Features

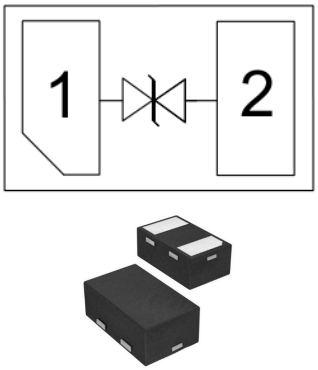
- Ultra small package: 0.6x0.3x0.3mm
- Ultra low capacitance: 0.5pF typical
- Ultra low leakage: nA level
- Low operating voltage: 5V
- Low clamping voltage
- 2-pin leadless package
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±20kV
    Contact discharge: ±15kV
  – IEC61000-4-5 (Lightning) 5A (8/20μs)
- RoHS Compliant
- Lead Finish: NiPdAu

Description

The LXE0603F5VBLH is a bi-directional TVS di-ode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for pro-tecting voltage sensitive high-speed data lines.

The LXE0603F5VBLH has an ultra-low capacitance with a typical value at 0.5pF, and complies with the IEC 61000-4-2 (ESD) standard with ±15kV air and ±8kV contact discharge. It is assembled into an ultra-small 0.6x0.3x0.3mm lead-free DFN package. The small size, ultra-low capacitance and high ESD surge pro-tection make LXE0603F5VBLH an ideal choice to pro-tect cell phone, digital video interfaces and other high speed ports.

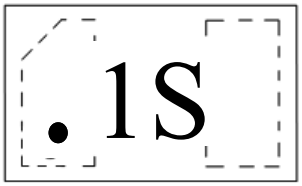
Circuit Diagram



Applications

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

Marking Diagram



Transparent top view

1S:Device Marking Code

Dot denotes Pin1

Ordering Information

Part Number	Packaging	Reel Size
LXE0603F5VBLH	10000/Tape & Reel	7 inch

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

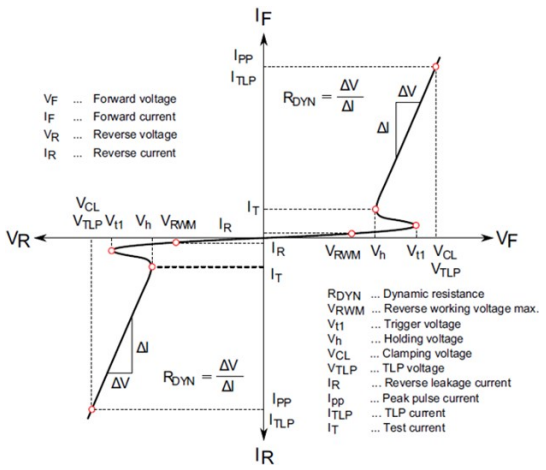
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	35	W
Peak Pulse Current (8/20μs)	IPP	5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±20 ±15	kV
Operating Temperature Range	TJ	−40 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

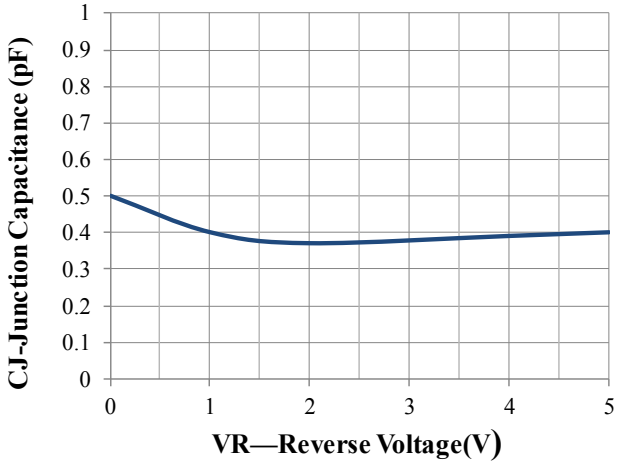
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	I_T = 1mA	8.0	12.0	14.0	V
Holding Voltage	V_h	I_T = 100mA	2.6		4.0	V
Reverse Leakage Current	I_R	V_{RWM} = 5.0V			0.2	μA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20μs pulse)		5.0		V
Clamping Voltage	V_C	I_{PP} = 5A (8 x 20μs pulse)		6.0	8.0	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz		0.5		pF

Portion Electronics Parameter

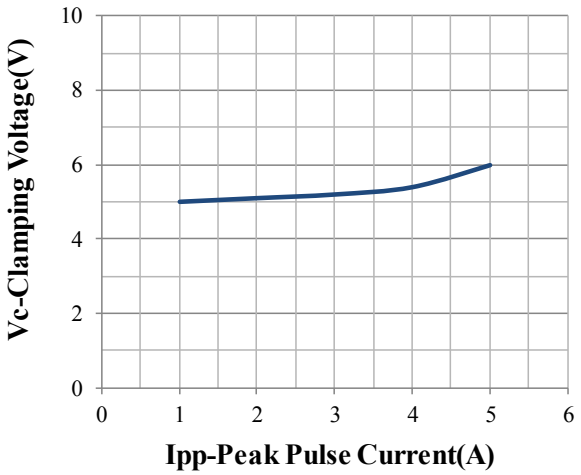
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



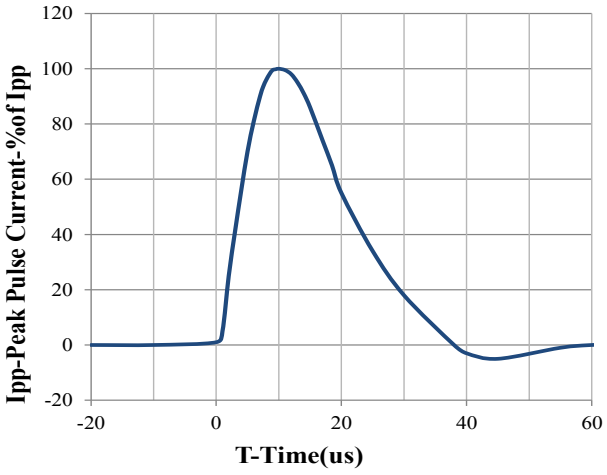
Typical Performance Characteristics (T_A=25°C unless otherwise Specified)



