

# CPDZC24V-HF

RoHS Device  
Halogen Free



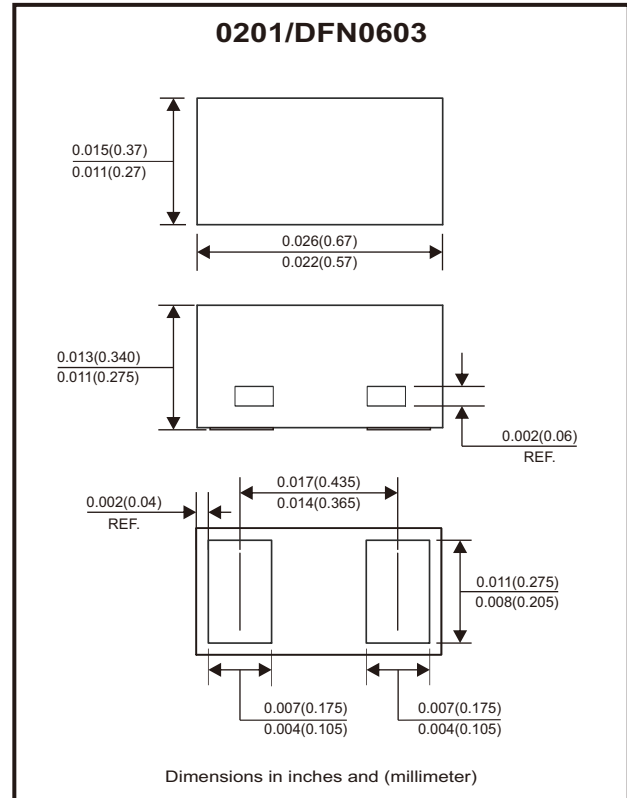
## Features

- Bi-directional ESD protection.
- Ultra small SMD package: 0201.
- Low leakage current.
- Low clamping voltage.

## Mechanical data

- Case: 0201/DFN0603 package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Mounting position: Any.
- Weight: 0.0004 grams (approx.).

## Circuit Diagram



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

| Parameter                   | Conditions                                   | Symbol    | Value       | Unit             |
|-----------------------------|----------------------------------------------|-----------|-------------|------------------|
| Peak pulse power            | $T_P = 8/20\mu\text{s}$                      | $P_{PP}$  | 105         | W                |
| Peak pulse current          | $T_P = 8/20\mu\text{s}$                      | $I_{PP}$  | 2.5         | 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 +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 |                                               | $V_{RWM}$ |      |      | 24  | V             |
| Breakdown voltage            | $I_T = 1\text{mA}$                            | $V_{BR}$  | 26.2 |      |     | V             |
| Reverse leakage current      | $V_{RWM} = 24\text{V}$                        | $I_R$     |      | 0.03 | 0.4 | $\mu\text{A}$ |
| Clamping voltage             | $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$   | $V_C$     |      | 32   | 36  | V             |
|                              | $I_{PP} = 2.5\text{A}, T_P = 8/20\mu\text{s}$ | $V_C$     |      | 38   | 42  |               |
| Junction capacitance         | $V_R = 0\text{V}, f = 1\text{MHz}$            | $C_J$     |      | 8    | 12  | pF            |

Rating and Characteristic Curves (CPDZC24V-HF)

