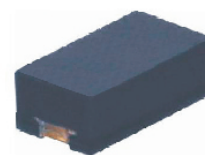


# CPDU Series-HF

## RoHS Device

## Halogen Free



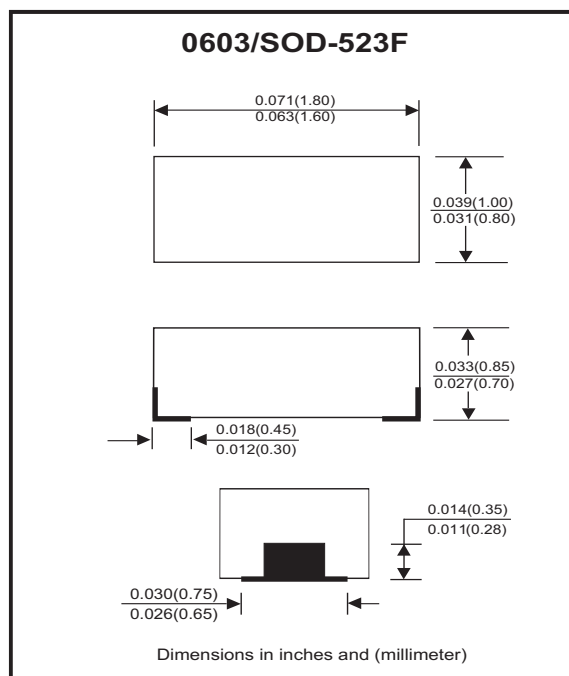
### Features

- Bi-directional ESD protection.
- Surface mount package.
- High component density.

### Mechanical data

- Case: 0603/SOD-523F standard package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Marking Code:  
 CPDU5V0-HF: E05  
 CPDU12V-HF: E12  
 CPDU24V-HF: E24
- Mounting position: Any.
- Weight: 0.003 grams(approx.).

### Circuit Diagram



### Electrical Characteristics (at T<sub>A</sub>=25°C unless otherwise noted)

| Parameter                   | Conditions                                                                                                                                                                                                                                 | Symbol           | Min             | Typ             | Max                  | Unit |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-----------------|----------------------|------|
| Diode breakdown voltage     | CPDU5V0-HF<br>CPDU12V-HF<br>CPDU24V-HF<br>I <sub>R</sub> = 1mA                                                                                                                                                                             | V <sub>BD</sub>  | 5.1<br>13<br>25 | 7.0<br>17<br>28 |                      | V    |
| Leakage current             | CPDU5V0-HF<br>CPDU12V-HF<br>CPDU24V-HF<br>V <sub>R</sub> = 5V<br>V <sub>R</sub> = 12V<br>V <sub>R</sub> = 24V                                                                                                                              | I <sub>L</sub>   |                 | 0.1             | 2.0                  | uA   |
| Junction capacitance        | CPDU5V0-HF<br>CPDU12V-HF<br>CPDU24V-HF<br>V <sub>R</sub> = 0V, f = 1MHz                                                                                                                                                                    | C <sub>T</sub>   |                 | 15<br>12<br>10  | 20<br>—<br>—         | pF   |
| ESD capability              | CPDU Series-HF<br>IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)                                                                                                                                                                             | ESD              |                 |                 | 16<br>8              | kV   |
| Clamping voltage            | CPDU5V0-HF<br>CPDU12V-HF<br>CPDU24V-HF<br>I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us<br>I <sub>PP</sub> = 5A, T <sub>P</sub> = 8/20us<br>I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us<br>I <sub>PP</sub> = 1A, T <sub>P</sub> = 8/20us | V <sub>C</sub>   |                 |                 | 10<br>15<br>25<br>47 | V    |
| Peak pulse power            | CPDU5V0-HF<br>CPDU12V-HF<br>CPDU24V-HF<br>T <sub>P</sub> = 8/20us                                                                                                                                                                          | P <sub>PP</sub>  |                 |                 | 75<br>25<br>47       | W    |
| Operation temperature range | CPDU Series-HF                                                                                                                                                                                                                             | T <sub>j</sub>   | -40             |                 | 125                  | °C   |
| Storage temperature range   | CPDU Series-HF                                                                                                                                                                                                                             | T <sub>STG</sub> | -55             |                 | 150                  | °C   |

