

## Features

- \* Ultra small package: 1.6x1.0x0.5mm
- \* Protects one data or power line
- \* Ultra low leakage: nA level
- \* Low clamping voltage
- \* 2-pin leadless package
- \* Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
- \* Air discharge:  $\pm 30\text{kV}$
- \* Contact discharge:  $\pm 30\text{kV}$ 
  - IEC61000-4-4 (EFT) 120A (5/50ns)
  - IEC61000-4-5 (Lightning) 120A (8/20 $\mu\text{s}$ )

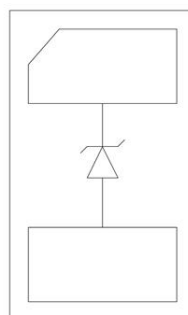
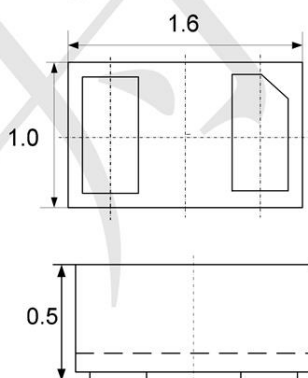
## Mechanical Characteristics

- \* Package: DFN1610-2
- \* Ultra low leakage: nA level
- \* Case Material: "Green" Molding Compound.
- \* UL Flammability Classification Rating 94V-0
- \* Moisture Sensitivity: Level 3 per J-STD-020
- \* Shipping Qty :3000/7Inch Tape & Reel

## Applications

- \* Power Management
- \* Industrial Application
- \* Power Supply Protection
- \* Many other portable devices

## Dimensions and Pin Configuration



**Marking: 7P**

**Absolute Maximum Ratings** (Tamb=25°C unless otherwise specified)

| Parameter                       | Symbol | Value       | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk    | 2000        | W    |
| Peak Pulse Current (8/20μs)     | Ipp    | 120         | A    |
| ESD per IEC 61000-4-2 (Air)     | VESD   | ±30         | kV   |
| ESD per IEC 61000-4-2 (Contact) |        | ±30         |      |
| Operating Temperature Range     | TJ     | -55 to +125 | °C   |
| Storage Temperature Range       | Tstg   | -55 to +150 | °C   |

**Electrical Characteristics** (TA=25°C unless otherwise specified)

| Parameter               | Symbol | Min | Typ | Max | Unit | Test Condition          |
|-------------------------|--------|-----|-----|-----|------|-------------------------|
| Reverse Working Voltage | VRWM   |     |     | 7   | V    |                         |
| Breakdown Voltage       | VBR    |     | 8   |     | V    | IT = 1mA                |
| Reverse Leakage Current | IR     |     |     | 1   | uA   | VRWM = 7V               |
| Clamping Voltage        | VC     |     | 10  |     | V    | Ipp=50A(8x 20us pulse)  |
| Clamping Voltage        | VC     |     | 15  | 18  | V    | Ipp=120A(8x 20us pulse) |
| Junction Capacitance    | CJ     |     |     | 900 | pF   | VR = 0V, f = 1MHz       |

