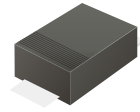


# CPDW30VMUHT-HF

RoHS Device  
Halogen Free



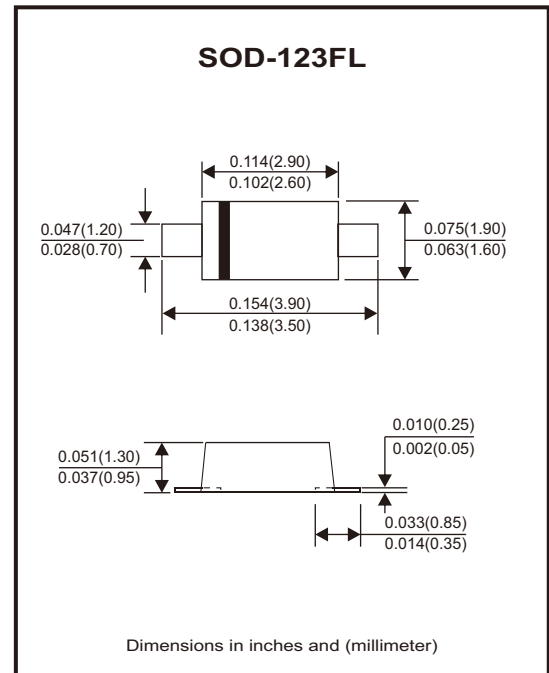
## Features

- Uni-directional ESD protection.
- Low leakage current.
- Low clamping voltage.
- IEC 61000-4-2 (ESD)  $\pm 30\text{kV}$  (air/contact)
- IEC 61000-4-4 (EFT) 80A (5/50ns)
- IEC 61000-4-5 (Lightning) 30A (8/20 $\mu\text{s}$ )

## Mechanical data

- Case: SOD-123FL package, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.

## Circuit Diagram



## Maximum Rating (at $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                   | Conditions                                   | Symbol    | Value       | Unit             |
|-----------------------------|----------------------------------------------|-----------|-------------|------------------|
| Peak pulse power            | $T_P = 8/20\mu\text{s}$                      | $P_{PP}$  | 1590        | W                |
| Peak pulse current          | $T_P = 8/20\mu\text{s}$                      | $I_{PP}$  | 30          | A                |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD       | $\pm 30$    | kV               |
| Operating temperature range |                                              | $T_J$     | -55 to +150 | $^\circ\text{C}$ |
| Storage temperature range   |                                              | $T_{STG}$ | -55 to +150 | $^\circ\text{C}$ |

## Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter                    | Conditions                                   | Symbol    | Min  | Typ | Max | Unit          |
|------------------------------|----------------------------------------------|-----------|------|-----|-----|---------------|
| Working peak reverse voltage |                                              | $V_{RWM}$ |      |     | 30  | V             |
| Forward voltage              | $I_F = 15\text{mA}$                          | $V_F$     | 0.6  |     | 1.2 | V             |
| Reverse leakage current      | $V_{RWM} = 30\text{V}$                       | $I_R$     |      |     | 1   | $\mu\text{A}$ |
| Breakdown voltage            | $I_T = 1\text{mA}$                           | $V_{BR}$  | 33.3 |     |     | V             |
| Clamping voltage             | $I_{PP} = 5\text{A}, T_P = 8/20\mu\text{s}$  | $V_C$     |      | 37  | 39  | V             |
|                              | $I_{PP} = 30\text{A}, T_P = 8/20\mu\text{s}$ | $V_C$     |      | 51  | 53  |               |
| Clamping voltage             | $TLP = 16\text{A}, T_P = 100\text{ns}$       | $V_C$     |      | 38  |     | V             |
| Junction capacitance         | $V_R = 0\text{V}, f = 1\text{MHz}$           | $C_J$     |      | 204 |     | pF            |

Typical Rating and Characteristic Curves (CPDW30VMUHT-HF)

