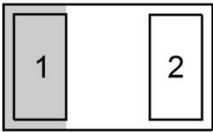
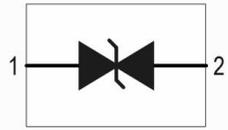




1-Line Bidirectional ESD Protection Diode

DFN1006-2L

Schematic & Pin configuration

Mimensions	Circuit Diagram
	

General description

The ESD8LB5.0C 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 data and power line. The ESD8LB5.0C complies with the IEC 61000-4-2 (ESD) standard with ± 20 KV air and ± 15 KV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free 0402 package. The small size and high ESD surge protection make ESD8LB5.0C an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Features and benefits

- Ultra small SMD package 1.0x0.6x0.5 mm
- Bidirectional ESD protection of one line
- Femtofarad capacitance: $C_j = 0.5\text{pF}$ (Typ)
- Complies with following standards: IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 20\text{KV}$, Contact discharge: $\pm 15\text{KV}$
 - IEC61000-4-5 (Lightning) 5A (8/20 μS)
- RoHS Compliant

Application information

- PCI Express and Serial SATA Ports
- Smart phones
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- Display Ports

Ordering information

Device	Package	Marking	Packaging	Reel Size
ESD8LB5.0C	DFN1006-2L	S1	10000/Tape & Reel	7 Inch

Maximum Ratings ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified)

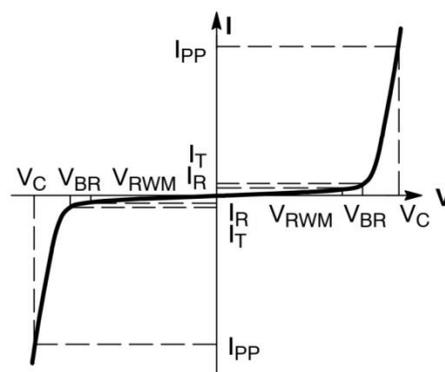
Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_p = 8/20\ \mu\text{S}$)	P_{PK}	40	W
Rated Peak Pulse Current ($T_p = 8/20\ \mu\text{S}$)	I_{PP}	5.0	A
Maximum lead temperature for soldering during 10s	T_L	260	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Operating Temperature Range	T_{OP}	-40 to +125	$^\circ\text{C}$
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	20	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	15	kV

Electrical Characteristics ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise specified)

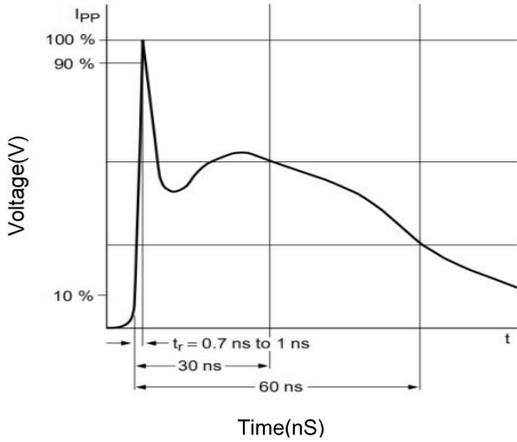
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	8.0	11.0	13.0	V	$I_T=1\text{mA}$
Holding Voltage	V_H	2.6		4.0	V	$I_H=100\text{mA}$
Leakage Current I_{Leak}	I_R	--	--	0.1	μA	$V_{RWM}=5.0\text{V}$
Clamping Voltage	V_C	--	5.0	6.5	V	$I_{PP}=1\text{A}, T_p=8/20\ \mu\text{s}$
Clamping Voltage	V_C	--	6.0	8.0	V	$I_{PP}=5\text{A}, T_p=8/20\ \mu\text{s}$
Junction Capacitance	C_J	--	0.50	0.60	pF	$V_R=0\text{V}, f=1\text{MHz}$

Portion Electronics Parameter

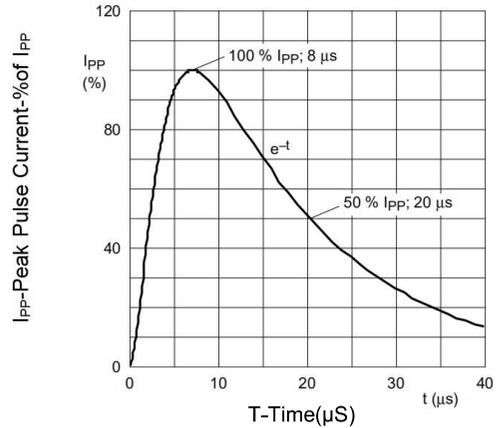
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	V_{BR} Breakdown Voltage @ I_T



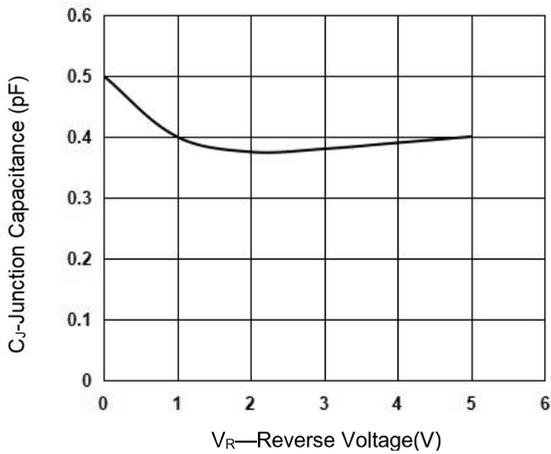
Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)



