

CPDZC12V0B-HF

RoHS Device
Halogen Free



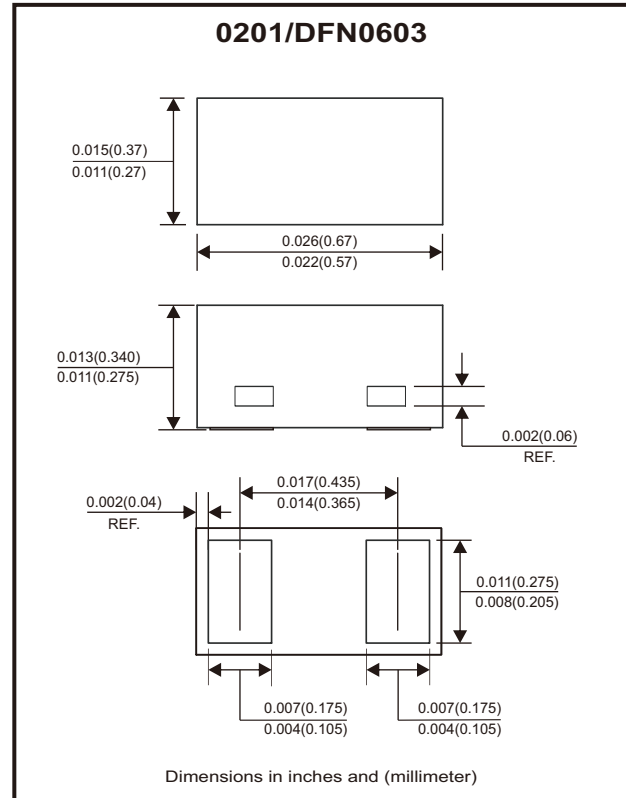
Features

- 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} | 112 | 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 | ± 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} | | | 12 | V |
| Breakdown voltage | $I_T = 1\text{mA}$ | V_{BR} | 12.2 | | | V |
| Reverse leakage current | $V_{RWM} = 12\text{V}$ | I_R | | | 0.1 | μA |
| Clamping voltage | $I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$ | V_C | | 18 | 20 | V |
| | $I_{PP} = 4\text{A}, T_P = 8/20\mu\text{s}$ | V_C | | 26 | 28 | |
| Junction capacitance | $V_R = 0\text{V}, f = 1\text{MHz}$ | C_J | | 3 | 6 | pF |

Rating and Characteristic Curves (CPDZC12V0B-HF)