Fig.1 - 8/20 $\mu$ s Peak Pulse Current  
Waveform Acc. IEC 61000-4-5

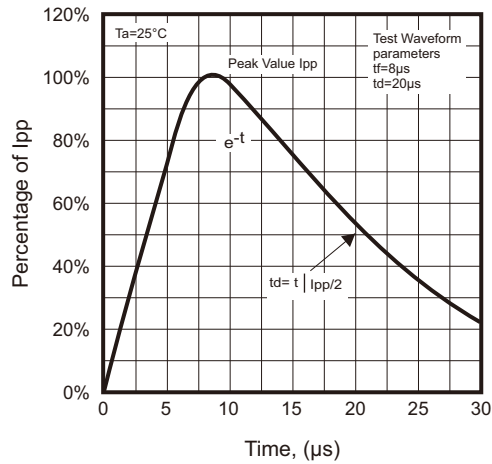


Fig.2 - Power Rating Derating Curve

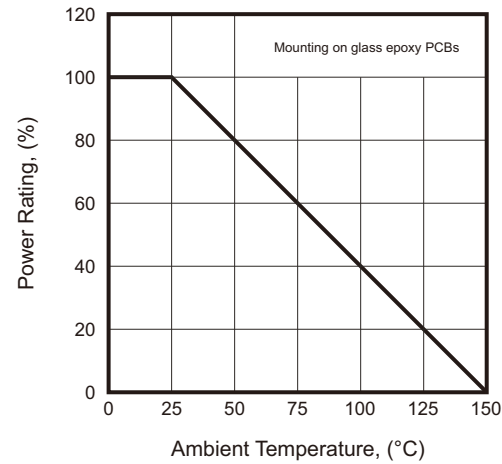


Fig.3 - Typical Clamping Voltage vs.  
Peak Pulse Current

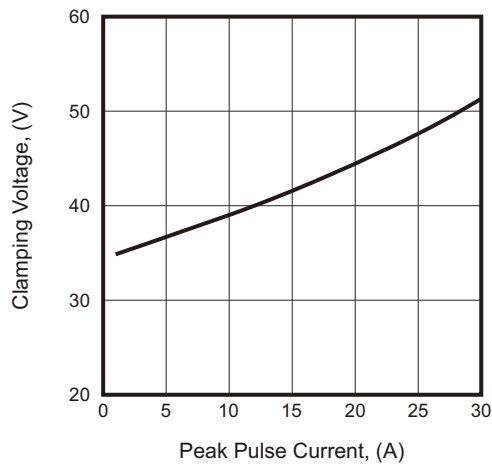


Fig.4 - Typical Capacitance Between  
Terminals Characteristics

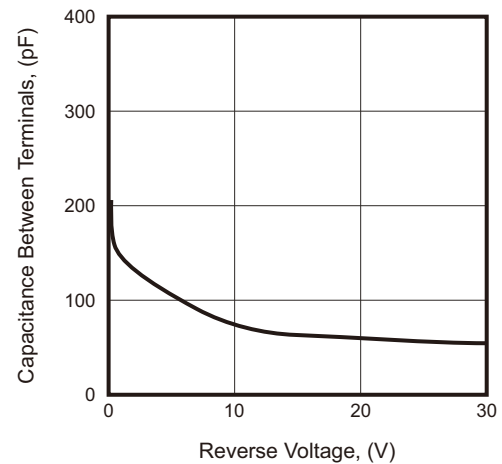
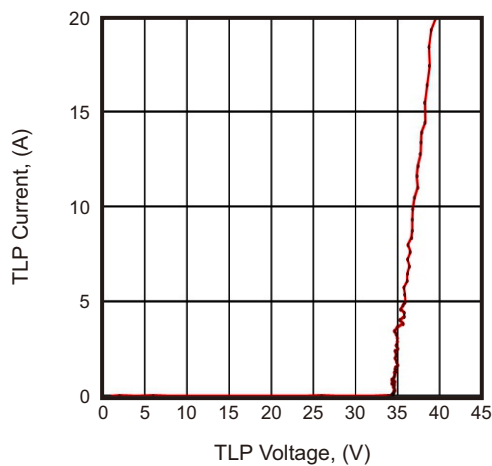
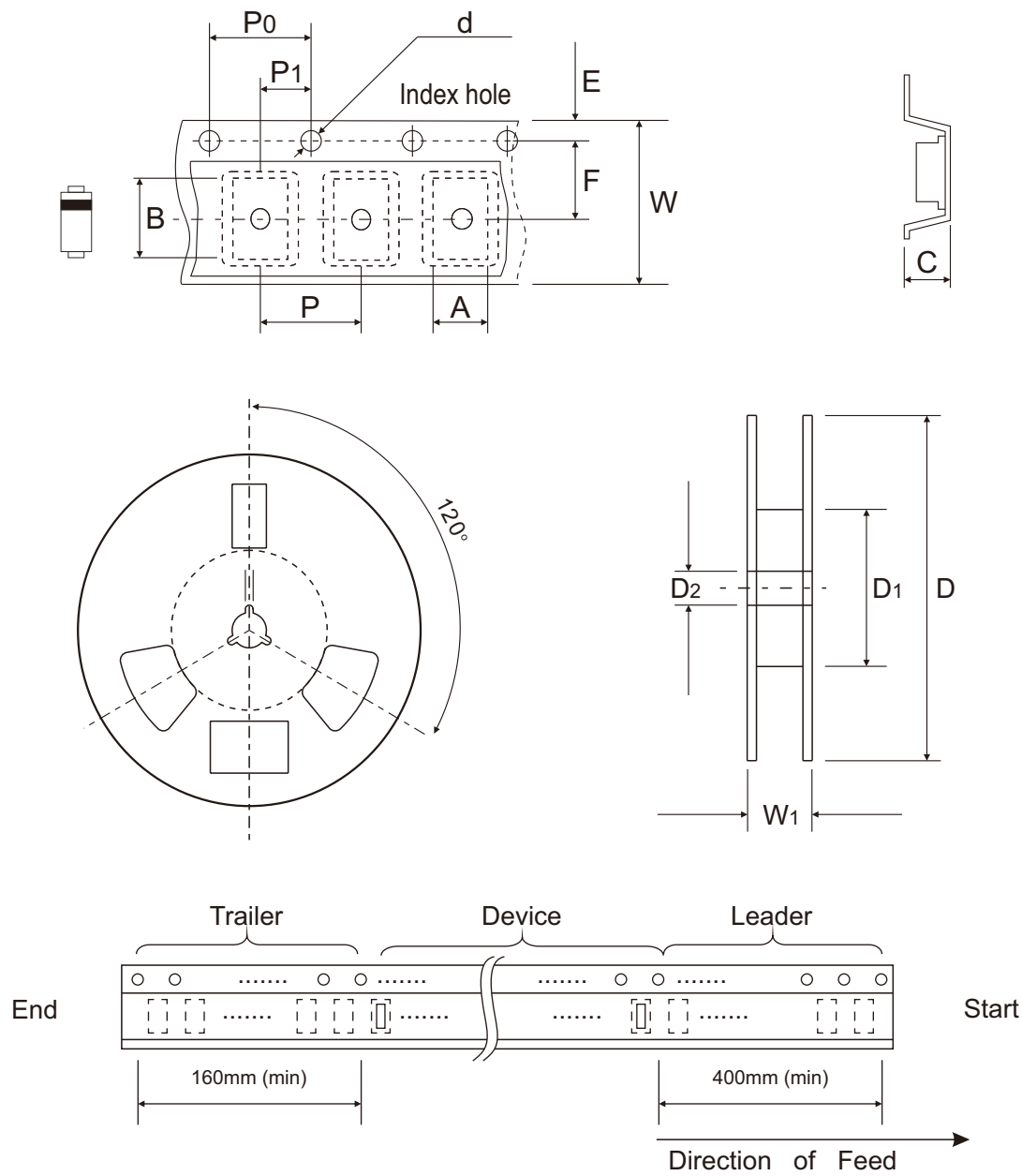


