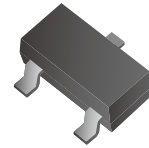


CPDT-3V3UA-HF

RoHS Device
Halogen Free



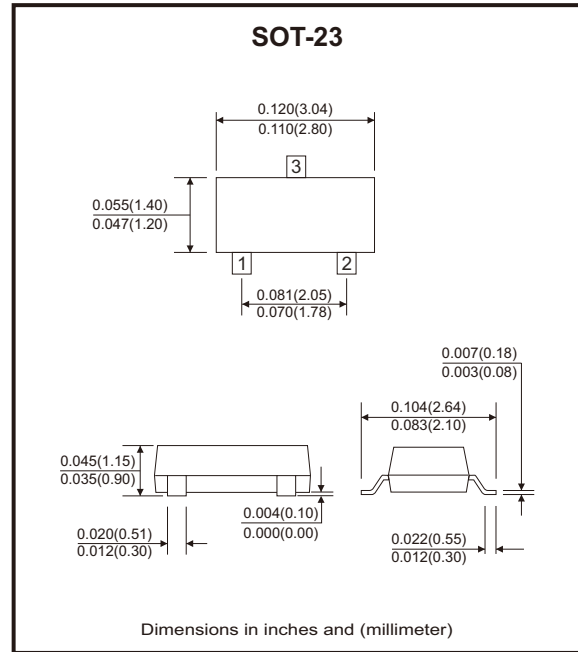
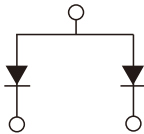
Features

- Uni-directional ESD protection diode.
- High ESD protection level.
- Working voltage: 3.3V.
- Low clamping voltage.
- Low leakage current.

Mechanical data

- Case: SOT-23 standard package, molded plastic.
- 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} | 60 | W |
| Peak pulse current | $T_P = 8/20\mu\text{s}$ | I_{PP} | 4 | A |
| ESD capability | IEC 61000-4-2(air) IEC 61000-4-2(contact) | ESD | ± 20 | kV |
| Operating temperature | | T_J | -55 to +125 | $^\circ\text{C}$ |
| 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} | | | 3.3 | V |
| Forward voltage | $I_F = 15\text{mA}$ | V_F | | | 1.2 | V |
| Breakdown voltage | $I_T = 1\text{mA}$ | V_{BR} | 4.2 | | | V |
| Reverse leakage current | $V_{RWM} = 3.3\text{V}$ | I_R | | | 0.1 | μA |
| Clamping voltage | $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$ | V_C | | 9 | 11 | V |
| | $I_{PP} = 4\text{A}, T_P = 8/20\mu\text{s}$ | V_C | | 13 | 15 | |
| Junction capacitance | $V_R = 0\text{V}, f = 1\text{MHz}$ | C_J | | 0.46 | | pF |

Typical Rating and Characteristic Curves (CPDT-3V3UA-HF)

