0402ESDA-MLP

ESD suppressor

RoHS

Surface Mount Device

Applications

- ESD port protection for mobile/smart phones
- Game console ESD port protection
- High speed ESD data port protection
- Set-top-boxes
- Tablets, notebooks, netbooks, laptops
- High definition television (HDTV)
- Media players
- Digital cameras
- Medical equipment
- Computers and peripherals ESD port protection
- Consumer electronics

Product features

- Ultra-low capacitance (0.05 pF typ.) ideal for high speed data applications
- Provides ESD protection with fast response time (<1 ns) 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 (<0.1 nA typ.) reduces power consumption

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

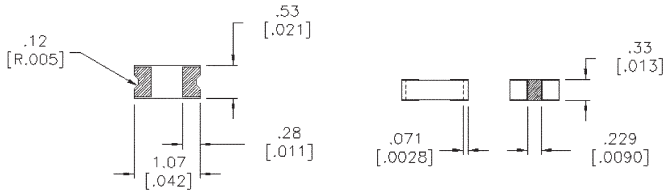
Electrical Characteristics

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

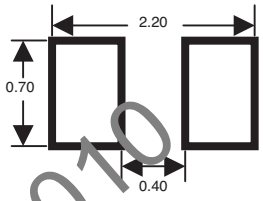
Notes:

1. Per IEC61000-4-2, Level 4 waveform (8 kV direct, 30 A) 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.

Product Dimensions: mm [inches]



Solder Pad Recommendation: mm [inches]



Design Considerations

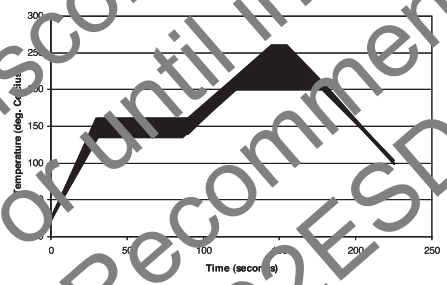
The location in the circuit for the MLP family has to be carefully determined. For better performance, the device should be placed as close to the signal input as possible and ahead of any other component. Due to the high current associated with an ESD event, it is recommended to use a “0-stub” pad design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

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:



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