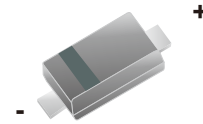


# CPDH2V5UB-HF Thru. CPDH12V0UB-HF

RoHS Device  
Halogen Free

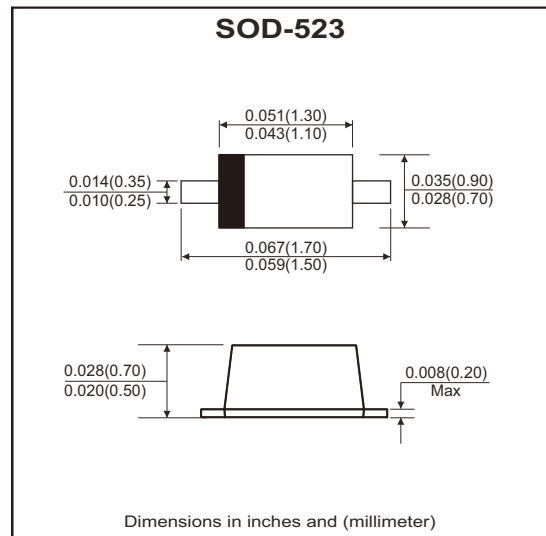


## Features

- IEC61000-4-2 Level 4 ESD protection.
- Protects one directional I/O line.
- Low clamping voltage.
- Working voltages: 2.5V~12V.
- Low leakage current.

## Mechanical data

- Case: SOD-523 package.
- Flammability rating: UL 94V-0.
- High temperature soldering guaranteed: 260°C/10s.



## Circuit Diagram



## Maximum Rating (at Ta=25°C unless otherwise noted)

| Parameter  | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| ESD per IEC 61000-4-2 (air)                              | V <sub>ESD</sub>                  | ±30         | kV   |
| ESD per IEC 61000-4-2 (contact)                          |                                   | ±22         |      |
| ESD Voltage per human body model                         | ESD                               | 16          | kV   |
| ESD Voltage per machine model                            |                                   | 400         |      |
| Total power dissipation on FR-5 board (Note 1) @ Ta=25°C | P <sub>D</sub>                    | 150         | mW   |
| Junction and storage temperature range                   | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |
| Lead solder temperature - maximum (10 second duration)   | T <sub>L</sub>                    | 260         | °C   |

Notes: 1. FR-5 = 1.0 x 0.75 x 0.62 in.

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

| Part No.      | V <sub>RWM</sub> (V)<br>Max | I <sub>R</sub> (μA)<br>Max | V <sub>B</sub> (V)<br>Min | I <sub>T</sub> (mA) | V <sub>C</sub> (V) |    | V <sub>C</sub> (V) |     | P <sub>PK</sub> (W)<br>Max | C <sub>J</sub> (pF)<br>Max |
|---------------|-----------------------------|----------------------------|---------------------------|---------------------|--------------------|----|--------------------|-----|----------------------------|----------------------------|
|               |                             |                            |                           |                     | Max                | @A | Max                | @A  |                            |                            |
| CPDH2V5UB-HF  | 2.5                         | 6                          | 4.0                       | 1                   | 9.0                | 5  | 11.5               | 9   | 104                        | 145                        |
| CPDH3V3UB-HF  | 3.3                         | 0.9                        | 5.0                       | 1                   | 10.0               | 5  | 14.0               | 7.5 | 105                        | 105                        |
| CPDH5V0UB-HF  | 5.0                         | 0.08                       | 6.2                       | 1                   | 11.6               | 5  | 15.0               | 7   | 105                        | 80                         |
| CPDH7V0UB-HF  | 7.0                         | 0.03                       | 7.5                       | 1                   | 14.0               | 5  | 18.0               | 6   | 108                        | 65                         |
| CPDH12V0UB-HF | 12.0                        | 0.03                       | 14.1                      | 1                   | 20.0               | 1  | 26.0               | 4   | 104                        | 45                         |

## Rating and Characteristic Curves (CPDH2V5UB-HF Thru. CPHD12V0UB-HF)

Fig.1 - ESD Clamping Voltage Screenshot  
Positive 8 kV Contact per IEC 61000-4-2

