

## CPDZC3V3U-HF

### RoHS Device

### Halogen Free



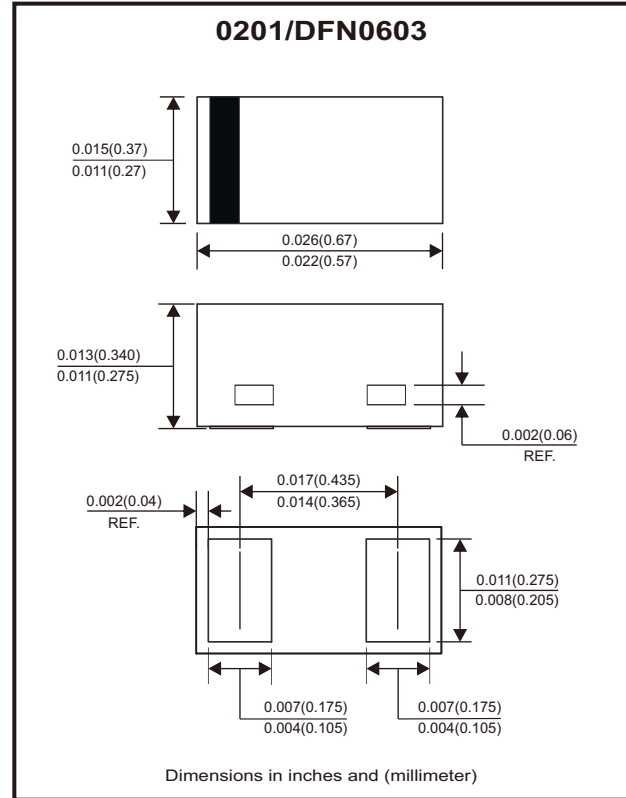
### Features

- Uni-directional ESD protection.
- Surface mount package.
- Ultra small SMD package.
- High component density.
- Low clamping voltage.
- Low leakage.

### Mechanical data

- Case: 0201/DFN0603 package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end.
- Mounting position: Any.

### Circuit Diagram



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

| Parameter                   | Conditions                                   | Symbol    | Value    | Unit |
|-----------------------------|--|-----------|----------|------|
| Peak pulse power            | $T_P = 8/20\mu s$                            | $P_{PP}$  | 66       | W    |
| Peak pulse current          | $T_P = 8/20\mu s$                            | $I_{PP}$  | 6        | A    |
| ESD capability              | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD       | $\pm 30$ | kV   |
| Operating temperature range |  | $T_j$     | -40~+125 | °C   |
| Storage temperature range   |  | $T_{STG}$ | -55~+150 | °C   |

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

| Parameter                    | Conditions   | Symbol    | Min | Typ        | Max     | Unit     |
|------------------------------|--|-----------|-----|------------|---------|----------|
| Working peak reverse voltage |  | $V_{RWM}$ |     |            | 3.3     | V        |
| Forward voltage              | $I_F = 10mA$   | $V_F$     |     |            | 1.2     | V        |
| Breakdown voltage            | $I_T = 1mA$  | $V_{BR}$  | 5.7 | 6.2        | 6.7     | V        |
| Reverse leakage current      | $V_{RWM} = 3.3V$   | $I_R$     |     |            | 0.1     | $\mu A$  |
| Clamping voltage             | $I_{PP} = 1A, T_P = 8/20\mu s$<br>$I_{PP} = 6A, T_P = 8/20\mu s$ | $V_C$     |     |            | 8<br>11 | V        |
| Clamping voltage             | $I_{PP} = 8A, T_P = 100ns$<br>$I_{PP} = 16A, T_P = 100ns$        | $V_{CL}$  |     | 10<br>12.8 |         | V        |
| Dynamic resistance           |  | $R_{DYN}$ |     | 0.35       |         | $\Omega$ |
| Junction capacitance         | $V_R = 0V, f = 1MHz$   | $C_J$     |     | 35         |         | pF       |

