

## Low Capacitance TVS/ESD Protection Diode

### DESCRIPTION

SLESD0301M is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for data, control or power lines. With Maximum capacitance of 15pF, SLESD0301M 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.

SLESD0301M uses ultra-small DFN1006 package. Each SLESD0301M device can protect one data line. It offers system designers flexibility to protect single data line where space is a premium concern.

### ORDERING INFORMATION

- ✧ Device: SLESD0301M
- ✧ Package: DFN1006
- ✧ Marking: 3B
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 10,000pcs

### CIRCUIT DIAGRAM



### 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×0.6mm×0.4mm)
- ✧ Protects one data, control or power line
- ✧ Low capacitance: 15pF (Maximum)
- ✧ Low leakage current
- ✧ Low clamping voltage
- ✧ Each I/O pin can withstand over 1000 ESD strikes for  $\pm 8\text{ kV}$  contact discharge

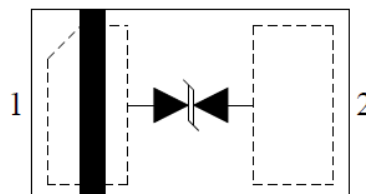
### MACHANICAL DATA

- ✧ DFN1006 package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed:  $260^{\circ}\text{C}/10\text{s}$
- ✧ Reel size: 7 inch
- ✧ MSL 1

### APPLICATIONS

- ✧ Portable Electronics
- ✧ Desktops, Servers and Notebooks
- ✧ Cellular Phones
- ✧ MP3 Ports
- ✧ Digital Ports
- ✧ Subscriber Identity Module (SIM) card

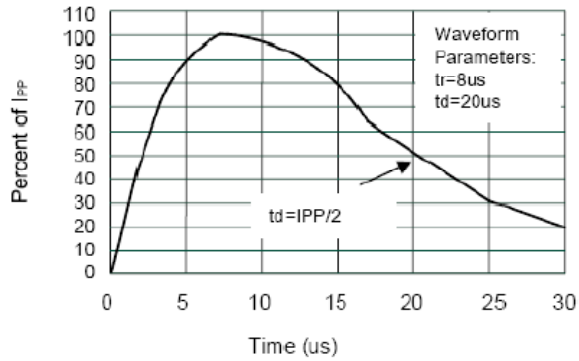
### PIN CONFIGURATION



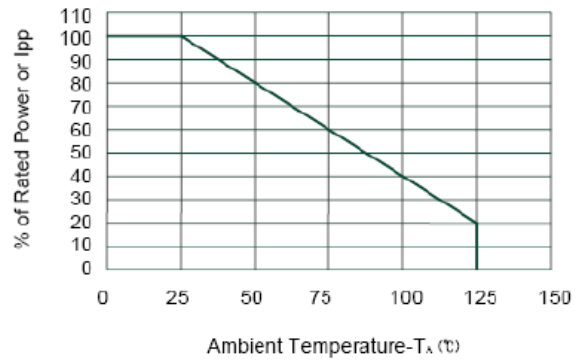
ABSOLUTE MAXIMUM RATING			
Symbol	Parameter	Value	Units
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Air)	±25	kV
	ESD per IEC 61000-4-2 (Contact)	±20	
P <sub>PP</sub>	Peak Pulse Power (8/20µs)	84	W
T <sub>OPT</sub>	Operating Temperature	-55/+125	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> =25°C)						
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage				3.3	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA	3.6			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 3.3V			1.0	µA
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20µs			8.0	V
V <sub>C</sub>	Clamping Voltage	I <sub>PPmax</sub> = 7A, t <sub>p</sub> = 8/20µs			12.0	V
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz			15	pF

## ELECTRICAL CHARACTERISTICS CURVE

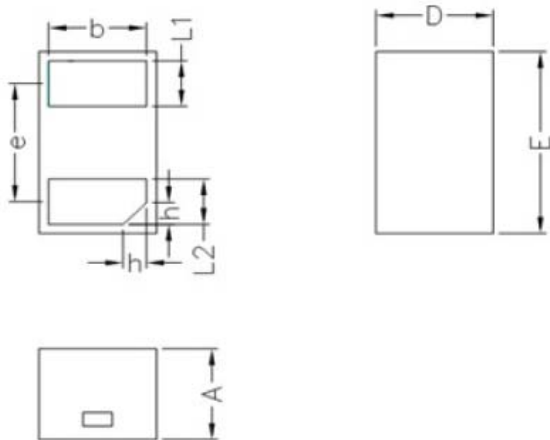


Pulse Waveform



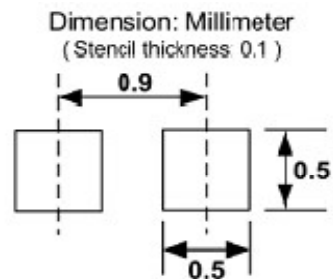
Power Derating Curve

## DFN1006 PACKAGE OUTLINE DIMENSIONS



Unit: mm

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
b	0.45	0.50	0.55
e	0.65BSC		
A	0.45	0.50	0.55
h	0.07	0.12	0.17



Soldering Footprint