

MLESD08A-2510

Multilayer Polymer ESD Suppressor

Features

- ESD protection for high speed data lines to IEC61000-4-2 ESD contact discharge typical 8KV, max 15KV
IEC61000-4-2 ESD air discharge typical 15KV, max 25KV
- Multilayer structure
- Surface mount
- Extremely low capacitance
- Very low leakage current
- Fast response time
- Bi-directional ESD protection
- Lead free solder termination
- The best ESD protection for high frequency, low voltage applications

Application

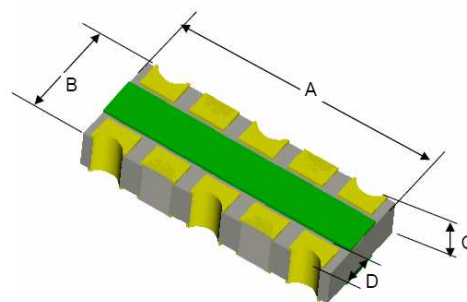
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface
- Unified Display Interface (UDI)
- MDDI Ports
- Gigabit Ethernet
- USB2.0 and IEEE1394 interface

* Caution: This component is designed for signal line protection only, not intended to be used under bias, not for application with a power line.

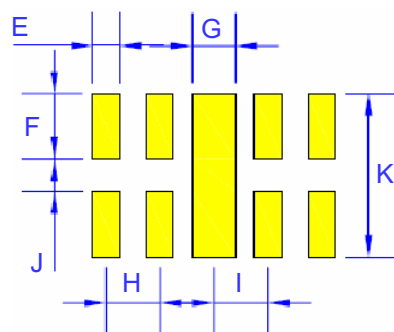
Environmental Specifications

- Operation temperature: -40~90
- Moisture Resistance, Steady state: MIL-STD-833, Method 1004.7, 85% RH, 85, 1000hrs
- Thermal Shock: MIL-STD-202, Method 107G, -55 to 150, 30 min cycle, 10 cycles.
- Vibration: MIL-STD-202F, Method 201A, (10 to 55 to 10HZ, 1 min. cycle, 2hrs each in X-Y-Z)
- Chemical Resistance: ASTM D-543, 4hrs @ 40, 3 solutions (H₂O, detergent solution, deluxer)
- Solder leach resistance and terminal adhesion: Per EIA-576 test

2510



Suggested Solder
Pad Layout



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.096	.100	2.45	2.55	
B	.035	.043	0.90	1.10	
C	.013	.017	0.33	0.43	
D	.008	.018	0.20	0.45	
E	.008	.012	0.20	0.30	
F	.022	.026	0.55	0.65	
G	.014	.018	0.35	0.45	
H	.018	.022	0.45	0.55	
I	.018	.022	0.45	0.55	
J	.010	.014	0.25	0.35	
K	.055	.063	1.40	1.60	

