

# CPDUT4V5MUHT-HF

RoHS Device

Halogen Free



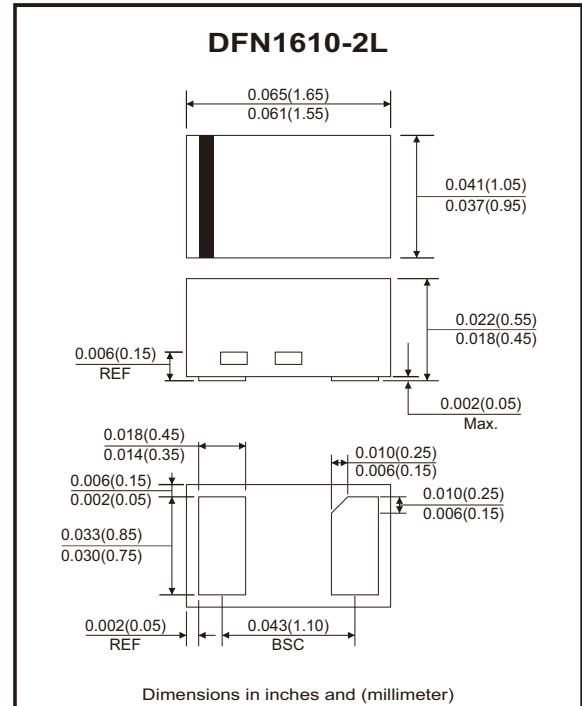
## Features

- ESD/Surge protection for 1 line with Unidirectional.
- High surge protection.
- Fast turn-on and low clamping voltage.
- IEC 61000-4-2 (ESD)  $\pm 30\text{kV}$  (air/contact)
- IEC 61000-4-4 (EFT) 80A (5/50ns)
- IEC 61000-4-5 (Lightning) 200A (8/20 $\mu\text{s}$ )

## Mechanical data

- Case: DFN1610-2L package, molded plastic.
- Polarity: Indicated by cathode band.
- 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            | $T_P = 8/20\mu\text{s}$                      | $P_{PP}$  | 3000        | W                |
| Peak pulse current          | $T_P = 8/20\mu\text{s}$                      | $I_{PP}$  | 200         | 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 |                                                  | $V_{RWM}$ |     |     | 4.5 | V    |
| Forward voltage              | $I_F = 15\text{mA}$                              | $V_F$     |     | 0.8 | 1   | V    |
| Reverse leakage current      | $V_{RWM} = 4.5\text{V}$                          | $I_R$     |     |     | 100 | nA   |
| Breakdown voltage            | $I_T = 1\text{mA}$                               | $V_{BR}$  | 5   |     | 7   | V    |
| Clamping voltage             | $I_{PP} = 160\text{A}$ , $T_P = 8/20\mu\text{s}$ | $V_C$     |     | 11  |     | V    |
|                              | $I_{PP} = 200\text{A}$ , $T_P = 8/20\mu\text{s}$ | $V_C$     |     | 12  | 15  |      |
| Clamping voltage             | $TLP = 16\text{A}$ , $T_P = 0.2/100\text{ns}$    | $V_C$     |     | 5.7 |     | V    |
| Junction capacitance         | $V_R = 0\text{V}$ , $f = 1\text{MHz}$            | $C_J$     |     | 573 |     | pF   |

Typical Rating and Characteristic Curves (CPDUT4V5MUHT-HF)

