HESDUC3V3B1AF-B

Ultra Low Capacitance ESD Protection Diode

Description

HESDUC3V3B1AF-B 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, HESDUC3V3B1AF-B is designed to protect parasitic-sensitive systems against over-voltage and over-currenttransient events. It complies with IEC 61000-4-2 (ESD), Level 4 (±20kV air, ±20kV contact discharge), IEC61000-4-4(electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD andcable discharge event (CDE), etc.HESDUC3V3B1AF-B uses ultra-small DFN1006-2L package. Each HESDUC3V3B1AF-B device can protect one high-speed data line. It offers system designers flexibility to protectsingle data line where space is a premium concern. The combined features of low capacitance, ultra-smallsize and high ESD robustness make HESDUC3V3B1AF-B ideal for high-speed data port and high-frequencyline applications,such as cellular phones and HD visual devices.

Features

- Transient protection for high-speed data lines
  IEC 61000-4-2 (ESD) ±20kV (Air)
  ±20kV (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×0.5mm)
- Protects one data, control line
- Low capacitance: 0.25pF (Typical)
- Low leakage current
- Low clamping voltage

Applications

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

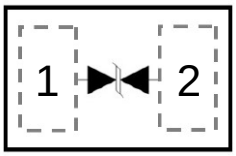
Ordering Information

- Device: HESDUC3V3B1AF-B
- Package: DFN1006-2L
- Material: Halogen free
- Packing: Tape & Reel
- Quantity per reel: 10,000 pcs

Machanical Data

- DFN1006-2L package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260℃/10s
- Reel size: 7 inch

Pin Configuration



Package Outline



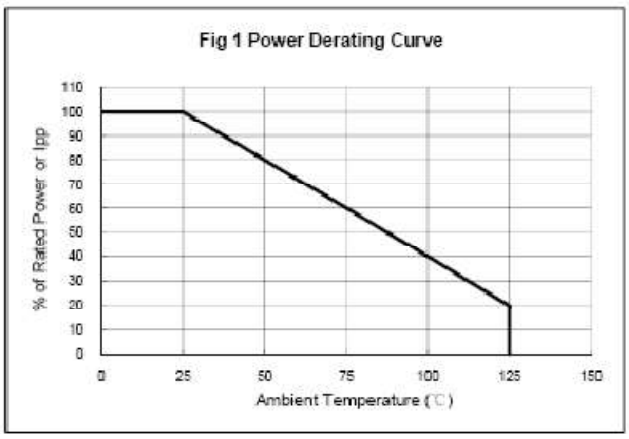
Absolute Maximum Rating

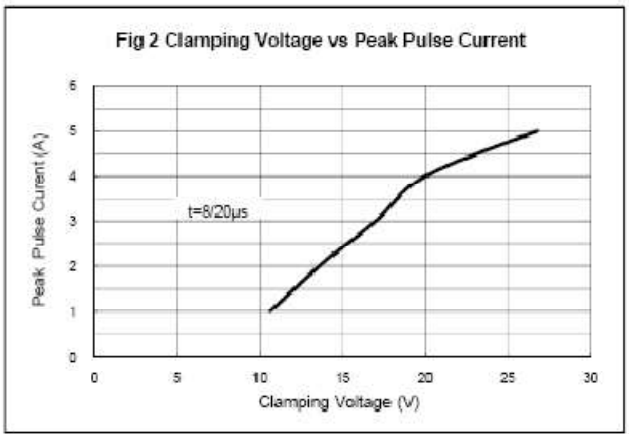
Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±20 ±20	kV
P_{PP}	Peak Pulse Power (8/20μs)	100	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C

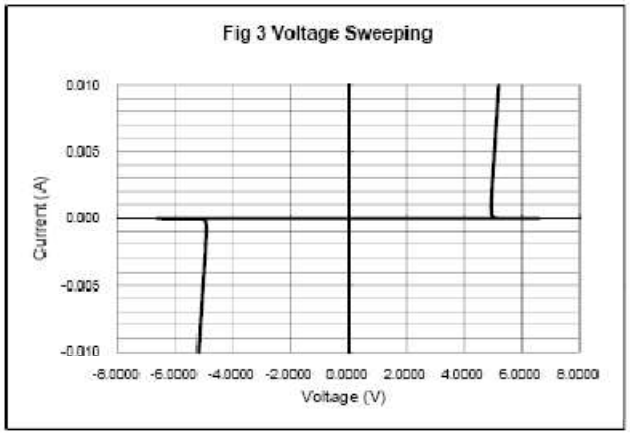
Electrical Characteristics (Tamb=25°C)

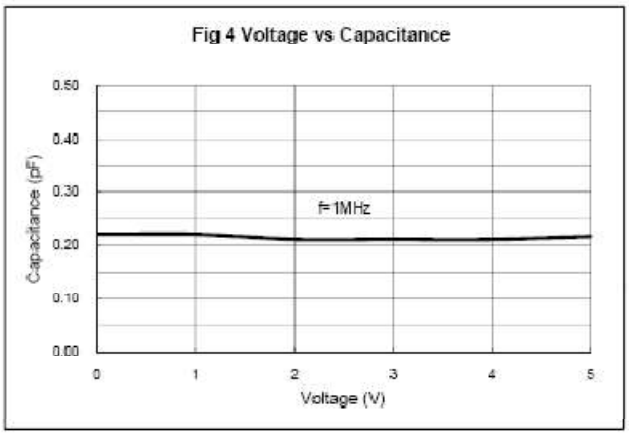
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	4.2			V
I_R	Reverse Leakage Current	V_{RWM} = 3.3V			100	nA
V_C	Clamping Voltage	I_{PP} = 1A, t_p = 8/20μs			12	V
		I_{PP} = 4A, t_p = 8/20μs			25	V
C_J	Junction Capacitance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