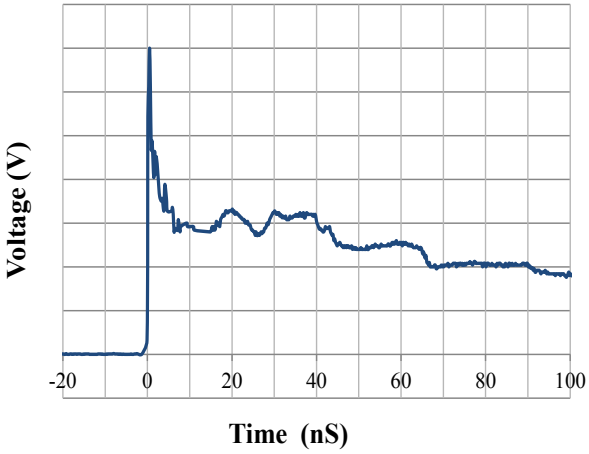
Junction Capacitance vs. Reverse Voltage



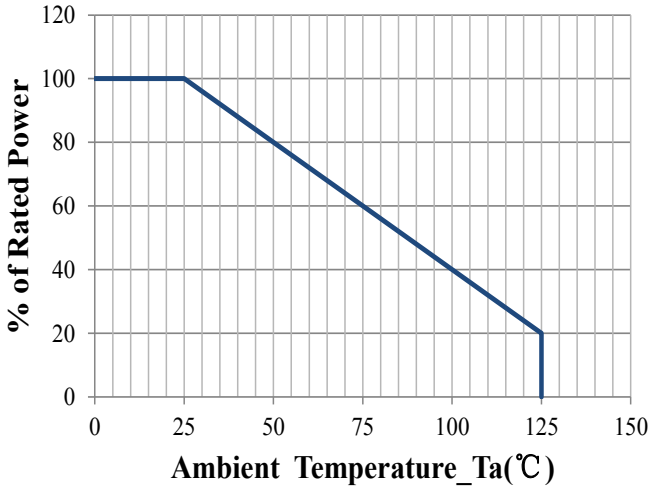
Clamping Voltage vs. Peak Pulse Current



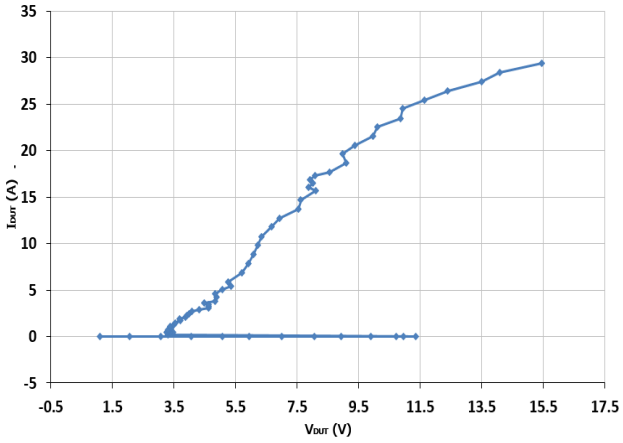
8 X 20us Pulse Waveform



IEC61000−4−2 Pulse Waveform

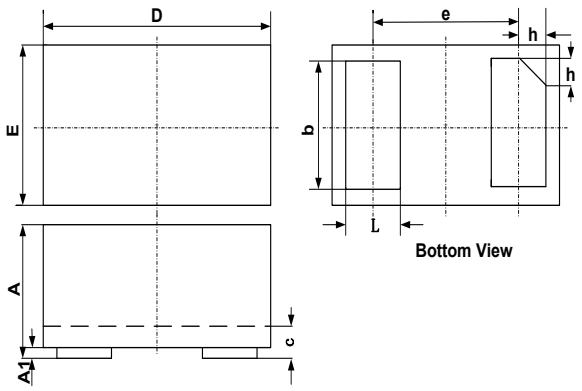


Power Derating Curve



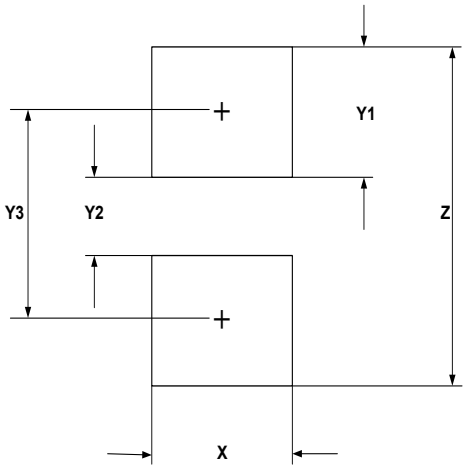
TLP Curve

DFN0603-2 Package Outline Drawing



SYM	DIMENSIONS		
	MILLIMETERS		
	MIN	NOM	MAX
A	0.230		0.330
A1	0.000	0.020	0.050
b	0.215	0.245	0.275
c	0.120	0.150	0.180
D	0.550	0.600	0.650
e	0.355 BSC		
E	0.250	0.300	0.350
L	0.160	0.190	0.220
h	0.079 BSC		

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
X	0.30	0.012
Y1	0.25	0.010
Y2	0.15	0.006
Y3	0.40	0.016
Z	0.65	0.026