LITE-ON SEMICONDUCTOR

L05ESDL5V0NA-4

ESD PROTECTION DEVICE

STAND-OFF VOLTAGE - 5.0 Volts
POWER DISSIPATION - 50 Watts

GENERAL DESCRIPTION

The L05ESDL5V0NA-4 is ultra low capacitance TVS arrays designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

FEATURES

- Flow-through design
- Protects four I/O lines (Data line)
- Max. peak pulse power: Ppp=50w at tp = 8/20 us.
- Low capacitance: 0.3pF typical (I/O to I/O)
- IEC 61000-4-2, level 4 (ESD), >±15KV(air) ; >±8KV(contact)

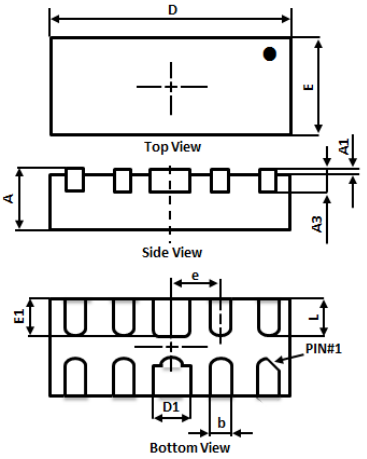
MECHANICAL DATA

- Case material: “Green” molding compound UL flammability classification 94V-0 (No Br, Sb, Cl), “Halogen-free”
- Terminals: lead free plating (matte tin finish)
- Component in accordance to RoHs 2011/65/EU

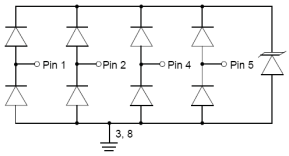
APPLICATION

- High definition multi-media interface (HDMI)
- Digital visual interface (DVI)
- Display prot™ interface
- MDDI ports
- LVDS
- SATA
- USB 3.0/3.1

SLP2510P8



SLP2510P8		
DIM.	MIN.	MAX.
A	0.45	0.55
A1	0.00	0.05
A3	0.152 REF.	
D	2.45	2.55
E	0.95	1.05
D1	0.35	0.45
E1	0.35	0.45
b	0.15	0.25
e	0.50 BSC	
L	0.35	0.45
All dimension in millimeter		



PIN ASSIGNMENT	
1,2,4,5	Input lines
6,7,9,10	NC
3,8	Ground

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power (tp = 8/20us)	P_{pk}	50	W
Peak pulse current (tp = 8/20us)	I_{pp}	4.5	A
Operating junction temperature range	T_J	-55 to +125	°C
Storage temperature range	T_{STG}	55 to +150	°C
Soldering temperature, t max = 10s	T_L	260	°C

ELECTRICAL CHARACTERISTICS

PARAMETER	TEST CONDITIONS	SYMBOL	MIN	TYP.	MAX	UNIT
Reverse standoff voltage	Any I/O pin to ground	V_{RWM}	--	--	5.0	V
Reverse leakage current	V_{DRM} = 5V	I_{RM}	--	--	1.0	uA
Breakdown voltage	I_R = 1 mA	V_{BR}	6.0	--	--	V
Forward voltage	I_F = 15 mA, pin 3,8 to pin 1,2,4,5 @ T_J =25°C	V_F	--	0.85	1.1	V
Clamping Voltage	Ipp=4.5A, tp = 8/20 us	Vc	--	--	10	V
Junction capacitance	VR = 0V, f = 1MHz, between I/O pins	C_J	--	0.3	0.4	pF
	VR = 0V, f = 1MHz, any I/O pin to ground		--	--	0.8	

