

Bi-directional ESD Protection Diode in DFN0603 Package

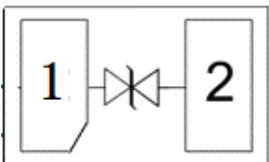
## Features

- Ultra small package: 0.6x0.3x0.3mm
- Ultra low capacitance: 15pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  - - IEC 61000-4-2 (ESD) immunity test
  - Air discharge:  $\pm 15\text{kV}$
  - Contact discharge:  $\pm 8\text{kV}$
- These are Pb-Free Devices
- Response Time is Typically  $< 1\text{ ns}$

## Description

The SLD5V0L1B2LP3-7 is a bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protect voltage sensitive data and power line. The D5V0L1B2LP3-7 complies with the IEC 61000-4-2 (ESD) standard with  $\pm 15\text{ kV}$  air and  $\pm 8\text{ kV}$  contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm lead-free 0201 package. The small size and high ESD surge protection make SLD5V0L1B2LP3-7 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

## Circuit Diagram



## Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

## Ordering Information

| Part Number     | Packaging         | Reel Size |
|-----------------|-------------------|-----------|
| SLD5V0L1B2LP3-7 | 10000/Tape & Reel | 7 inch    |

**Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

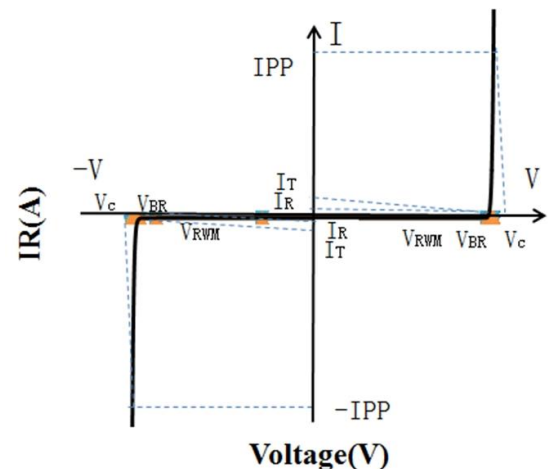
| Parameter                                | Symbol | Value       | Unit               |
|--|--------|-------------|--------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ )   | Ppk    | 80          | W                  |
| Peak Pulse Current (8/20 $\mu\text{s}$ ) | IPP    | 6           | A                  |
| ESD per IEC 61000-4-2 (Air)              | VESD   | $\pm 15$    | kV                 |
| ESD per IEC 61000-4-2 (Contact)          |        | $\pm 8$     |                    |
| Operating Temperature Range              | TJ     | -55 to +125 | $^{\circ}\text{C}$ |
| Storage Temperature Range                | Tstg   | -55 to +150 | $^{\circ}\text{C}$ |

**Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)**

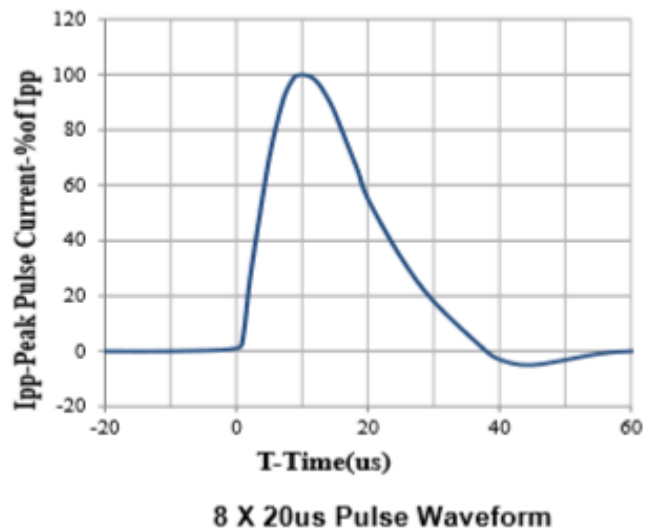
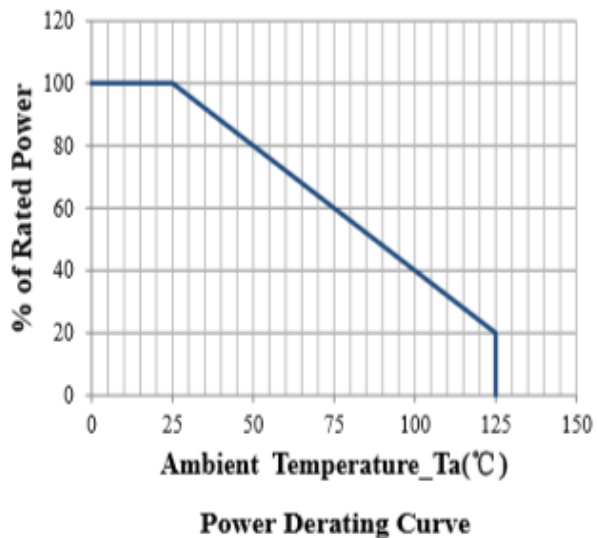
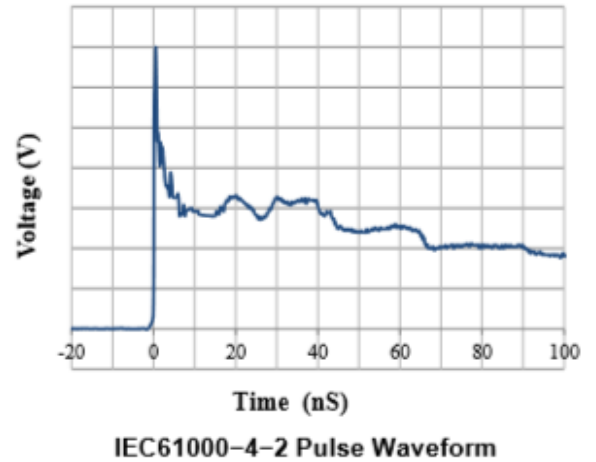
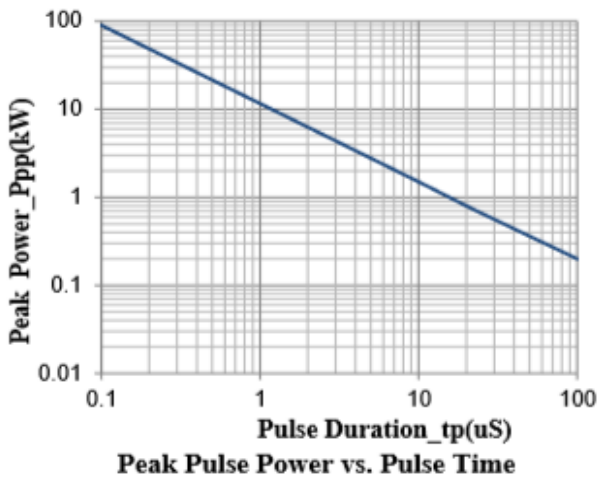
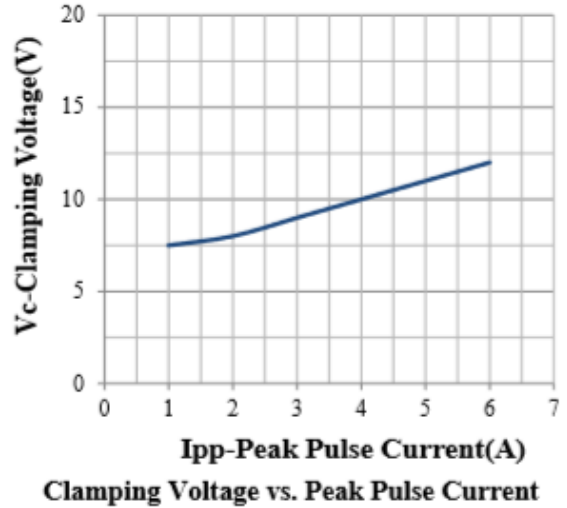
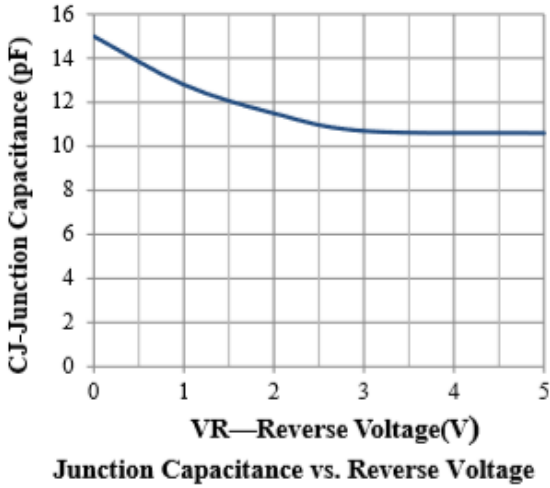
| Parameter               | Symbol    | Test Condition                                    | Min | Typ | Max | Unit          |
|-------------------------|-----------|---|-----|-----|-----|---------------|
| Reverse Working Voltage | $V_{RWM}$ |   |     |     | 5.0 | V             |
| Breakdown Voltage       | $V_{BR}$  | $I_T = 1\text{mA}$                                | 6   |     |     | V             |
| Reverse Leakage Current | $I_R$     | $V_{RWM} = 5.0\text{V}$                           |     |     | 0.1 | $\mu\text{A}$ |
| Clamping Voltage        | $V_C$     | $I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse) |     |     | 7.5 | V             |
| Junction Capacitance    | $C_J$     | $V_R = 0\text{V}$ , $f = 1\text{MHz}$             |     | 15  | 18  | pF            |

