

# CPDU5V0UESPC-HF

RoHS Device  
Halogen Free



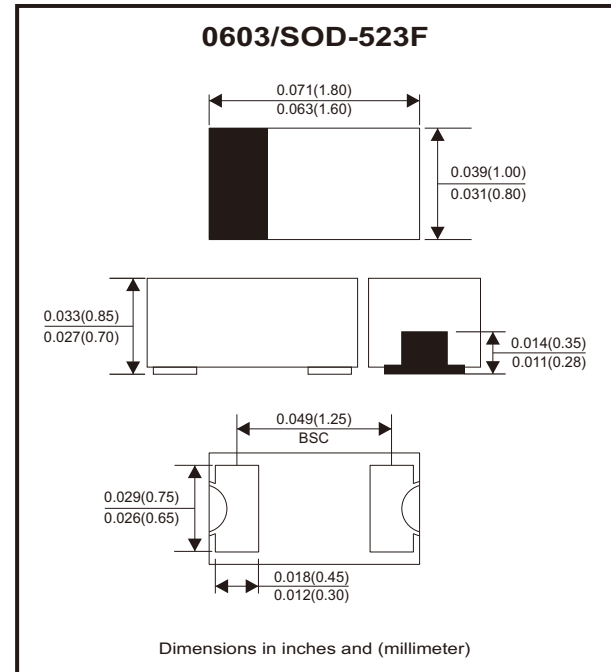
## Features

- Uni-directional ESD protection.
- Low leakage current.
- Low clamping voltage.

## Mechanical data

- Case: 0603/SOD-523F package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.

## Circuit Diagram



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

| Parameter                            | Conditions                                   | Symbol    | Value       | Unit |
|--------------------------------------|----------------------------------------------|-----------|-------------|------|
| Peak pulse power                     | $T_P = 8/20\mu s$                            | $P_{PP}$  | 105         | W    |
| Peak pulse current                   | $T_P = 8/20\mu s$                            | $I_{PP}$  | 5           | A    |
| ESD capability                       | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD       | ±22         | kV   |
| Operating junction temperature range |                                              | $T_J$     | -55 to +150 | °C   |
| Storage temperature range            |                                              | $T_{STG}$ | -55 to +150 | °C   |

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

| Parameter                    | Conditions                     | Symbol    | Min | Typ | Max | Unit |
|------------------------------|--------------------------------|-----------|-----|-----|-----|------|
| Working peak reverse voltage |                                | $V_{RWM}$ |     |     | 5   | V    |
| Forward voltage              | $I_F = 10mA$                   | $V_F$     |     |     | 1.2 | V    |
| Breakdown voltage            | $I_R = 1mA$                    | $V_{BR}$  | 6   |     |     | V    |
| Reverse leakage current      | $V_{RWM} = 5V$                 | $I_R$     |     |     | 50  | nA   |
| Clamping voltage             | $I_{PP} = 1A, T_P = 8/20\mu s$ | $V_C$     |     | 11  | 13  | V    |
|                              | $I_{PP} = 5A, T_P = 8/20\mu s$ | $V_C$     |     | 19  | 21  |      |
| Junction capacitance         | $V_R = 0V, f = 1MHz$           | $C_J$     |     | 0.6 |     | pF   |

Typical Rating and Characteristic Curves (CPDU5V0UESPC-HF)

