

## Features

- Low operating voltage:  $\pm 18V$
- Ultra low capacitance: 0.3pF typical
- Ultra low leakage: nA level
- Low operating voltage:
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
- – IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 20kV$   
Contact discharge:  $\pm 15kV$
- – IEC61000-4-5 (Lightning) 2A (8/20  $\mu s$ )
- RoHS Compliant
- Lead Finish: NiPdAu

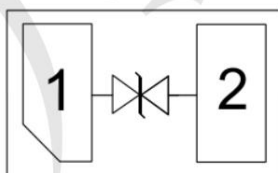
## Mechanical Characteristics

- Package: DFN0603-2 (0201)
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Shipping Qty :15000pcs Tape & Reel

## Applications

- VGA, DVI, SDI, USB1.0, USB2.0, USB3.0, USB3.1
- High Definition Multi-Media Interface (HDMI 1.3/1.4/2.0)
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Peripherals

## Dimensions and Pin Configuration



**DFN0603-2(0201)**

## Marking: Px

“P” is part number, fixed  
“x” is internal code

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

| Parameter                       | Symbol | Value       | Unit |
|---------------------------------|--------|-------------|------|
| Peak Pulse Power (8/20μs)       | Ppk    | 90          | W    |
| Peak Pulse Current (8/20μs)     | Ipp    | 2           | A    |
| ESD per IEC 61000-4-2 (Air)     | VESD   | ±20         | kV   |
| ESD per IEC 61000-4-2 (Contact) |        | ±15         |      |
| 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   |      |     | 18  | V    |                       |
| Breakdown Voltage       | VBR    | 19.5 |     |     | V    | IT = 1mA              |
| Reverse Leakage Current | IR     |      |     | 0.1 | uA   | VRWM = 18V            |
| Clamping Voltage        | VC     |      |     | 35  | V    | Ipp=1A(8x 20us pulse) |
| Clamping Voltage        | VC     |      |     | 40  | V    | Ipp=2A(8x 20us pulse) |
| Junction Capacitance    | CJ     |      | 0.3 |     | 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