RATING AND CHARACTERISTIC CURVES
L05ESDL5V0NA-4

FIG.1- 8/20us pulse waveform according to IEC 61000-4-5

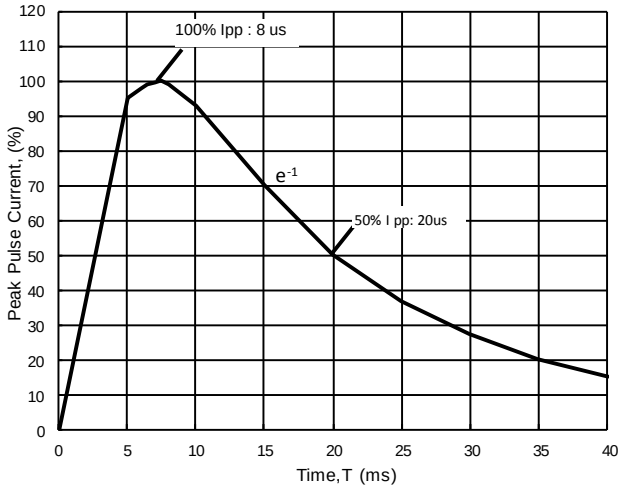


FIG.2- ESD pulse waveform according to IEC 61000-4-2

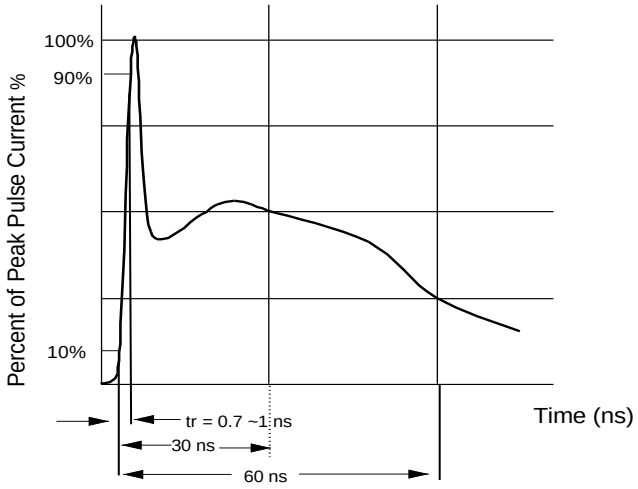


