



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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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

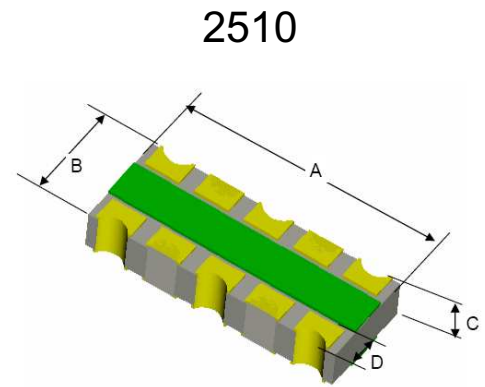
Application

- 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

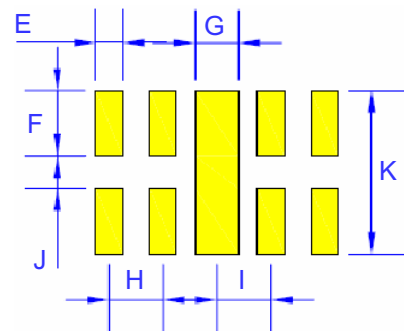


Table with 6 columns: DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. It lists dimensions A through K with their respective minimum and maximum values in inches and millimeters.

MLESD08A-2510

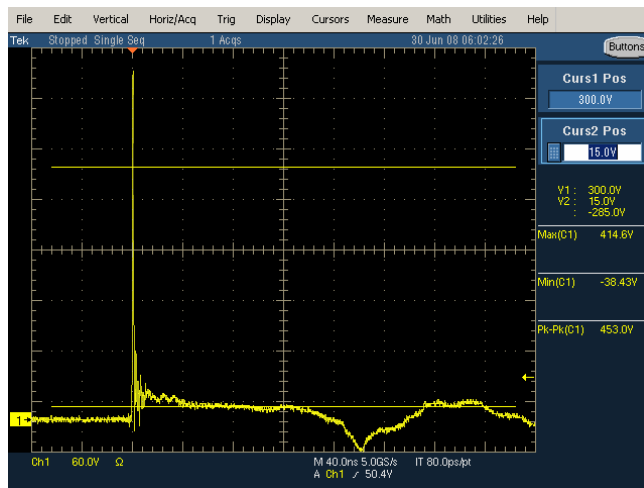
Electrical Characteristics

| 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 | $V_R = 0V, f = 1MHz$ | --- | 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:

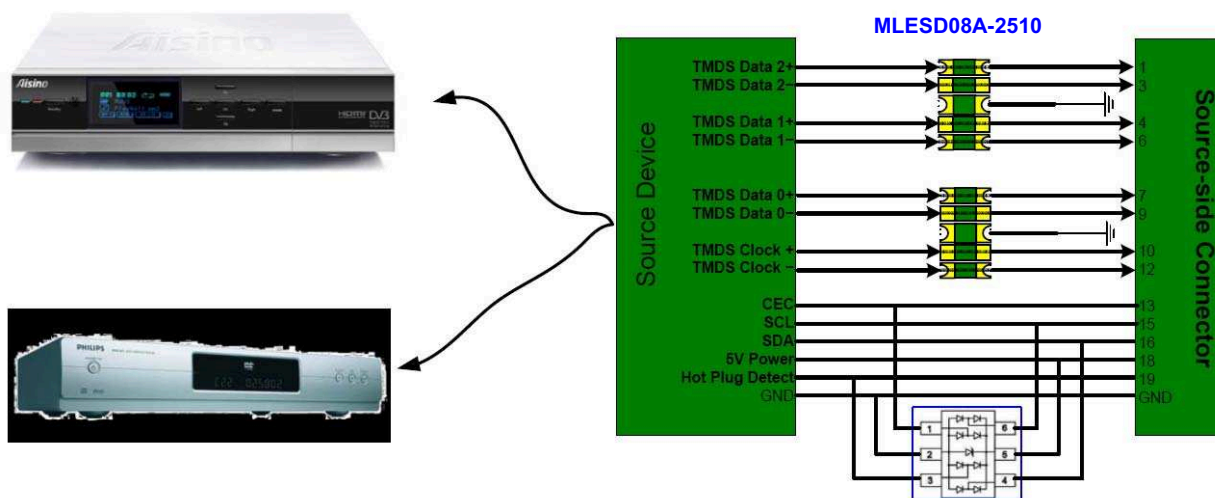
1, Trigger and clamping voltage measure per IEC 61000-4-2, 8KV contact discharge method