## Rating and Characteristic Curves (CPDZC3V3U-HF)

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

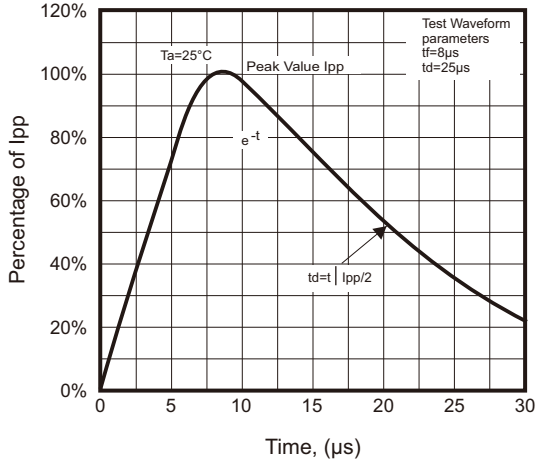


Fig.2 - Power Rating Derating Curve

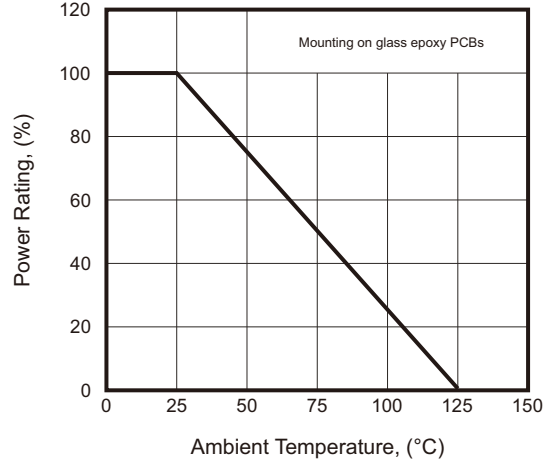


Fig.3 - Clamping Voltage Vs. Peak Pulse Current

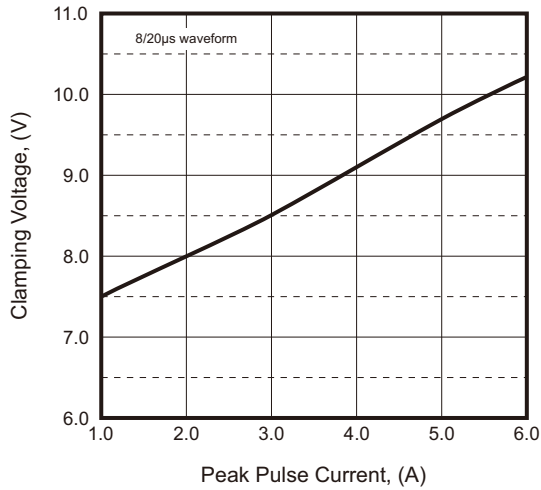


Fig.4 - Capacitance Between Terminals Characteristics

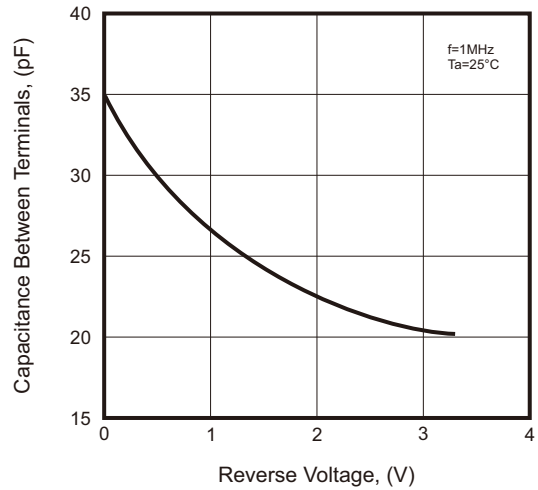
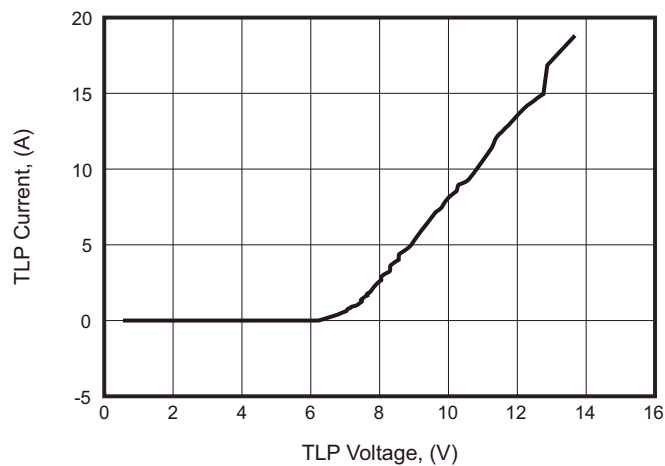
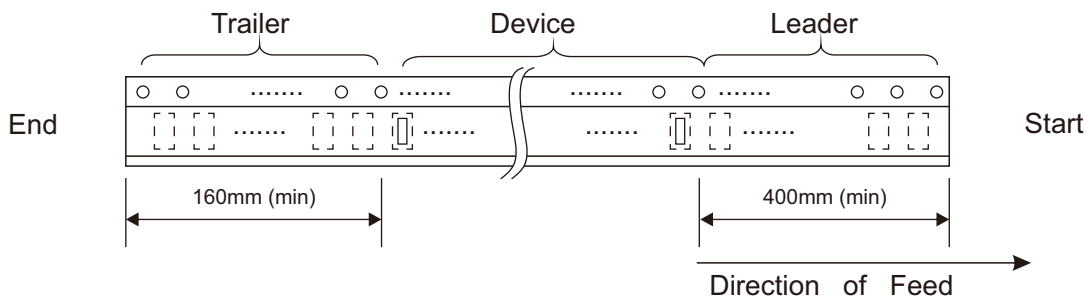
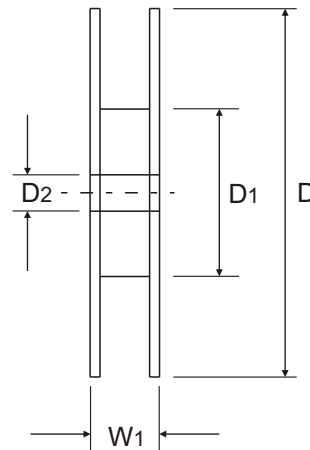
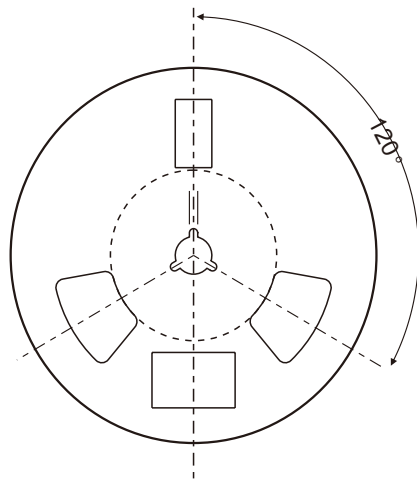
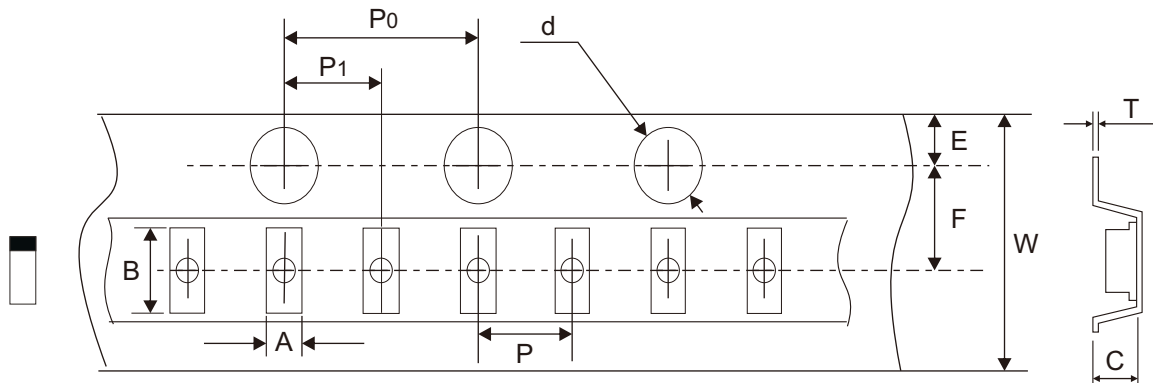


