



Description

LESD11LL3.3CT5G 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, LESD11LL3.3CT5G 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 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), IEC61000-4-4(electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc. LESD11LL3.3CT5G uses ultra-small DFN0603-2L package. Each LESD11LL3.3CT5G 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 LESD11LL3.3CT5G 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
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 (0.6mm $\times$ 0.3mm $\times$ 0.3mm)
- Protects one data, control line
- Low capacitance: 0.25pF (Typical)
- Low leakage current
- Low clamping voltage

Ordering Information

- Device: LESD11LL3.3CT5G
- Package: DFN0603-2L
- Material: Halogen free
- Packing: Tape & Reel
- Quantity per reel: 15,000 pcs

Mechanical Data

- DFN0603-2L package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed:
260 $^{\circ}\text{C}$ /10s
- Reel size: 7 inch

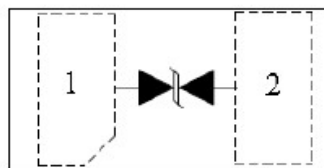
Applications

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

Pin Configuration



Circuit Diagram





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 (8/20 μ s)	96	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C

Electrical Characteristics (T_{amb}=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	$I_{PP} = 1A, t_p = 8/20\mu s$			12	V
		$I_{PP} = 4A, t_p = 8/20\mu s$			24	V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$		0.25		pF



