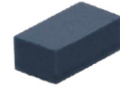


# CPDUR Series-HF

## RoHS Device

## Halogen Free



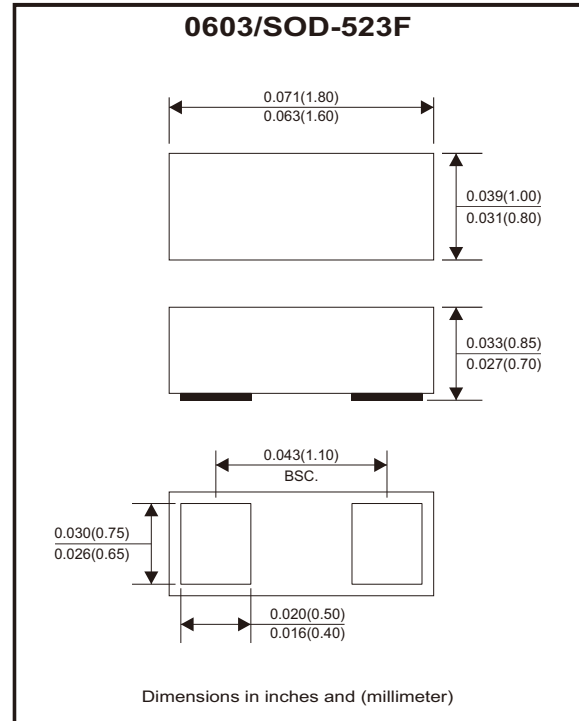
### Features

- 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.
- Mounting position: Any.

### Circuit Diagram



### Maximum Ratings (at TA=25°C unless otherwise noted)

| Parameter                   | Conditions                                             | Symbol | Min | Typ | Max            | Unit |
|-----------------------------|--------------------------------------------------------|--------|-----|-----|----------------|------|
| Peak pulse power            | CPDUR5V0-HF<br>CPDUR12V-HF<br>CPDUR24V-HF<br>TP=8/20μs | PPp    |     |     | 75<br>25<br>47 | W    |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact)           | ESD    |     |     | 16<br>8        | kV   |
| Operating temperature range |                                                        | Tj     | -55 |     | 125            | °C   |
| Storage temperature range   |                                                        | TSTG   | -55 |     | 150            | °C   |

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

| Parameter               | Conditions                                                                                                                                    | Symbol | Min             | Typ             | Max                  | Unit |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------|-----------------|----------------------|------|
| Diode breakdown voltage | CPDUR5V0-HF<br>CPDUR12V-HF<br>CPDUR24V-HF<br>IR = 1mA                                                                                         | VBR    | 5.1<br>13<br>25 | 7.0<br>17<br>28 |                      | V    |
| Leakage current         | CPDUR5V0-HF<br>CPDUR12V-HF<br>CPDUR24V-HF<br>VR = 5V<br>VR = 12V<br>VR = 24V                                                                  | IR     |                 | 0.1             | 2.0                  | μA   |
| Clamping voltage        | CPDUR5V0-HF<br>CPDUR12V-HF<br>CPDUR24V-HF<br>IPP = 1A, TP = 8/20μs<br>IPP = 5A, TP = 8/20μs<br>IPP = 1A, TP = 8/20μs<br>IPP = 1A, TP = 8/20μs | VC     |                 |                 | 10<br>15<br>25<br>47 | V    |
| Junction capacitance    | CPDUR5V0-HF<br>CPDUR12V-HF<br>CPDUR24V-HF<br>VR = 0V, f = 1MHz                                                                                | CJ     |                 | 15<br>12<br>10  | 20<br>—<br>—         | pF   |

