

## MLESD12A-0402

### 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

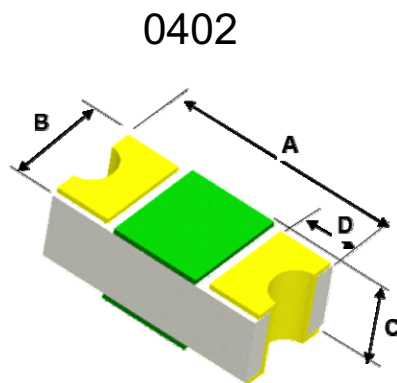
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface
- Unified Display Interface (UDI)
- MDDI Ports
- Gigabit Ethernet
- USB2.0 and IEEE1394 interface

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

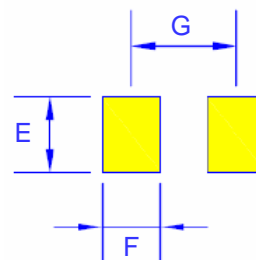
### Environmental Specifications

- 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 (H<sub>2</sub>O, detergent solution, deluxer )
- Solder leach resistance and terminal adhesion: Per EIA-576 test

## Multilayer Polymer ESD Suppressor



Suggested Solder  
Pad Layout



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.035	.047	0.90	1.20	
B	.017	.026	0.45	0.65	
C	.010	.018	0.25	0.45	
D	.006	.014	0.15	0.35	
E	.024	.028	0.60	0.70	
F	.017	.022	0.45	0.55	
G	.033	.037	0.85	0.95	

# MLESD12A-0402

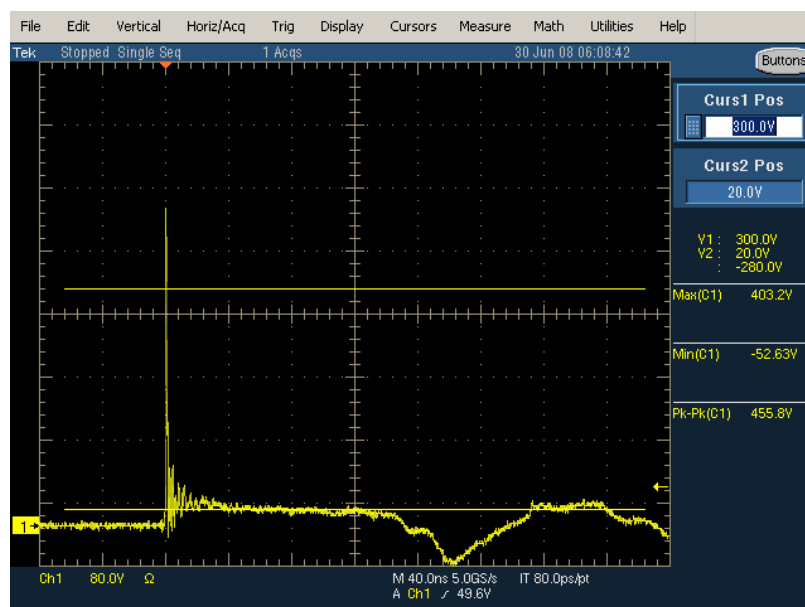
## Electrical Characteristics

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:

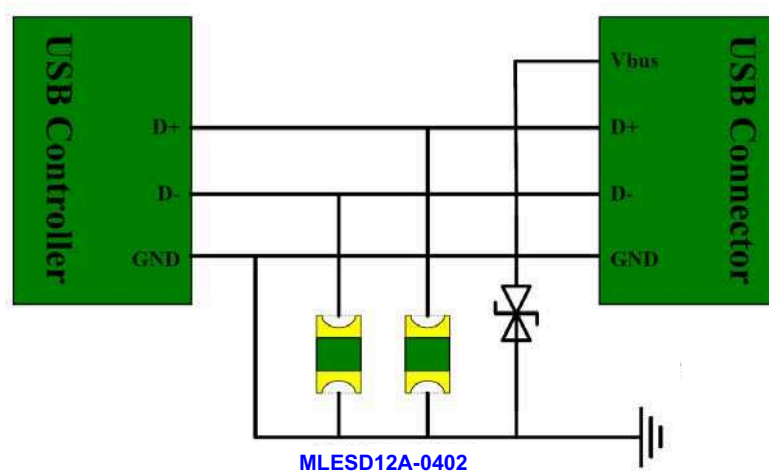
1, Trigger and clamping voltage measure per IEC 61000-4-2, 8KV contact discharge method

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



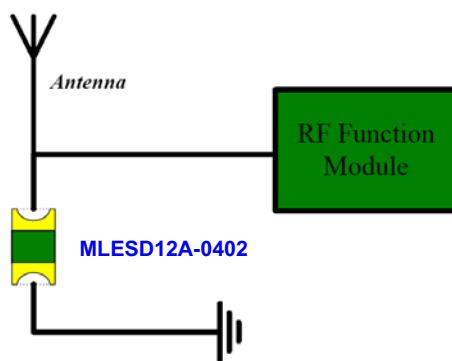
## Design Recommendations for USB2.0

For USB2.0 port



## Design Recommendations for Antenna

For antenna line



## Ordering Information

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

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