FIG3- Power dissipation versus pulse time

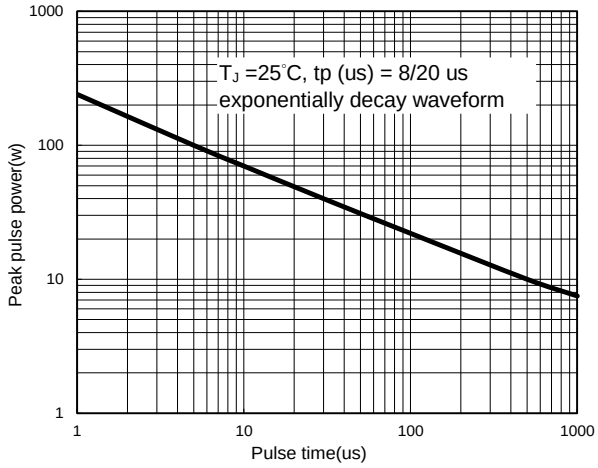


FIG4- Peak pulse power versus TJ

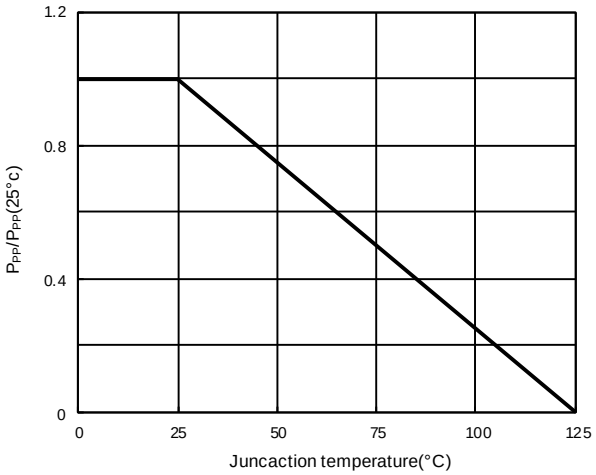


FIG.5- Typical junction capacitance

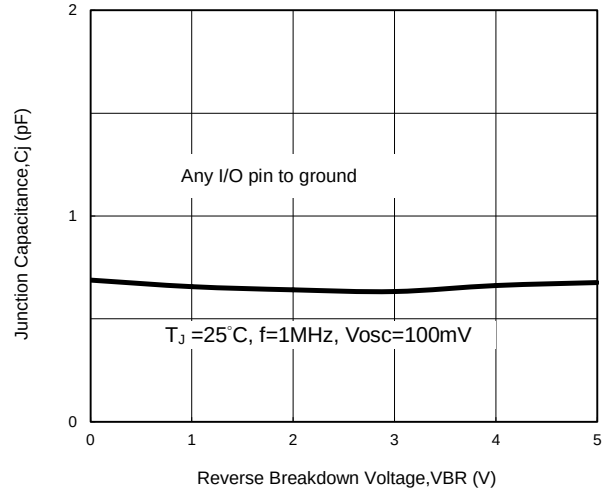
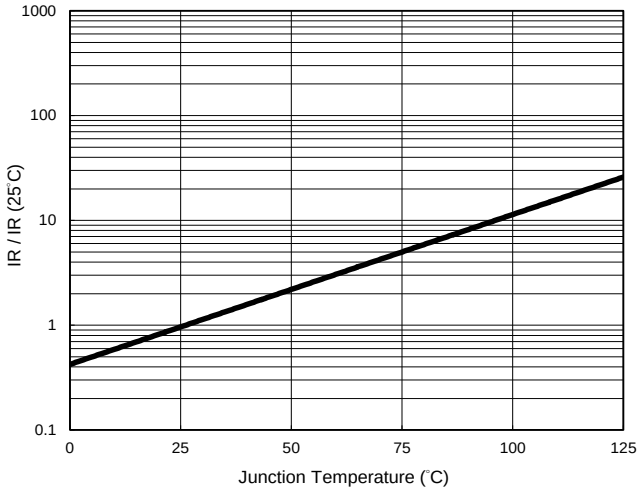