Fig.5 - Positive TLP IV Curve



## Reel Taping Specification



| 0201<br>(DFN0603) | SYMBOL | A             | B             | C             | d                        | D             | D1            | D2            |
|-------------------|--------|---------------|---------------|---------------|--------------------------|---------------|---------------|---------------|
|                   | (mm)   | 0.44 ± 0.03   | 0.74 ± 0.03   | 0.40 ± 0.03   | 1.50 + 0.10<br>- 0.00    | 178.00 ± 1.00 | 60.00 ± 0.50  | 13.50 ± 0.20  |
|                   | (inch) | 0.017 ± 0.001 | 0.029 ± 0.001 | 0.016 ± 0.001 | 0.059 + 0.004<br>- 0.000 | 7.008 ± 0.039 | 2.362 ± 0.020 | 0.531 ± 0.008 |

| 0201<br>(DFN0603) | SYMBOL | E             | F             | P             | P0            | P1            | T             | W                        | W1                       |
|-------------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|--------------------------|
|                   | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 2.00 ± 0.05   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.20 ± 0.03   | 8.00 + 0.30<br>- 0.10    | 12.00 + 0.50<br>- 0.00   |
|                   | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.079 ± 0.002 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.001 | 0.315 + 0.012<br>- 0.004 | 0.472 + 0.020<br>- 0.000 |

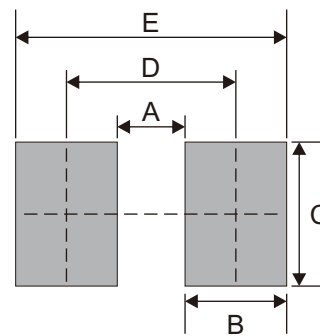
## Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| CPDZC3V3U-HF | C            |



## Suggested P.C.B. PAD Layout

| SIZE | 0201(DFN0603) |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 0.16          | 0.006  |
| B    | 0.24          | 0.009  |
| C    | 0.34          | 0.013  |
| D    | 0.40          | 0.016  |
| E    | 0.64          | 0.025  |



## Standard Packaging

| Case Type      | REEL PACK  |                  |
|----------------|------------|------------------|
|                | REEL (pcs) | Reel Size (inch) |
| 0201 (DFN0603) | 10,000     | 7                |