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

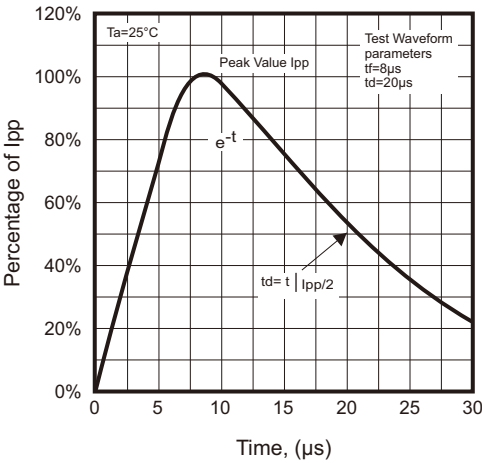


Fig.2 - Power Rating Derating Curve

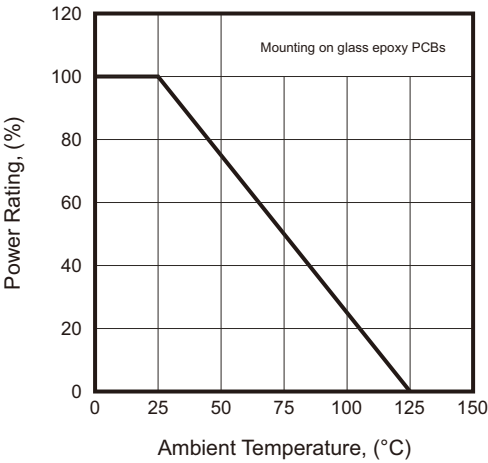


Fig.3 - Typical Clamping Voltage vs. Peak Pulse Current

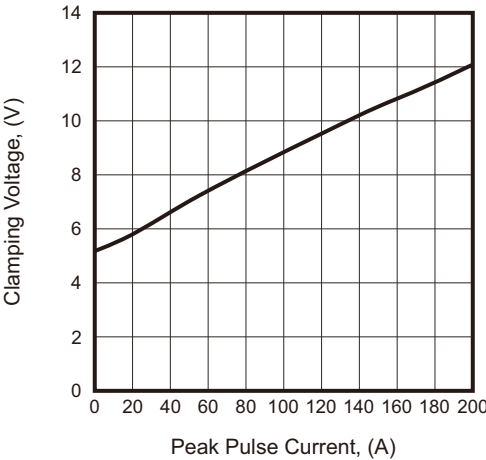


Fig.4 - Typical Capacitance Between Terminals Characteristics

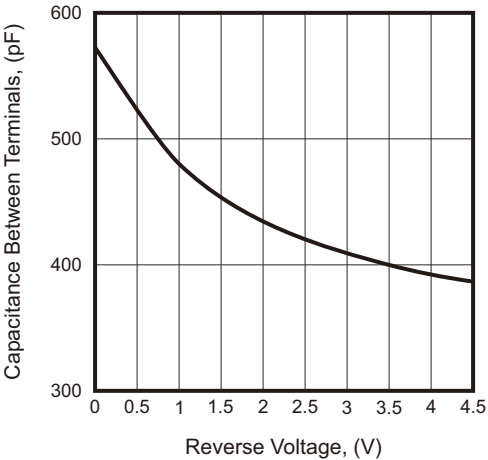
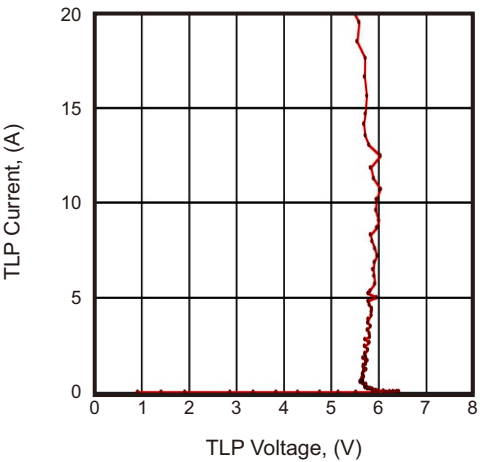
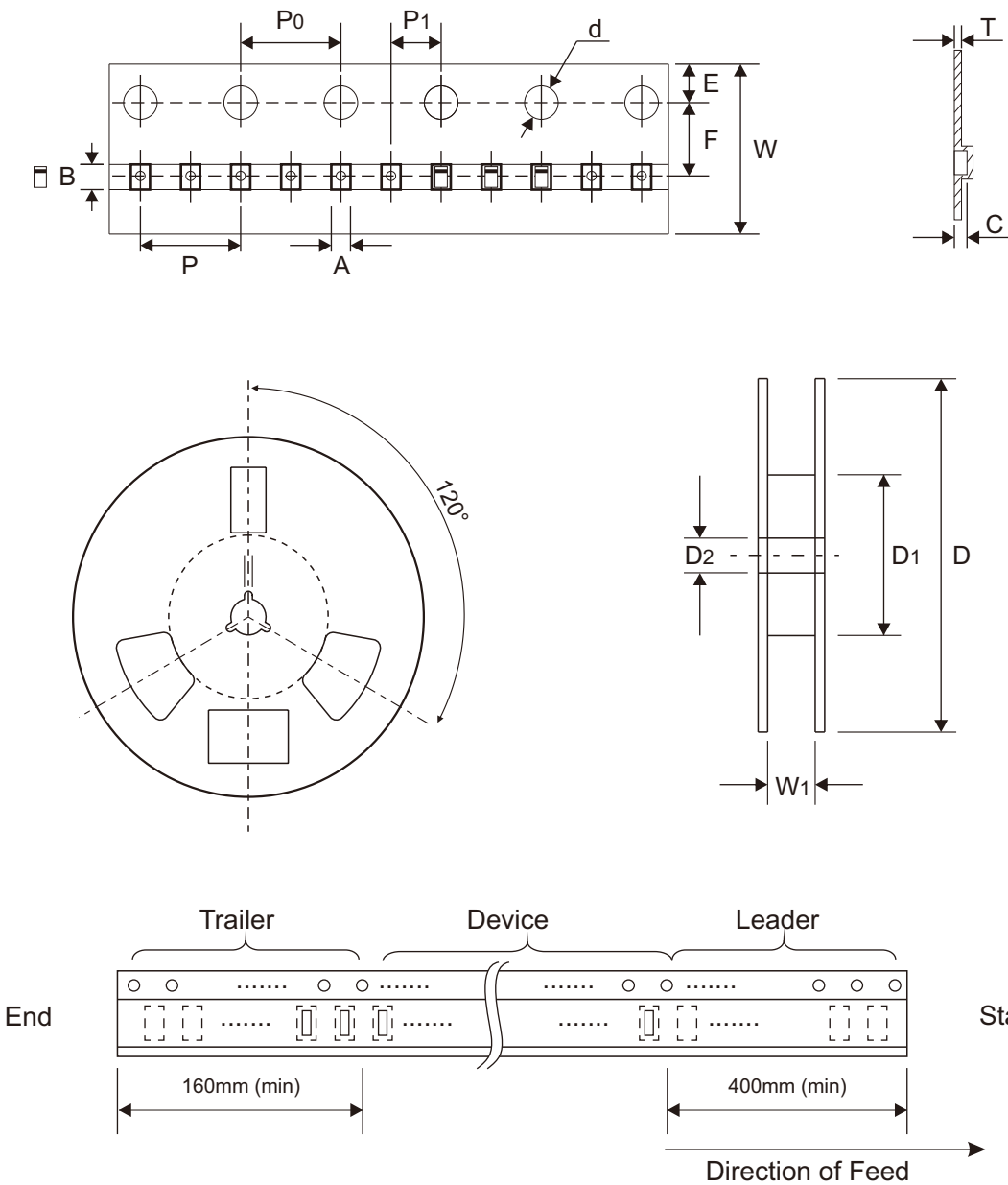


