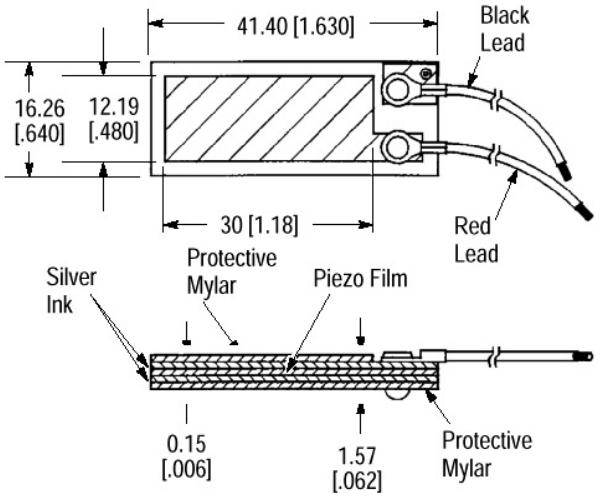
LDT1-028K Piezo Sensor with Lead Attachment



INTRODUCTION

This product is a multi-purpose, piezoelectric sensor for detecting physical phenomena such as vibration or impact. The piezo film element is encased in protective laminate, and produces a useable electrical signal output when forces are applied to the sensing area. The dual wire lead attached to the sensor allows a circuit or monitoring device to process the signal. See Figure 1.

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, etc., can be constructed to fit the applications.

Measurements on this sheet are in metric units [with U.S. customary units in brackets].

USES

Sensing a direct contact force, for recording the time of an event; counting the number of impact events; measuring impact related functions; sensing vibration using cantilevered beam, weight on beam, etc.; turn on switch—"waking up CMOS"); motion detection.

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 as a finger touch or a 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 is required.

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 is a fully shielded form of 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.

SHIELDING

The LDT1-028K device is unshielded by design. If shielding is required, the sensor can 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.

OTHER SPECIFICATIONS

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

(Higher temperature films are available as special order.)

ADDITIONAL INFORMATION

For additional information or assistance, please contact:

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