Fig.5 - TLP-Positive Pulse



Reel Taping Specification

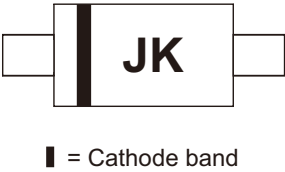


| SOD-123FL | SYMBOL | A             | B             | C             | d             | D             | D1        | D2            |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|-----------|---------------|
|           | (mm)   | 1.85 ± 0.10   | 3.94 ± 0.10   | 1.57 ± 0.10   | 1.55 ± 0.05   | 178.00 ± 1.00 | 50.00 Min | 13.00 ± 0.20  |
|           | (inch) | 0.073 ± 0.004 | 0.155 ± 0.004 | 0.062 ± 0.004 | 0.061 ± 0.002 | 7.008 ± 0.039 | 1.969 Min | 0.512 ± 0.008 |

| SOD-123FL | SYMBOL | E             | F             | P             | P0            | P1            | W             | W1        |
|-----------|--------|---------------|---------------|---------------|---------------|---------------|---------------|-----------|
|           | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 8.00 ± 0.10   | 11.40 Max |
|           | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.315 ± 0.004 | 0.449 Max |

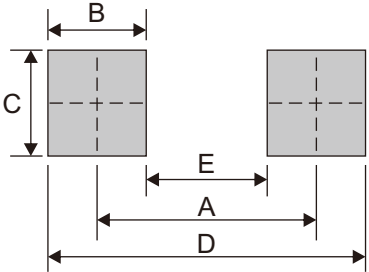
Marking Code

| Part Number    | Marking Code |
|----------------|--------------|
| CPDW30VMUHT-HF | JK           |



Suggested P.C.B. PAD Layout

| SIZE | SOD-123FL |        |
|------|-----------|--------|
|      | (mm)      | (inch) |
| A    | 2.90      | 0.114  |
| B    | 1.30      | 0.051  |
| C    | 1.40      | 0.055  |
| D    | 4.20      | 0.165  |
| E    | 1.60      | 0.063  |



Standard Packaging

| Case Type | REEL PACK  |                  |
|-----------|------------|------------------|
|           | REEL (pcs) | Reel Size (inch) |
| SOD-123FL | 3,000      | 7                |