



**THE DATASHEET OF
MLESD12A-0402-TP**





Micro Commercial Components



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MLESD12A-0402

Multilayer Polymer
ESD Suppressor

Features

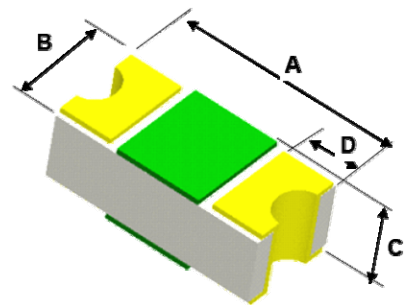
- ESD protection for high speed data lines to IEC61000-4-2 ESD contact discharge 8KV, max 15KV
IEC61000-4-2 ESD air discharge 15KV, max 25KV
Multilayer structure
Surface mount
Extremely low capacitance
Very low leakage current
Fast response time
Bi-directional ESD protection
Lead free solder termination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

Application

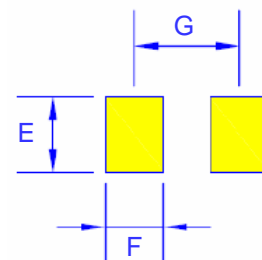
- High Definition Multi-Media Interface (HDMI)
Digital Visual Interface (DVI)
Display Port Interface
Unified Display Interface (UDI)
MDDI Ports
Gigabit Ethernet
USB2.0 and IEEE1394 interface

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

0402



Suggested Solder Pad Layout



Environmental Specifications

- Operation temperature: -40~90°C
Moisture Resistance, Steady state: MIL-STD-833, Method 1004.7, 85% RH, 85°C, 1000hrs
Thermal Shock: MIL-STD-202, Method 107G, -55°C to 150°C, 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°C, 3 solutions(H2O, detergent solution, deluxer)
Solder leach resistance and terminal adhesion: Per EIA-576 test

DIMENSIONS

Table with 5 columns: DIM, INCHES (MIN, MAX), MM (MIN, MAX), and NOTE. Rows include dimensions A through G.

MLESD12A-0402

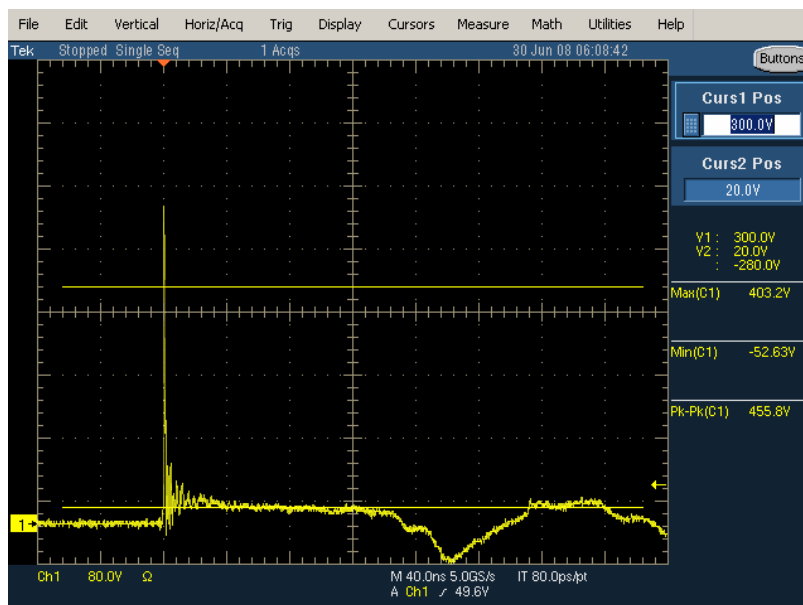
Electrical Characteristics

Electrical Characteristics						
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Continuous operating voltage	V_{DC}	---	---	---	12	V
Trigger voltage	V_T	IEC61000-4-2 8KV contact discharge	---	300	---	V
Clamping voltage	V_C	IEC61000-4-2 8KV contact discharge	---	20	---	V
Leakage current	I_L	12V V_{DC}	---	0.10	100	nA
Capacitance	C_P	$V_R = 0V, f = 1MHz$	---	0.15	0.3	pF
Operating Temperature	---	---	-40	---	90	°C
Storage Temperature	---	---	-55	---	120	°C
ESD pulse withstand	Pulses	IEC61000-4-2 8KV contact discharge	100	---	---	---

Notes:

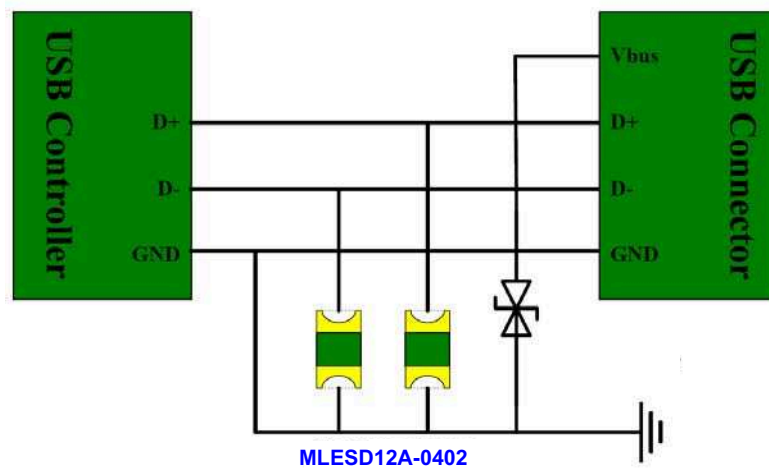
1, Trigger and clamping voltage measure per IEC 61000-4-2, 8KV contact discharge method

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



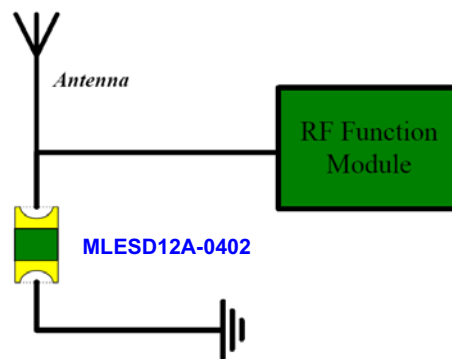
Design Recommendations for USB2.0

For USB2.0 port



Design Recommendations for Antenna

For antenna line





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Ordering Information

Device	Packing
(Part Number)-TP	Tape&Reel;10Kpcs/Reel

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