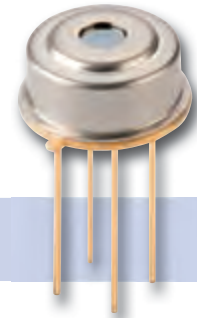


ISOthermal Detectors

For Measurement



TPiD 1T 0224, TPiD 1T 0624 – Thermopile Detectors

Target Applications

- Non-contact Temperature measurements
- Pyrometry

Features and Benefits

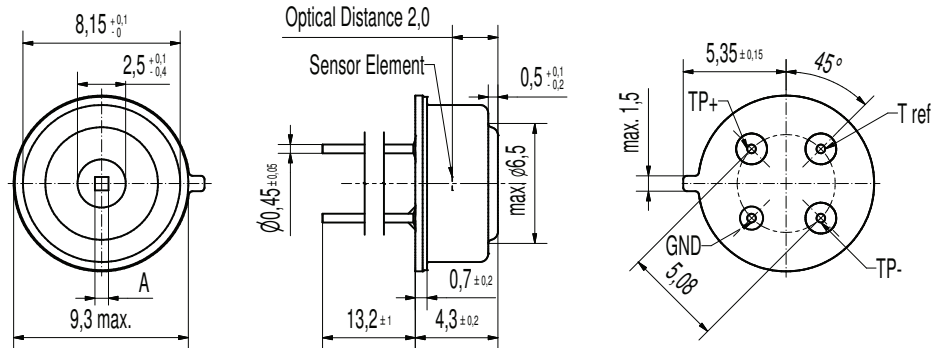
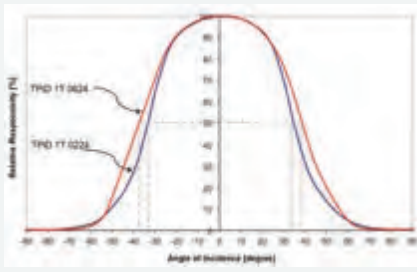
- ISOthermal performance
- TO-39 Metal housing
- Thermistor included

Product Description

Excelitas offers a range of ISOthermal Thermopile Detectors in TO-39 type housings. The patent protected ISOthermal feature provides improved system performance when being subjected to thermal shock conditions.

Both types are provided with round window, which also serves as aperture. All feature a specially-designed element configuration, each one with different size of absorbing area. TPiD 1T 0224 provides the smallest absorbing area, TPiD 1T 0624 offers the largest absorbing sensor area and high sensitivity. All types are equipped as standard with internal Thermistor as temperature reference for Thermopile temperature compensation.

Field of View



TPiD 1T 0224 and TPiD 1T 0624

Parameter	Symbol	TPiD 1T 0224	TPiD 1T 0624	Unit	Remark
Sensitive Area	A	0,7 x 0,7	1,2 x 1,2	mm ²	Absorber Area
Thermopile Resistance	R _{TP}	50...100	50...110	kΩ	25°C
Responsivity	R	45	33	V/W	500°K / 1Hz / Without IR-filter
Sensitivity (T _{det} 25 °C / T _{obj} 40 °C)	S ₄₀	50	92	μV/K	With standard filter (LWP, cut-on 5.5 μm)
Sensitivity (T _{det} 25 °C / T _{obj} 100 °C)	S ₁₀₀	65	120	μV/K	With standard filter (LWP, cut-on 5.5 μm)
Time Constant	t	22	27	ms	
Noise Voltage	V _n	35	36	nV/√Hz	25°C
Specific Detectivity	D*	0,9	1,1	10 ⁸ cm ² /Hz/W	25°C
Temp. Coefficient of Resistance	TC _{RTP}	0,03	0,03	%/K	
Temp. Coefficient of Responsivity	TC _R	-0,05	-0,05	%/K	
Field of view	FoV	70	76	Degrees	at 50% intensity points
Thermistor resistance (25°C)	R ₂₅	100	100	kΩ	25°C
Thermistor BETA-value	β	3964	3964	K	defined at 25°C / 100 °C