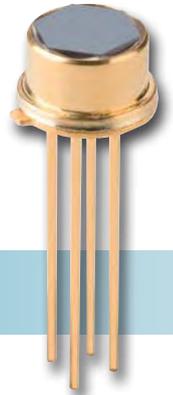


# ISOthermal, Miniature Thermopile Detectors For Ear Thermometry



## TPiD 1T 0122B, TPiD 1T 0222B, TPiD 1T 0622B Thermopile Detector

### Applications

- Ear Thermometry
- General purpose Thermometry

### Features and Benefits

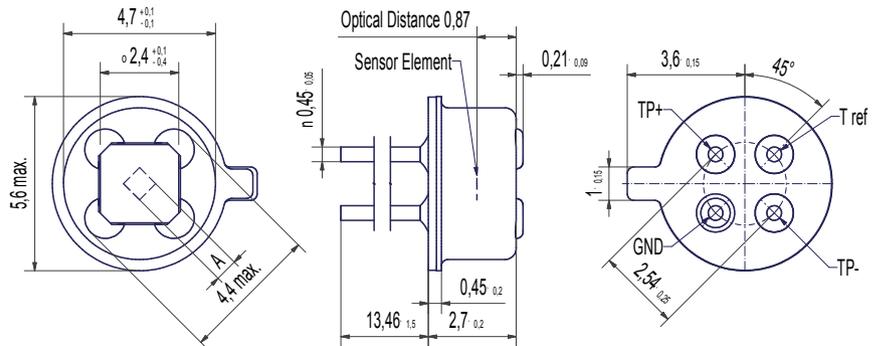
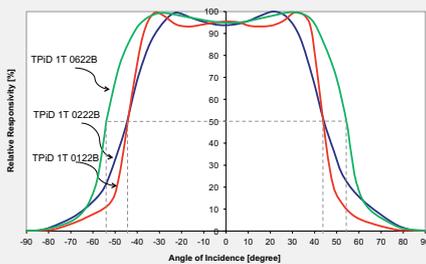
- ISOthermal performance
- Miniature, TO-type metal housing
- Light collecting aperture
- Thermistor included

### Product Description

As the optimum choice for Ear Thermometry, Excelitas offers thermopile detectors, referenced as ISOthermal detectors. The patented designs provide for superior thermopile performance under thermal shock conditions, and thereby are best suited for ear thermometry.

The range consists of the TPiD 1T 0122B as our low-cost version, with the other versions providing higher signals, either because of high sensitivity element designs or larger element area. The physical dimensions of the ISOthermal sensors are equivalent to our TO-46 sensor housings and include a special aperture. All models are equipped with an internal Thermistor as a temperature reference for thermopile temperature compensation to further improve accuracy.

### Field of View



### TPiD 0122B, TPiD 0222B and TPiD 0622B

Parameter	Symbol	TPiD 0122B	TPiD 0222B	TPiD 0622B	Remarks
Sensitive Area	A	Ø 0.5	0.7 x 0.7	1.2 x 1.2	Absorber Area
Sensitive Area	A	0.2	0.5	1.4	Absorber Area
Thermopile Resistance	R <sub>TP</sub>	85...135	50...100	50...110	25°C
Responsivity	R	92	60	33	500% 1Hz/ Without IR-filter
Sensitivity (T <sub>det</sub> 25 °C / T <sub>obj</sub> 40 °C)	S <sub>40</sub>	44	95	126	With standard filter (LWP, cut-on 5.5 µm)
Sensitivity (T <sub>det</sub> 25 °C / T <sub>obj</sub> 100 °C)	S <sub>100</sub>	58	125	140	With standard filter (LWP, cut-on 5.5 µm)
Time Constant	t	15	22	27	
Noise Voltage	V <sub>n</sub>	42	35	36	25°C
Specific Detectivity	D*	1.0	1.2	1.1	25°C
Temp. Coefficient of Resistance	TC <sub>RTP</sub>	0,03	0,03	0,03	
Temp. Coefficient of Responsivity	TC <sub>R</sub>	-0,05	-0,05	-0,05	
Field of view	FoV	90	90	110	at 50% intensity points
Thermistor resistance (25°C)	R <sub>25</sub>	100	100	100	25 °C
Thermistor BETA-value	β	3964	3964	4097	defined at 25 °C / 100 °C