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

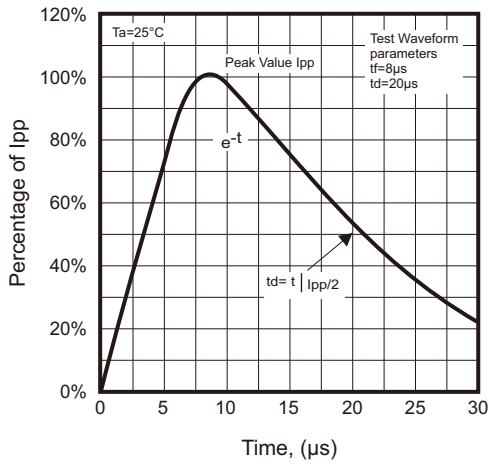


Fig.2 - Power Rating Derating Curve

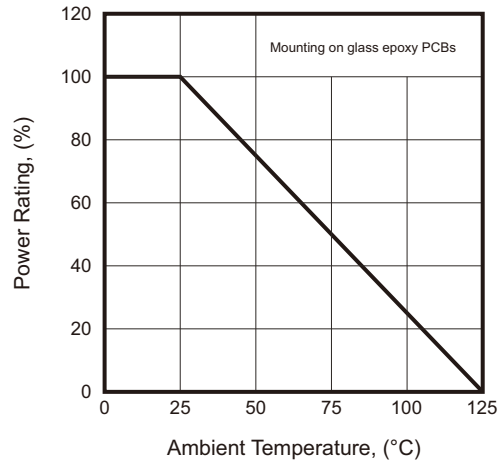


Fig.3 - Typical Clamping Voltage vs. Peak Pulse Current

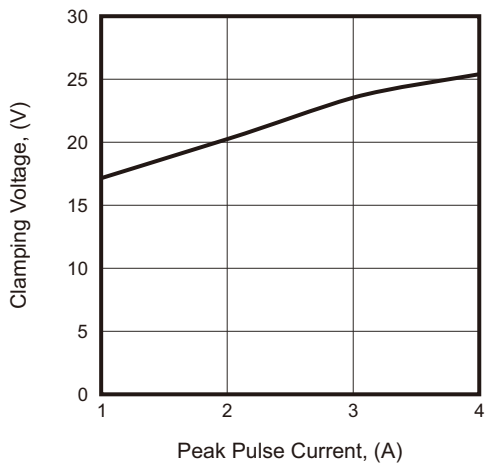
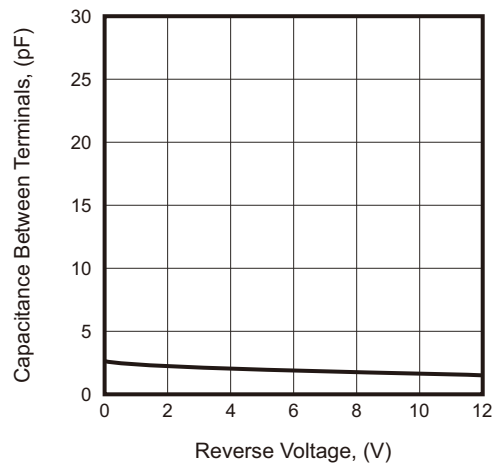
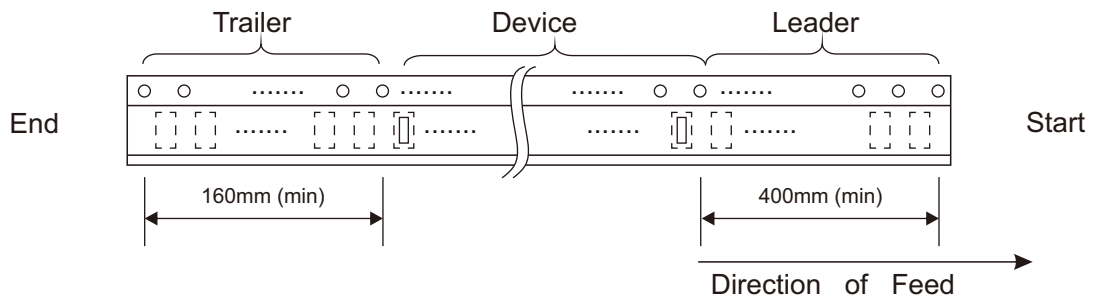
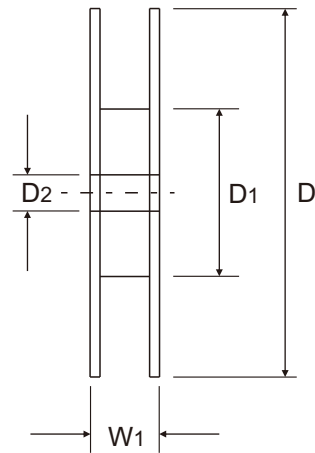
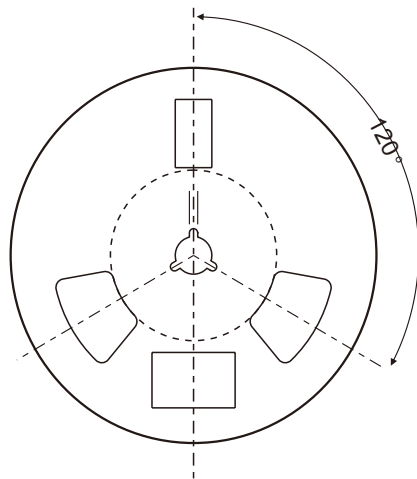
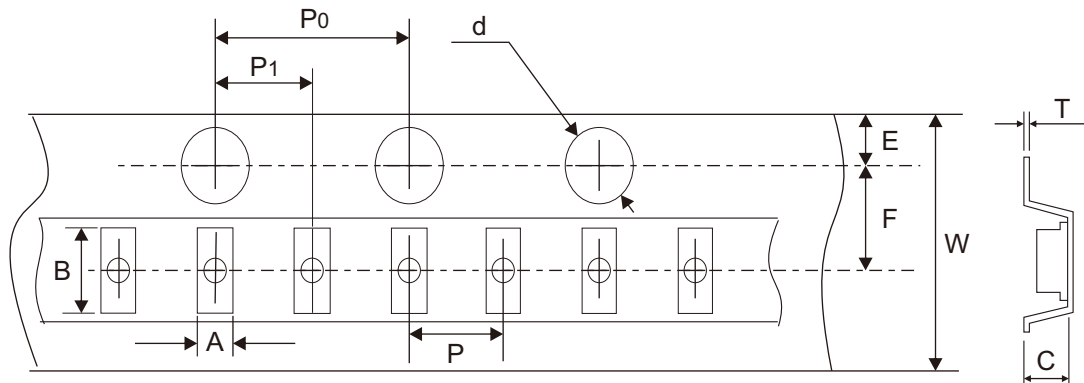


Fig.4 - Typical Capacitance Between Terminals Characteristics



Reel Taping Specification



| 0201 (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 - 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 - 0.000 | 7.008 ± 0.039 | 2.362 ± 0.020 | 0.531 ± 0.008 |

| 0201 (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 - 0.10 | 12.00 + 0.50 - 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 - 0.004 | 0.472 + 0.020 - 0.000 |

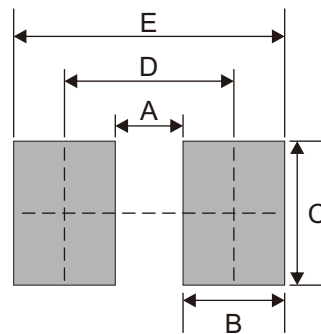
Marking Code

| | |
|---------------|--------------|
| Part Number | Marking Code |
| CPDZC12V0B-HF | E2B |

E2B

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 |