Fig.1 - 8/20μs Peak Pulse Current  
Waveform Acc. IEC 61000-4-5

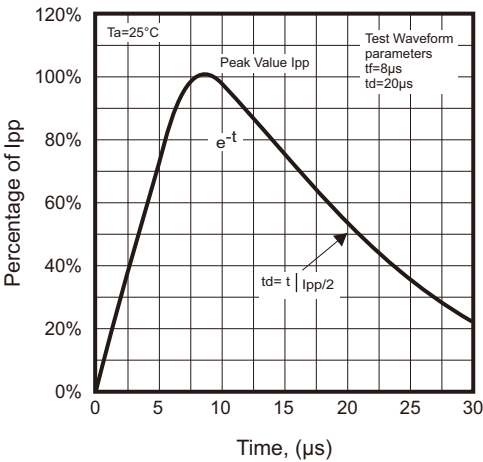


Fig.2 - Power Rating Derating Curve

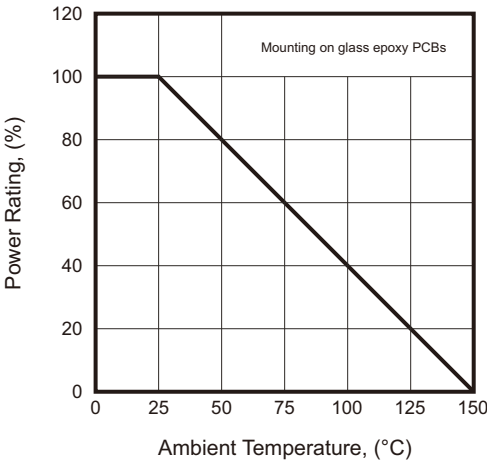


Fig.3 - Typical Clamping Voltage vs.  
Peak Pulse Current

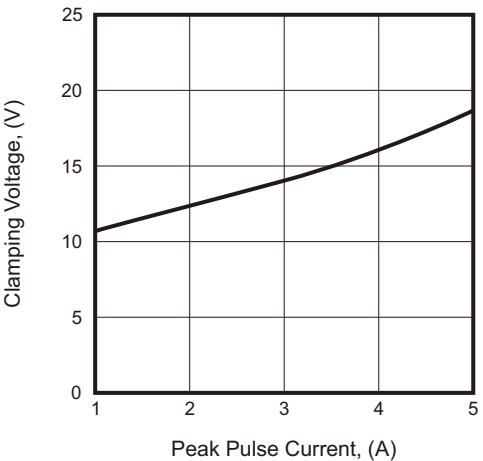


Fig.4 - Typical Capacitance Between  
Terminals Characteristics

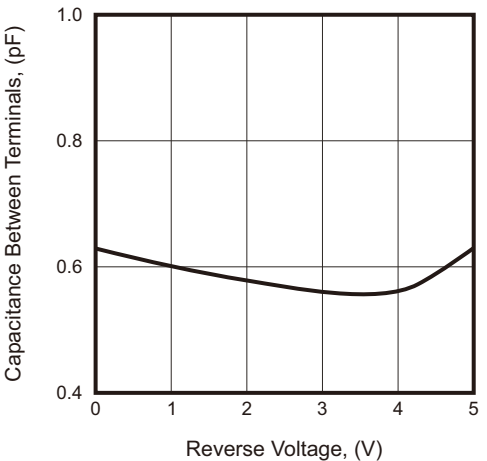
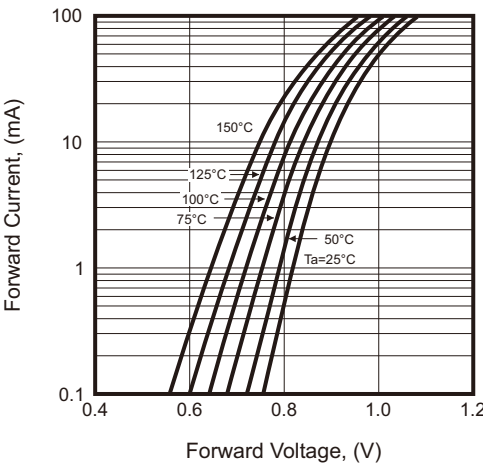
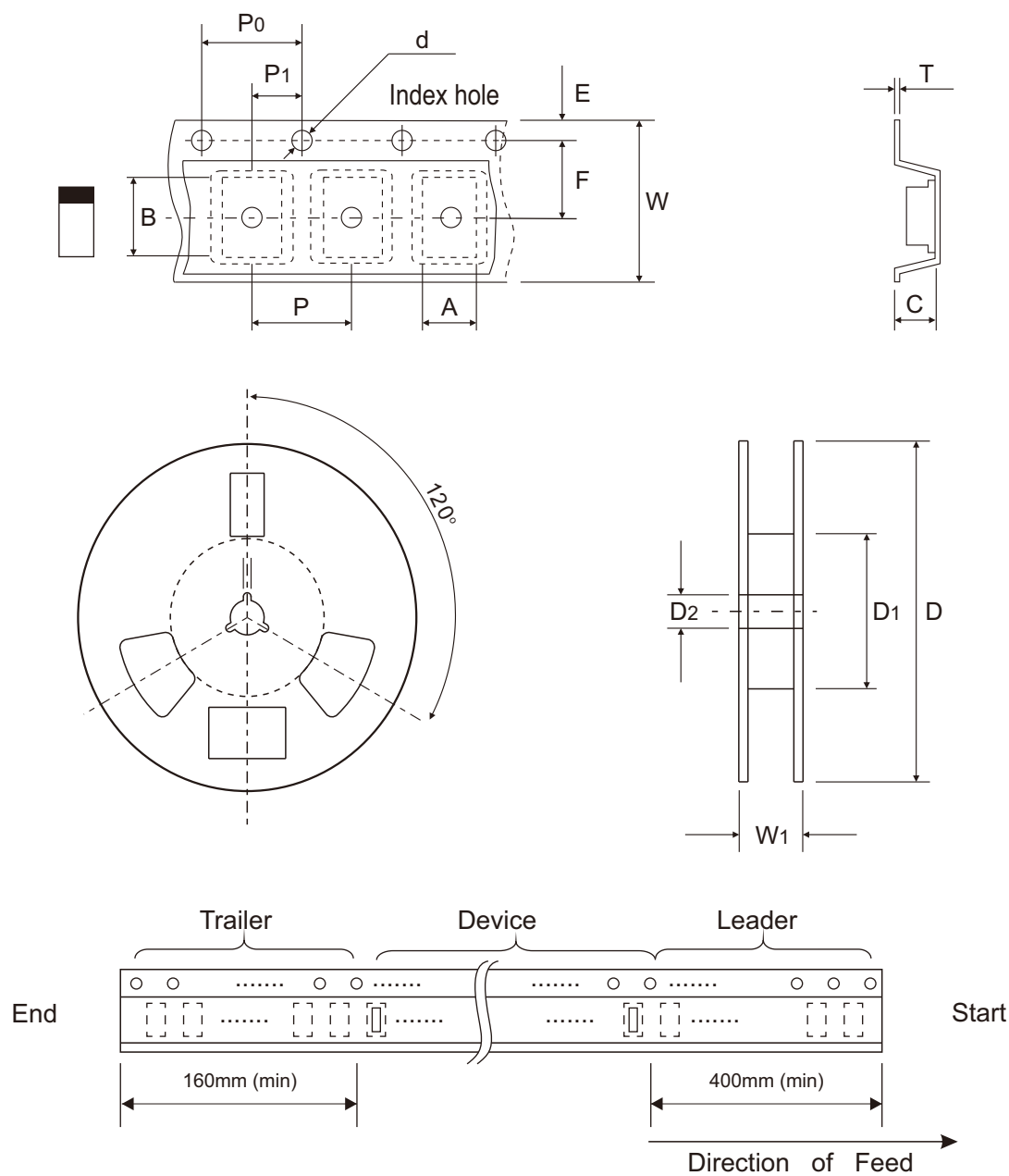


Fig.5 - Forward Characteristic



Reel Taping Specification



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

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

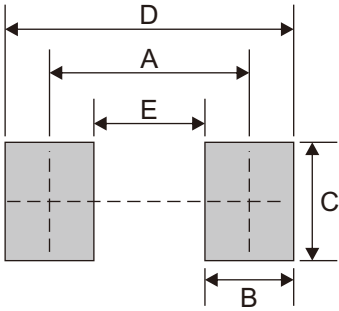
Marking Code

| Part Number     | Marking Code |
|-----------------|--------------|
| CPDU5V0UESPC-HF | 5SP          |



Suggested P.C.B. PAD Layout

| SIZE | 0603/SOD-523F |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 1.35          | 0.053  |
| B    | 0.60          | 0.024  |
| C    | 0.80          | 0.031  |
| D    | 1.95          | 0.077  |
| E    | 0.75          | 0.030  |



Standard Packaging

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