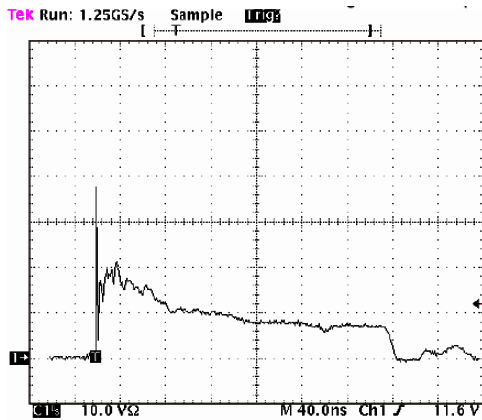
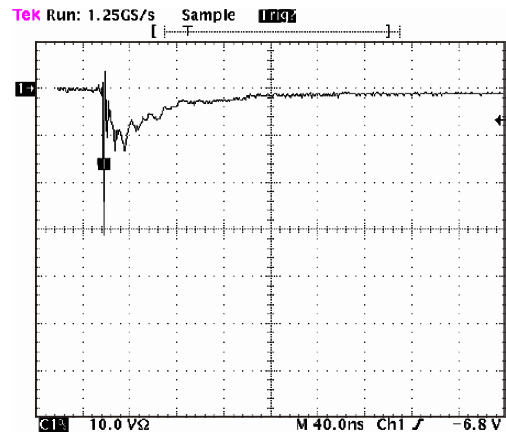
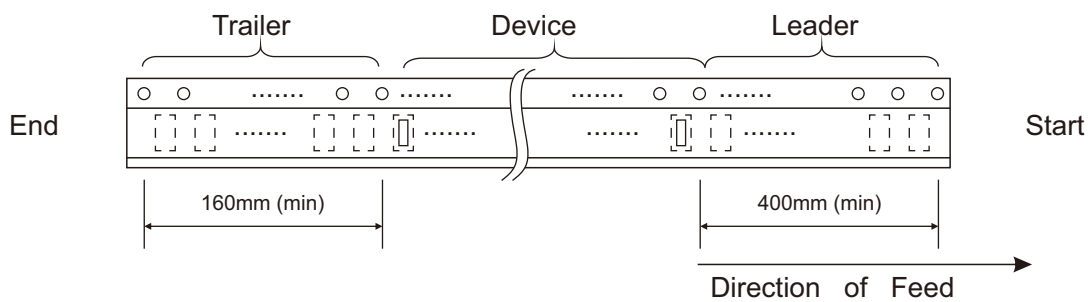
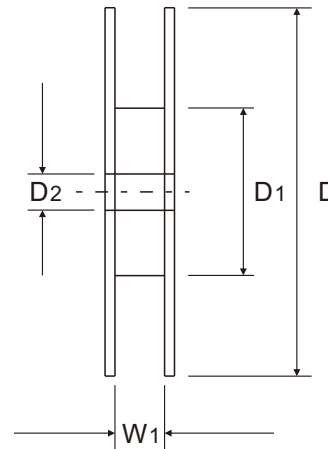
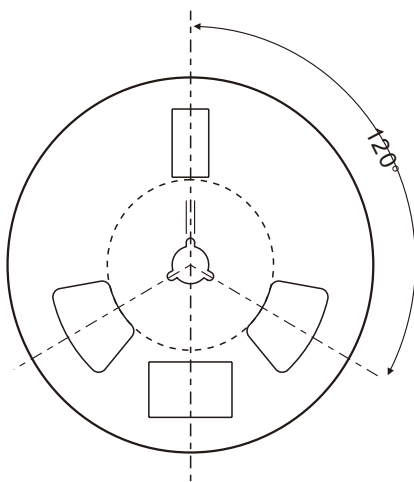
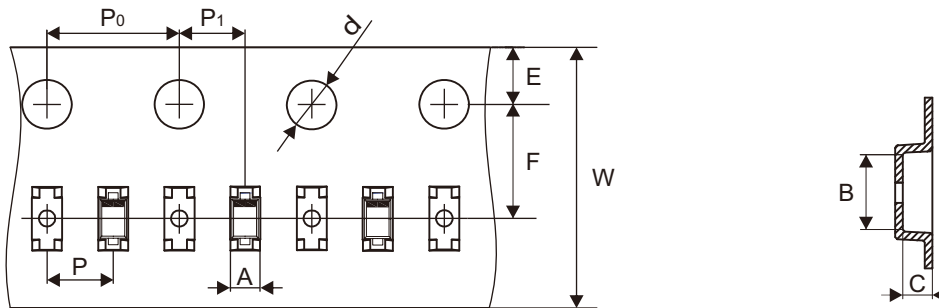


Fig.2 - ESD Clamping Voltage Screenshot  
Negative 8 kV Contact per IEC 61000-4-2



## Reel Taping Specification



| SOD-523 | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|         | (mm)   | 0.90 ± 0.05   | 1.95 ± 0.05   | 0.73 ± 0.05   | 1.55 ± 0.05   | 178.00 ± 2.00 | 54.50 ± 1.00  | 13.00 ± 1.00  |
|         | (inch) | 0.035 ± 0.002 | 0.077 ± 0.002 | 0.029 ± 0.002 | 0.061 ± 0.002 | 7.008 ± 0.079 | 2.146 ± 0.039 | 0.512 ± 0.039 |

| SOD-523 | SYMBOL | E             | F             | P             | P0            | P1            | W                        | W1            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 2.00 ± 0.05   | 4.00 ± 0.10   | 2.00 ± 0.05   | 8.00 + 0.30<br>- 0.10    | 9.40 ± 1.50   |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.079 ± 0.002 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.315 + 0.012<br>- 0.004 | 0.370 ± 0.059 |

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

## Marking Code

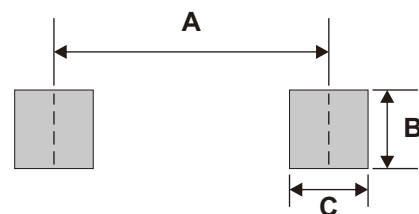
| Part Number   | Marking Code |
|---------------|--------------|
| CPDH2V5UB-HF  | ZD ∞         |
| CPDH3V3UB-HF  | ZE ∞         |
| CPDH5V0UB-HF  | ZF ∞         |
| CPDH7V0UB-HF  | ZH ∞         |
| CPDH12V0UB-HF | ZM ∞         |



XXX = Product type marking code

## Suggested PAD Layout

| SIZE | SOD-523 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 1.40    | 0.055  |
| B    | 0.40    | 0.016  |
| C    | 0.40    | 0.016  |



Note: 1. The pad layout is for reference purposes only.

## Standard Packaging

| Case Type | REEL PACK  |                  |
|-----------|------------|------------------|
|           | REEL (pcs) | Reel Size (inch) |
| SOD-523   | 3,000      | 7                |