FIG.6- reverse leakage current versus Tj



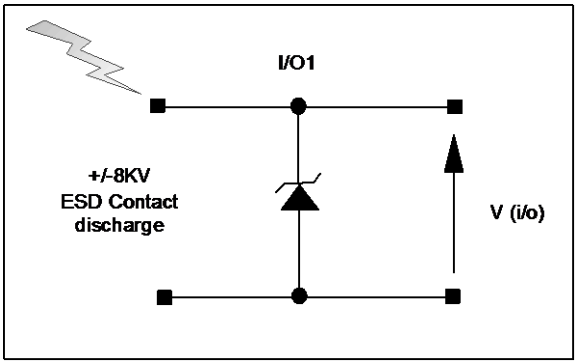


Figure 7. ESD Test Configuration

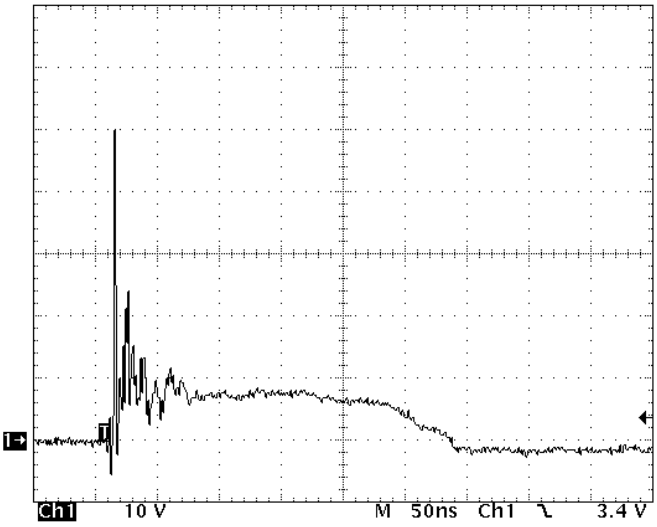


Figure 8. Clamped +8 kV ESD voltage waveform

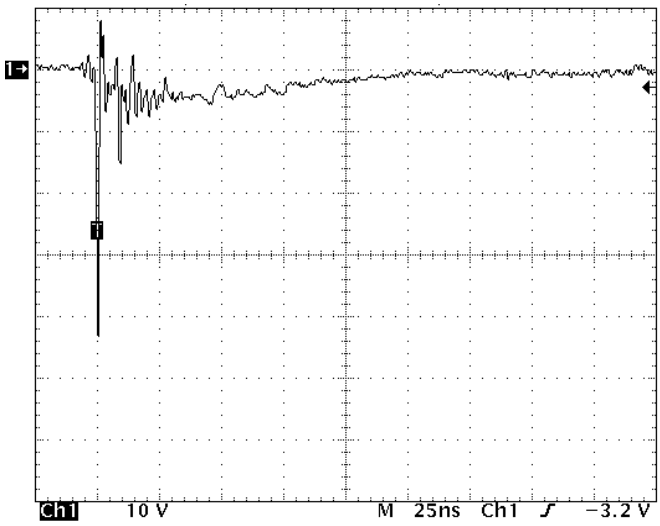


Figure 9. Clamped -8 kV ESD voltage waveform

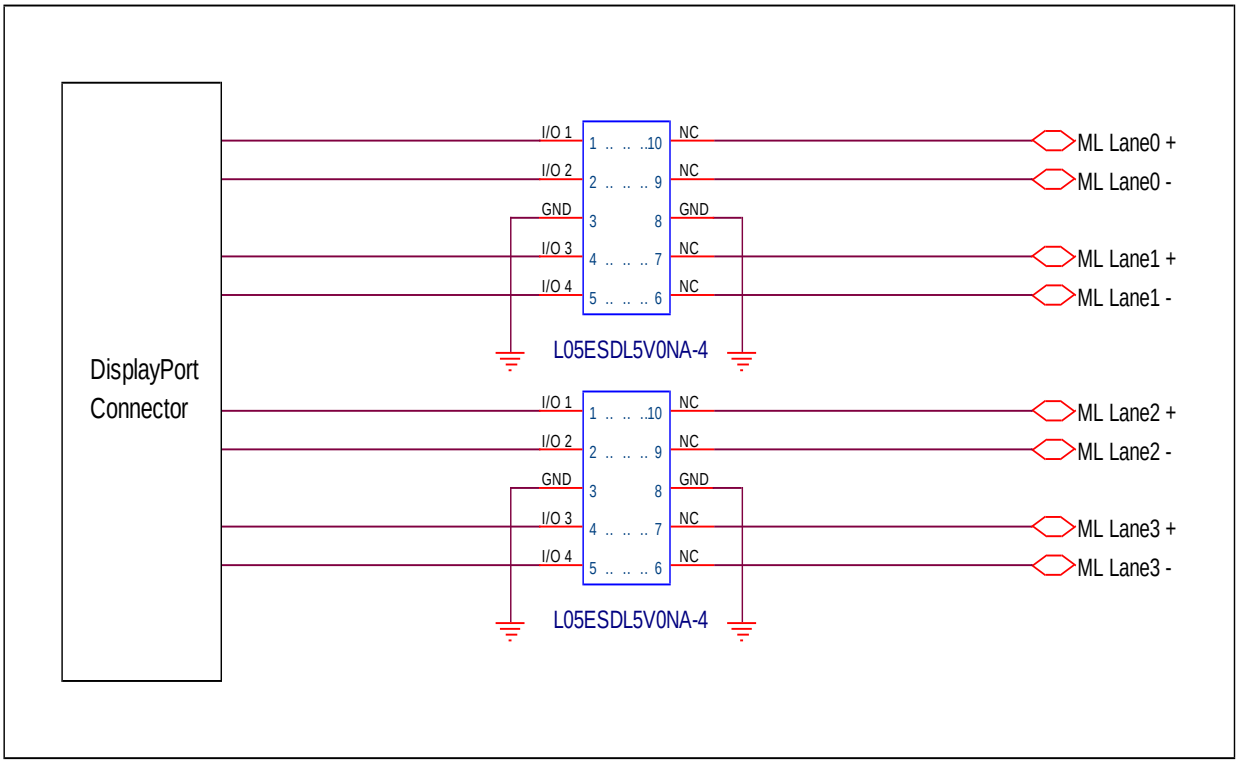


Figure 12. Display Port ESD Protection

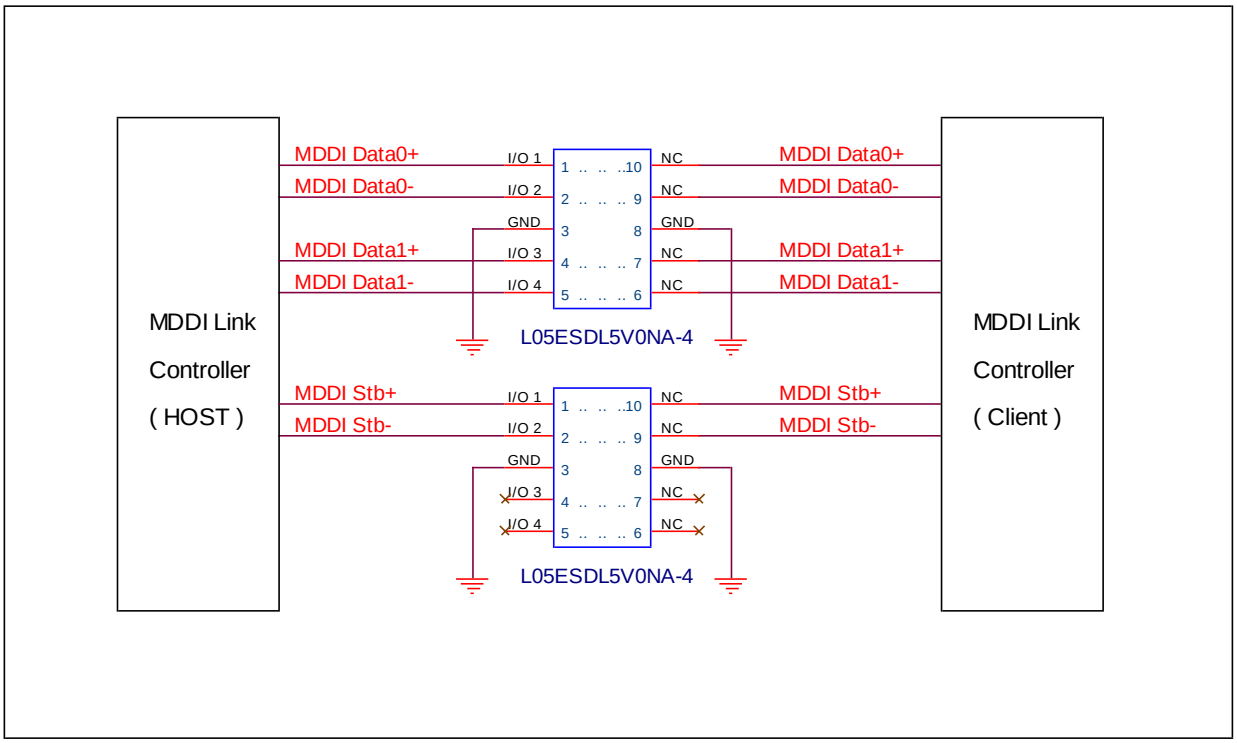


Figure 13. MDDI Interface ESD Protection