## Typical Rating and Characteristic Curves (CPDUR Series-HF)

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

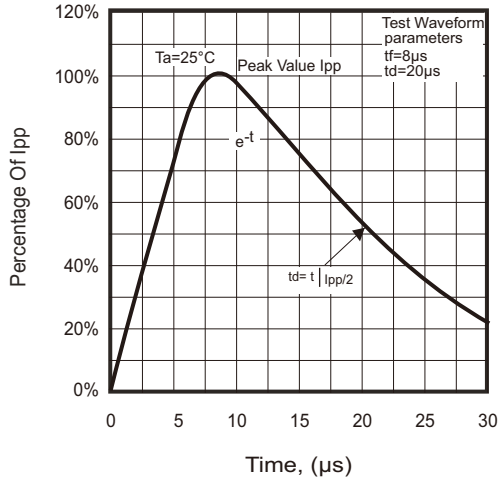


Fig.2-1 - Reverse Characteristics

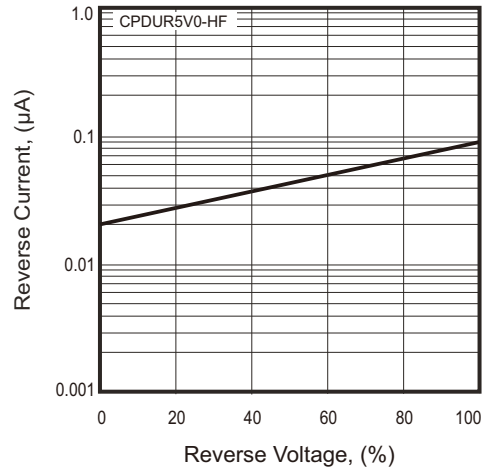


Fig.2-2 - Reverse Characteristics

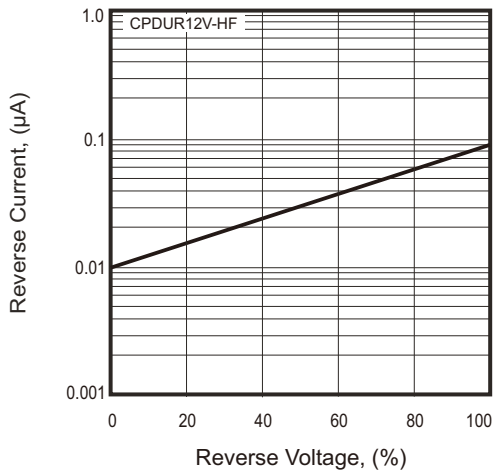


Fig.2-3 - Reverse Characteristics

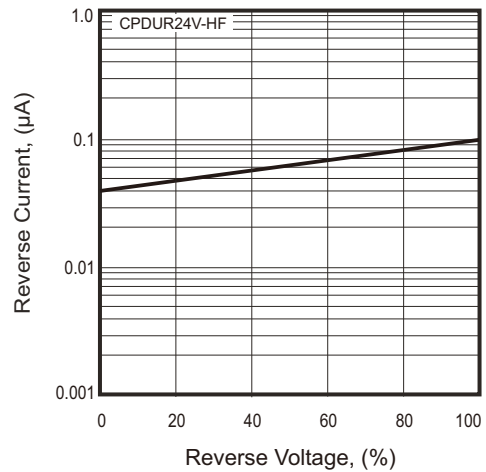


Fig.3 - Capacitance Between  
Terminals Characteristics

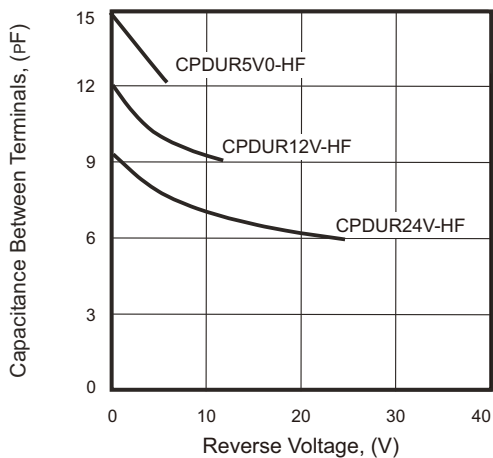
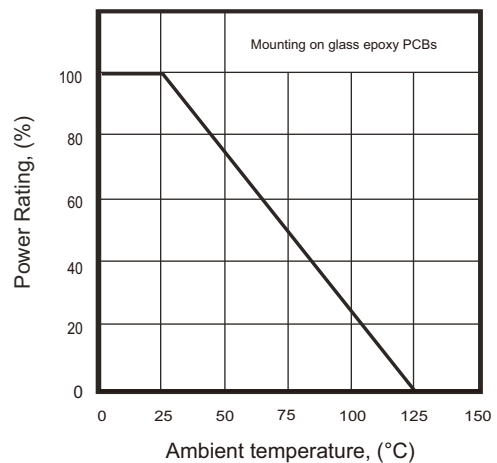
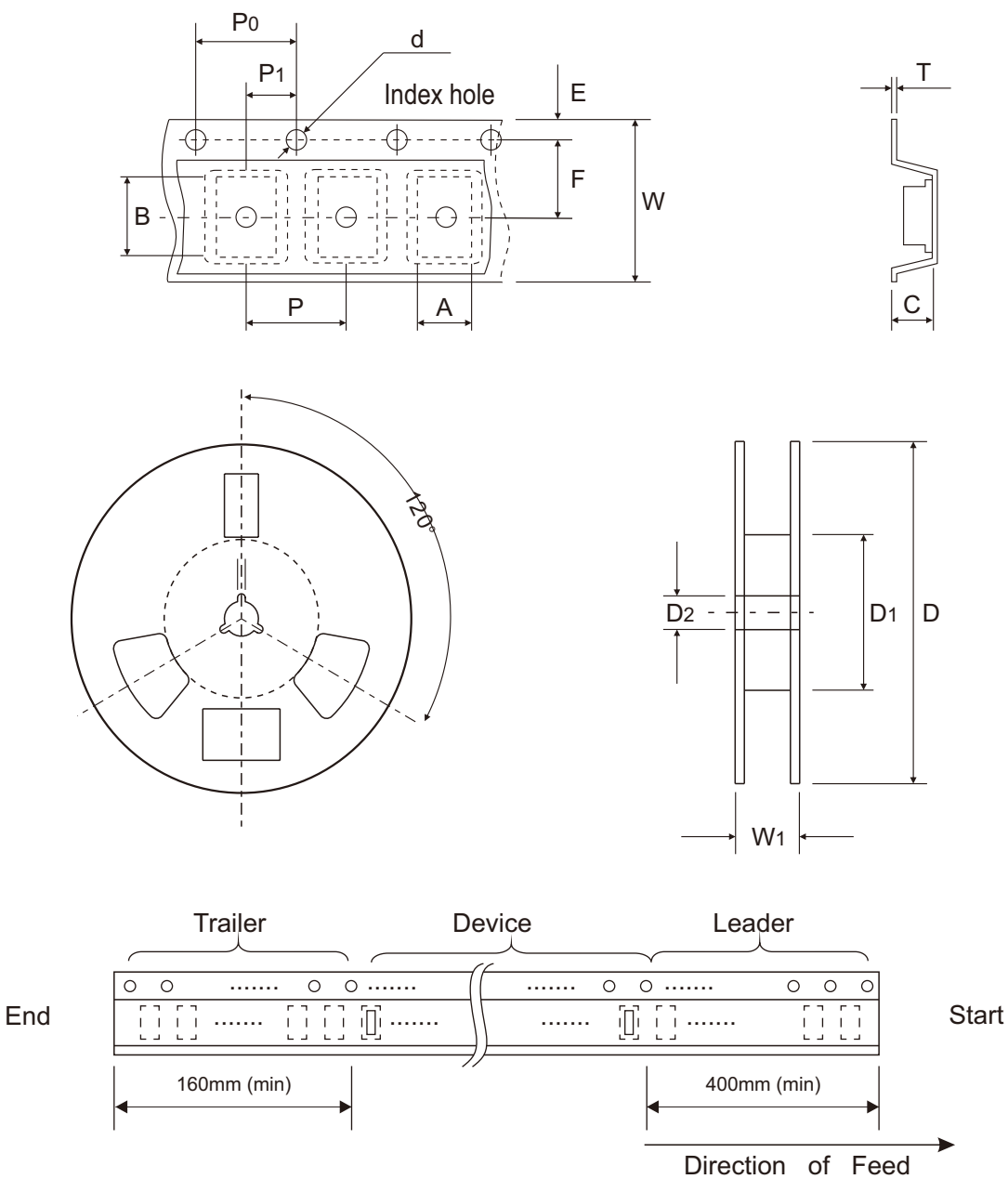


