

## Ultra Low Capacitance ESD Protection Diode

### DESCRIPTION

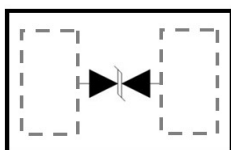
SLESD0301BU is a low capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.25pF, SLESD0301BU is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ( $\pm 15\text{kV}$  air,  $\pm 8\text{kV}$  contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

SLESD0301BU uses ultra-small DFN1006 package. Each SLESD0301BU device can protect one high-speed data line. It offers system designers flexibility to protect single data line where space is a premium concern. The combined features of low capacitance, ultra-small size and high ESD robustness make SLESD0301BU ideal for high-speed data port and high-frequency line applications, such as cellular phones and HD visual devices.

### ORDERING INFORMATION

- ✧ Device: SLESD0301BU
- ✧ Package: DFN1006
- ✧ Marking: 3BU
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs

### PIN CONFIGURATION



### FEATURES

- ✧ Transient protection for high-speed data lines
  - IEC 61000-4-2 (ESD)  $\pm 15\text{kV}$  (Air)
  - $\pm 8\text{kV}$  (Contact)
  - IEC 61000-4-4 (EFT) 40A (5/50 ns)
  - Cable Discharge Event (CDE)
- ✧ Package optimized for high-speed lines
- ✧ Ultra-small package (1.0mm $\times$ 0.6mm $\times$ 0.5mm)
- ✧ Protects one data, control line
- ✧ Low capacitance: 0.25pF (Typical)
- ✧ Low leakage current
- ✧ Low clamping voltage

### MACHANICAL DATA

- ✧ DFN1006 package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed:
  - 260 $^{\circ}\text{C}$ /10s
- ✧ Reel size: 7 inch

### APPLICATIONS

- ✧ Serial ATA
- ✧ Desktops, Servers and Notebooks
- ✧ Cellular Phones
- ✧ MDDI Ports
- ✧ USB Data Line Protection
- ✧ Display Ports
- ✧ Digital Visual Interfaces (DVI)

### PACKAGE OUTLINE



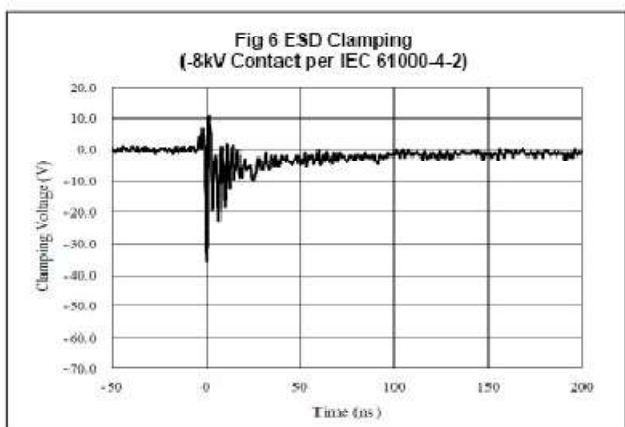
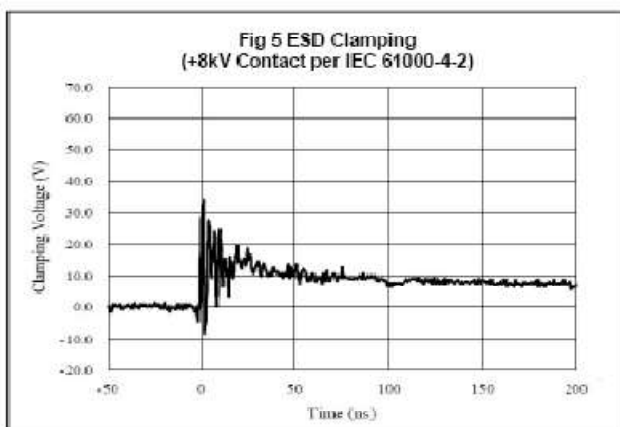
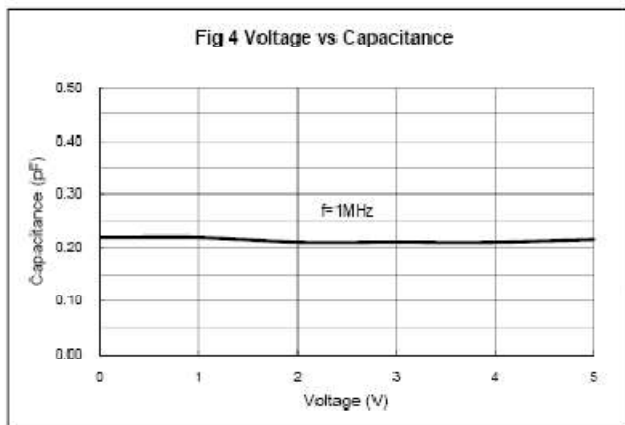
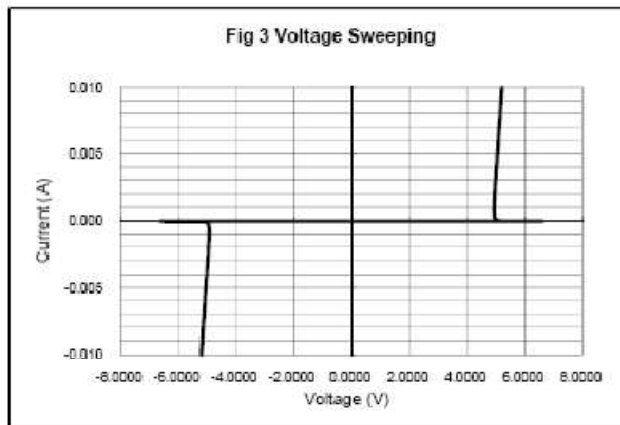
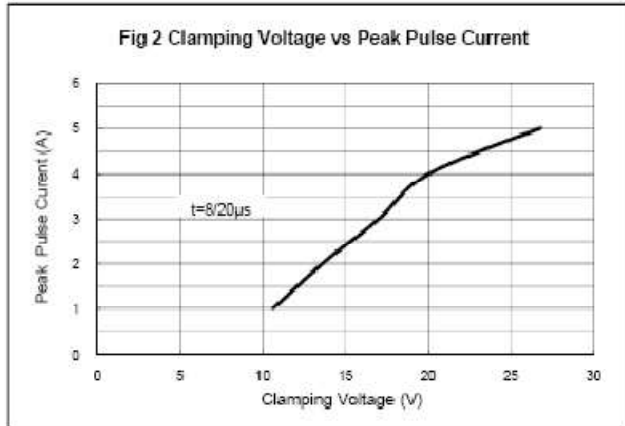
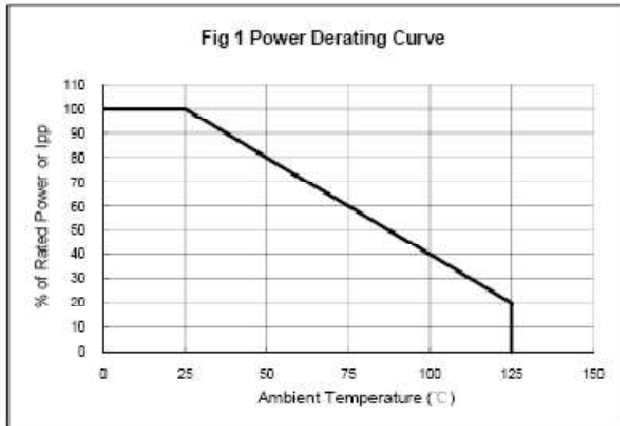
**ABSOLUTE MAXIMUM RATING**