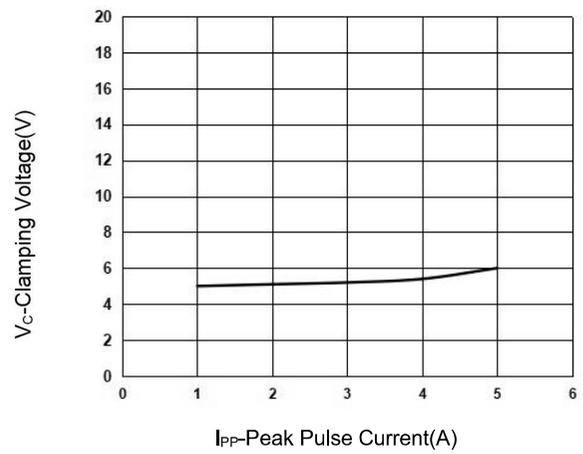
IEC61000-4-2 Pulse Waveform



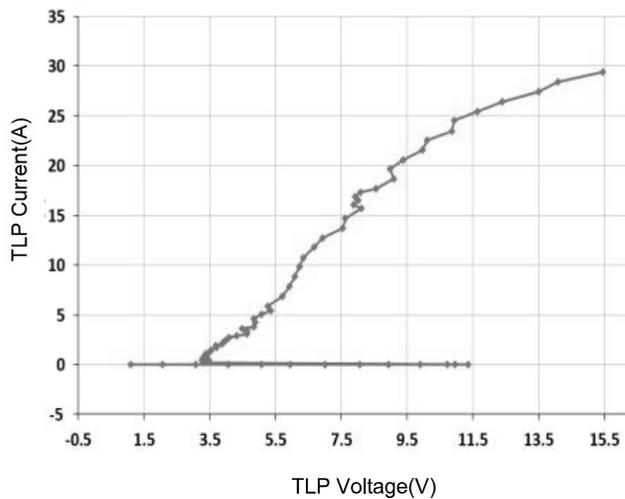
IEC61000-4-5 8X20µs Pulse Waveform



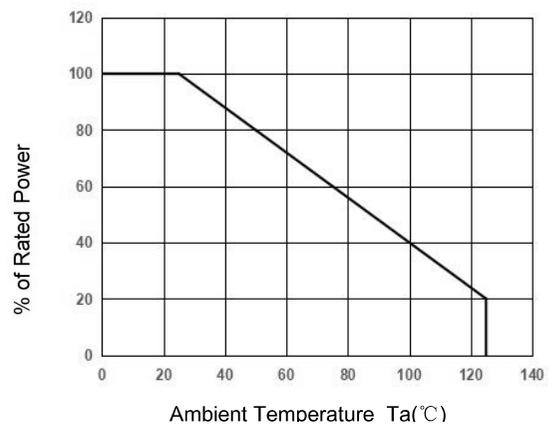
Junction Capacitance vs. Reverse Voltage



Clamping Voltage vs. Peak Pulse Current



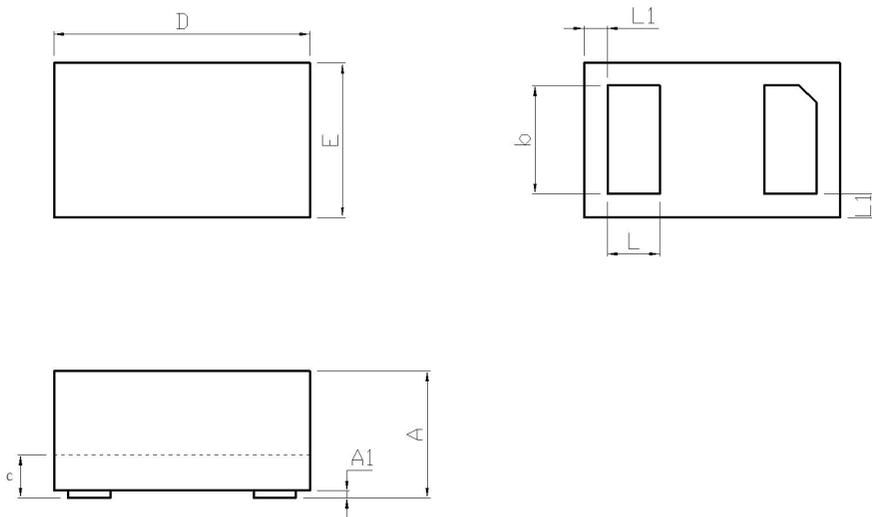
TLP Measurement Curve



Power Derating Curve

Package Outline Dimensions

DFN1006-2L



DFN1006-2L (mm)			
Dim	Min	Typ.	Max
A	0.40	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.5	0.55
c	0.12	0.15	0.18
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