

Description

The FESD8L3.3BDFN1006 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 protecting voltage sensitive high-speed data lines. The FESD8L3.3BDFN1006 has an ultra low capacitance with a typical value at 0.25pF and complies with the IEC 61000-4-2 (ESD standard with ±25kV air and ±20kV contact discharge). It is assembled into an ultra small 1.0 x 0.6 x 0.5mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge protection make FESD8L3.3BDFN1006 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

Features

- ◆ Ultra small package: 1.0 x0.6 x0.5mm
- ◆ Ultra low capacitance: 0.25pF typical
- ◆ Ultra low leakage : nA level
- ◆ Operating voltage : 3.3V
- ◆ Low clamping voltage
- ◆ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: ±25kV
Contact discharge: ±20kV
 - IEC61000-4-5 (Lightning) 4A (8/20µs)
- ◆ RoHS Compliant

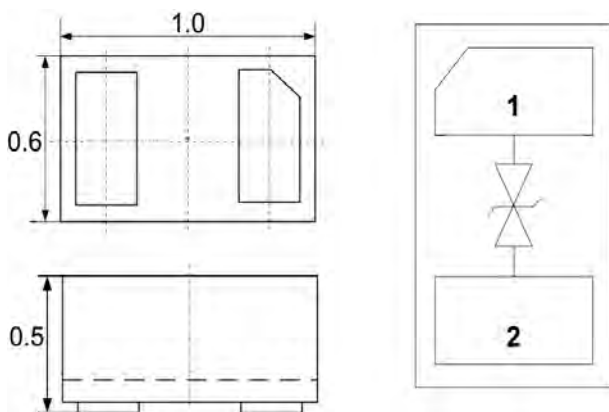
Mechanical Characteristics

- ◆ Package: DFN1006-2 (1.0 x0.6 x0.5mm)
- ◆ Case Material: “Green” Molding Compound.
- ◆ Moisture Sensitivity: Level 3 per J-STD-020
- ◆ Terminal Connections: See Diagram Below
- ◆ Marking Information: See Below

Applications

- ◆ Cellular Handsets and Accessories
- ◆ Display Ports
- ◆ MDDI Ports
- ◆ USB Ports
- ◆ Digital Visual Interface(DVI)
- ◆ PCI Express and Serial SATA Ports

Dimensions and Pin Configuration



Package Dimensions Circuit and Pin Schematic

Marking Information



Ordering Information

Part Number	Marking	Packaging	Reel Size
FESD8L3.3BDFN1006	3L	10000/Tape & Reel	7 inch



FESD8L3.3BDFN1006

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20μs)	P _{pk}	100	W
Peak Pulse Current(8/20μs)	I _{PP}	4	A
FESD per IEC 61000-4-2 (Air) FESD per IEC 61000-4-2 (Contact)	V _{ESD}	±25 ±20	kV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

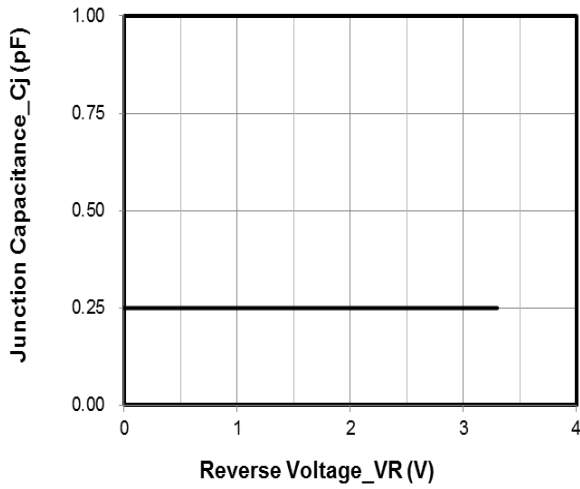
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			3.3	V	
Breakdown Voltage	V _{BR}	5			V	I _T = 1mA
Reverse Leakage Current	I _R			0.2	μA	V _{RWM} = 3.3V
Clamping Voltage	V _C			11	V	I _{PP} = 1A (8 x 20μs pulse)
Clamping Voltage	V _C			25	V	I _{PP} = 4A (8 x 20μs pulse)
Junction Capacitance	C _J		0.25	0.3	pF	V _R = 0V, f = 1MHz

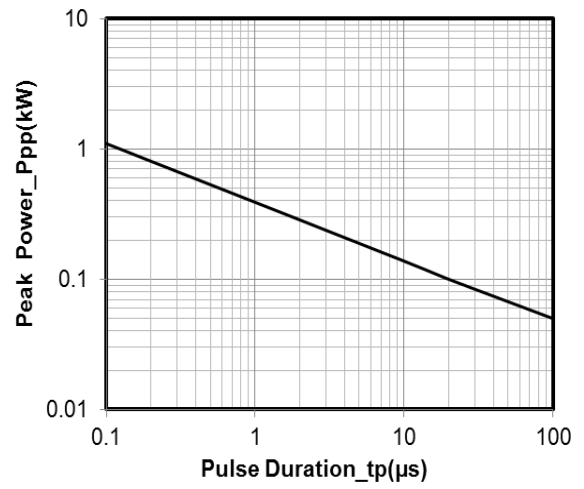


FESD8L3.3BDFN1006

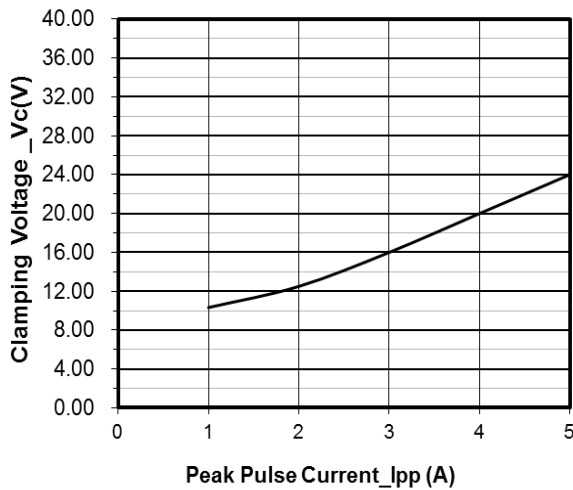
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



