



## FDT SERIES ELEMENTS WITH LEAD ATTACHMENT

### SPECIFICATIONS

- ◆ Piezo Film Technology
- ◆ Flexible Leads
- ◆ High Strain Output
- ◆ Film Thickness Options
- ◆ Lamination Options
- ◆ Solderable Connection Pins

The “F” in FDT Series stands for “Flexible Leads”. These are rectangle elements of Piezo film with silver ink screen printed electrodes. Rather than making the lead attachment near the sensor, the Piezo polymer tail extends from the active sensor area as flex circuit material with offset traces. This gives a very flat, flexible lead with a connector at the end.

The FDT elements are available in a variety of different sizes and thicknesses. They are available without a laminate (FDT), with a laminated (0.005” mylar) on one side (FLDT) or with tape release layer adhesive (FDT with adh) in the sensor area.

### FEATURES

- ◆ Thin piezo film sensor
- ◆ Flexible leads give flat profile to the sensor
- ◆ Dynamic strain sensing with a high output
- ◆ Typical interface to a 1 or 10 M  $\Omega$  input impedance
- ◆ Output Voltage (dependent on force applied) 10 mV to 100V

### APPLICATIONS

- ◆ Sensing Direct Contact Force
- ◆ Recording Time of an Event
- ◆ Counting Number of Impact Events
- ◆ Measuring Impact Related Events
- ◆ Sensing Vibration using Cantilevered Beam
- ◆ Wakeup Switch
- ◆ Motion Detection

**DIMENSIONS and PART NUMBERS**



**DIMENSION in INCHES (mm)**

Model Number	Part Number	Film thickness	A Film	B Electrode	C Film	D Electrode	t (µm)	Cap (nF)
FDT1-028K	1-1002785-1	28 µm	.620 (16)	.485 (12)	9.25 (235)	1.16 (30)	55	1.37
FDT1-052K	2-1002785-1	52 µm	.620 (16)	.485 (12)	9.25 (235)	1.16 (30)	85	.740
FLDT1-028K	1-1002786-1	28 µm	.620 (16)	.485 (12)	9.25 (235)	1.16 (30)	205	1.37
FLDT1-052K	2-1002786-1	52 µm	.620 (16)	.485 (12)	9.25 (235)	1.16 (30)	230	.740
FDT1-028K w/adh-F	1001777	28 µm	.650 (17)	.485 (12)	5.51 (140)	1.18 (30)	125	1.37

The connector pins on the FDT sensors can be directly soldered to a PCB with a reasonable level of care. This component cannot withstand high temperatures (>80°C) and therefore soldering of the pins to a PCB must be done quickly. A heat sink clamped to the interface area between the film and the crimps will take the heat away from the film. Pre-tin the pins and then quickly solder them to the board. Do not allow the soldering iron to touch the film and do not use a dwell time of more than 5 seconds on the pins. Low temperature solder can also be used.

**NORTH AMERICA**

Measurement Specialties, Inc.,  
a TE Connectivity Company  
Tel: +1-800-522-6752  
Email: [customercare.dtmd@te.com](mailto:customercare.dtmd@te.com)

**EUROPE**

MEAS Deutschland GmbH  
a TE Connectivity Company  
Tel: +49-800-440-5100  
Email: [customercare.dtmd@te.com](mailto:customercare.dtmd@te.com)

**ASIA**

Measurement Specialties (China), Ltd.,  
a TE Connectivity Company  
Tel: +86 0400-820-6015  
Email: [customercare.chdu@te.com](mailto:customercare.chdu@te.com)

**TE.com/sensorsolutions**

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.