



Micro Commercial Components



Micro Commercial Components  
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# MLESD24B-0603

## 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

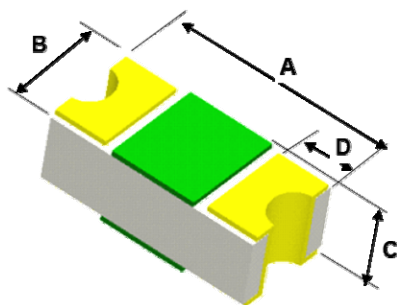
- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- Display Port Interface
- Unified Display Interface (UDI)
- MDDI Ports
- Gigabit Ethernet
- USB2.0 and IEEE1394 interface

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

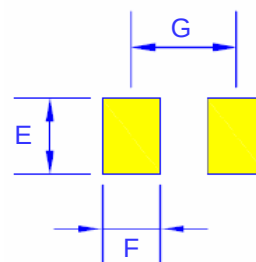
### Environmental Specifications

- 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

0603



Suggested Solder  
Pad Layout



| DIMENSIONS |        |      |      |      |      |
|------------|--------|------|------|------|------|
| DIM        | INCHES |      | MM   |      | NOTE |
|            | MIN    | MAX  | MIN  | MAX  |      |
| A          | .057   | .069 | 1.45 | 1.75 |      |
| B          | .027   | .038 | 0.70 | 0.95 |      |
| C          | .011   | .019 | 0.27 | 0.47 |      |
| D          | .008   | .020 | 0.20 | 0.50 |      |
| E          | .035   | .040 | 0.90 | 1.00 |      |
| F          | .023   | .028 | 0.60 | 0.70 |      |
| G          | .051   | .056 | 1.30 | 1.40 |      |

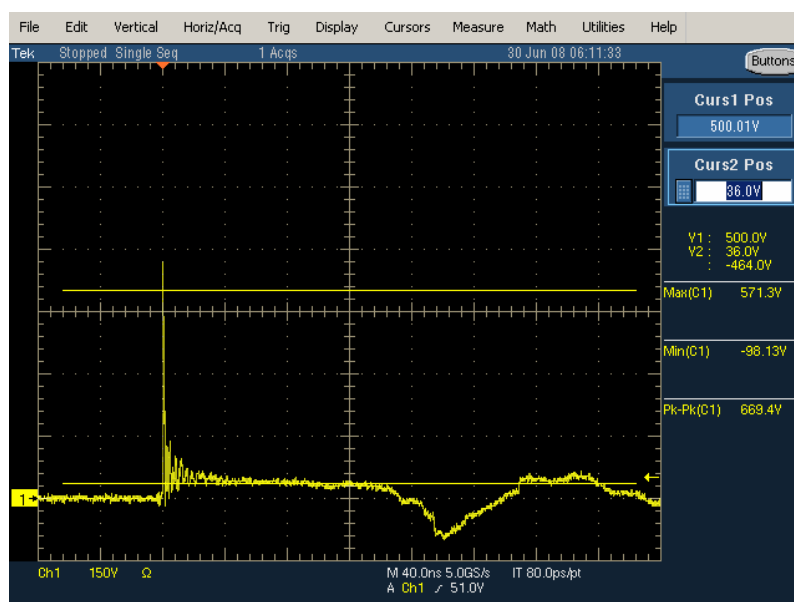
## Electrical Characteristics

| Electrical Characteristics   |          |                                    |      |      |     |       |
|------------------------------|----------|------------------------------------|------|------|-----|-------|
| Parameter                    | Symbol   | Conditions                         | Min  | Typ  | Max | Units |
| Continuous operating voltage | $V_{DC}$ | ---                                | ---  | ---  | 24  | V     |
| Trigger voltage              | $V_T$    | IEC61000-4-2 8KV contact discharge | ---  | 500  | --- | V     |
| Clamping voltage             | $V_C$    | EC61000-4-2 8KV contact discharge  | ---  | 36   | --- | V     |
| Leakage current              | $I_L$    | 24V $V_{DC}$                       | ---  | 0.20 | 10  | nA    |
| Capacitance                  | $C_P$    | VR = 0V, f = 1MHz                  | ---  | 0.15 | 0.3 | pF    |
| Operating Temperature        | ---      | ---                                | -40  | ---  | 90  | °C    |
| Storage Temperature          | ---      | ---                                | -55  | ---  | 150 | °C    |
| ESD pulse withstand          | Pulses   | EC61000-4-2 8KV contact discharge  | 2000 | ---  | --- | ---   |

Notes:

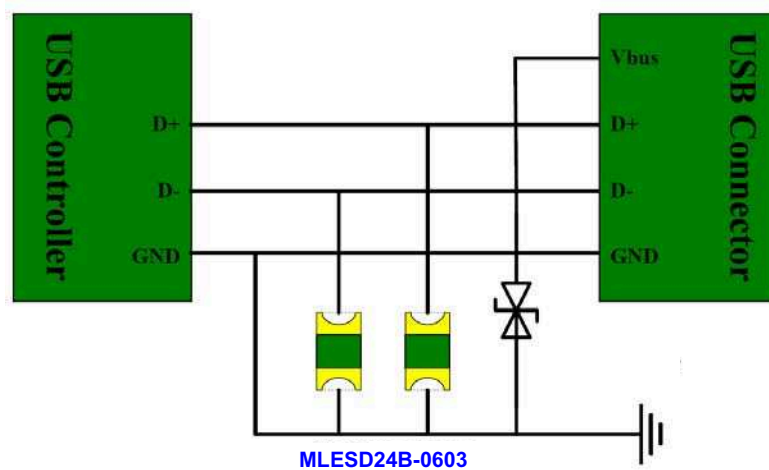
1, Trigger and clamping voltage measure per IEC 61000-4-2, 8KV direct discharge method

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



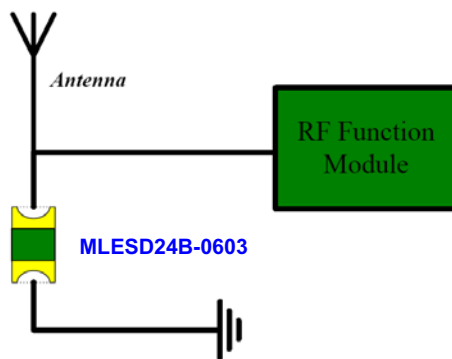
## Design Recommendations for USB2.0

For USB2.0 port



## Design Recommendations for Antenna

For antenna line



## Ordering Information

| Device           | Packing              |
|------------------|----------------------|
| (Part Number)-TP | Tape&Reel;5Kpcs/Reel |

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