

Obsolete

M.C.C.

Micro Commercial Components



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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

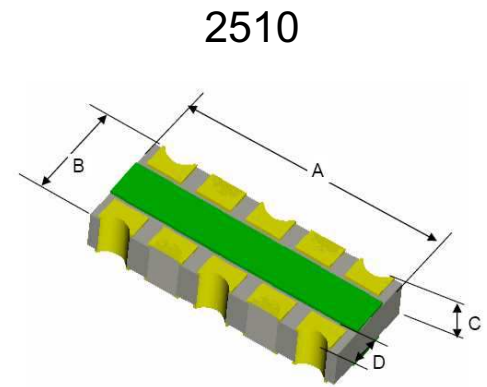
Application

- 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 to150 ,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



Suggested Solder Pad Layout

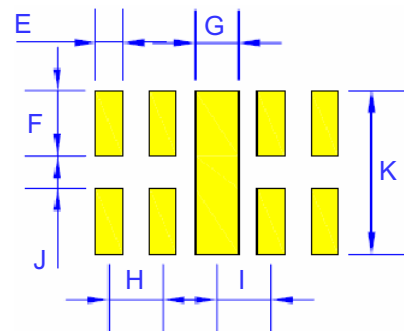


Table with 6 columns: DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. Rows A through K provide specific dimension values.

# MLESD08A-2510

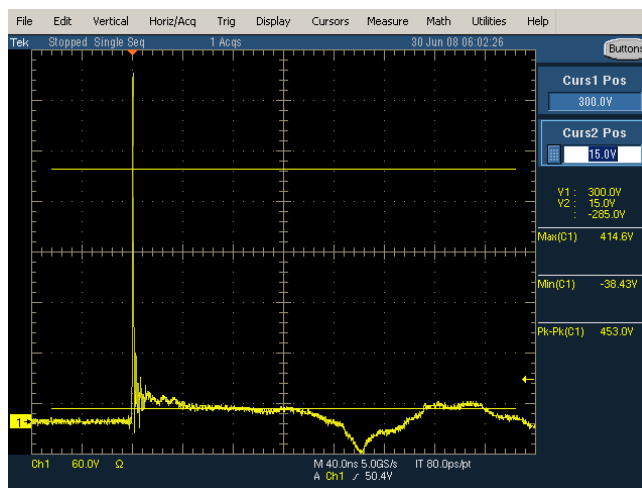
## Electrical Characteristics

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:

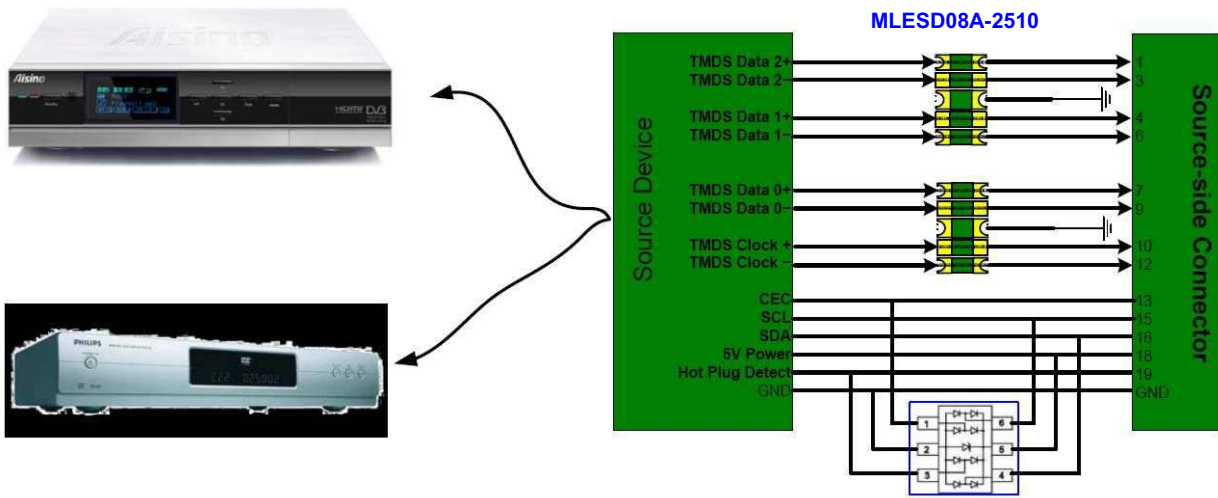
1, Trigger and clamping voltage measure per IEC 61000-4-2, 8KV contact discharge method