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

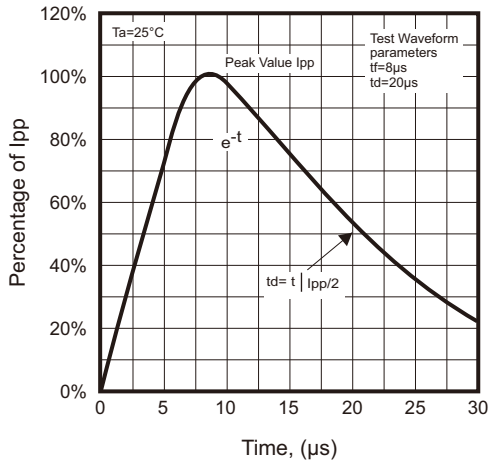


Fig.2 - Power Rating Derating Curve

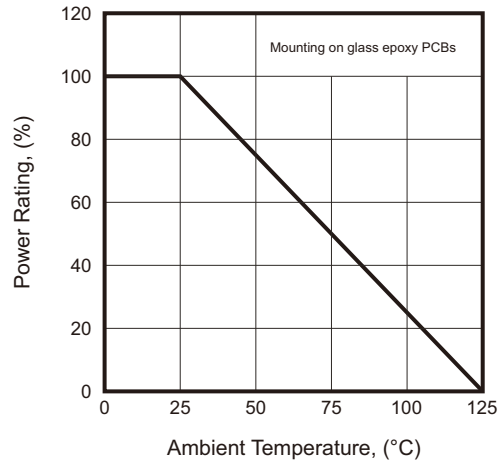


Fig.3 - Clamping Voltage vs. Peak Pulse Current

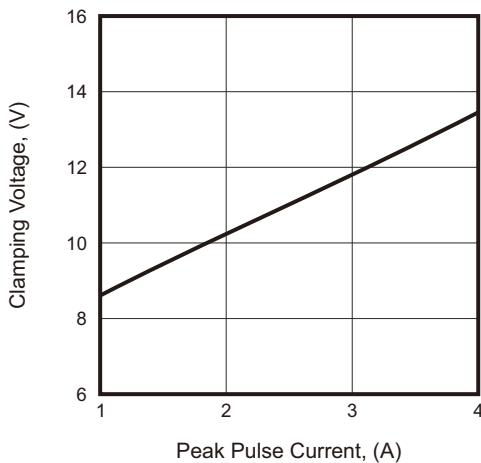


Fig.4 - Capacitance Between Terminals Characteristics

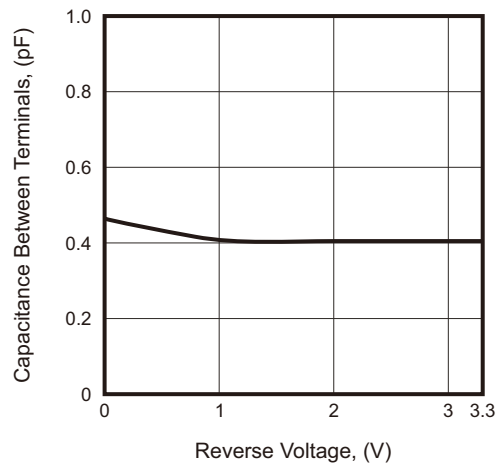
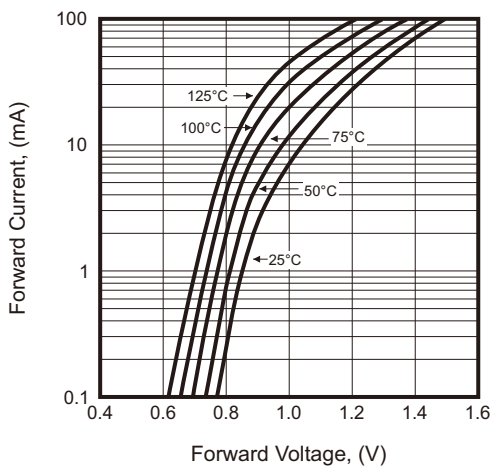
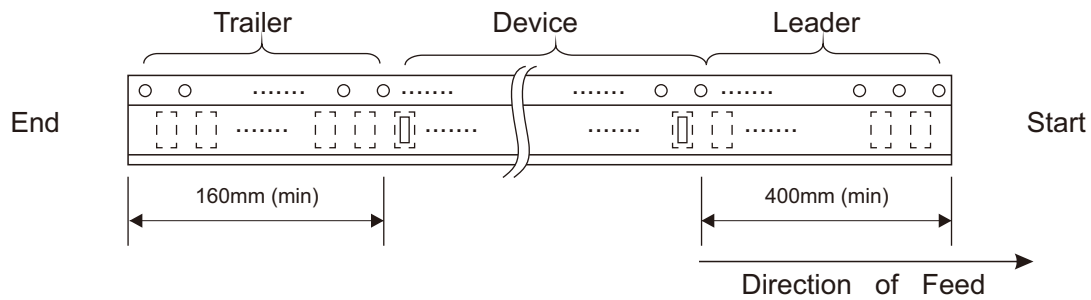
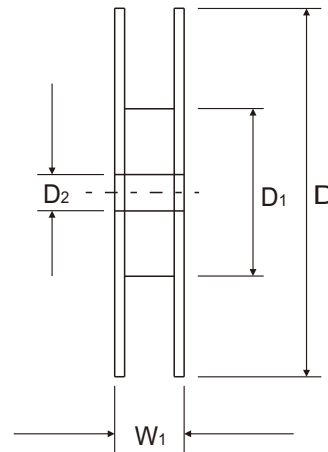
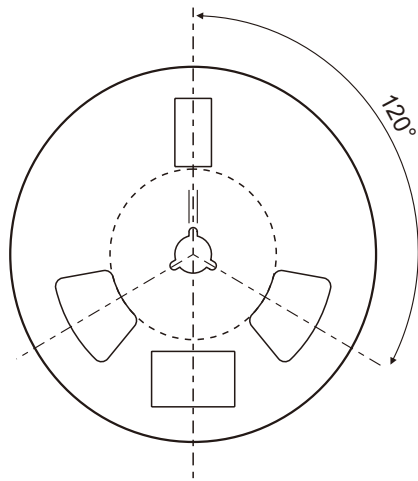
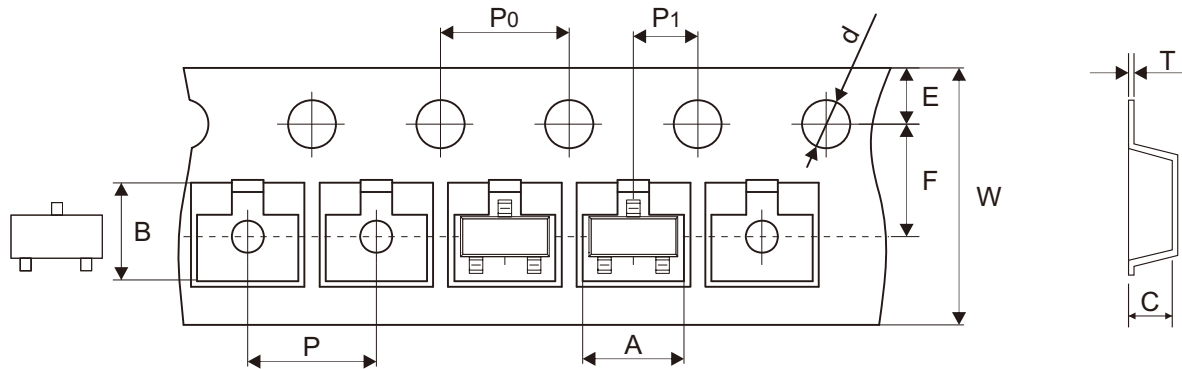