Fig. 4 - Power rating derating curve



Reel Taping Specification



|                    |        |                   |                   |                   |                              |                   |                   |                   |
|--------------------|--------|-------------------|-------------------|-------------------|------------------------------|-------------------|-------------------|-------------------|
| 0603<br>(SOD-523F) | SYMBOL | A                 | B                 | C                 | d                            | D                 | D1                | D2                |
|                    | (mm)   | $1.16 \pm 0.10$   | $1.90 \pm 0.10$   | $0.95 \pm 0.10$   | $1.50 + 0.10$<br>$- 0.00$    | $178.00 \pm 1.00$ | $60.00 \pm 0.50$  | $13.50 \pm 0.20$  |
|                    | (inch) | $0.046 \pm 0.004$ | $0.075 \pm 0.004$ | $0.037 \pm 0.004$ | $0.059 + 0.004$<br>$- 0.000$ | $7.008 \pm 0.039$ | $2.362 \pm 0.020$ | $0.531 \pm 0.008$ |

|                    |        |                   |                   |                   |                   |                   |                   |                   |                              |
|--------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------------|
| 0603<br>(SOD-523F) | SYMBOL | E                 | F                 | P                 | P0                | P1                | T                 | W                 | W1                           |
|                    | (mm)   | $1.75 \pm 0.10$   | $3.50 \pm 0.05$   | $4.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.05$   | $0.22 \pm 0.03$   | $8.00 \pm 0.20$   | $12.00 + 0.50$<br>$- 0.00$   |
|                    | (inch) | $0.069 \pm 0.004$ | $0.138 \pm 0.002$ | $0.157 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.002$ | $0.009 \pm 0.001$ | $0.315 \pm 0.008$ | $0.472 + 0.020$<br>$- 0.000$ |

Marking Code

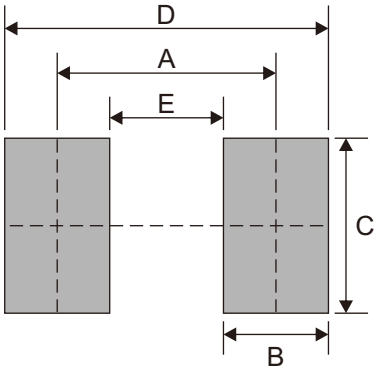
| Part Number | Marking Code |
|-------------|--------------|
| CPDUR5V0-HF | E05          |
| CPDUR12V-HF | E12          |
| CPDUR24V-HF | E24          |



xxx = Product type marking code

Suggested P.C.B. PAD Layout

| SIZE | 0603/SOD-523F |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 1.25          | 0.049  |
| B    | 0.60          | 0.024  |
| C    | 1.00          | 0.039  |
| D    | 1.85          | 0.073  |
| E    | 0.65          | 0.026  |



Standard Packaging

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