

CPDQ24VM-HF

RoHS Device

Halogen Free



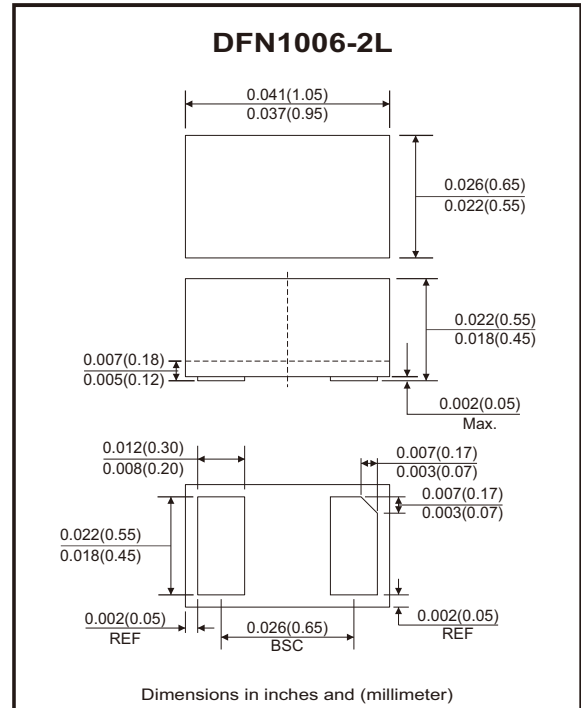
Features

- ESD protection for one line with Bi-directional.
- Protect one I/O line or power line.
- Fast turn-on and low clamping voltage.
- IEC 61000-4-2 (ESD) ± 30 kV (air/contact)
- IEC 61000-4-4 (EFT) 80A (5/50ns)
- IEC 61000-4-5 (Lightning) 7A (8/20 μ s)

Mechanical data

- Case: DFN1006-2L package, molded plastic.
- 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} | 294 | W |
| Peak pulse current | $T_P = 8/20\mu s$ | I_{PP} | 7 | A |
| ESD capability | IEC 61000-4-2(air) IEC 61000-4-2(contact) | ESD | ± 30 | kV |
| Operating temperature range | | T_J | -55 to +125 | °C |
| Storage temperature range | | T_{STG} | -55 to +150 | °C |

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

| Parameter | Conditions | Symbol | Min | Typ | Max | Unit |
|------------------------------|--------------------------------|-----------|------|------|-----|---------|
| Working peak reverse voltage | | V_{RWM} | | | 24 | V |
| Forward voltage | $I_F = 15mA$ | V_F | 0.6 | | 1.2 | V |
| Reverse leakage current | $V_{RWM} = 24V$ | I_R | | | 0.5 | μA |
| Breakdown voltage | $I_T = 1mA$ | V_{BR} | 25.5 | | 31 | V |
| Clamping voltage | $I_{PP} = 5A, T_P = 8/20\mu s$ | V_C | | 34 | | V |
| | $I_{PP} = 7A, T_P = 8/20\mu s$ | V_C | | 39 | 42 | |
| Clamping voltage | $TLP = 16A, T_P = 100ns$ | V_C | | 32.5 | | V |
| Junction capacitance | $V_R = 0V, f = 1MHz$ | C_J | | 27 | | pF |

Typical Rating and Characteristic Curves (CPDQ24VM-HF)