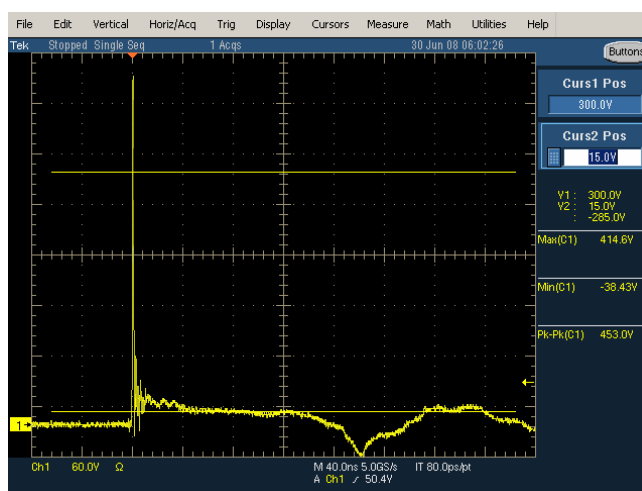
Electrical Characteristics

Electrical Characteristics						
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Continuous operating voltage	V_{DC}	---	---	---	8	V
Trigger voltage	V_T	IEC61000-4-2 8KV contact discharge	---	300	---	V
Clamping voltage	V_C	IEC61000-4-2 8KV contact discharge	---	15	---	V
Leakage current	I_L	8V V_{DC}	---	0.10	10	nA
Capacitance	C_P	VR = 0V, f = 1MHz	---	0.15	0.3	pF
Operating Temperature	---	---	-40	---	90	°C
Storage Temperature	---	---	-55	---	150	°C
ESD pulse withstand	Pulses	IEC61000-4-2 8KV contact discharge	2000	---	---	---

Notes:

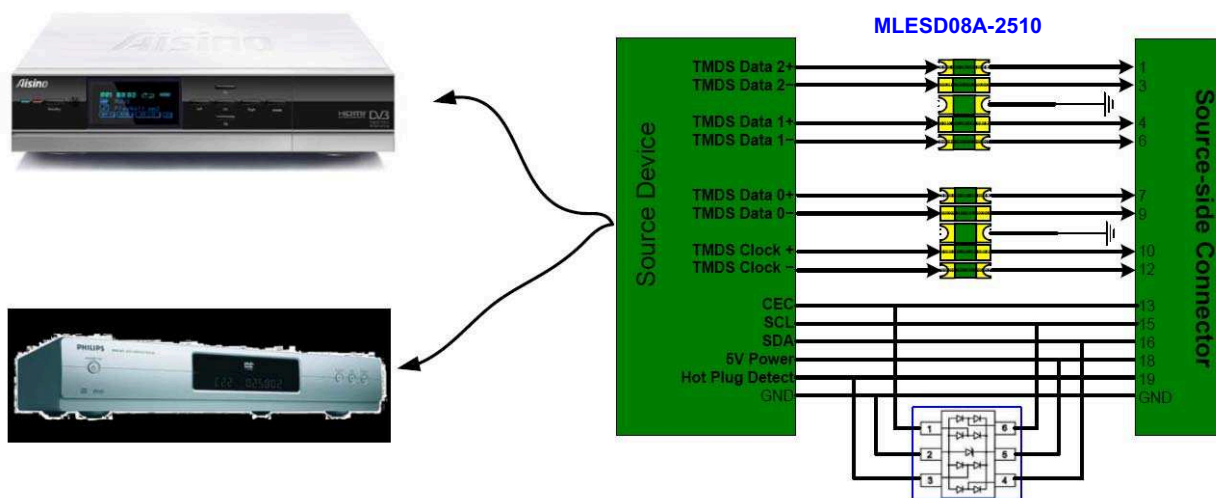
1, Trigger and clamping voltage measure per IEC 61000-4-2, 8KV contact discharge method