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

REV:F

## RATING AND CHARACTERISTIC CURVES (CPDU Series-HF)

Fig.1 - Peak Pulse Current Wave  
Form Acc. IEC 61000-4-5

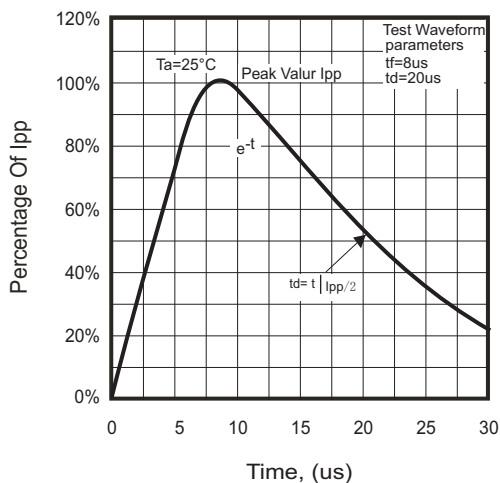


Fig.2-1 - Reverse Characteristics

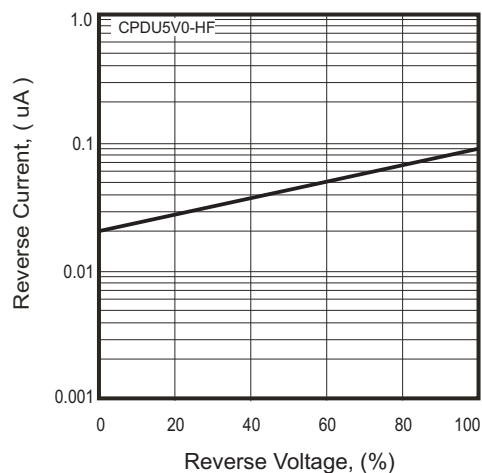


Fig.2-2 - Reverse Characteristics