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

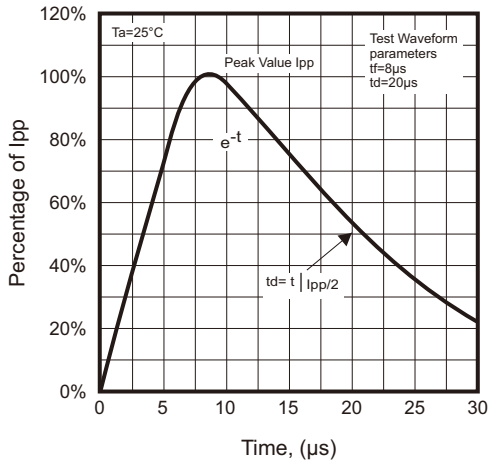


Fig.2 - Power Rating Derating Curve

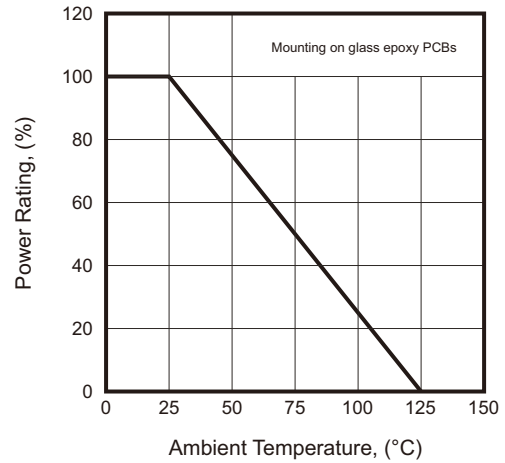


Fig.3 - Typical Clamping Voltage vs. Peak Pulse Current

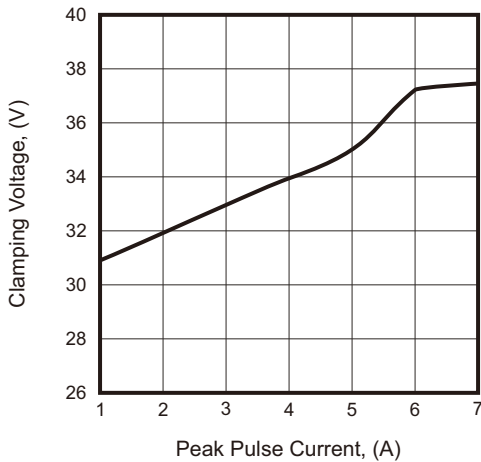


Fig.4 - Typical Capacitance Between Terminals Characteristics

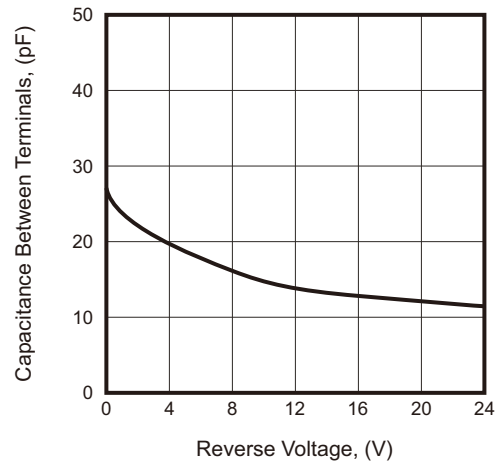


Fig.5 - TLP- Positive Pulse

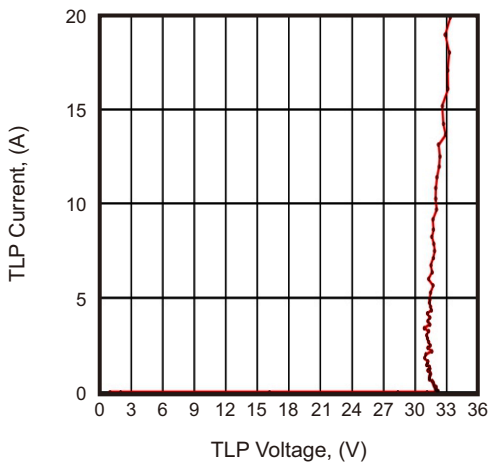
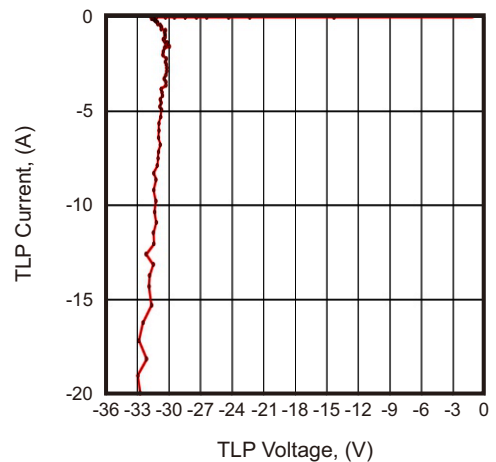
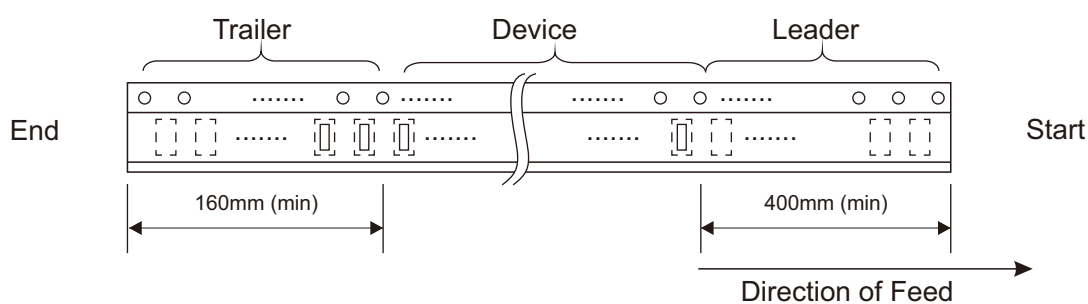
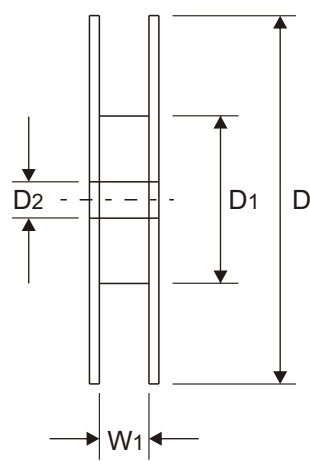
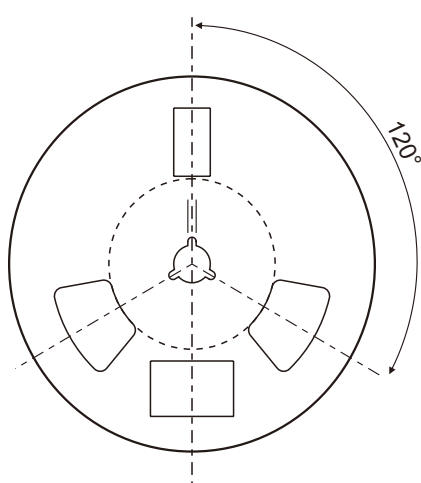
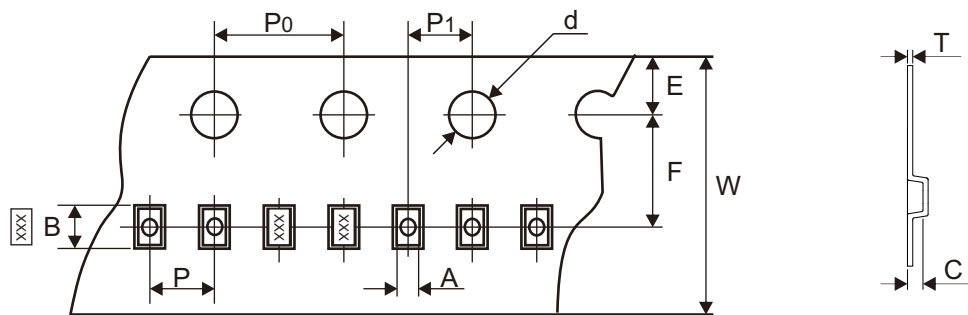


