

SMD MINIATURE THERMOPILE DETECTORS FOR ALL APPLICATIONS



TPiD 1S 0121, TPiD 1S 0121 FM – Thermopile

Applications

- Ear thermometry
- General purpose temperature monitoring
- Small space applications

Features and Benefits

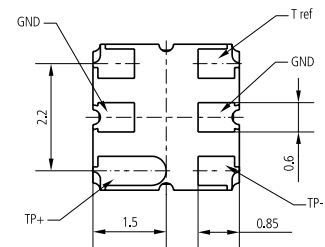
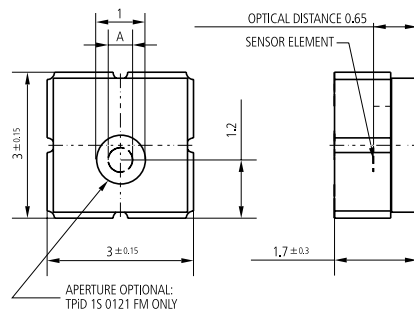
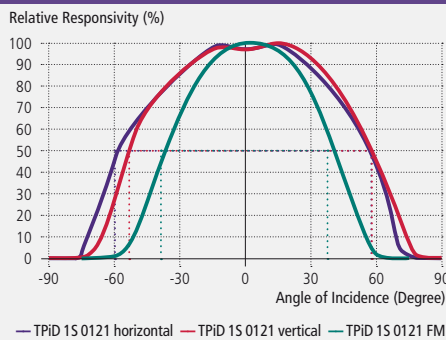
- Miniature SMD housing
- Flat housing
- Thermistor included
- Tape & reel

Product Description

Excelitas now offers thermopiles in a compact SMD housing. This enables standard SMT assembly processes and small dimensions. The SMD versions also feature the unique ISOthermal performance in thermal shock conditions as all TPiD thermopiles. It is supplied in volume in tape & reel packaging.

This sensor is equipped with an internal thermistor as temperature reference for thermopile temperature compensation.

Field of View



TPiD 1S 0121 Thermopile

Parameter	Symbol	0121 / 0121 FM	Unit	Remark
Sensitive area	A	∅ 0.5	mm	Absorber area
Sensitive area	A	0.2	mm ²	Absorber area
Thermopile resistance	R _{TP}	85 ... 135	kΩ	25° C
Responsivity	R	77	V/W	500° / 1Hz/ without IR-filter
Sensitivity (T _{det} 25° C / T _{obj} 40° C)	S ₄₀	56 / -	μV/K	With standard filter (LWP, cut-on 5.5 μm)
Sensitivity (T _{det} 25° C / T _{obj} 100° C)	S ₁₀₀	75 / -	μV/K	With standard filter (LWP, cut-on 5.5 μm)
Time constant	t	15	ms	
Noise voltage	V _N	42	nV / √Hz	25° C
Specific detectivity	D*	0.8	10 ⁸ cm ² /Hz/W	25° C
Temp. coefficient of resistance	TC _{RTP}	0.03	% / K	
Temp. coefficient of responsivity	TC _R	-0.05	% / K	
Field of view	FoV	114 / 75	Degrees	At 50 % intensity points
Thermistor resistance (25° C)	R ₂₅	100	kΩ	25° C
Thermistor BETA-value	β	4097	K	Defined at 25° C / 100° C
Soldering temperature				Please refer to page 44.