

# CPDQ03T3V3SBPU-HF

RoHS Device  
Halogen Free



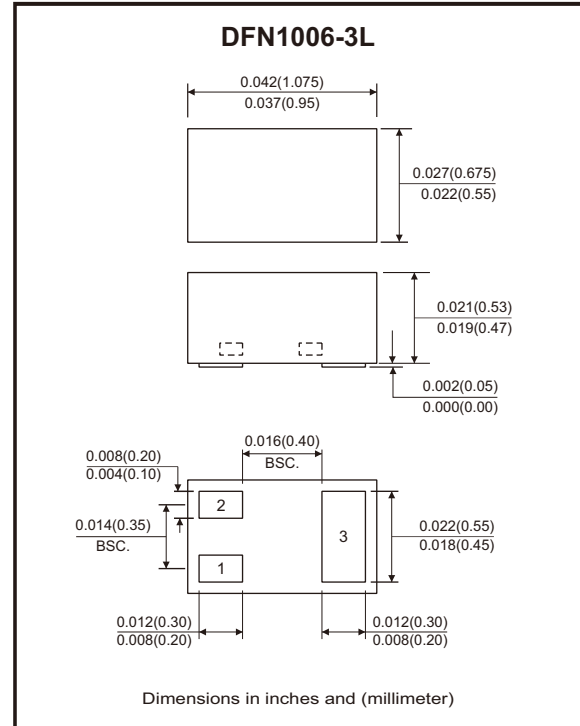
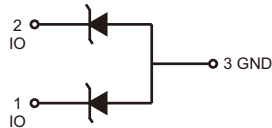
## Features

- IEC 61000-4-2 (ESD)  $\pm 30\text{kV}$  (air/contact).
- Protecting 2 Uni-directional lines.
- Low clamping voltage.
- Low leakage current.

## Mechanical data

- Case: DFN1006-3L package, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- 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        | $T_P = 8/20\mu\text{s}$                      | $I_{PP}$  | 12          | A                |
| ESD capability            | IEC 61000-4-2(air)<br>IEC 61000-4-2(contact) | ESD       | $\pm 30$    | kV               |
| Lead temperature          |                                              | $T_L$     | 260         | $^\circ\text{C}$ |
| Junction temperature      |                                              | $T_J$     | 150         | $^\circ\text{C}$ |
| 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     |
|---------------------------|------------------------------------------------------|-----------|-----|------|------|----------|
| Reverse stand-off voltage |                                                      | $V_{RWM}$ |     |      | 3.3  | V        |
| Breakdown voltage         | $I_T = 1\text{mA}$                                   | $V_{BR}$  | 5.5 | 7.1  |      | V        |
| Reverse leakage current   | $V_{RWM} = 3.3\text{V}$                              | $I_R$     |     | 1    | 100  | nA       |
| Clamping voltage          | $I_{PP} = 1\text{A}$ , $T_P = 8/20\mu\text{s}$       | $V_C$     |     | 1.5  | 2.5  | V        |
|                           | $I_{PP} = 12\text{A}$ , $T_P = 8/20\mu\text{s}$      | $V_C$     |     | 3.6  | 5    | V        |
| Dynamic resistance        | $I_R = 10\text{A}$ , $T_{amb} = 25^\circ\text{C}$    | $R_{DYN}$ |     | 0.15 |      | $\Omega$ |
| Junction capacitance      | $V_R = 0\text{V}$ , $f = 1\text{MHz}$ , IO to GND    | $C_J$     |     | 0.66 |      | pF       |
|                           | $V_R = 1.65\text{V}$ , $f = 1\text{MHz}$ , IO to GND | $C_J$     |     | 0.51 | 0.60 | pF       |
|                           | $V_R = 1.65\text{V}$ , $f = 1\text{MHz}$ , IO to IO  | $C_J$     |     | 0.25 | 0.35 | pF       |

