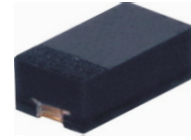


## CPDU12V0U-HF

RoHS Device  
Halogen Free



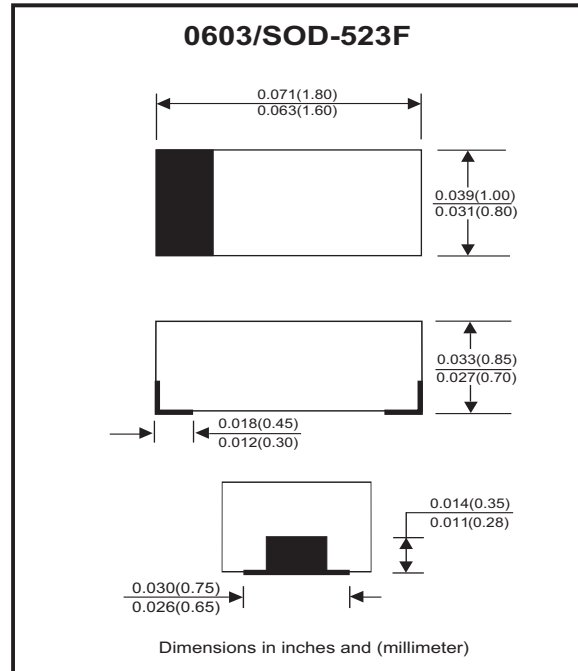
### Features

- Uni-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.
- Mounting position: Any.
- Weight: 0.003 grams (approx.).

### Circuit Diagram



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

| Parameter                   | Conditions   | Symbol | Min  | Typ  | Max      | Unit |
|-----------------------------|--|--------|------|------|----------|------|
| Forward voltage             | IF = 10mA  | VF     |      | 0.8  |          | V    |
| Diode breakdown voltage     | IR = 1mA   | VBD    | 13.3 | 15.5 | 17.5     | V    |
| Leakage current             | VR = 12V   | IL     |      | 0.1  | 1.0      | uA   |
| Junction capacitance        | VR = 0V, f = 1MHz  | CT     |      |      | 60       | pF   |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)                       | ESD    |      |      | 30       | kV   |
| Clamping voltage            | I <sub>PP</sub> = 1A, TP=8/20us<br>I <sub>PP</sub> = 5A, TP=8/20us | VC     |      |      | 19<br>24 | V    |
| Peak pulse power            |  | PPP    |      |      | 120      | W    |
| Operation temperature range |  | TJ     | -55  |      | 125      | °C   |
| Storage temperature range   |  | TSTG   | -55  |      | 150      | °C   |