**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**

Fig1. 8/20 $\mu\text{s}$  Pulse Waveform

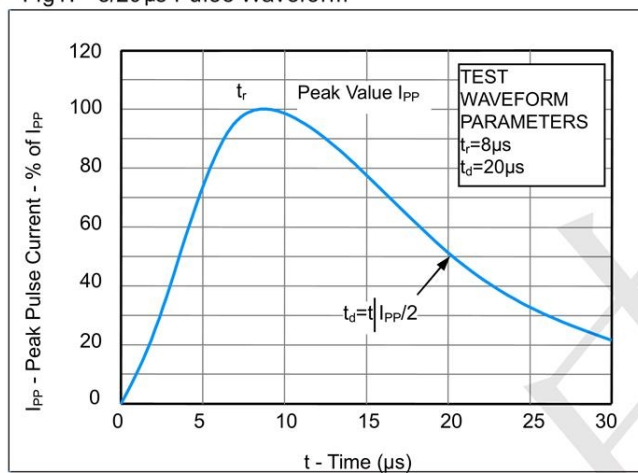


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

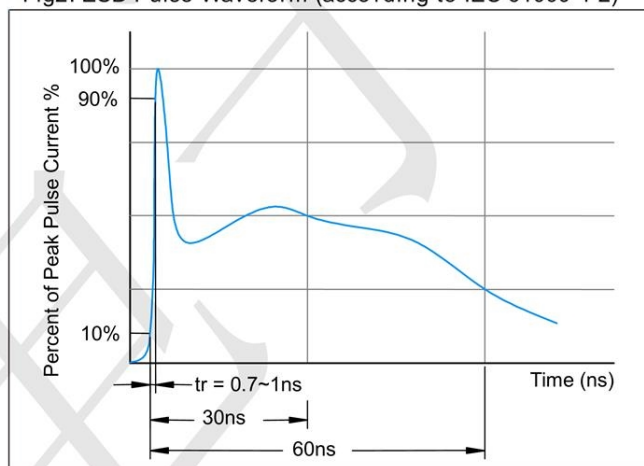
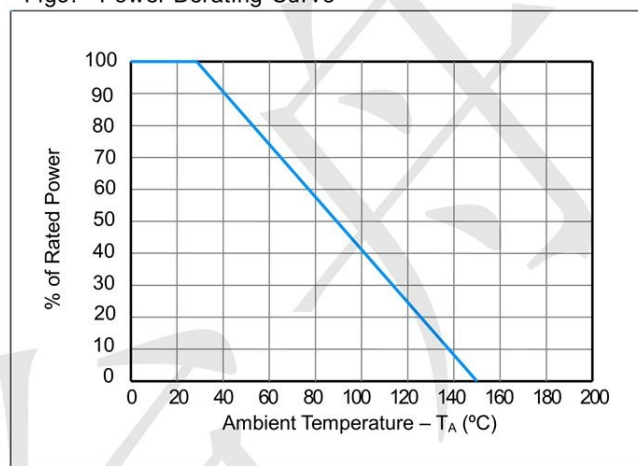
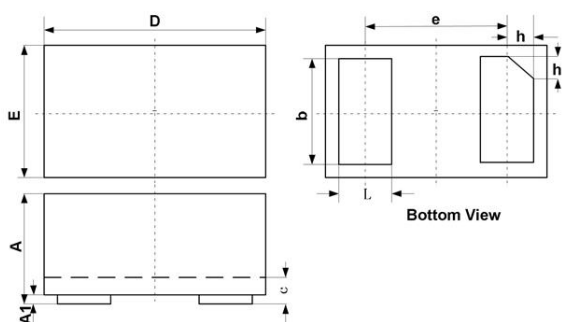


Fig3. Power Derating Curve

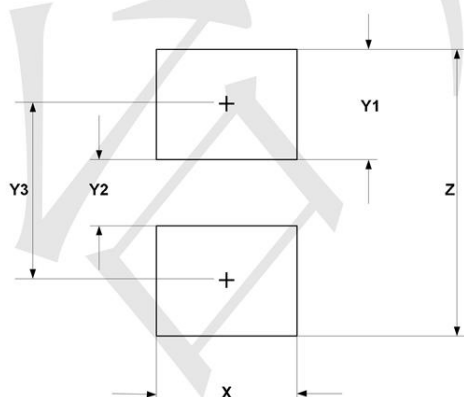


### DFN1610-2 Package Outline Drawing



| SYM | DIMENSIONS  |      |      |           |       |       |
|-----|-------------|------|------|-----------|-------|-------|
|     | MILLIMETERS |      |      | INCHES    |       |       |
|     | MIN         | NOM  | MAX  | MIN       | NOM   | MAX   |
| A   | 0.45        | 0.50 | 0.55 | 0.018     | 0.020 | 0.022 |
| A1  | 0.00        | 0.02 | 0.05 | 0.000     | 0.001 | 0.002 |
| b   | 0.75        | 0.80 | 0.85 | 0.030     | 0.032 | 0.034 |
| c   | 0.10        | 0.15 | 0.20 | 0.004     | 0.006 | 0.008 |
| D   | 1.55        | 1.60 | 1.65 | 0.062     | 0.064 | 0.066 |
| e   | 1.10 BSC    |      |      | 0.044 BSC |       |       |
| E   | 0.95        | 1.00 | 1.05 | 0.038     | 0.040 | 0.042 |
| L   | 0.35        | 0.40 | 0.45 | 0.014     | 0.016 | 0.018 |
| h   | 0.15        | 0.20 | 0.25 | 0.006     | 0.008 | 0.010 |

### Suggested Land Pattern



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| X   | 1.00        | 0.040  |
| Y1  | 0.62        | 0.025  |
| Y2  | 0.60        | 0.024  |
| Y3  | 1.22        | 0.049  |
| Z   | 1.85        | 0.074  |