Fig.5 - Forward Characteristic



Reel Taping Specification

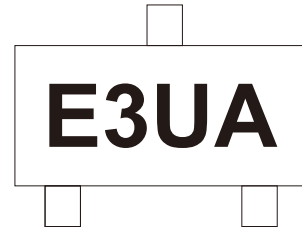


| SOT-23 | SYMBOL | A | B | C | d | D | D1 | D2 |
|--------|--------|---------------|---------------|---------------|--------------------------|---------------|---------------|---------------|
| | (mm) | 3.15 ± 0.10 | 2.77 ± 0.10 | 1.22 ± 0.10 | 1.50 + 0.10 - 0.00 | 178.00 ± 2.00 | 54.40 ± 1.00 | 13.00 ± 1.00 |
| | (inch) | 0.124 ± 0.004 | 0.109 ± 0.004 | 0.048 ± 0.004 | 0.059 + 0.004 - 0.000 | 7.008 ± 0.079 | 2.142 ± 0.039 | 0.512 ± 0.039 |

| SOT-23 | SYMBOL | E | F | P | P0 | P1 | T | W | W1 |
|--------|--------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.10 | 4.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 0.20 ± 0.05 | 8.00 + 0.30 - 0.10 | 12.30 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.002 | 0.315 + 0.012 - 0.004 | 0.484 ± 0.039 |

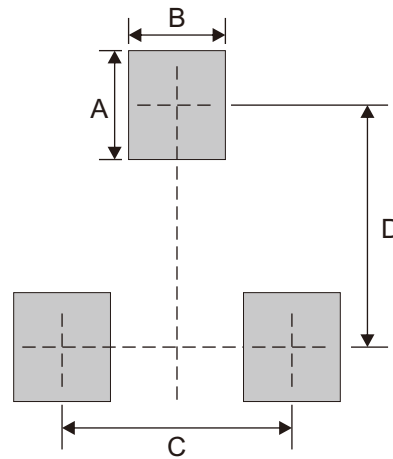
Marking Code

| Part Number | Marking Code |
|---------------|--------------|
| CPDT-3V3UA-HF | E3UA |



Suggested P.C.B. PAD Layout

| SIZE | SOT-23 | |
|------|--------|--------|
| | (mm) | (inch) |
| A | 0.90 | 0.035 |
| B | 0.80 | 0.031 |
| C | 1.90 | 0.075 |
| D | 2.02 | 0.080 |



Standard Packaging

| Case Type | REEL PACK | |
|-----------|------------|------------------|
| | REEL (pcs) | Reel Size (inch) |
| SOT-23 | 3,000 | 7 |