

## Piezo Film Vibra Tab (#605-00004)

The Piezo Film Vibra Tab sensor consists of a flexible piezoelectric film laminated to a polymer substrate. When the sensor is bent or displaced from its neutral axis, the strain within the piezo film generates voltage, up to 70 V voltages. A microcontroller can detect this voltage, making the Vibra Tab useful as an inexpensive switch or vibration sensor.

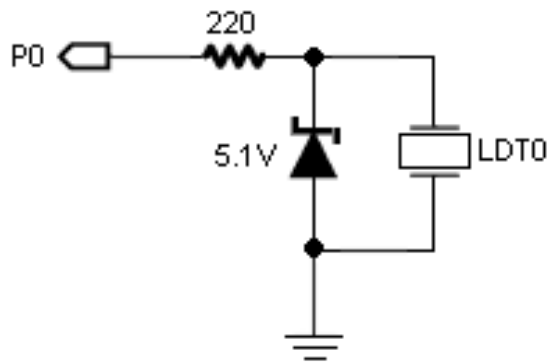
### Features

- Two crimped contacts for mounting and electrical connections
- Sensitivity of 50 mV/g
- Generates voltage when vibrated, flicked, or bent, from 0 to 70 V
- Attach a small mass to decrease sensitivity and resonant frequency

### Application Ideas

- Alarm system sensor
- Product damage/shock detector
- Acceleration sensor
- Tap switch

### Example Circuit (With Clamping Diode)



The circuit above allows you to start using the Vibra Tab as a switch or shock detector with a microcontroller. The 5.1 V Zener diode clamps the sensor's output voltage to protect microcontrollers whose I/O pins do not have internal clamping diodes. Use this circuit with the BASIC Stamp 2 example program, below. It tests the sensor for functionality by checking for a HIGH signal when the sensor is tapped, flicked or snapped. The BASIC Stamp microcontroller, SX microcontroller and Propeller chip have internal clamping diodes and do not require the 5.1 V Zener diode in the circuit.

**CAUTION!** This device can generate voltages of ~70 volts if bent to 90°. If your microcontroller does not have internal clamping/protection diodes on the I/O pins, be sure to clamp, buffer or filter the sensor's output signal to keep it within acceptable voltage/current limits for your microcontroller's I/O pin. See the manufacturer's datasheet for voltage output vs. tip deflection information.

## Resources and Downloads

Check out the Piezo Film Vibra Tab product page for the manufacturer datasheet and example source code; go to [www.parallax.com](http://www.parallax.com) and enter "605-00004" in the search field.

Please see the manufacturer's website to obtain a Tech Manual, which describes more example applications, use of a mass to decrease sensitivity, configurations, and information on piezoelectric film devices.

<http://www.msiusa.com>

## BASIC Stamp 2 Example Program

The example below provides a very simple method of reading the device as a vibration sensor or switch. This example will run on any BASIC Stamp 2 model, by updating the \$STAMP directive. It simply displays "Triggered!" on the Debug Terminal when the device is tapped, flicked or snapped. You could easily modify the code to branch to a subroutine on activation instead.

```
' File..... PiezoFilmTrigger.bs2
' Purpose... Detect Pulse On I/O
' Author.... Parallax Tech Support
' E-mail.... support@parallax.com
' {$STAMP BS2}
' {$PBASIC 2.5}
' =====

' -----[ Program Description ]-----
' This program demonstrates using the LDT0 as a switch/trigger

' -----[ I/O Definitions ]-----
TriggerPin      PIN      0              ' Input Pin From LDT0

' -----[ Program Code ]-----

DO
  IF TriggerPin = 1 THEN DEBUG "Triggered!", CR
  PAUSE 50
LOOP
```

## Revision History

Version 1.1: revised product name to remove "mass." Updated product description and features, and explanation of the example circuit.

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [Vibration Sensors](#) category:*

*Click to view products by [Parallax](#) manufacturer:*

Other Similar products are found below :

[D7H-A1](#) [SCA1000-N1000070-004](#) [LDTC-VERTICAL](#) [1005939-1](#) [1005940-1](#) [1007158-1](#) [1767](#) [3-1004346-0](#) [1005935-1](#) [1006015-1](#) [2384](#)  
[1-1002608-0](#) [1-1003745-0](#) [1-1002150-0](#) [1-1002785-1](#) [1-1002786-1](#) [1-1002908-0](#) [1-1004346-0](#) [D7A1](#) [D7A2](#) [VBS040100](#) [VBS061100](#)  
[VBS062100T](#) [D7S-A0001](#) [1766](#) [4081](#) [PCH420V-M12-HZ](#) [SR-3065W](#) [VS-BV203-B](#) [VS-JV10A-K03](#) [VS-JV10A](#) [VS-JV10A-K02](#) [VS-](#)  
[JV10A-K04](#) [BU-21771-000](#) [BU-23173-000](#) [D6B-2](#) [D7E-1](#) [D7E-2](#) [29132](#) [605-00004](#) [RBS100602](#) [SEN-09196](#) [SEN-09198](#) [VBS040200T](#) [3-](#)  
[1004347-0](#) [LDT1-028K](#) [1-1004347-0](#) [1-1003744-0](#) [1-1004696-0](#) [D7A3](#)