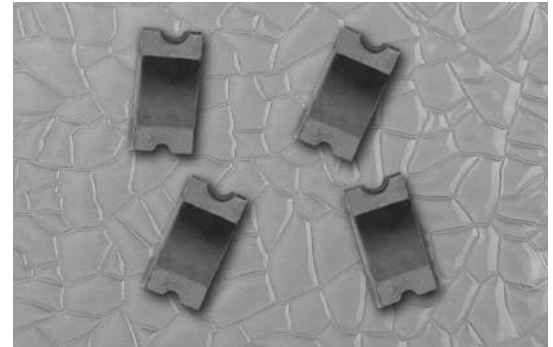


### Features & Benefits

- 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 0603/1608 design for board space savings
- Low leakage current (<0.1nA typ.) reduces power consumption



### Applications

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>• Computers &amp; Peripherals</li> <li>• HDTV Equipment</li> <li>• DVD Players</li> <li>• A/V Equipment</li> <li>• Satellite Radio</li> <li>• Cell Phones</li> </ul> | <ul style="list-style-type: none"> <li>• PDA's</li> <li>• Digital Still Cameras</li> <li>• Digital Camcorders</li> <li>• MP3 / Multimedia Players</li> <li>• Set Top Boxes</li> <li>• External Storage</li> <li>• DSL Modems</li> </ul> | <ul style="list-style-type: none"> <li>• High Speed Data Ports           <ul style="list-style-type: none"> <li>• USB 2.0</li> <li>• IEEE 1394</li> <li>• HDMI</li> <li>• DVI</li> <li>• High Speed Ethernet</li> <li>• Infiniband®</li> </ul> </li> </ul> |
|---|---|--|

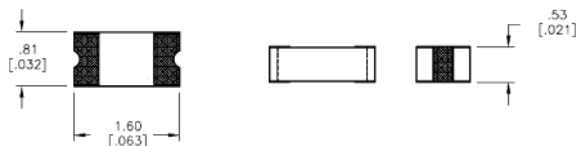
### Description

The PolySURG™ 0603ESDA-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.

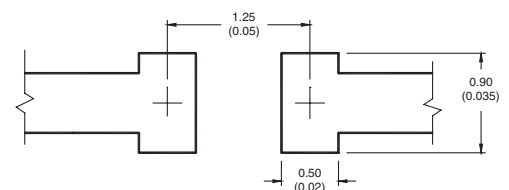
### Ordering Information

| Catalog Number | Packaging                                     |
|----------------|---|
| 0603ESDA-MLP7  | 5,000 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 <sup>1</sup>    | 35V typical              |
| Trigger Voltage <sup>2</sup>     | 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 <sup>1</sup> | >1000 typical            |

**Notes:**

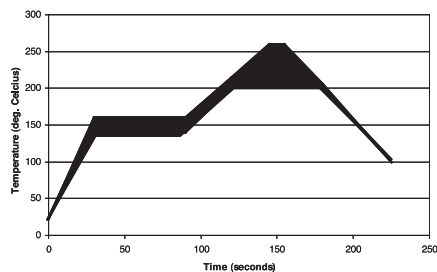
1. Per IEC61000-4-2, Level 4 waveform (8kV direct, 30A) measured 30ns after initiation of pulse.
2. Trigger measurement made using Transmission Line Pulse (TLP) method.
3. Minor shifting in characteristics may be observed over multiple ESD pulses at very rapid rate.

### Environmental Specifications:

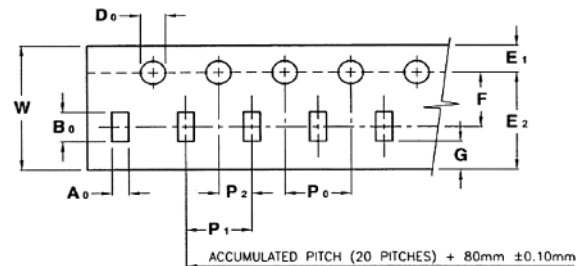
- Load Humidity: 12VDC per EIA/IS-772 Para. 4.4.2, +85°C, 85% RH for 1000 hours
- Thermal Shock: EIA/IS-722 Para 4.6, Air to Air -55°C to +125°C, 5 cycles
- Moisture Resistance Test: MIL-STD-202G Method 106G, 10 cycles
- Mechanical Shock: EIA/IS-722 Para. 4.9
- Vibration: EIA/IS-722 Para. 4.10
- Resistance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



### Tape & Reel Specifications



|                |         |                |         |
|----------------|---------|----------------|---------|
| A <sub>0</sub> | 1.02mm  | G              | 0.75 mm |
| B <sub>0</sub> | 1.85 mm | P <sub>0</sub> | 4.00 mm |
| D <sub>0</sub> | 1.50 mm | P <sub>1</sub> | 4.00 mm |
| E <sub>1</sub> | 1.75 mm | P <sub>2</sub> | 2.00 mm |
| E <sub>2</sub> | 6.25 mm | W              | 8.00 mm |
| F              | 3.50 mm | Thickness      | 0.75 mm |

- 5,000 pieces in paper tape on 7 inch (178mm) plastic reel per EIA Standard 481-1

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