

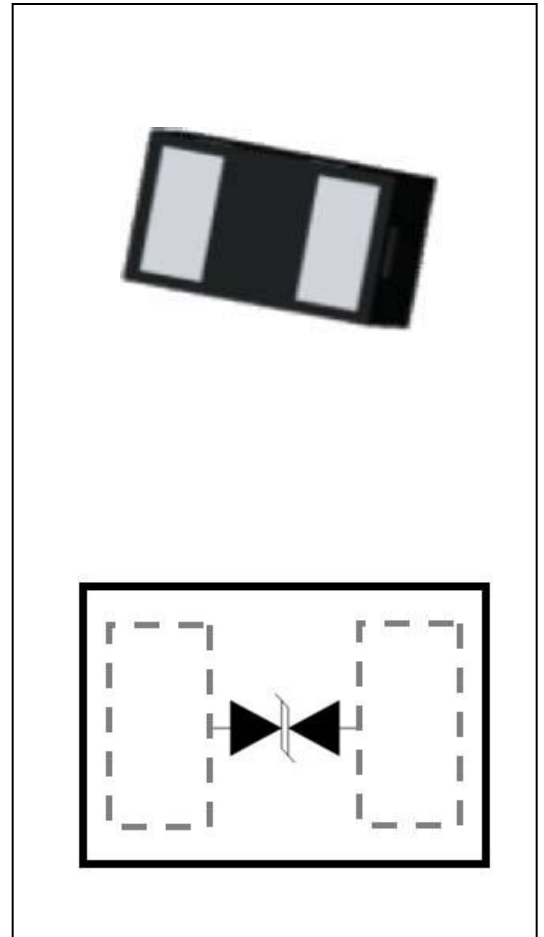
DESCRIPTION

ESD0301BU 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, ESD0301BU 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 ($\pm 20\text{kV}$ air, $\pm 20\text{kV}$ 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.

ESD0301BU uses ultra-small DFN1006 package. Each ESD0301BU 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 ESD0301BU ideal for high-speed data port and high-frequency line applications, such as cellular phones and HD visual devices.

FEATURES

- ✧ Transient protection for high-speed data lines
high-frequency line applications, such as cellular
IEC 61000-4-2 (ESD) $\pm 20\text{kV}$ (Air)
 $\pm 20\text{kV}$ (Contact).
IEC 61000-4-4 (EFT) 40A (5/50 ns)
Cable Discharge Event (CDE).
- ✧ Package optimized for high-speed lines.
- ✧ Ultra-small package (1.0mmx0.6mmx0.5mm).
- ✧ Protects one data, control line.
- ✧ Low capacitance: 0.25pF (Typical).
- ✧ Low leakage current.
- ✧ Low clamping voltage.



APPLICATIONS

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

MECHANICAL CHARACTERISTICS

- ✧ DFN1006 package.
- ✧ Flammability Rating: UL 94V-0.
- ✧ Packaging: Tape and Reel.
- ✧ High temperature soldering guaranteed: 260°C/10s.
- ✧ Reel size: 7 inch.