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

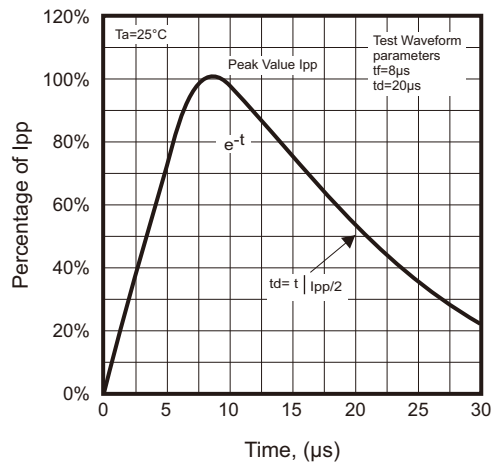


Fig.2 - Power Rating Derating Curve

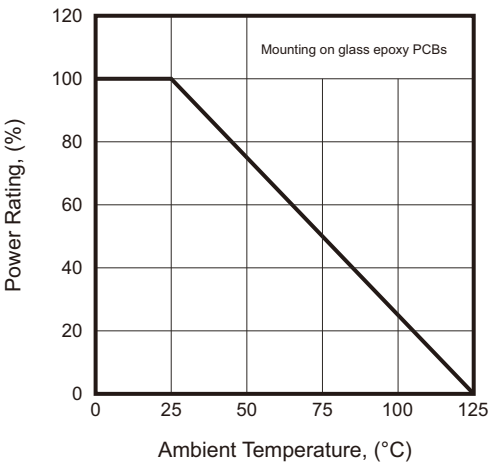


Fig.3 - Typical Clamping Voltage vs.  
Peak Pulse Current

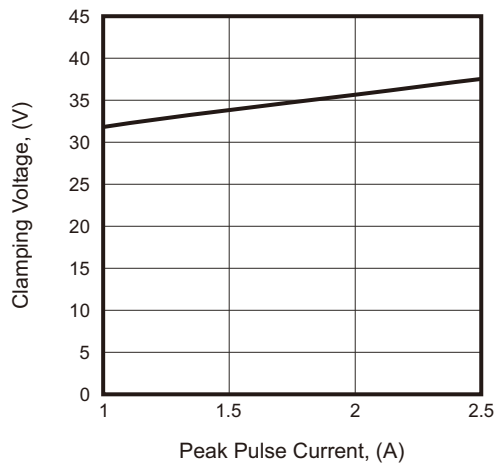
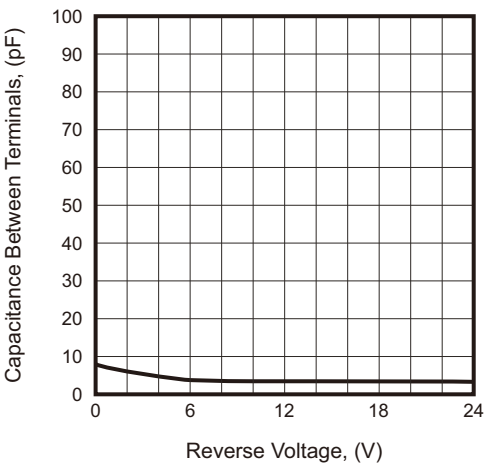
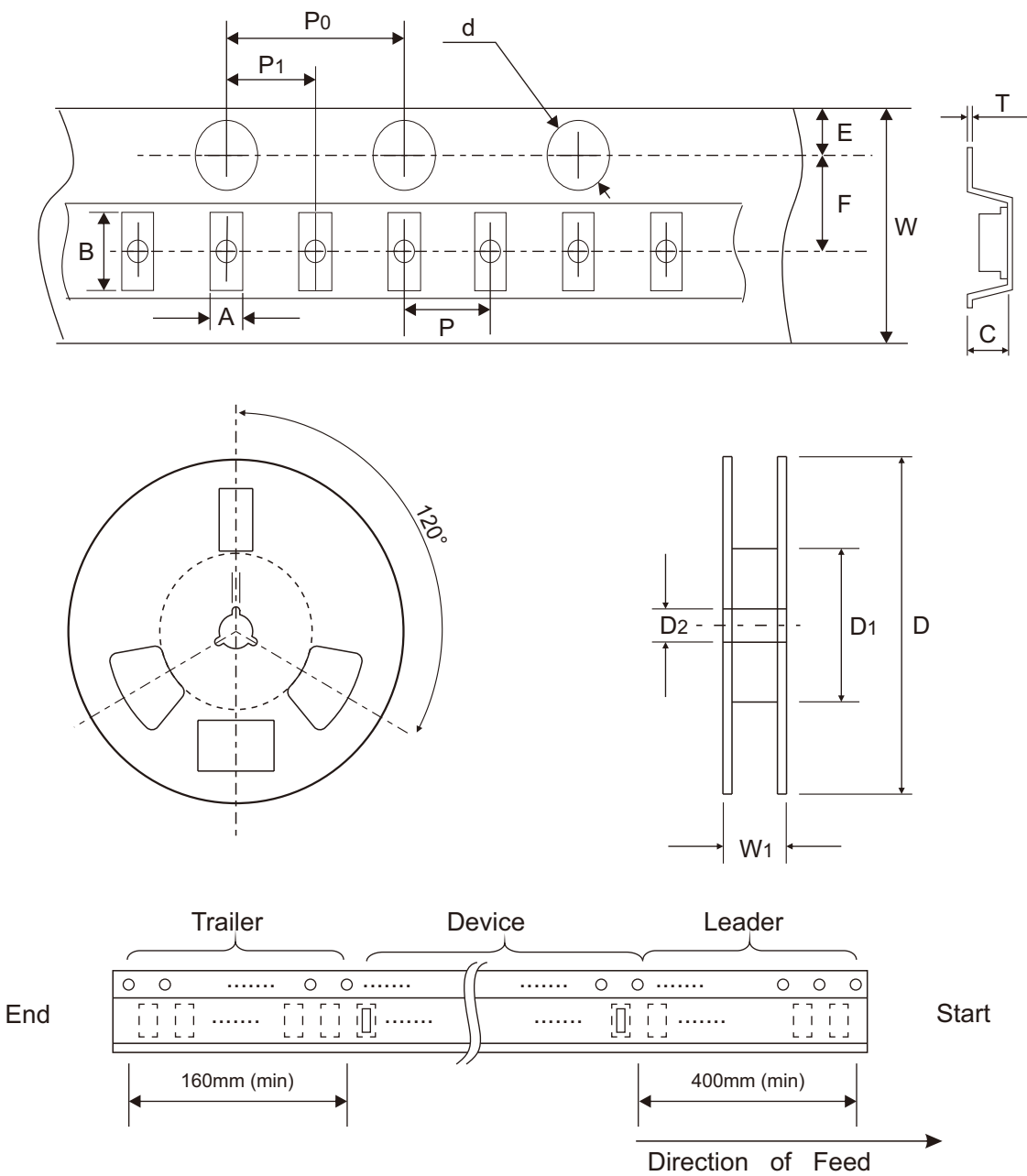


Fig.4 - Typical Capacitance Between  
Terminals Characteristics



Reel Taping Specification



| 0201<br>(DFN0603) | SYMBOL | A             | B             | C             | d                        | D             | D <sub>1</sub> | D <sub>2</sub> |
|-------------------|--------|---------------|---------------|---------------|--------------------------|---------------|----------------|----------------|
|                   | (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             | P <sub>0</sub> | P <sub>1</sub> | T             | W                        | W <sub>1</sub>           |
|-------------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|--------------------------|--------------------------|
|                   | (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 |

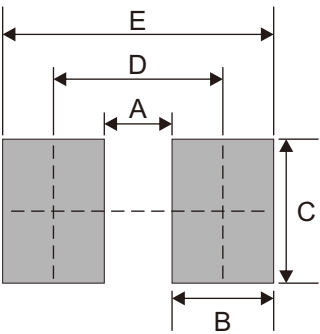
Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| CPDZC24V-HF | E24          |

E24

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<br>(pcs) | Reel Size<br>(inch) |
| 0201<br>(DFN0603) | 10,000        | 7                   |

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