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

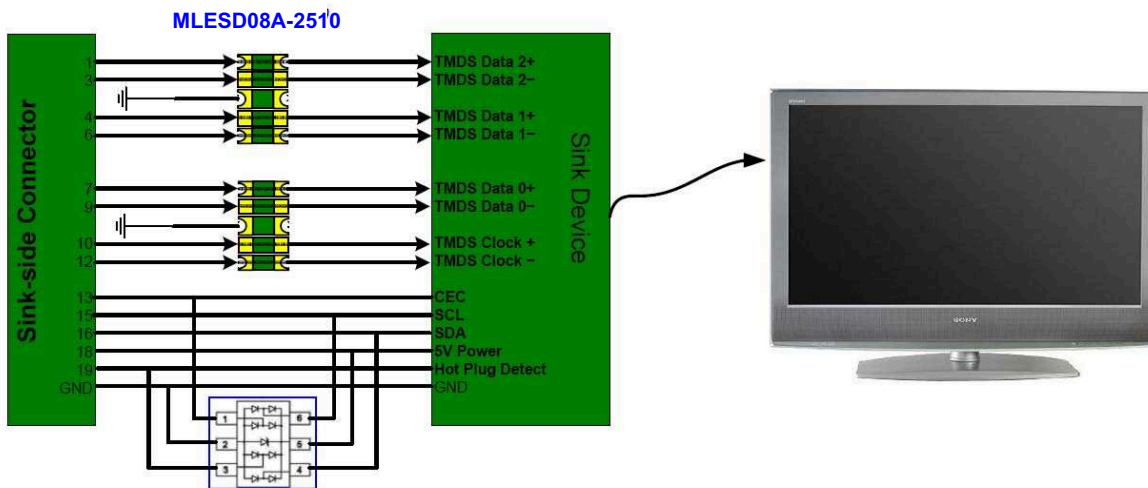


Design Recommendations for HDMI

For HDMI Source Device



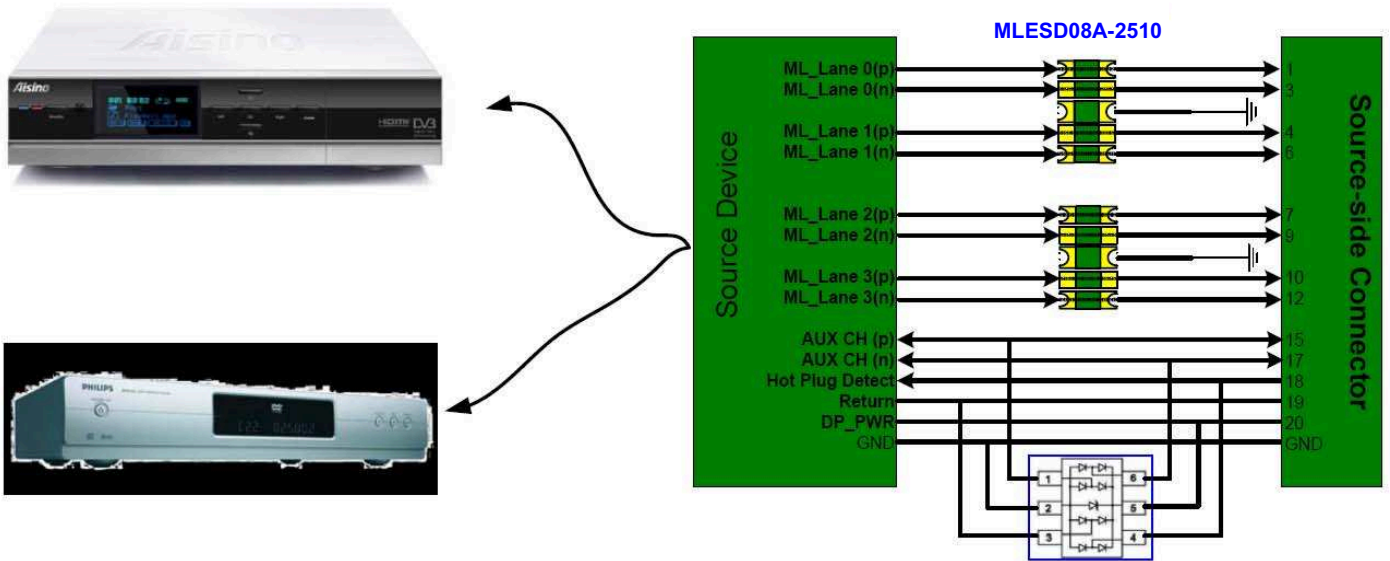
For HDMI Sink Device



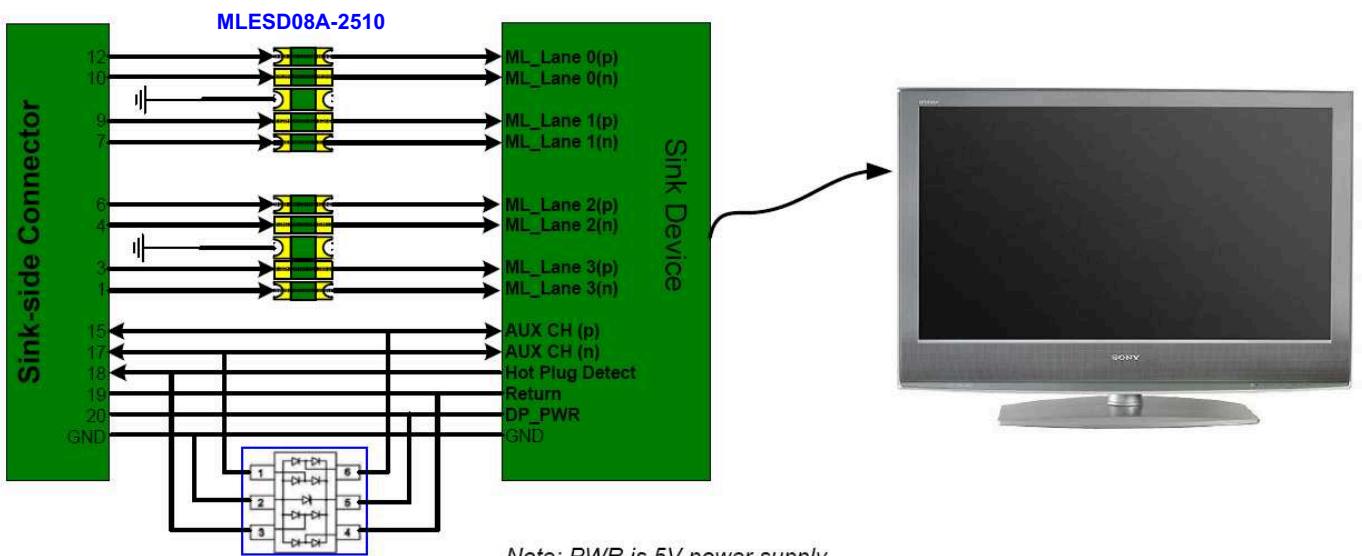
MLESD08A-2510