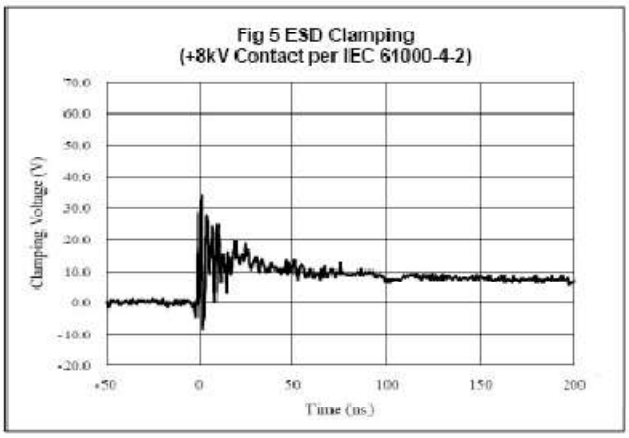
Electrical Characteristics Curve

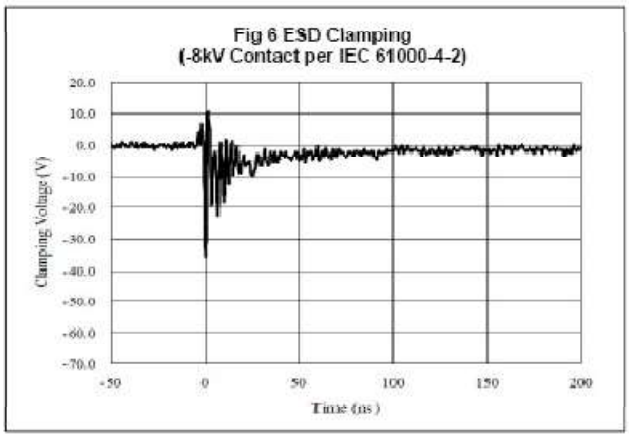




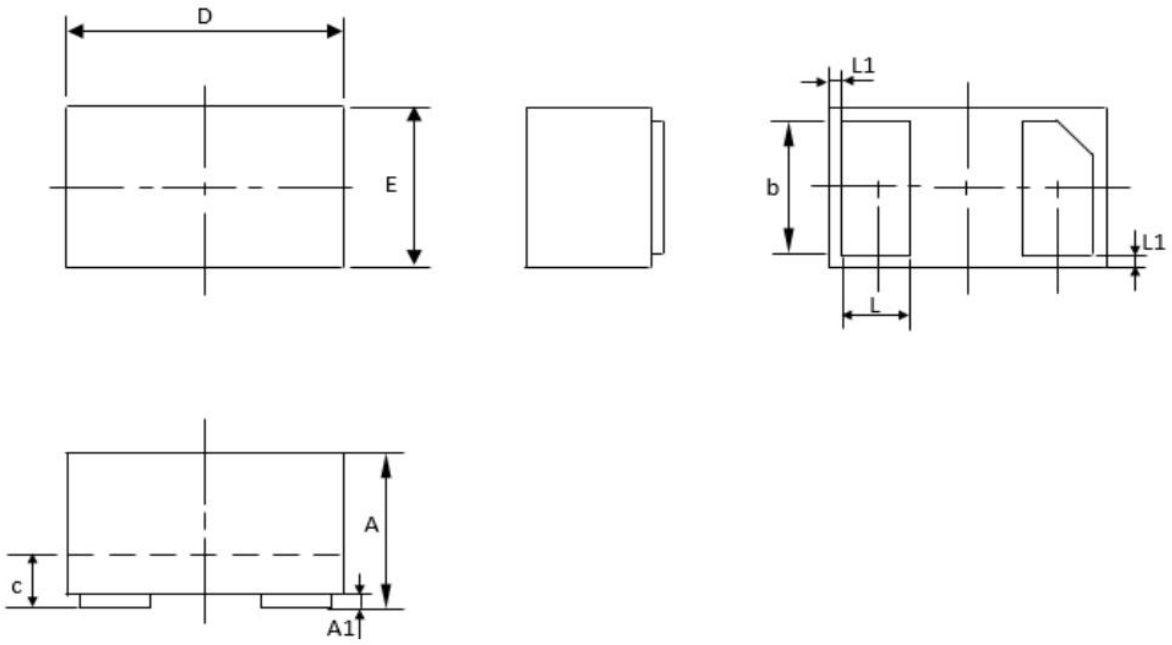








Outline And Dimensions



DFN1006-2L			
Dim	Min	Typ.	Max
A	0.46	0.48	0.50
A1	0	0.02	0.05
b	0.45	0.5	0.55
c	0.1	0.12	0.14
D	0.95	1.00	1.05
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.035	0.05	0.065
h	0.07	0.12	0.17
All Dimensions in mm			

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