## Typical Rating and Characteristic Curves (CPDQ03T3V3SBPU-HF)

Fig.1 - Breaking Voltage Curve

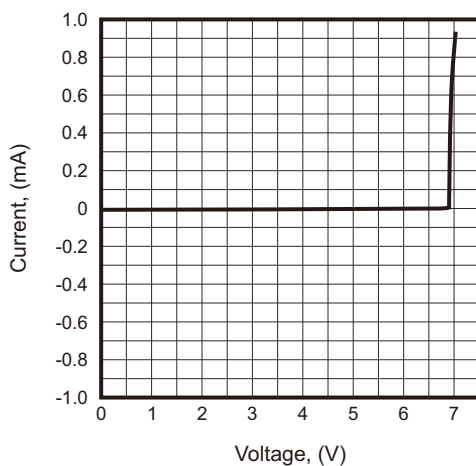


Fig.2 - Reverse Leakage Current Curve

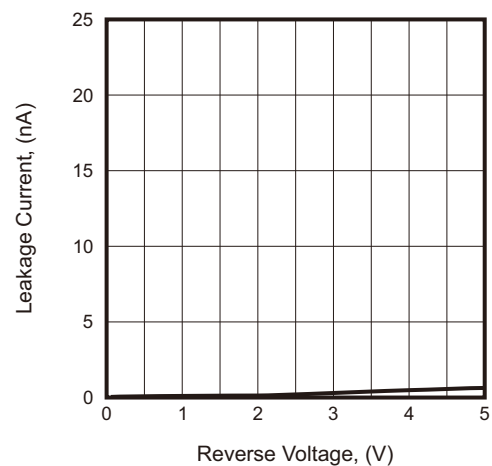


Fig.3 - Junction Capacitance Curve

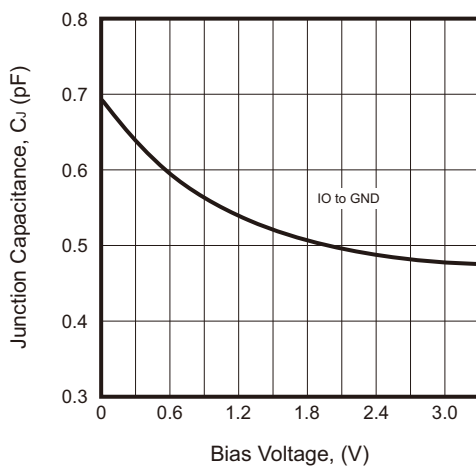
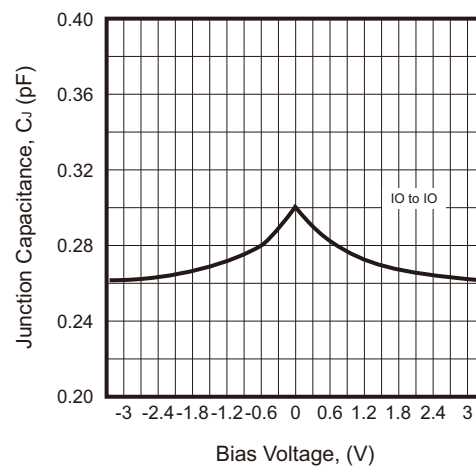


Fig.4 - Junction Capacitance Curve



Typical Rating and Characteristic Curves (CPDQ03T3V3SBPU-HF)