Symbol	Parameter	Value	Units
$V_{ESD}$	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$\pm 20$ $\pm 20$	kV
$P_{PP}$	Peak Pulse Power (8/20 $\mu$ s)	100	W
$T_{OPT}$	Operating Temperature	-55~125	$^{\circ}$ C
$T_{STG}$	Storage Temperature	-55~150	$^{\circ}$ C

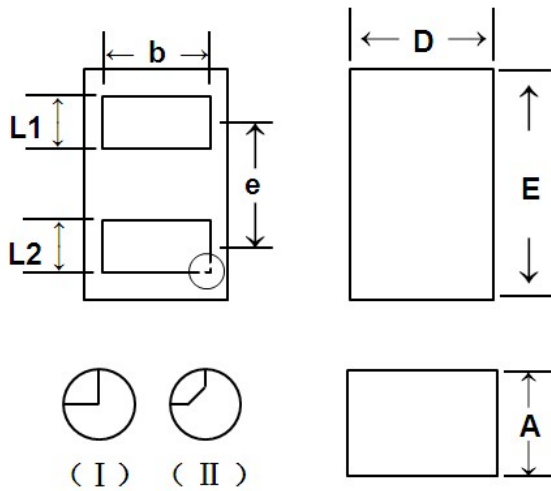
**ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}$ C)**

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				3.3	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	4.2			V
$I_R$	Reverse Leakage Current	$V_{RWM} = 3.3\text{V}$			100	nA
$V_C$	Clamping Voltage	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			12	V
		$I_{PP} = 4\text{A}, t_p = 8/20\mu\text{s}$			25	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		0.25	0.40	pF

**ELECTRICAL CHARACTERISTICS CURVE**



**DFN1006 PACKAGE OUTLINE DIMENSIONS**



**NOTE: ALL DIMENSIONS IN MM**

	MIN	NOM	MAX
<b>D</b>	<b>0.55</b>	<b>0.60</b>	<b>0.65</b>
<b>E</b>	<b>0.95</b>	<b>1.00</b>	<b>1.05</b>
<b>L1</b>	<b>0.20</b>	<b>0.25</b>	<b>0.30</b>
<b>L2</b>	<b>0.20</b>	<b>0.25</b>	<b>0.30</b>
<b>A</b>	<b>0.45</b>	<b>0.50</b>	<b>0.55</b>
<b>b</b>	<b>0.45</b>	<b>0.50</b>	<b>0.55</b>
<b>e</b>		<b>0.64BSC</b>	

