

## Features

- Ultra small package: 1.0x0.6x0.5mm
- Ultra low capacitance: 0.3pF typical (I/O-I/O)
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 3-pin leadless package
- Up to 2-line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 25\text{kV}$   
Contact discharge:  $\pm 20\text{kV}$
  - IEC61000-4-5 (Lightning) 4A (8/20 $\mu\text{s}$ )
  - IEC61000-4-4 (EFT) 40A (5/50ns)
- RoHS Compliant

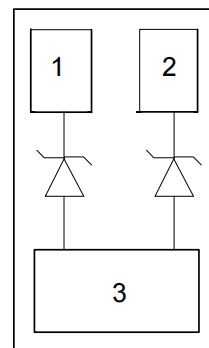
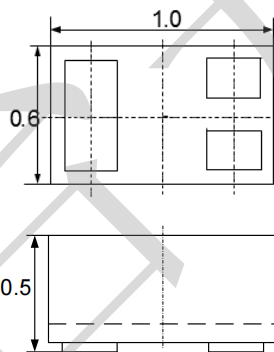
## Mechanical Characteristics

- Package: DFN1006-3 (1.0×0.6×0.5mm)
- Lead Finish: NiPdAu
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty : 10000pcs/7Inch Tape & Reel

## Applications

- Cellular Handsets & Accessories
- Digital Visual Interface (DVI)
- Display Port
- MDDI Ports
- USB Ports
- PCI Express
- Serial ATA

## Dimensions and Pin Configuration



**Absolute Maximum Ratings** (T<sub>amb</sub>=25°C unless otherwise specified)

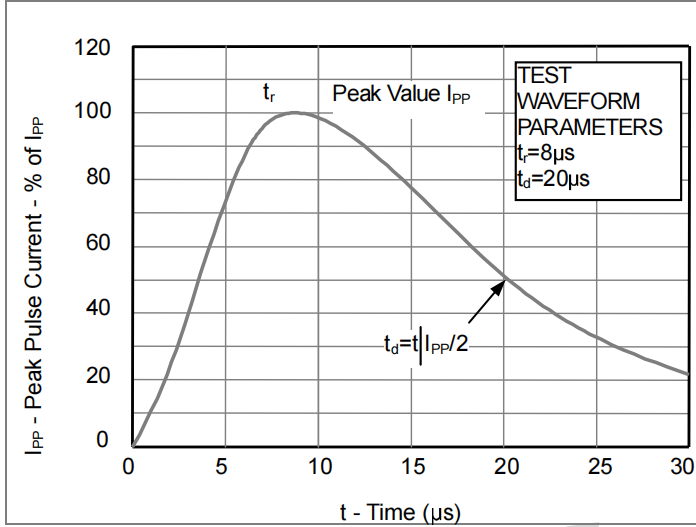
| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk              | 80          | W    |
| Peak Pulse Current (8/20μs)     | I <sub>PP</sub>  | 4           | A    |
| ESD per IEC 61000-4-2 (Air)     | V <sub>ESD</sub> | ±25         | kV   |
| ESD per IEC 61000-4-2 (Contact) |                  | ±20         |      |
| Operating Temperature Range     | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range       | T <sub>stg</sub> | -55 to +150 | °C   |

**Electrical Characteristics** (T<sub>A</sub>=25°C unless otherwise specified)

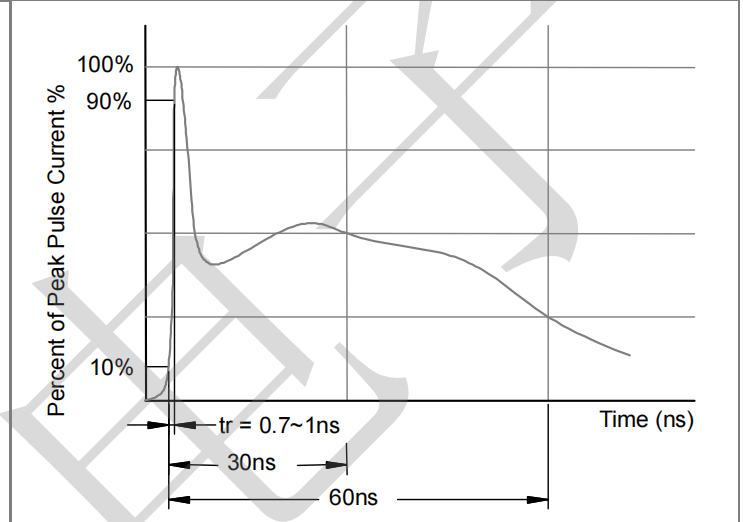
| Parameter               | Symbol           | Min | Typ | Max  | Unit | Test Condition                                                             |
|-------------------------|------------------|-----|-----|------|------|----------------------------------------------------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 5    | V    | Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2                        |
| Breakdown Voltage       | V <sub>BR</sub>  | 6.5 |     |      | V    | I <sub>T</sub> = 1mA, pin 1 or pin 2 to pin 3 and between pin 1 and pin 2  |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.08 | uA   | V <sub>RWM</sub> = 5V, Pin 1 or pin 2 to pin 3 and between pin 1 and pin 2 |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 12   | V    | I <sub>PP</sub> = 1A (8 x 20μs pulse), pin 1 or pin 2 to pin 3             |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 15   | V    | I <sub>PP</sub> = 4A (8 x 20us pulse), pin 1 or pin 2 to pin 3             |
| Junction Capacitance    | C <sub>J</sub>   |     | 0.3 |      | pF   | V <sub>R</sub> = 0V, f = 1MHz, between pin 1 and pin 2                     |
| Junction Capacitance    | C <sub>J</sub>   |     |     | 0.6  | pF   | V <sub>R</sub> = 0V, f = 1MHz, pin 1 or pin 2 to pin 3                     |