Electrical Characteristics Curve

Fig 1 Power Derating Curve

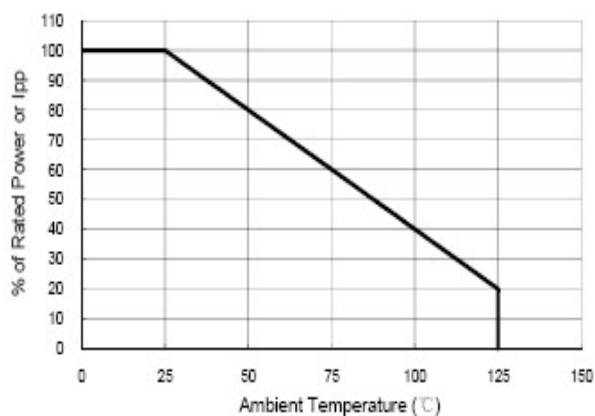


Fig 2 Clamping Voltage vs Peak Pulse Current

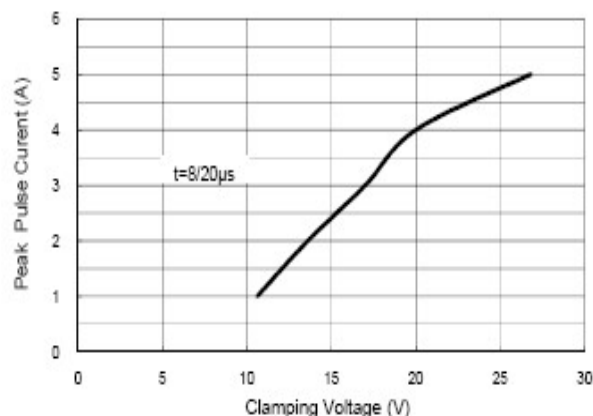


Fig 3 Voltage Sweeping

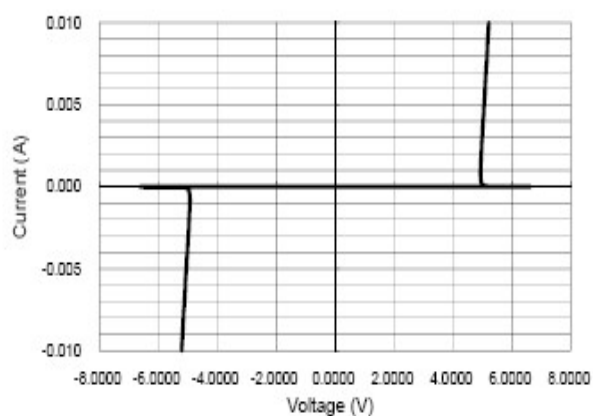


Fig 4 Voltage vs Capacitance

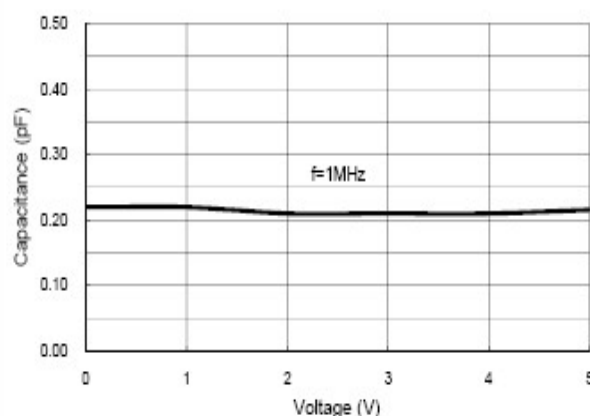


Fig 5 ESD Clamping
(+8kV Contact per IEC 61000-4-2)

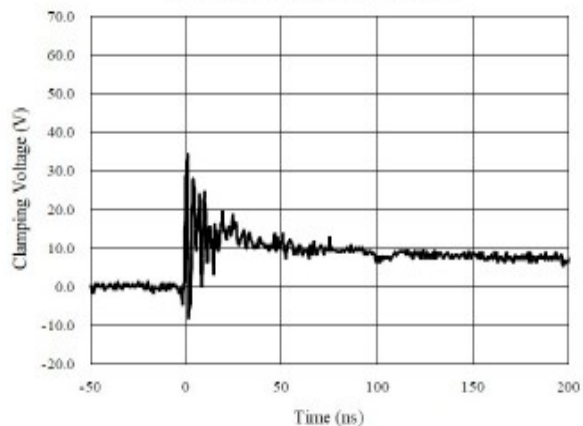
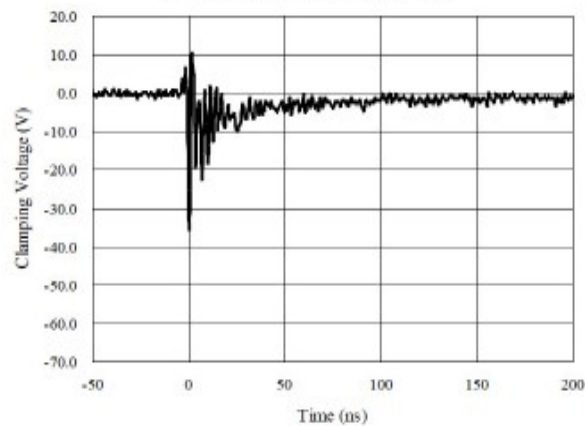
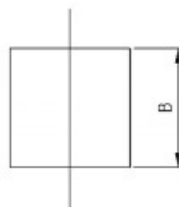
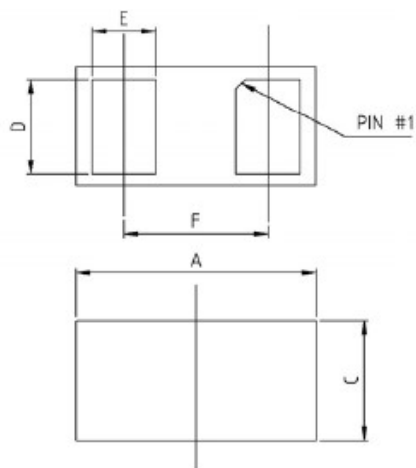


Fig 6 ESD Clamping
(-8kV Contact per IEC 61000-4-2)





Outline And Dimensions



Dimensions In Millimeterer			
Symbol	MIN	TYP	MAX
A	0.58	0.60	0.65
B	0.28	0.30	0.35
C	0.28	0.30	0.34
D	0.20	0.24	0.26
E	0.13	0.16	0.19
F	-	0.36	-



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