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

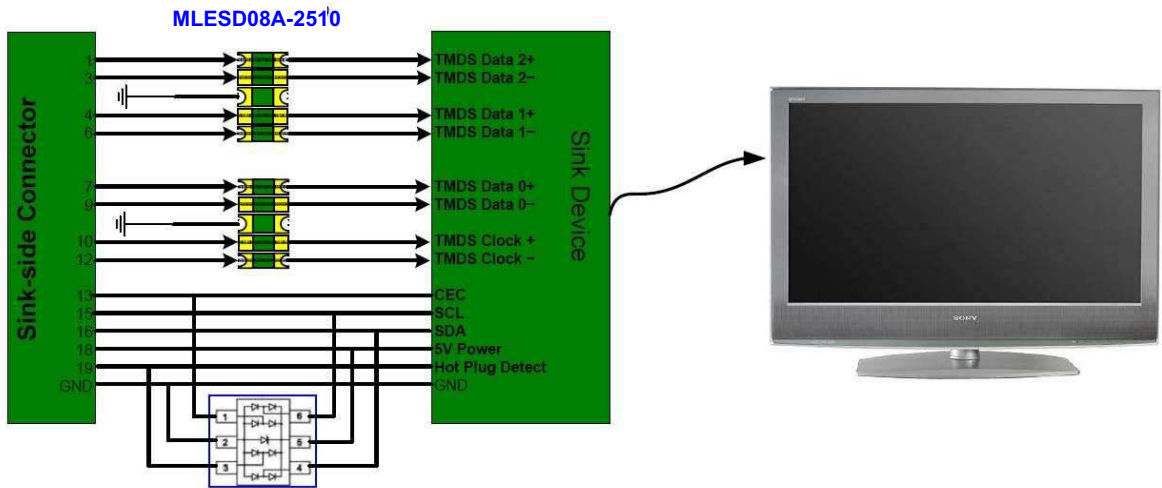


## Design Recommendations for HDMI

For HDMI Source Device



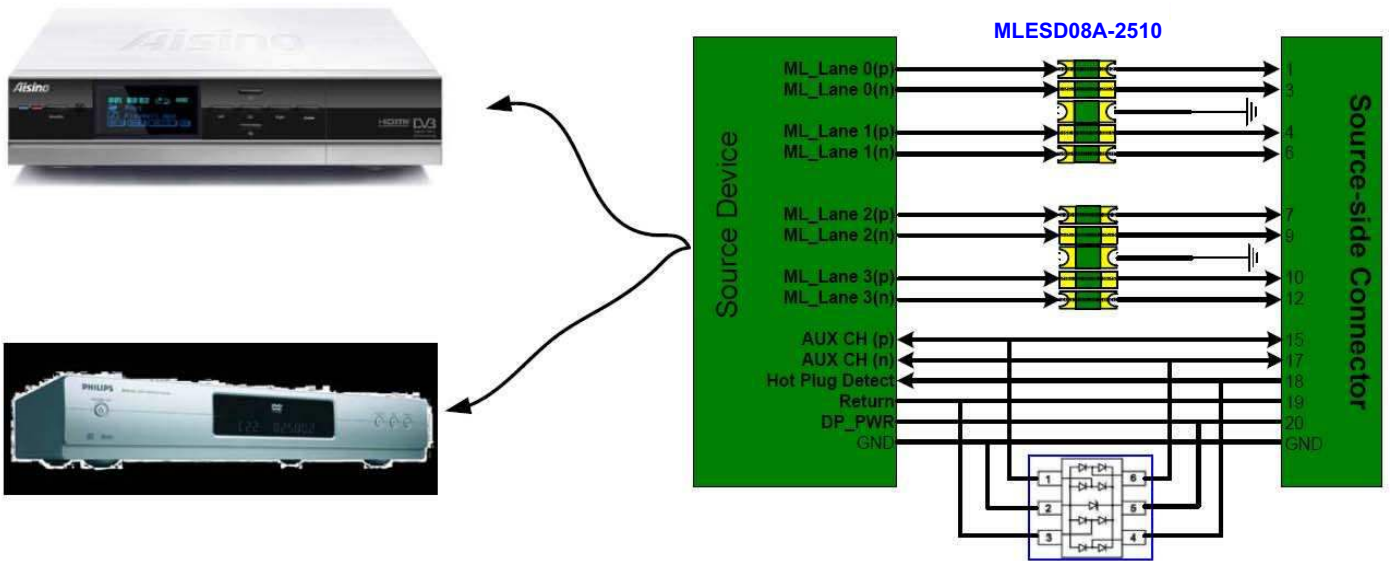
For HDMI Sink Device



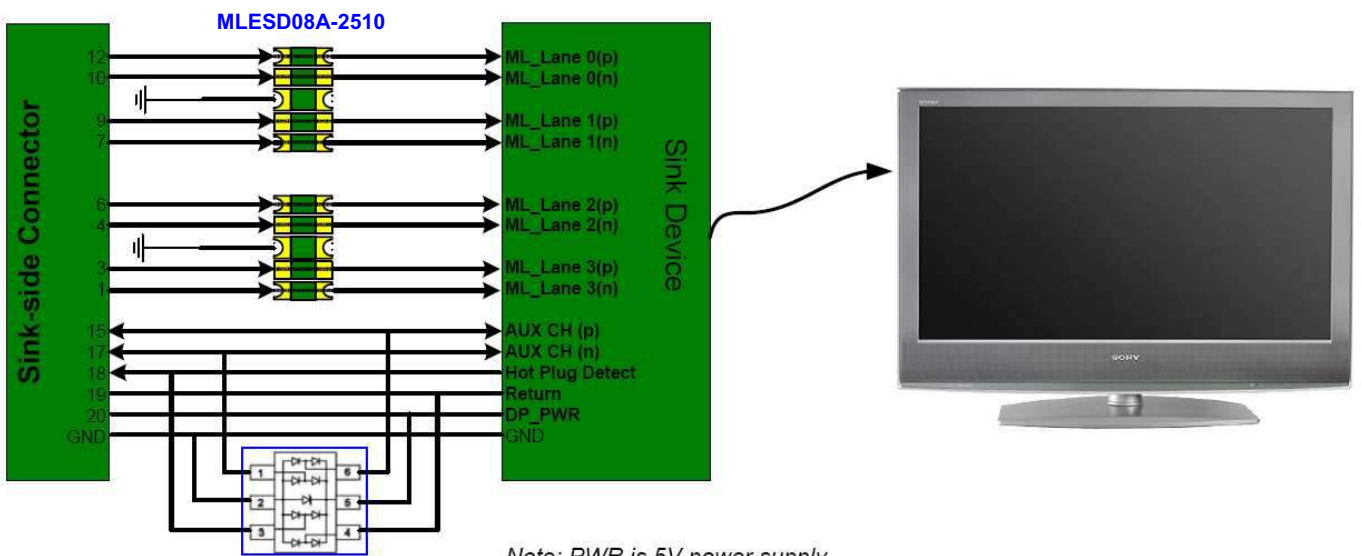
# MLESD08A-2510

## Design Recommendations for Display Port

For Display Port Source Device

