

ESDL2012

Extremely Low Voltage, Bidirectional ESD Protection Device in 0201 form factor featuring ultra low insertion loss for Thunderbolt, USB 3.x and PCIe

Product Overview

For complete documentation, see the data sheet.

The ESDL2012 is designed to protect voltage sensitive components that require low capacitance from ESD and transient voltage events. Excellent clamping capability, low capacitance, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its low capacitance, the part is well suited for use in high speed data line applications.

Features

- Low Insertion Loss (<0.5 dBs @ 20 GHz)
- Low Clamping Voltage
- X4DFN (0201 - 0.6 x 0.3 mm) package
- Stand-off Voltage: 1.0 V
- IEC61000-4-2 Level 4 ESD Protection
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

Applications

- USB 3.x & 4.0 Tx/Rx Data Line Pairs
- Thunderbolt 3.0 Data Line Pairs
- PCIe 3.x & 4.0 Data Lines

Benefits

- Allows for higher loss budget allocation for other elements of the link such as connectors and board traces
- Enables the best protection available in its class to latest Thunderbolt and USB Controllers
- Space saving solution that facilitates routing to the end customer, while providing a mechanically superior, no short circuit risk package
- Provides the right transition level between high and low impedance states, thus ensuring protection to the latest high speed differential interfaces even during small transients
- Featuring a minimum survivability level of 16 kV, the ESDL2012 will withstand twice the highest stress level defined by IEC61000-4-2

End Products

- Laptops
- Tablets
- Desktops
- Smartphones
- Wearables

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Interface	Number of Lines	Direction	C Max (pF)	V _(BR) Min (V)	V _{RWM} Max (V)	I _R Max (µA)	P _{PK} Max (W)	Package Type
ESDL2012MX4T5G	0.0511		Active		1	Bidirectional	0.23	1.4	1	0.5	0.313	DFN-2
SZESDL2012MX2WT5G	0.0512		Active	USB 3.0	1	Bidirectional	0.35	1.4	1	0.5	0.312	X2DFN W2 1.60x0.80