Fig.5 - 8/20μs Surge Current Curve

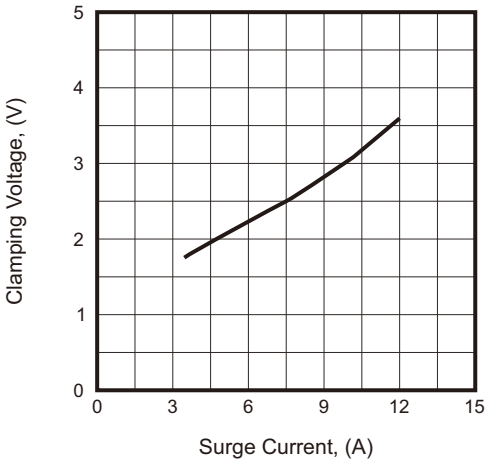


Fig.6 - I—V Curve

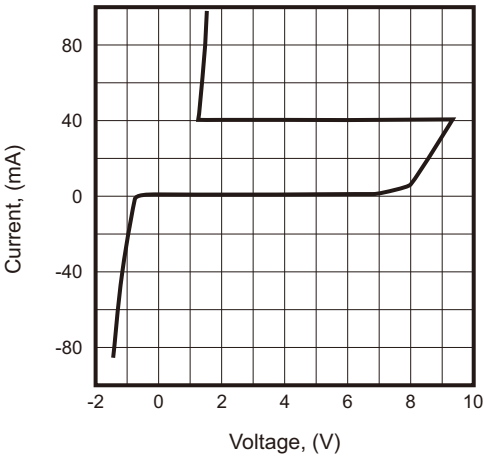


Fig.7 - 8/20μs Pulse Waveform According to IEC 61000-4-5

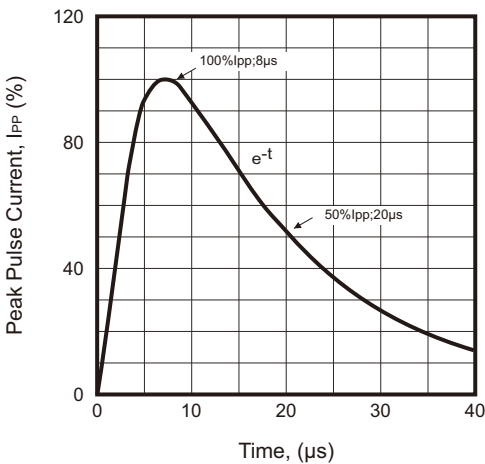
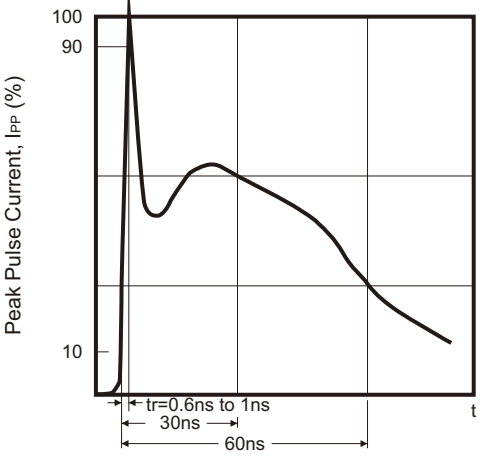
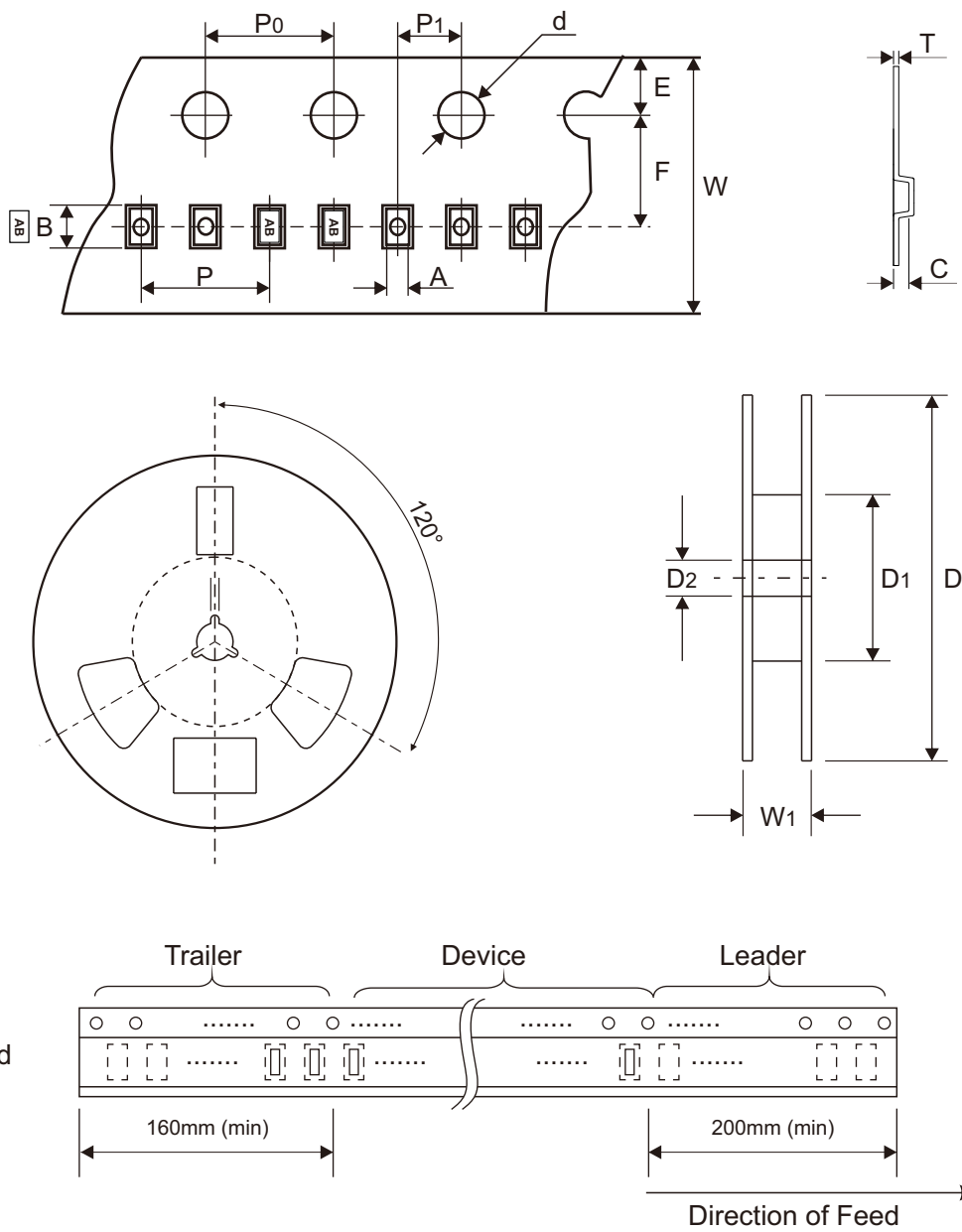