## RATING AND CHARACTERISTIC CURVES (CPDU12V0U-HF)

Fig.1 - 8/20us Peak Pulse Current Wave Form Acc. IEC 61000-4-5

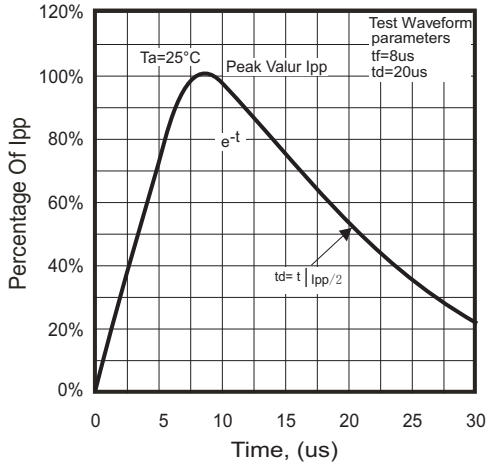


Fig.2 - Power Rating Derating Curve

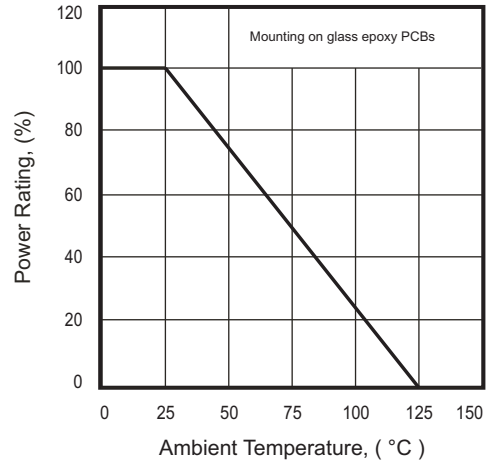


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

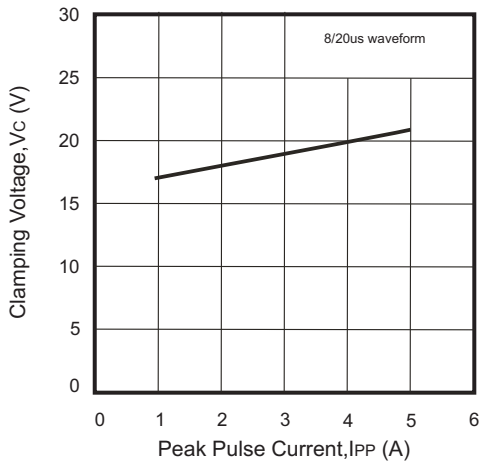


Fig.4 - Clamping Voltage Vs. Forward Peak Pulse Current

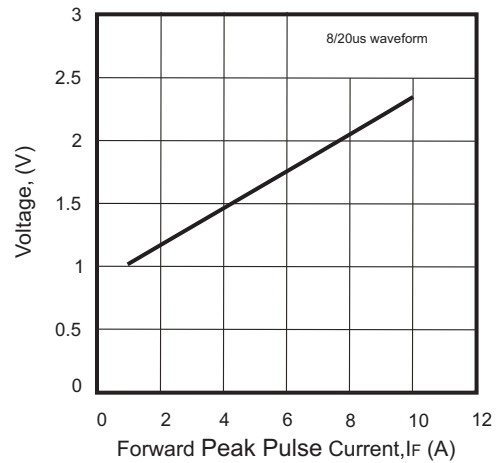
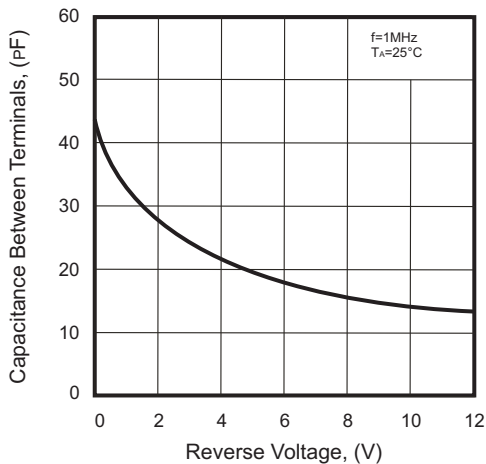
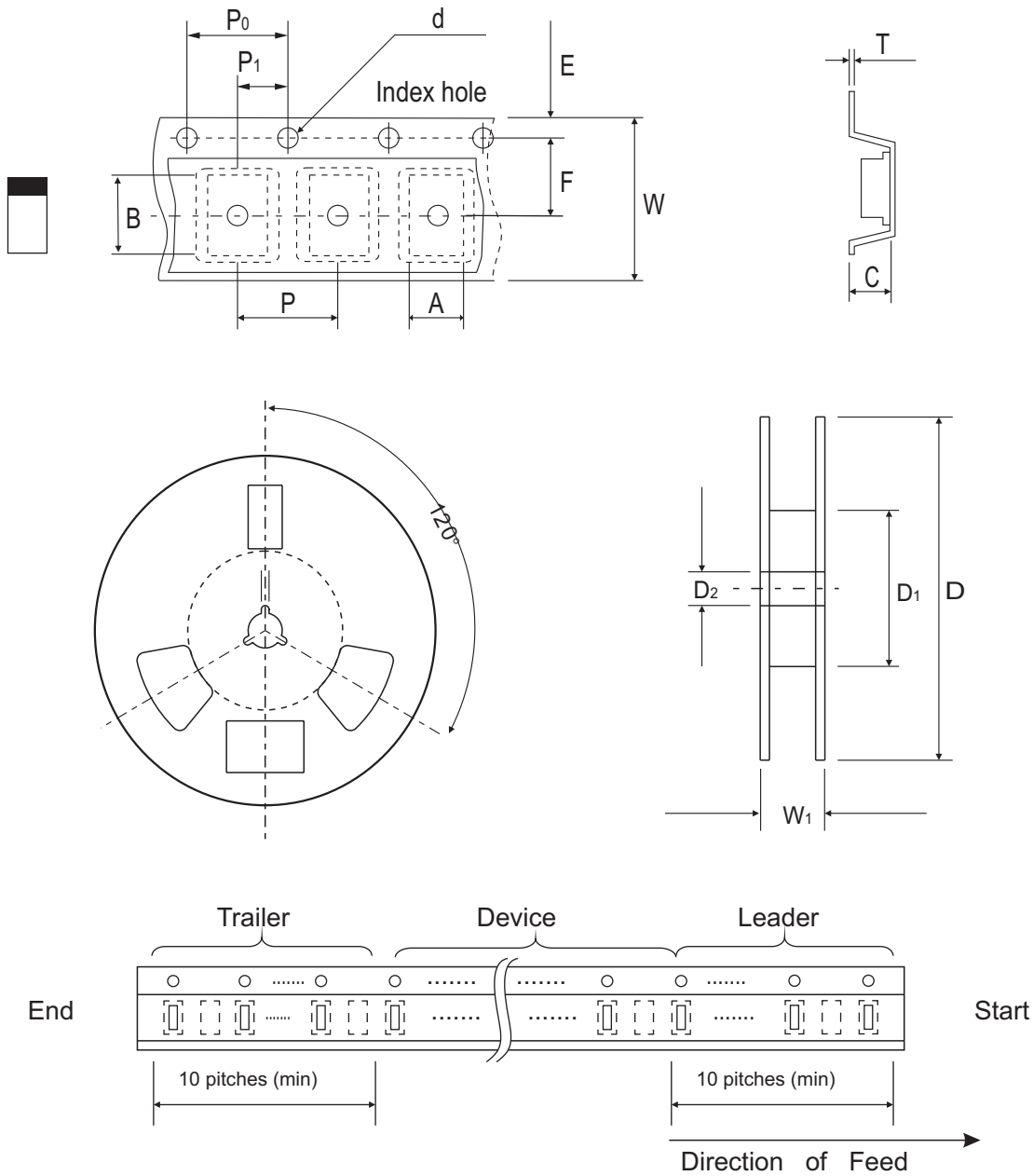


Fig.5 - Capacitance Between Terminals Characteristics



## 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.     |

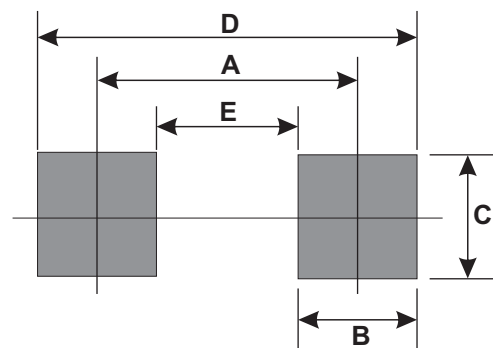
## Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| CPDU12V0U-HF | E12          |



## 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     | REEL PACK    |                  |
|---------------|--------------|------------------|
|               | REEL ( pcs ) | Reel Size (inch) |
| 0603/SOD-523F | 4,000        | 7                |

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