

# SMD Miniature Thermopile Detectors

## For Various Applications

### TPiD 1S 0121, TPiD 1S 0222 – Thermopile



#### Target Applications

- Forehead Thermometry
- General, Non-contact Temperature Sensing
- Small space applications

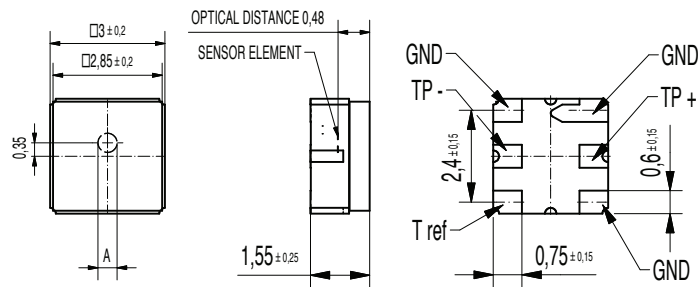
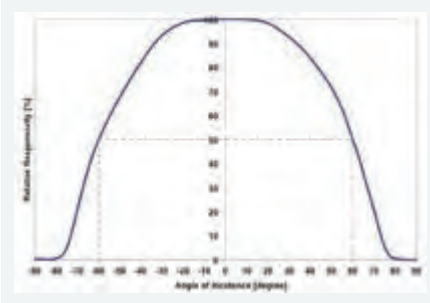
#### Features and Benefits

- Miniature SMD housing
- Flat housing
- Thermistor included
- Tape & Reel Packaging

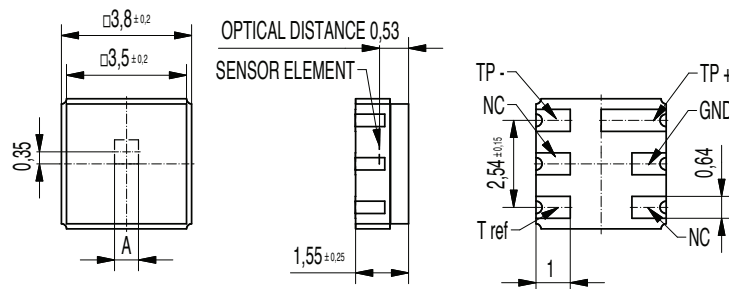
#### Product Description

Excelitas offers a series of Thermopile Detectors in small and compact SMD housings. This enables standard SMT assembly processes and provides for small dimensions. The SMD versions feature the unique ISOthermal performance when units are subjected to thermal shock conditions. The TPiD 1S 0121 is the smallest SMD version we offer, whereas the TPiD 1S 0222 provides element with higher sensitivity. Again, these detectors are equipped with an internal Thermistor as temperature reference for Thermopile temperature compensation. All SMD parts are supplied in volume in tape & reel packaging.

#### Field of View TPiD 1S 0122, TPiD 1S 0122



TPiD 1S 0121



TPiD 1S 0222

#### TPiD 1S 0121, TPiD 1S 0222

Parameter	Symbol	TPiD 1S 0121	TPiD 1S 0222	Unit	Remark
Sensitive Area	A	0,2	0,7 x 0,7	mm <sup>2</sup>	Absorber Area
Thermopile Resistance	R <sub>TP</sub>	85...135	50...100	kΩ	25°C
Responsivity	R	77	45	V/W	500°/ 1Hz/ Without IR-filter
Sensitivity (Tdet 25 °C / Tobj 40°C)	S <sub>40</sub>	60	130	μV/K	With standard filter (LWP, cut-on 5,5 μm)
Sensitivity (Tdet 25 °C / Tobj 100°C)	S <sub>100</sub>	80	170	μV/K	With standard filter (LWP, cut-on 5,5 μm)
Time Constant	t	15	22	ms	
Noise Voltage	V <sub>n</sub>	42	35	nV/√Hz	25°C
Specific Detectivity	D*	0,8	1,2	10 <sup>8</sup> cm <sup>2</sup> /Hz/W	25°C
Temp. Coefficient of Resistance	TC <sub>RTP</sub>	0,03	0,03	%/K	
Temp. Coefficient of Responsivity	TC <sub>R</sub>	-0,05	-0,05	%/K	
Field of view	FoV	120	120	Degrees	at 50% intensity points
Thermistor resistance (25°C)	R <sub>25</sub>	100	100	kΩ	25°C
Thermistor BETA-value	β	4092	4092	K	defined at 25°C / 100°C