Design Recommendations for Display Port

For Display Port Source Device



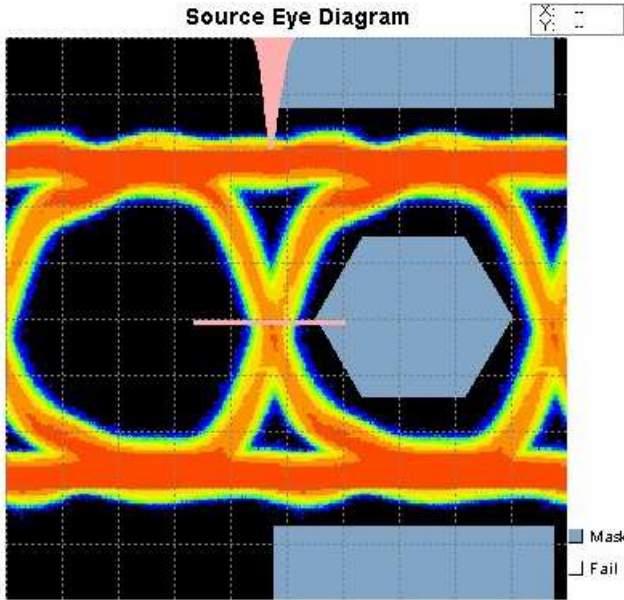
For Display Port Sink Device



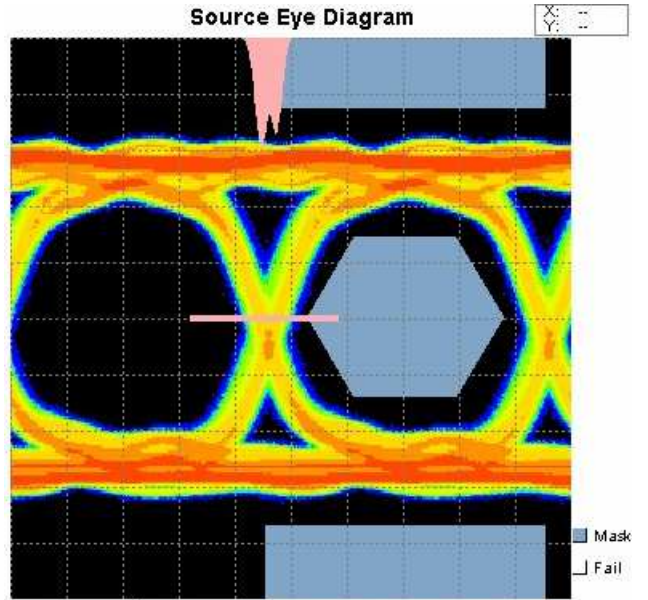
Note: PWR is 5V power supply.

Eye Pattern Test

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

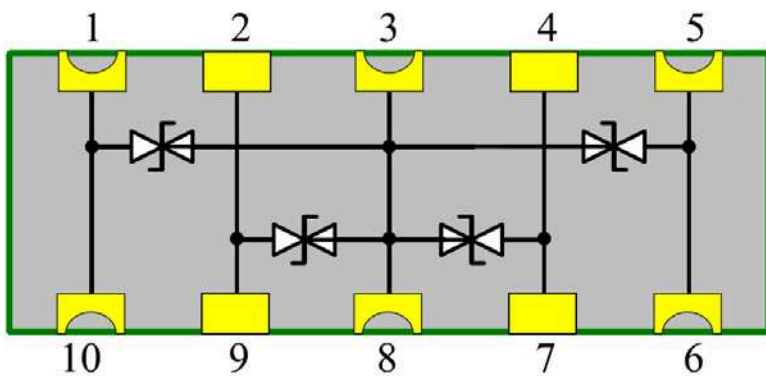


HDMI Port without MLESD08A-2510



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 |



Micro Commercial Components

Ordering Information

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

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