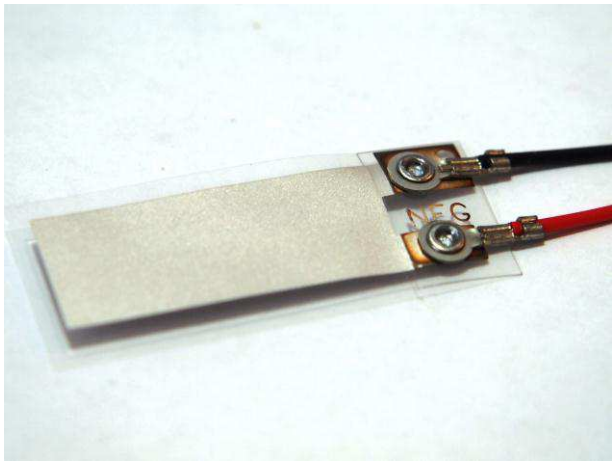


LDT1-028K PIEZO SENSOR

w/ Leads Attached

SPECIFICATIONS

- **Piezoelectric Polymer**
- **Multi-purpose**
- **Vibration Sensing**
- **Impact Sensing**
- **Laminated**
- **Dual Wire Lead Attached**

The LDT1-028K is a multi-purpose, piezoelectric sensor for detecting physical phenomena such as vibration or impact. The piezo film element is laminate to a sheet of polyester (Mylar), and produces a useable electrical signal output when forces are applied to the sensing area. The dual wire lead attached to the sensor allows easy connection to a circuit or monitoring device to process the signal.

FEATURES

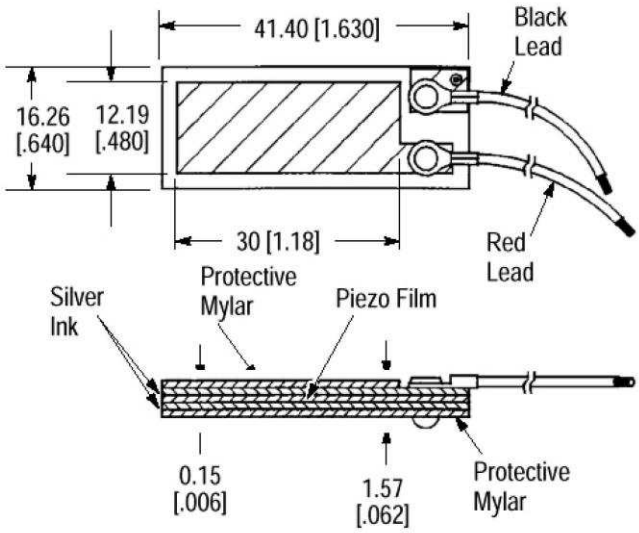
- Minimum Impedance: 1 MΩ
- Preferred Impedance: 10 MΩ and higher
- Output Voltage: 10 mV-100 V depending on force and circuit impedance
- Storage Temperature: -40°C to +70°C [-40°F to 60°F]
- Operating Temperature: 0°C to +70°C [32°F to 160°F]

APPLICATIONS

- Sensing direct contact force
- Recording time of an event
- Counting number of impact events
- Measuring impact related events
- Sensing vibration using a cantilevered beam
- Wakeup switch
- Motion detection

DIMENSIONS

Dimensions in mm [inches]



INSTRUCTIONS

Direct Impact Sensing: Using an adhesive (such as double sided tape), adhere the sensor area to a pliable pad to absorb impact with the full length protective laminate on the impact face. Apply the force (such a finger touch or hammer blow) to the sensor area.

Vibration and Motion Sensing: Mount the element in a cantilever arrangement, allowing the sensing area to vibrate up and down. Add a small weight to the end of the sensor if greater sensitivity to lower frequencies is desired.

The direct adherence of the LDT1-028K to the vibrating body can detect vibration, but another piezo film sensor configuration (SDT1-028K) is available and designed for this application. The SDT1-028K (part number 1-1000288-0) is a fully shielded sensor that is related to the LDT1-028K.

Bending: A cantilever arrangement will allow the piezo element to be deflected and this can be used to detect a striking object when the element is flexed. It is essential that the film not be in the neutral axis of the beam. Otherwise signal cancellation can result, minimizing signal.

The LDT1-028K device is unshielded by design. If shielding is required, the sensor should be enclosed in a proper environment. Metallized tapes can be used to cover the sensor but these may impede motion and subsequent output. Wire leads can be twisted or covered. Other piezo film devices such as SDT1-028K are available and are shielded.

The LDT1-028K is designed to cover a wide range of sensing applications. Specific sensors requiring wider dynamic range, more or less sensitivity, different area coverage, different shapes, extended life, resistance to sharp objects, and higher temperature range, etc., can be constructed to fit the applications as special orders.

ORDERING INFORMATION

Model Number	Part Number	Film Thickness	Film	Electrode	Film	Electrode	Total Thickness (µm)	Cap (nF)
LDT1-028K/L w/rivets	1-1002910-0	28 µm	.64 (16)	.484 (12)	1.63 (41)	1.19 (30)	157	1.38
LDT1-052K/L w/rivets	2-1002910-0	52 µm	.64 (16)	.484 (12)	1.63 (41)	1.19 (30)	181	.740
LDT2-028K/L w/rivets	1-1003745-0	28 µm	.64 (16)	.484 (12)	2.86 (73)	2.42 (62)	157	2.85
LDT2-052K/L w/rivets	2-1003745-0	52 µm	.64 (16)	.484 (12)	2.86 (73)	2.42 (62)	181	1.55
LDT4-028K/L w/rivets	1-1002405-0	28 µm	.86 (22)	.740 (19)	6.72 (171)	6.13 (156)	157	11.00
LDT4-052K/L w/rivets	2-1002405-0	52 µm	.86 (22)	.740 (19)	6.72 (171)	6.13 (156)	181	5.70

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