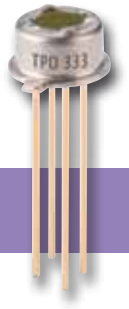
MINIATURE THERMOPILE DETECTORS FOR GAS SENSING AND MEASUREMENT



TPD 333, TPD 733 Thermopile

Applications

- Non-contact temperature measurements
- IR based gas sensors

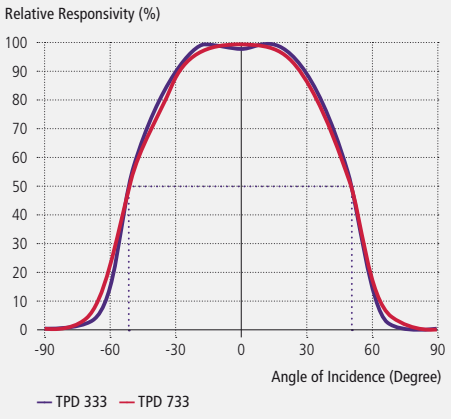
Features and Benefits

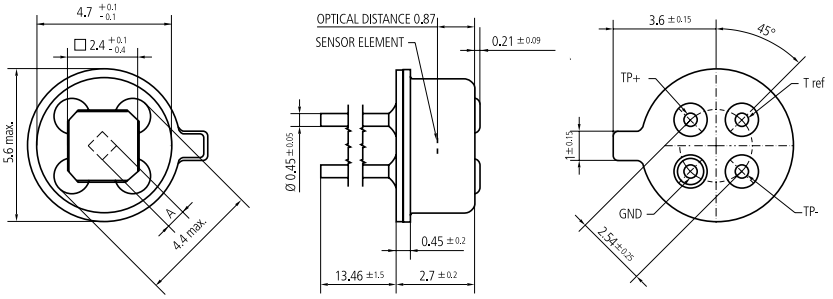
- TO-46 metal housing
- Square window
- Optical filter options
- Thermistor included

Product Description

This is our range of general-purpose miniature thermopile detectors in 4.7 mm diameter TO-46 type housings. Both feature a specially-designed element configuration, each one with a different size of absorbing area. The window is available as standard infrared or as narrow band pass filter for gas sensing applications. The TPD 333 provides the smallest absorbing area, the TPD 733 is a larger design offering strong signals. Both types are equipped as standard with an internal thermistor as temperature reference for thermopile temperature compensation.

Field of View





TPD 333, TPD 733 Thermopile

Parameter	Symbol	333	733	Unit	Remark
Sensitive area	A	0.7 x 0.7	1.2 x 1.2	mm	Absorber area
Sensitive area	A	0.5	1.4	mm^2	Absorber area
Thermopile resistance	R_{TP}	50 … 100	50 … 110	kΩ	25° C
Responsivity	R	45	33	V/W	500° / 1Hz/ without IR-filter
Sensitivity (T_{det} 25° C / T_{obj} 40° C)	S_{40}	88	133	µV/K	With standard filter (LWP, cut-on 5.5 µm)
Sensitivity (T_{det} 25° C / T_{obj} 100° C)	S_{100}	116	177	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√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	104	104	Degrees	At 50 % intensity points
Thermistor resistance (25° C)	R_{25}	100	100	kΩ	25° C
Thermistor BETA-value	ß	3964	3964	K	Defined at 25° C / 100° C