Fig.6 - TLP- Negative Pulse



Reel Taping Specification



| DFN1006 -2L | SYMBOL | A | B | C | d | D | D1 | D2 |
|----------------|--------|--------------------------|--------------------------|--------------------------|---------------|------------|---------------|--------------------------|
| | (mm) | 0.68 + 0.07 - 0.04 | 1.19 + 0.05 - 0.12 | 0.48 + 0.10 - 0.05 | 1.55 ± 0.05 | 181.00 Max | 55.00 ± 5.00 | 13.00 + 0.50 - 0.20 |
| | (inch) | 0.027 + 0.003 - 0.002 | 0.047 + 0.002 - 0.005 | 0.019 + 0.004 - 0.002 | 0.061 ± 0.002 | 7.126 Max | 2.165 ± 0.197 | 0.512 + 0.020 - 0.008 |

| DFN1006 -2L | SYMBOL | E | F | P | P0 | P1 | T | W | W1 |
|----------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|-----------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 2.00 ± 0.10 | 4.00 ± 0.10 | 2.00 ± 0.05 | 0.21 ± 0.04 | 8.00 + 0.30 - 0.10 | 11.60 Max |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.079 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.002 | 0.315 + 0.012 - 0.004 | 0.457 Max |

Marking Code

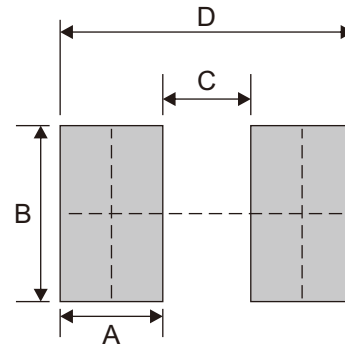
| Part Number | Marking Code |
|-------------|--------------|
| CPDQ24VM-HF | BW |



X = Control code

Suggested P.C.B. PAD Layout

| SIZE | DFN1006-2L | |
|------|------------|--------|
| | (mm) | (inch) |
| A | 0.35 | 0.014 |
| B | 0.60 | 0.024 |
| C | 0.30 | 0.012 |
| D | 1.00 | 0.039 |



Standard Packaging

| Case Type | REEL PACK | |
|------------|--------------|------------------|
| | REEL (pcs) | Reel Size (inch) |
| DFN1006-2L | 10,000 | 7 |