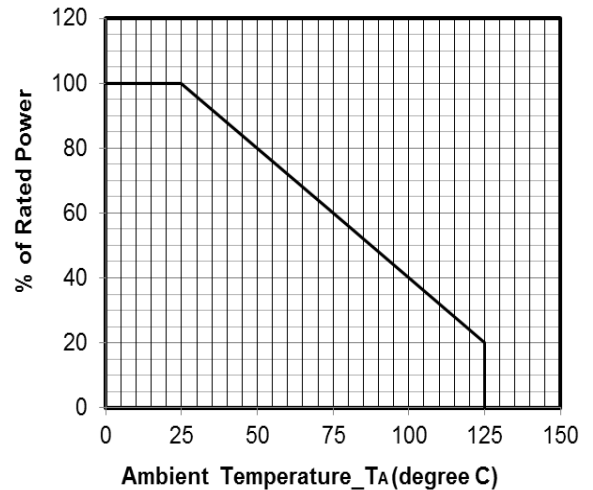
Junction Capacitance vs. Reverse Voltage



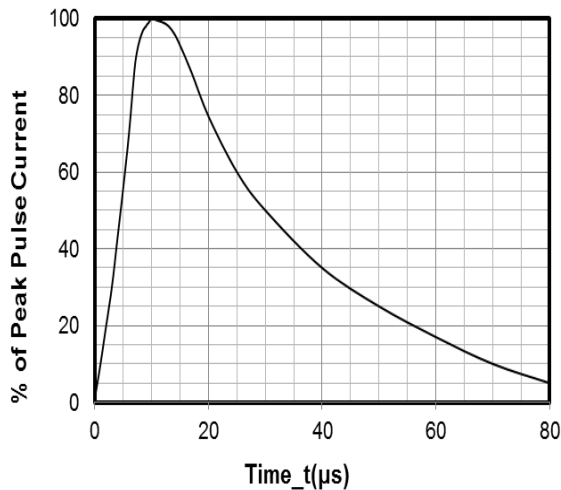
Peak Pulse Power vs. Pulse Time



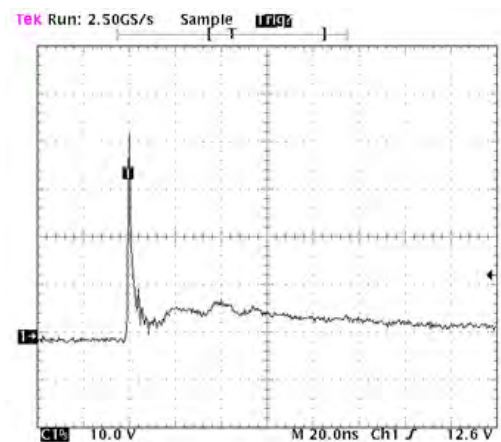
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

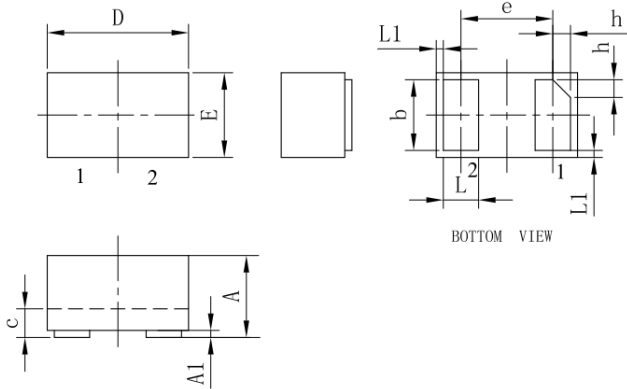


Note : Data is taken with a 10x attenuator

ESD Clamping Voltage

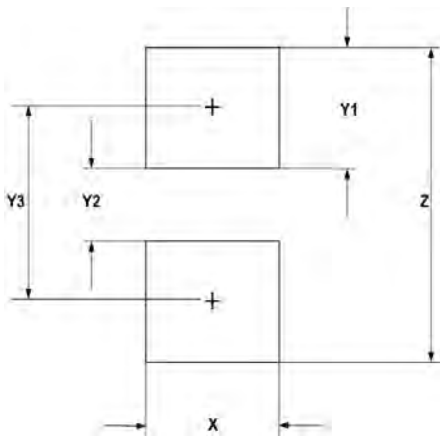
8 kV Contact per IEC61000-4-2

DFN1006-2 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.450	0.500	0.550	0.018	0.020	0.022
A1	0.000	0.020	0.050	0.000	0.001	0.002
b	0.450	0.50	0.550	0.018	0.020	0.022
c	0.120	0.150	0.180	0.005	0.006	0.007
D	0.950	1.000	1.050	0.037	0.039	0.041
e	0.65 BSC			0.026 BSC		
E	0.55	0.60	0.65	0.022	0.024	0.026
L	0.20	0.25	0.30	0.008	0.010	0.012
L1	0.05REF			0.002REF		
h	0.07	0.12	0.17	0.003	0.005	0.007

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.60	0.024
Y1	0.50	0.020
Y2	0.30	0.012
Y3	0.80	0.032
Z	1.30	0.052