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

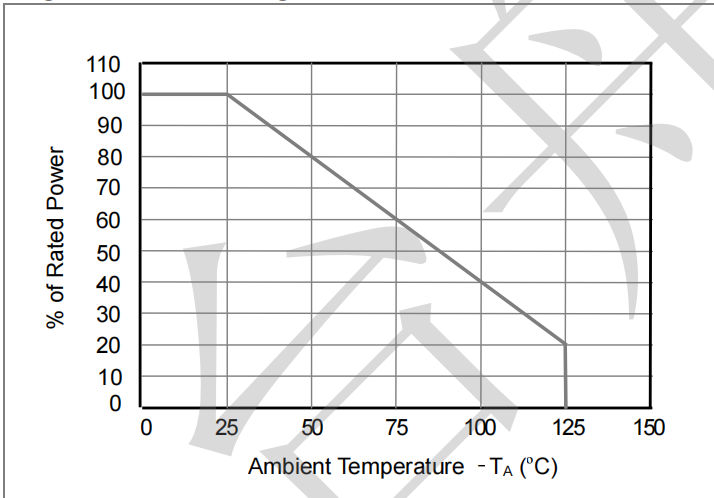
**Fig1. 8/20 $\mu\text{s}$  Pulse Waveform**



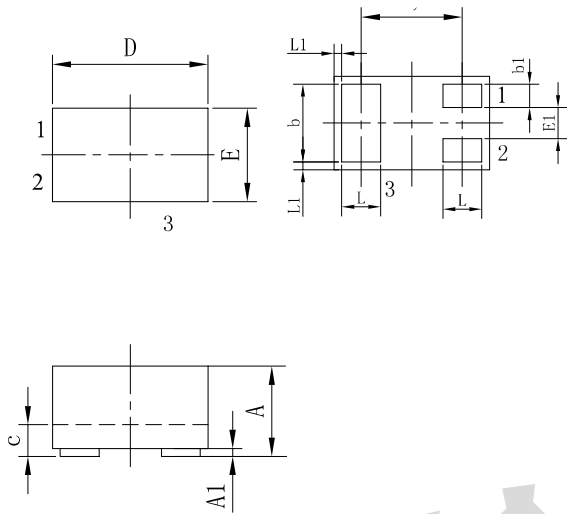
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



**Fig3. Power Derating Curve**

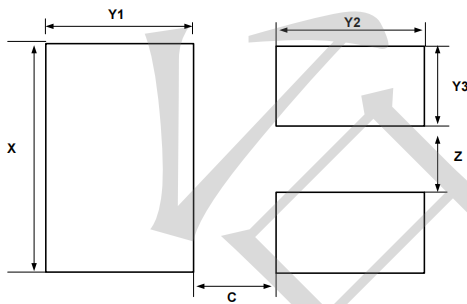


## Outline Drawing - DFN1006-3



| 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   | 0.45        | 0.50 | 0.55 | 0.018      | 0.020 | 0.022 |
| b1  | 0.10        | 0.15 | 0.20 | 0.004      | 0.006 | 0.008 |
| c   | 0.12        | 0.15 | 0.18 | 0.005      | 0.006 | 0.007 |
| D   | 0.95        | 1.00 | 1.05 | 0.037      | 0.039 | 0.041 |
| e   | 0.65 BSC    |      |      | 0.026 BSC  |       |       |
| E   | 0.55        | 0.60 | 0.65 | 0.022      | 0.024 | 0.026 |
| E1  | 0.15        | 0.20 | 0.25 | 0.006      | 0.008 | 0.010 |
| L   | 0.20        | 0.25 | 0.30 | 0.008      | 0.010 | 0.012 |
| L1  | 0.05 REF    |      |      | 0.0002 REF |       |       |

## Land Pattern -DFN1006-3



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| C   | 0.25        | 0.010  |
| X   | 0.65        | 0.024  |
| Y1  | 0.50        | 0.020  |
| Y2  | 0.50        | 0.020  |
| Y3  | 0.25        | 0.010  |
| Z   | 0.20        | 0.008  |