Typical MLESD clamping for +8KV pulse per IEC61000-4-2

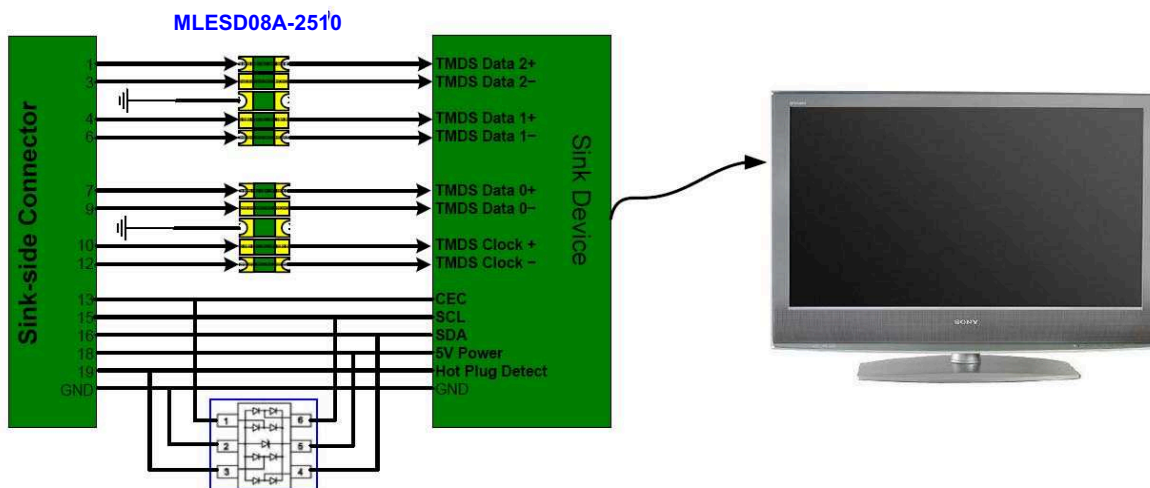


Design Recommendations for HDMI

For HDMI Source Device



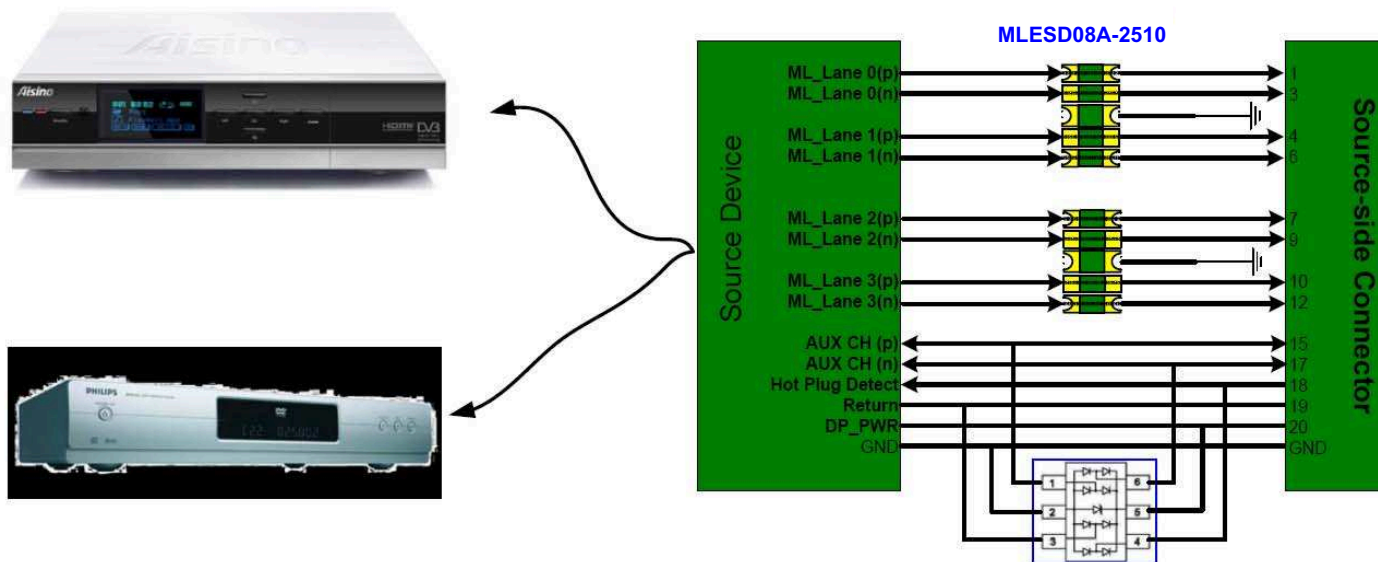
For HDMI Sink Device



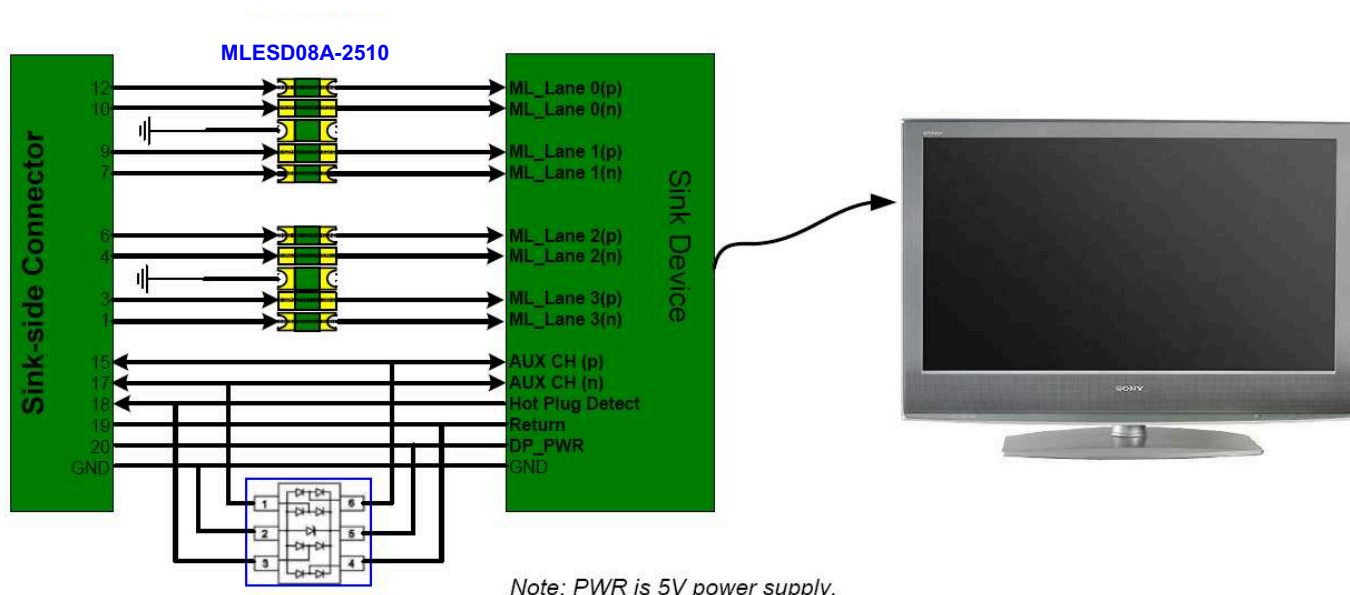
MLESD08A-2510

Design Recommendations for Display Port

For Display Port Source Device



For Display Port Sink Device



Note: PWR is 5V power supply.

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HDMI Port lane was protected with MLESD08A-2510, tested for 2.25G bps



The diagram shows a hydraulic network with 10 nodes, labeled 1 through 10. Nodes 1, 2, 3, 4, and 5 are arranged in a top row, while nodes 10, 9, 8, 7, and 6 are arranged in a bottom row. The network is bounded by a green rectangle. The interior is divided into three gray rectangular regions by vertical lines connecting the top and bottom nodes. Three pumps, represented by white triangles with black outlines, are located within these regions: one in the left region (between nodes 1 and 10), one in the middle region (between nodes 3 and 8), and one in the right region (between nodes 5 and 6). The connections are as follows: vertical lines connect (1,10), (2,9), (3,8), (4,7), and (5,6); a horizontal line connects nodes 1, 3, and 5; another horizontal line connects nodes 10, 9, 8, 7, and 6; and a third horizontal line connects nodes 3 and 8. The pumps are positioned on these lines: the first pump is on the vertical line between 1 and 10; the second pump is on the horizontal line between 3 and 8; and the third pump is on the horizontal line between 5 and 6.

Pin	Identification
1, 2, 4, 5	Input lines
6, 7, 9,10	Output lines
3, 8	Ground

Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;3Kpcs/Reel

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