Fig.5 - TLP- Positive Pulse



Reel Taping Specification



| DFN1610-2L | SYMBOL | A             | B             | C                        | d                        | D          | D1            | D2                       |
|------------|--------|---------------|---------------|--------------------------|--------------------------|------------|---------------|--------------------------|
|            | (mm)   | 1.20 ± 0.15   | 1.84 ± 0.11   | 0.80 + 0.15<br>- 0.22    | 1.50 + 0.15<br>- 0.10    | 181.00 Max | 55.00 ± 5.00  | 13.00 + 0.50<br>- 0.20   |
|            | (inch) | 0.047 ± 0.006 | 0.072 ± 0.004 | 0.031 + 0.006<br>- 0.009 | 0.059 + 0.006<br>- 0.004 | 7.126 Max  | 2.165 ± 0.197 | 0.512 + 0.020<br>- 0.008 |

| DFN1610-2L | SYMBOL | E             | F             | P             | P0            | P1            | T             | W                        | W1        |
|------------|--------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------------|-----------|
|            | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.05   | 0.215 ± 0.065 | 8.00 + 0.30<br>- 0.20    | 11.60 Max |
|            | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.008 ± 0.003 | 0.315 + 0.012<br>- 0.008 | 0.457 Max |

Marking Code

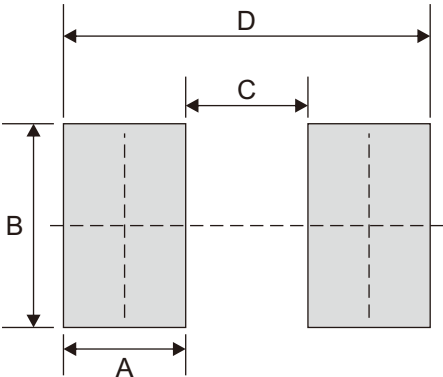
| Park Number     | Marking Code |
|-----------------|--------------|
| CPDUT4V5MUHT-HF | ML           |



X = Control code

Suggested P.C.B. PAD Layout

| SIZE | DFN1610-2L |        |
|------|------------|--------|
|      | (mm)       | (inch) |
| A    | 0.60       | 0.024  |
| B    | 1.00       | 0.039  |
| C    | 0.60       | 0.024  |
| D    | 1.80       | 0.071  |



Standard Packaging

| Case Type  | REEL PACK  |                  |
|------------|------------|------------------|
|            | REEL (pcs) | Reel Size (inch) |
| DFN1610-2L | 3,000      | 7                |