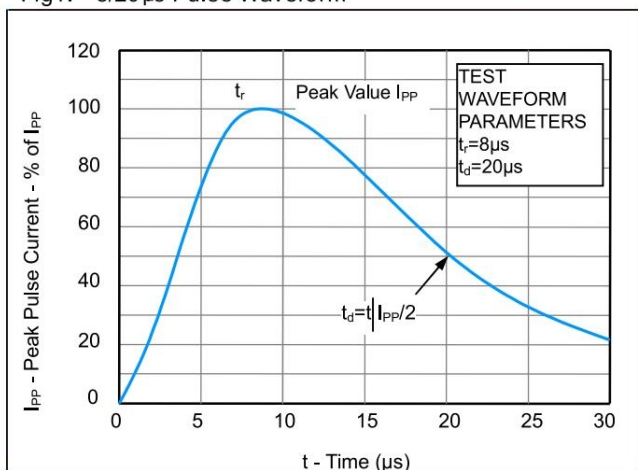


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

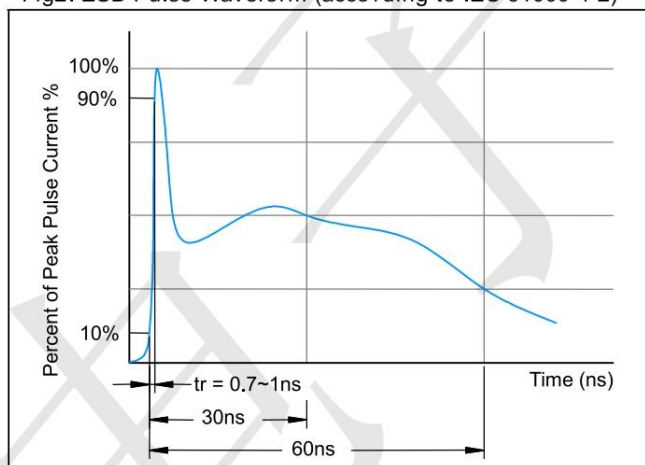
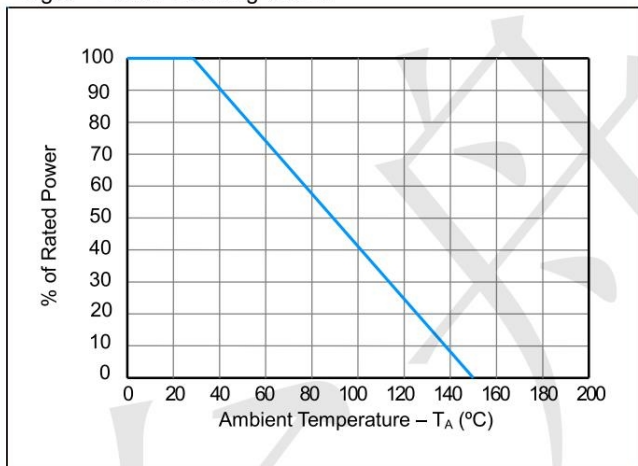


Fig3. Power Derating Curve





**TECH PUBLIC**

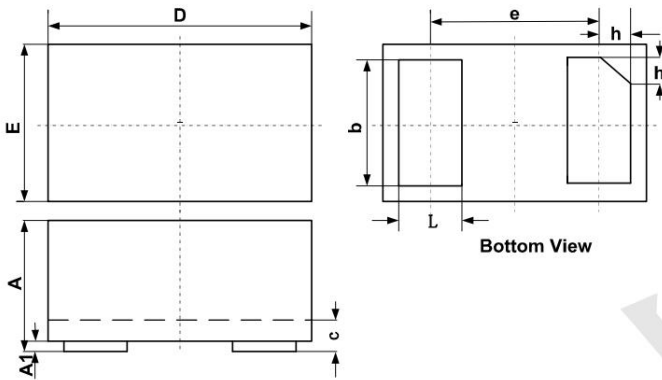
—台丹电子—

**TPESD1831Z**

1-Line Bi-directional TVS Diode

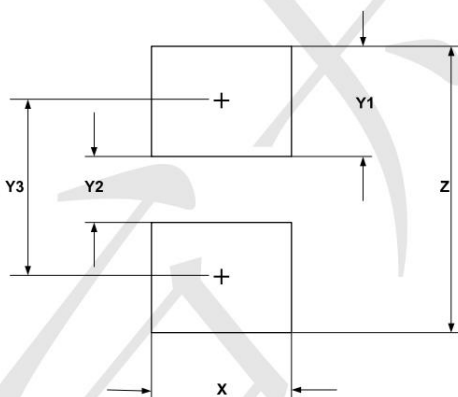
[www.sot23.com.tw](http://www.sot23.com.tw)

**DFN0603-2 Package Outline Drawing (0201)**



| SYM | DIMENSIONS  |       |       |
|-----|-------------|-------|-------|
|     | MILLIMETERS |       |       |
|     | MIN         | NOM   | MAX   |
| A   | 0.230       | 0.300 | 0.330 |
| A1  | 0.000       | 0.020 | 0.050 |
| b   | 0.215       | 0.245 | 0.275 |
| c   | 0.120       | 0.150 | 0.180 |
| D   | 0.550       | 0.600 | 0.650 |
| e   | 0.355 BSC   |       |       |
| E   | 0.250       | 0.300 | 0.350 |
| L   | 0.160       | 0.190 | 0.220 |
| h   | 0.079 BSC   |       |       |

**Suggested Land Pattern**



| SYM | DIMENSIONS  |        |
|-----|-------------|--------|
|     | MILLIMETERS | INCHES |
| X   | 0.30        | 0.012  |
| Y1  | 0.25        | 0.010  |
| Y2  | 0.15        | 0.006  |
| Y3  | 0.40        | 0.016  |
| Z   | 0.65        | 0.026  |