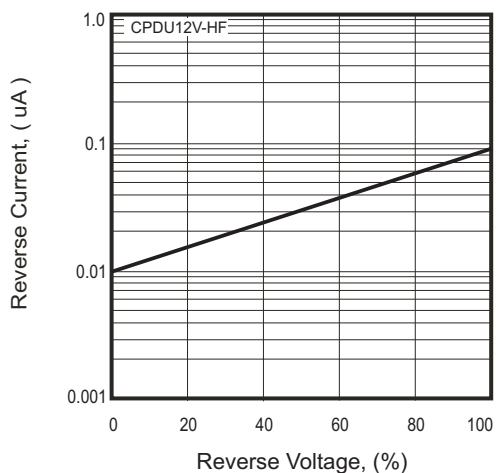


Fig.2-3 - Reverse Characteristics

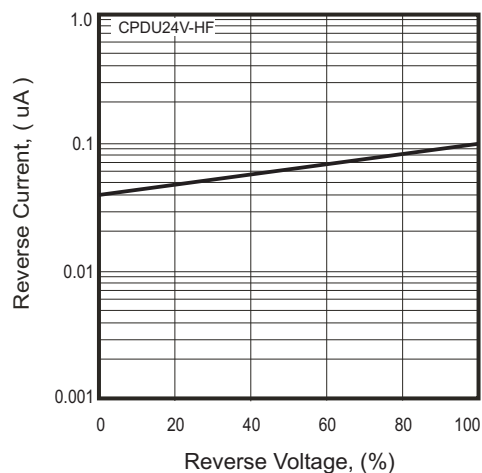


Fig.3 - Capacitance Between  
Terminals Characteristics

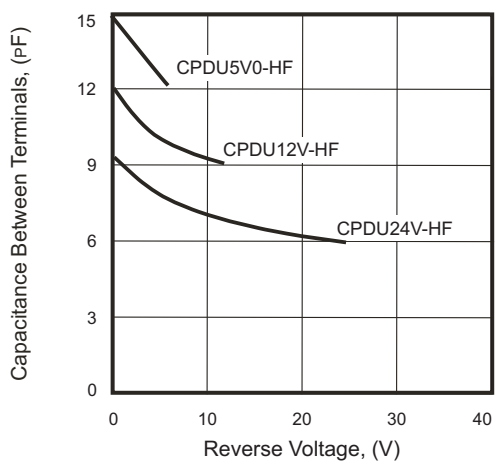
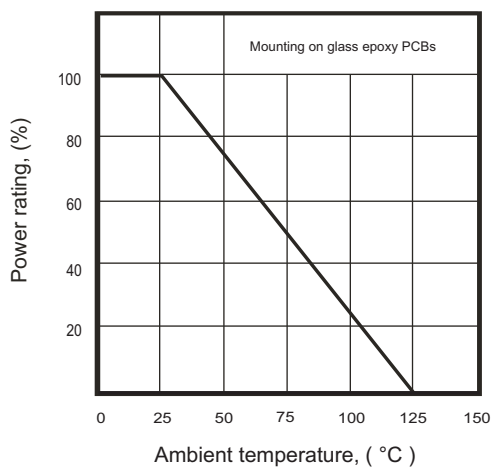
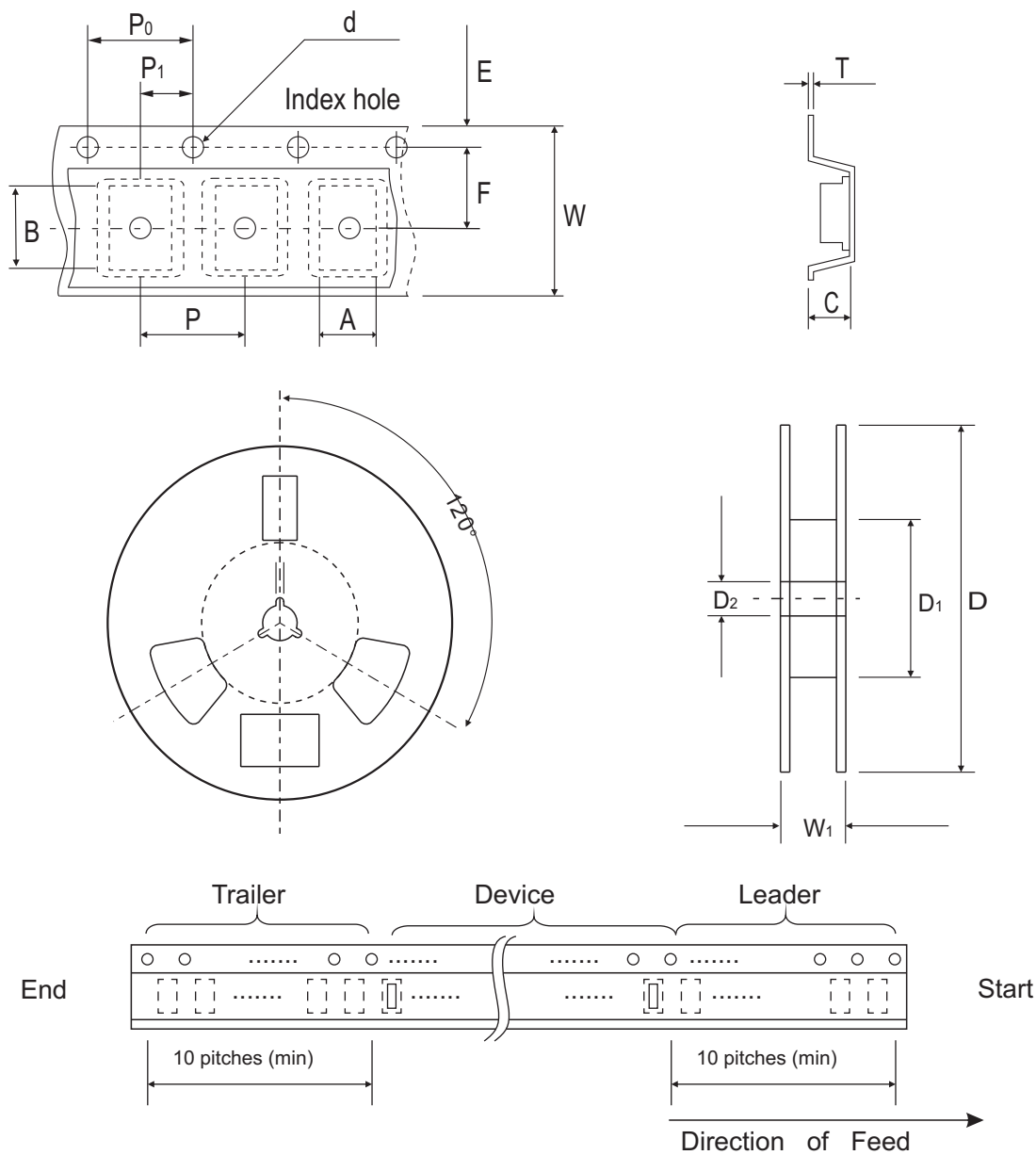


