COOPER Bussmann

COOPER Bussmann PolySurg ESD Suppressors

0402ESDA-MLP
MLP Series ESD Suppressor

Features & Benefits

- Ultra-low capacitance (0.05pF typ.) ideal for high speed data applications
- Provides ESD protection with fast response time (<1ns) allowing equipment to pass IEC 61000-4-2 level 4 test
- Single-line, bi-directional device for placement flexibility
- Low profile 0402/1005 design for board space savings
- Low leakage current (<0.1nA typ.) reduces power consumption

RoHS 2002/95/EC

Applications

- Computers & Peripherals
- HDTV Equipment
- DVD Players
- A/V Equipment
- Satellite Radio
- Cell Phones
- PDA's
- Digital Still Cameras
- Digital Camcorders
- MP3 / Multimedia Players
- Set Top Boxes
- External Storage
- DSL Modems
- High Speed Data Ports
  - USB 2.0
  - IEEE 1394
  - HDMI
  - DVI
  - High Speed Ethernet
  - Infiniband®

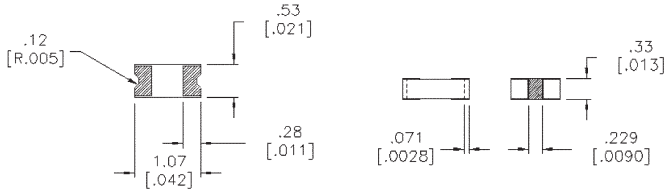
Description

The PolySurg™ 0402ESDA-MLP ESD Suppressors protect valuable high-speed data circuits from ESD damage without distorting data signals as a result of its ultra-low (0.05pF typical) capacitance.

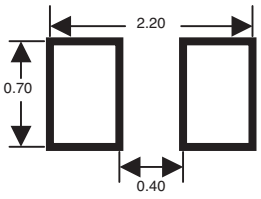
Ordering Information

Catalog Number	Packaging
0402ESDA-MLP7	10,000 pieces in paper tape on 7" (178mm) reel
0402ESDA-MLP8	2,500 pieces in paper tape on 7" (178mm) reel

Product Dimensions: mm [inches]



Solder Pad Recommendation: mm [inches]



Design Considerations

The location in the circuit for the MLP series has to be carefully determined. For better performance, the device should be placed as close to the signal input as possible and ahead of any other component. Due to the high current associated with an ESD event, it is recommended to use a "0-stub" pad design (pad directly on the signal/data line and second pad directly on common ground).

Electrical Characteristics

Characteristic	Value
Rated Voltage	30VDC maximum
Clamping Voltage[1]	35V typical
Trigger Voltage[2]	300V typical
Capacitance (@1MHz)	0.05pF typ., 0.15pF max.
Attenuation Change (0-6GHz)	-0.2dB typical
Leakage Current (@12VDC)	<0.1nA typical
ESD Capability	
IEC61000-4-2 Direct Discharge	8kV typical
IEC61000-4-2 Air Discharge	15kV typical
ESD Pulse Withstand[1]	>1000 typical

Notes:

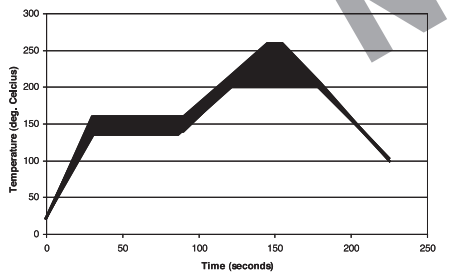
1. Per IEC61000-4-2, Level 4 waveform (8kV direct, 30A) measured 30ns after initiation of pulse.
2. Trigger measurement made using Transmission Line Pulse (TLP) method.
3. Minor shifting in characteristics may be observed over multiple ESD pulses at very rapid rate.

Environmental Specifications:

- Load Humidity: 12VDC per EIA/IS-772 Para. 4.4.2, +85°C, 85% RH for 1000 hours
- Thermal Shock: EIA/IS-722 Para 4.6, Air to Air -55°C to +125°C, 5 cycles
- Moisture Resistance Test: MIL-STD-202G Method 106G, 10 cycles
- Mechanical Shock: EIA/IS-722 Para. 4.9
- Vibration: EIA/IS-722 Para. 4.10
- Resistance to Solvent: EIA/IS-722 Para. 4.11
- Operating & Storage Temperature Range: -55°C to +125°C

Soldering Recommendations

- Compatible with lead and lead-free solder reflow processes
- Peak reflow temperatures and durations:
  - IR Reflow = 260°C max for 10 sec. max.
  - Wave Solder = 260°C max. for 10 sec. max.
- Recommended IR Reflow Profile:



Visit us on the web at:
www.cooperbussmann.com

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