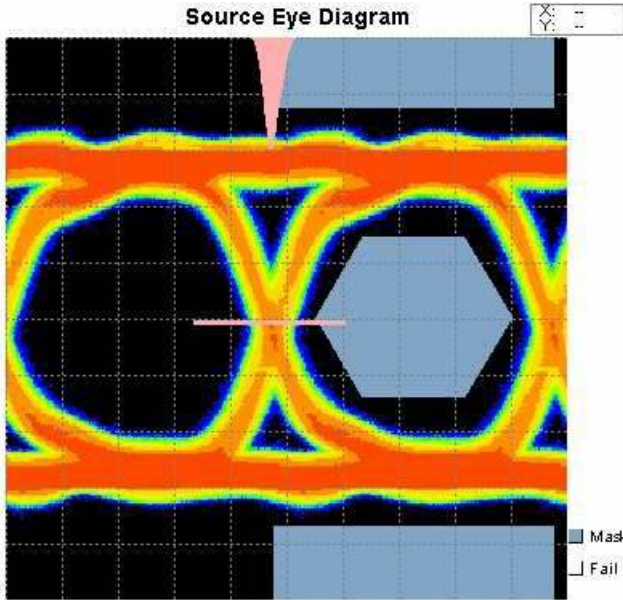


For Display Port Sink Device

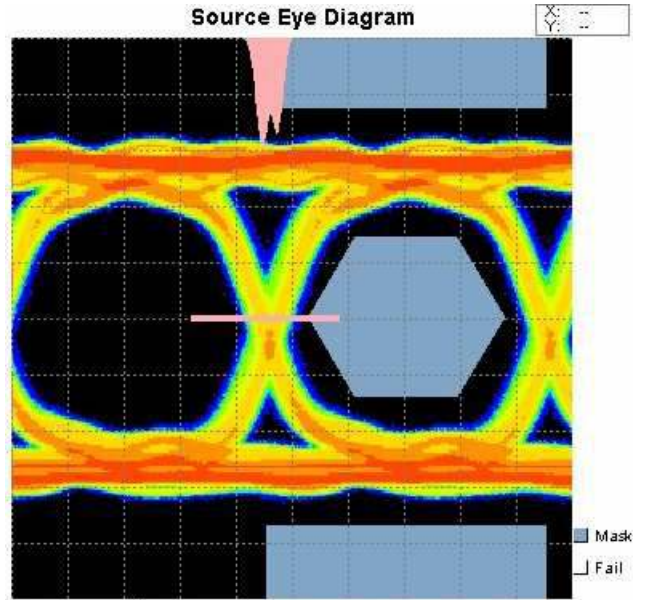


## Eye Pattern Test

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

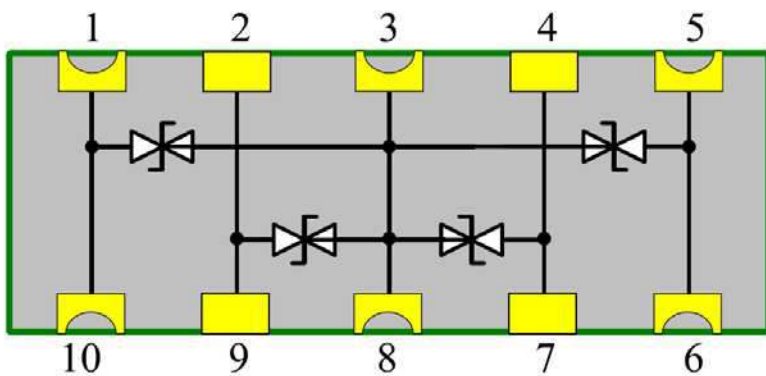


HDMI Port without MLESD08A-2510



HDMI Port with MLESD08A-2510

## Circuit diagram



## Pin configuration

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



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## Ordering Information

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

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