Fig.8 - ESD Pulse Waveform According to IEC 61000-4-2



Reel Taping Specification



| DFN1006<br>-3L | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|----------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                | (mm)   | 0.68 ± 0.05   | 1.14 ± 0.05   | 0.58 ± 0.05   | 1.55 ± 0.05   | 178.00 ± 1.00 | 54.40 ± 0.40  | 13.00 ± 0.20  |
|                | (inch) | 0.027 ± 0.002 | 0.045 ± 0.002 | 0.023 ± 0.002 | 0.061 ± 0.002 | 7.008 ± 0.039 | 2.142 ± 0.016 | 0.512 ± 0.008 |

| DFN1006<br>-3L | SYMBOL | E             | F             | P             | P0            | P1            | T             | W             | W1            |
|----------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.20 ± 0.05   | 8.00 ± 0.20   | 12.30 ± 0.20  |
|                | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.002 | 0.315 ± 0.008 | 0.484 ± 0.008 |

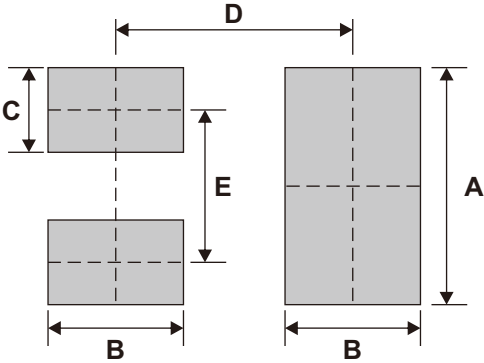
Marking Code

| Part Number       | Marking Code |
|-------------------|--------------|
| CPDQ03T3V3SBPU-HF | AB           |



Suggested P.C.B. PAD Layout

| SIZE | DFN1006-3L |        |
|------|------------|--------|
|      | (mm)       | (inch) |
| A    | 0.70       | 0.028  |
| B    | 0.40       | 0.016  |
| C    | 0.25       | 0.010  |
| D    | 0.70       | 0.028  |
| E    | 0.45       | 0.018  |



Standard Packaging

| Case Type  | REEL PACK       |                     |
|------------|-----------------|---------------------|
|            | REEL<br>( pcs ) | Reel Size<br>(inch) |
| DFN1006-3L | 10,000          | 7                   |