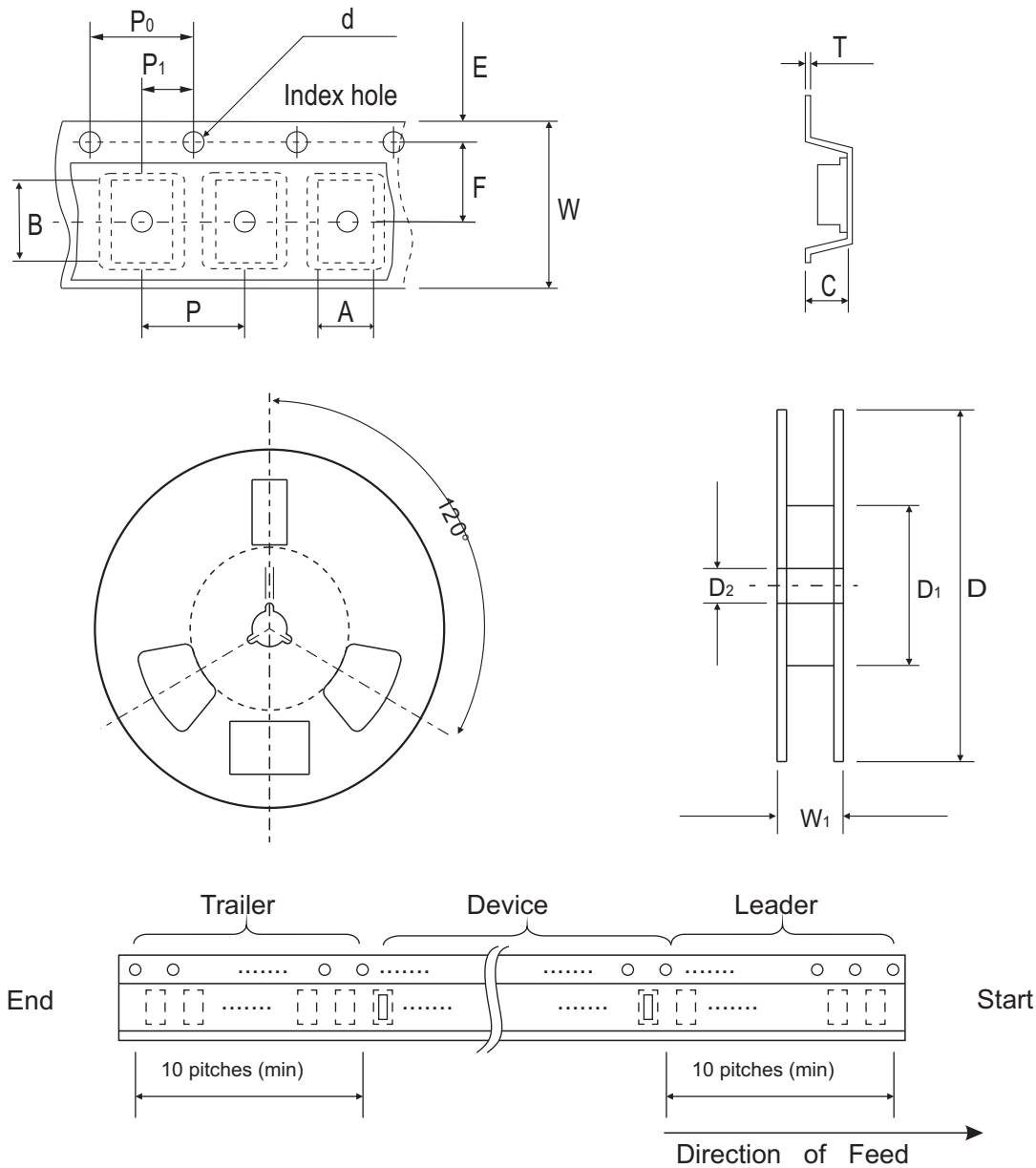


Fig. 4 - Power rating derating curve



Reel Taping Specification



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

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

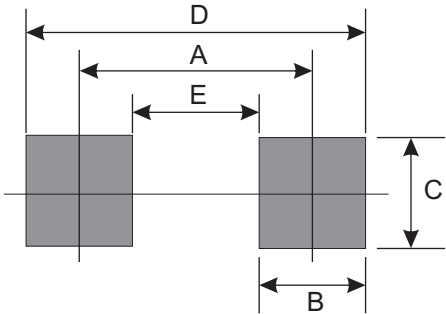
Marking Code

| 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         |