ORDERING INFORMATION

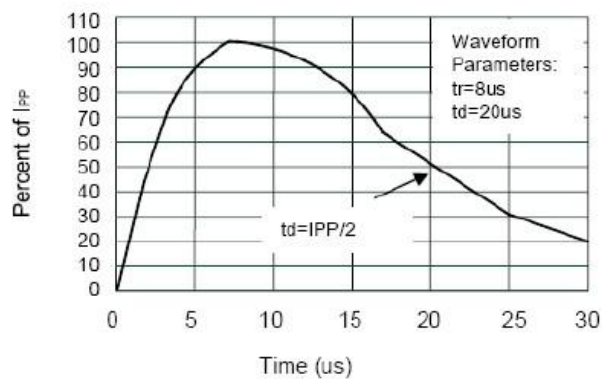
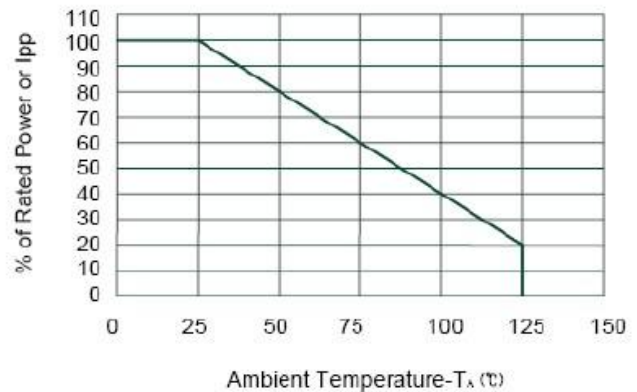
- ✧ Device: ESD0301BU.
- ✧ Package: DFN1006.
- ✧ Marking: 3BU.
- ✧ Material: Halogen free.
- ✧ Packing: Tape & Reel.
- ✧ Quantity per reel: 10,000pcs.

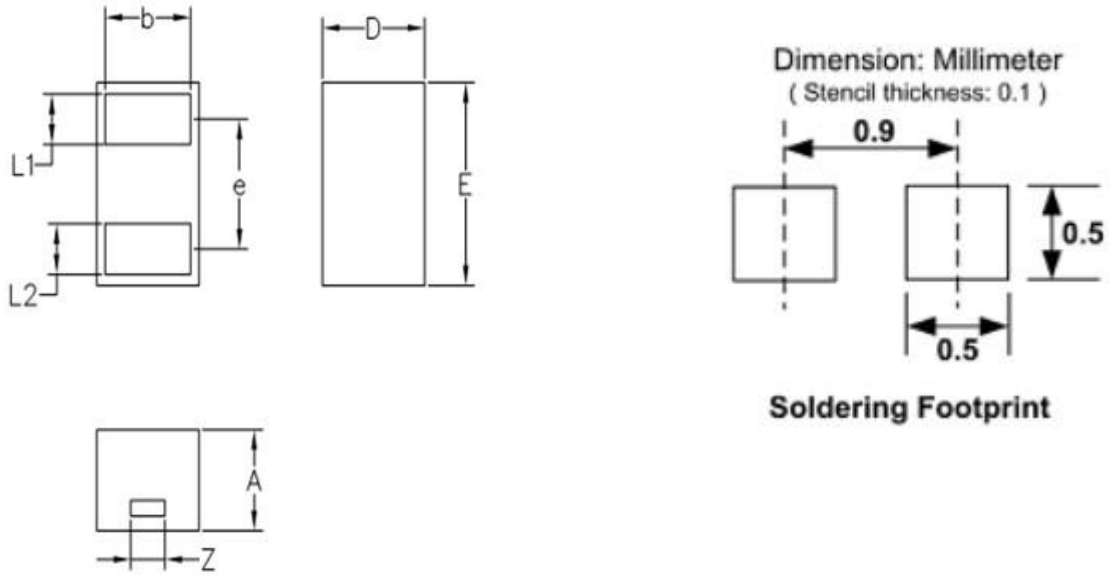
DEVICE CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (Tamb=25°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 mA	4.2			V
I _R	Reverse Leakage Current	V _{RWM} = 3.3 V			100	nA
V _c	Clamping Voltage	I _{pp} = 1 A, t _p = 8/20μs			12	V
		I _{pp} = 4 A, t _p = 8/20μs			21	V
C _j	Junction Capacitance	V _R = 0V, f = 1MHz		0.25	0.40	pF

ELECTRICAL CHARACTERISTICS CURVE

Pulse Waveform

Power Derating Curve

DFN1006 PACKAGE OUTLINE & DIMENSIONS


NOTE:ALL DIMENSIONS IN 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
A	0-45	0-50	0-55
Z	0-15	0.20	0-25
b	0-45	0-50	0-55
e		0-64BSC	

Website: <http://www.jksemi.com>

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