**Portion Electronics Parameter**

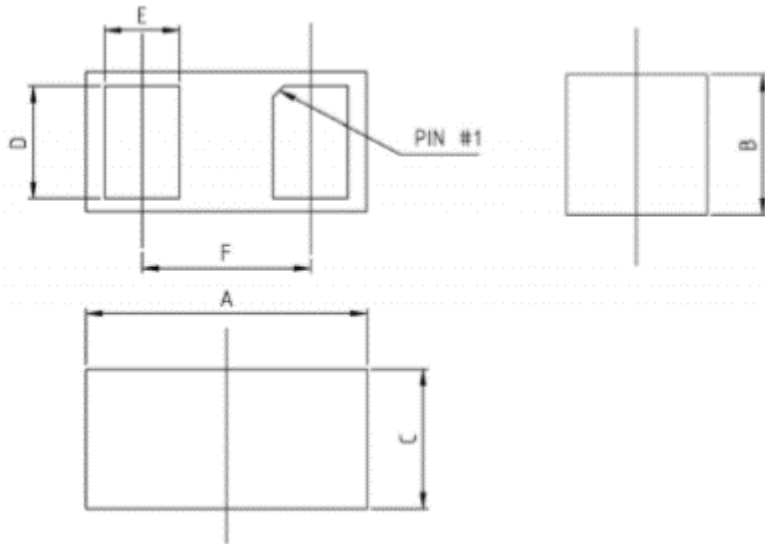
| Symbol   | Parameter                          |
|----------|------------------------------------|
| $I_T$    | Test Current                       |
| $I_{PP}$ | Maximum Reverse Peak Pulse Current |
| $V_C$    | Clamping Voltage @ $I_C$           |



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



DFN0603-2L(0201)Package Outline Drawing



| Dimensions In Millimeterer |      |      |      |
|----------------------------|------|------|------|
| Symbol                     | MIN  | TYP  | MAX  |
| A                          | 0.58 | 0.60 | 0.65 |
| B                          | 0.28 | 0.30 | 0.35 |
| C                          | 0.28 | 0.30 | 0.34 |
| D                          | 0.20 | 0.24 | 0.26 |
| E                          | 0.13 | 0.16 | 0.19 |
| F                          | -    | 0.36 | -    |

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