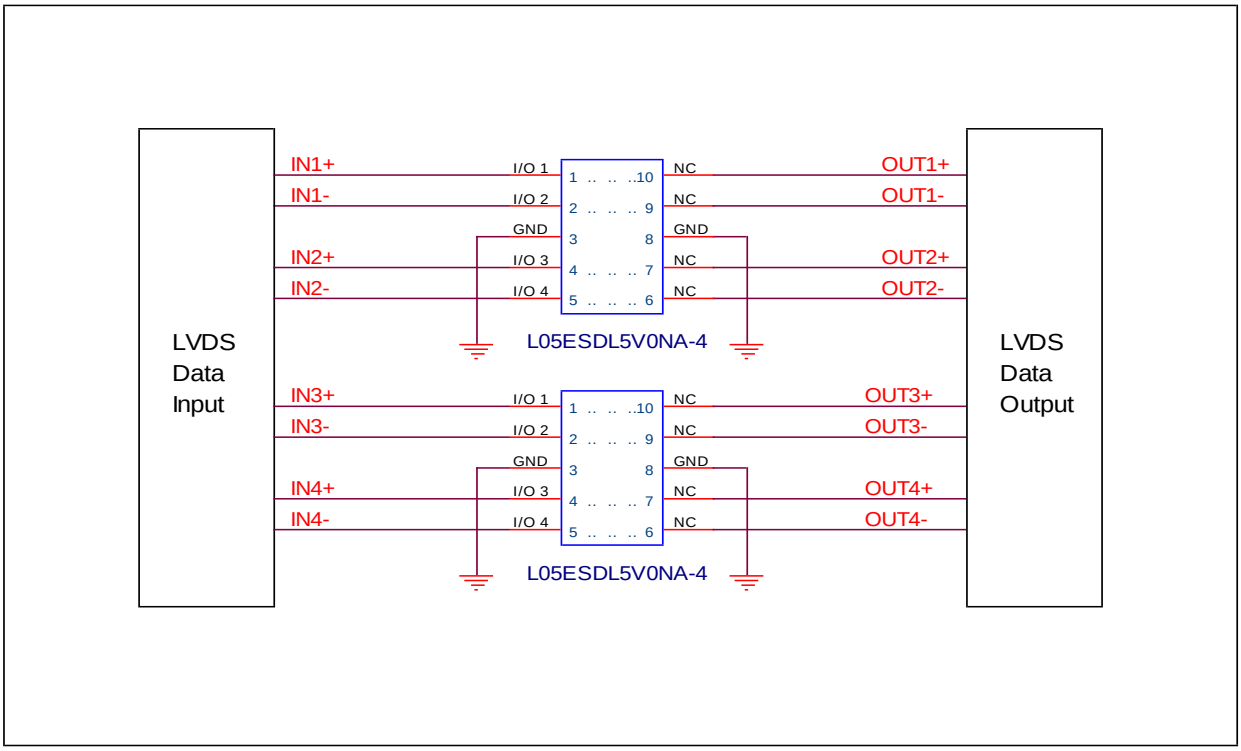


Figure 14. LVDS Interface ESD Protection

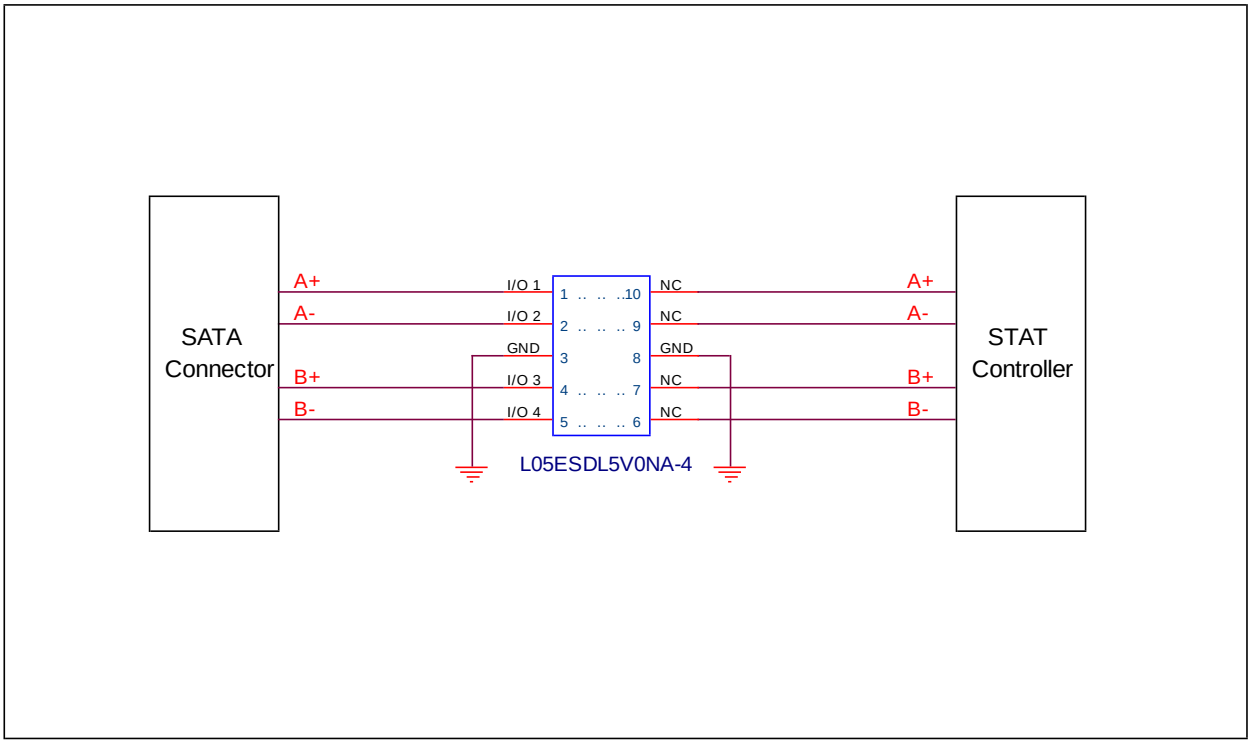
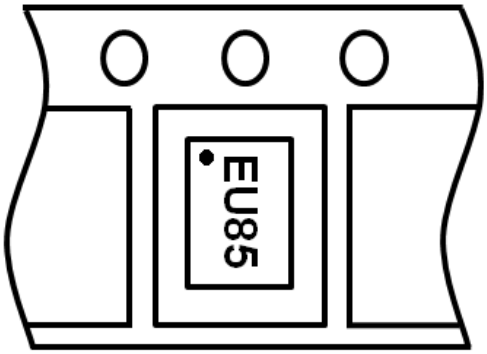


Figure 15. Serial ATA ESD Protection

MARKING AND PACKAGING INFORMATION
L05ESDL5V0NA-4

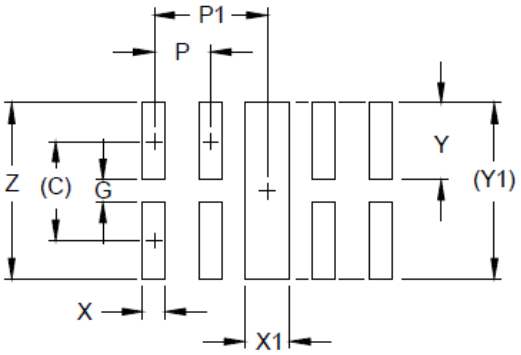
Marking and Orientation :



Packaging Information :

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
L05ESDL5V0NA-4	3000	7	45000	90K/180K

SLP2510P8 Soldering Pad Layout :



DIM.	MILLIMETERS	INCHES
C	(0.875)	(0.034)
G	0.20	0.008
P	0.50	0.020
P1	1.00	0.039
X	0.20	0.008
X1	0.40	0.016
Y	0.68	0.027
Y1	(1.550)	(0.061)
Z	1.550	0.061

Important Notice and Disclaimer

LSC reserves the right to make changes to this document and its products and specifications at any time without notice. Customers should obtain and confirm the latest product information and specifications before final design, purchase or use.

LSC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does LSC assume any liability for application assistance or customer product design. LSC does not warrant or accept any liability with products which are purchased or used for any unintended or unauthorized application.

No license is granted by implication or otherwise under any intellectual property rights of LSC.

LSC products are not authorized for use as critical components in life support devices or systems without express written approval of LSC.