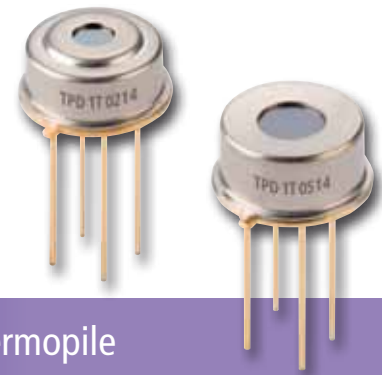


THERMOPILE DETECTORS FOR MEASUREMENT



TPD 1T 0214, TPD 1T 0514, TPD 1T 0624 – General-Purpose Thermopile

Applications

- Non-contact temperature measurements
- Pyrometry

Features and Benefits

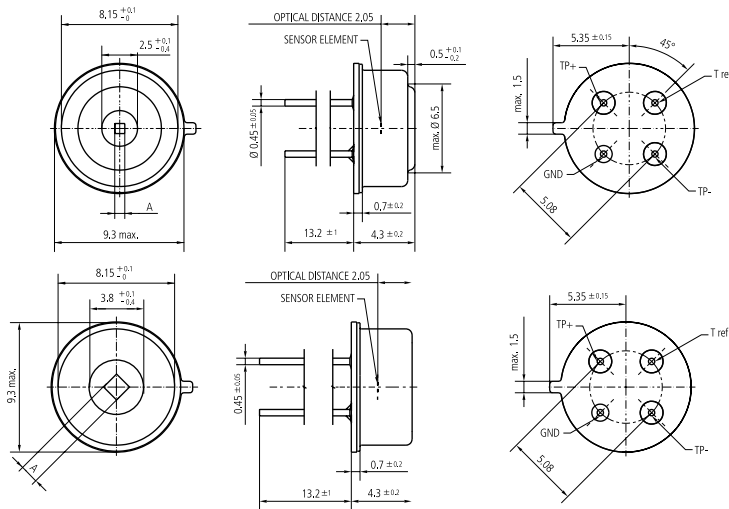
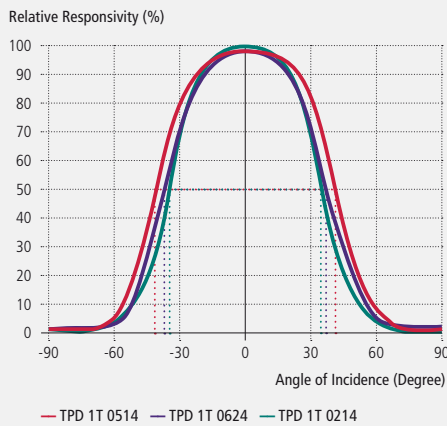
- TO-39 metal housing
- Thermistor included

Product Description

This is our general-purpose range of thermopile detectors in TO-39 type housings with a round window, which also serves as an aperture. All feature a specially-designed element configuration, each one with a different size of absorbing area.

The TPD 1T 0214 provides the smallest absorbing area, the TPD 1T 0514 offers a strong signal at low sensor resistance with a large absorbing area. The TPD 1T 0624 represents a lower-cost compromise. All types are equipped as standard with an internal thermistor as temperature reference for thermopile temperature compensation.

Field of View



TPD 1T 0214 and TPD 1T 0624

TPD 1T 0514

TPD 1T 0214, TPD 1T 0514, TPD 1T 0624 – General-Purpose Thermopile

Parameter	Symbol	0214	0514	0624	Unit	Remark
Sensitive area	A	0.7 x 0.7	1.25 x 1.25	1.2 x 1.2	mm	Absorber area
Sensitive area	A	0.5	1.6	1.4	mm ²	Absorber area
Thermopile resistance	R _{TP}	50 ... 100	25 ... 70	50 ... 110	kΩ	25° C
Responsivity	R	45	28	33	V/W	500° / 1Hz/ without IR-filter
Sensitivity (T _{det} 25° C / T _{obj} 40° C)	S ₄₀	50	110	92	μV/K	With standard filter (LWP, cut-on 5.5 μm)
Sensitivity (T _{det} 25° C / T _{obj} 100° C)	S ₁₀₀	65	150	120	μV/K	With standard filter (LWP, cut-on 5.5 μm)
Time constant	t	22	35	27	ms	
Noise voltage	V _N	35	29	36	nV / √Hz	25° C
Specific detectivity	D*	0.9	1.2	1.1	10 ⁸ cm / Hz / W	25° C
Temp. coefficient of resistance	TC _{RTP}	0.03	0.03	0.03	% / K	
Temp. coefficient of responsivity	TC _R	-0.05	-0.05	-0.05	% / K	
Field of view	FoV	70	84	76	Degrees	At 50 % intensity points
Thermistor resistance (25° C)	R ₂₅	30	30	100	kΩ	25° C
Thermistor BETA-value	β	3964	3964	3964	K	Defined at 25° C / 100° C