Fig. 4 - Power rating derating curve



Reel Taping Specification



|                   |        |               |               |               |               |              |                |                |
|-------------------|--------|---------------|---------------|---------------|---------------|--------------|----------------|----------------|
| 0603<br>(SOD-523) | SYMBOL | A             | B             | C             | d             | D            | D <sub>1</sub> | D <sub>2</sub> |
|                   | (mm)   | 1.00 ± 0.10   | 1.85 ± 0.10   | 1.00 ± 0.10   | 1.55 ± 0.05   | 178 ± 1.00   | 60.0 MIN.      | 13.0 ± 0.20    |
|                   | (inch) | 0.039 ± 0.004 | 0.073 ± 0.004 | 0.039 ± 0.004 | 0.061 ± 0.002 | 7.008 ± 0.04 | 2.362 MIN.     | 0.512 ± 0.008  |

|                   |        |               |               |               |                |                |               |               |                |
|-------------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| 0603<br>(SOD-523) | 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 ± 0.05    | 0.23 ± 0.05   | 8.00 ± 0.20   | 13.50 MAX.     |
|                   | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.002  | 0.009 ± 0.002 | 0.315 ± 0.008 | 0.531 MAX.     |

## Marking Code

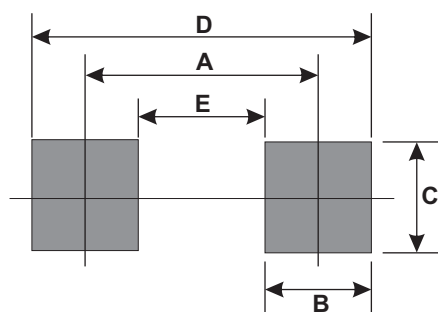
| Part Number | Marking Code |
|-------------|--------------|
| CPDU5V0-HF  | E05          |
| CPDU12V-HF  | E12          |
| CPDU24V-HF  | E24          |



xxx = Product type marking code

## Suggested PAD Layout

| SIZE | 0603/SOD-523F |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 1.70          | 0.067  |
| B    | 0.60          | 0.024  |
| C    | 0.80          | 0.031  |
| D    | 2.30          | 0.091  |
| E    | 1.10          | 0.043  |



## Standard Packaging

| Case Type     | Qty Per Reel | Reel Size |
|---------------|--------------|-----------|
|               | (Pcs)        | (inch)    |
| 0603/SOD-523F | 4,000        | 7         |