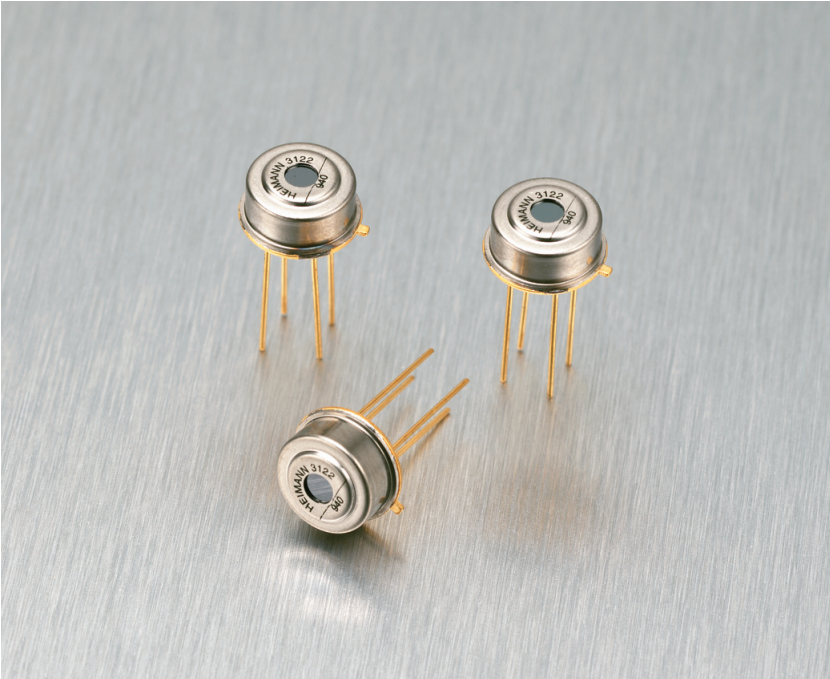


# TPS 434 - Thermopile Detector

## Extremely Small Absorber Size



### Description

The **TPS 434** thermopile sensor in TO 5 type housing employs a chip of  $0.5 \times 0.5 \text{ mm}^2$  absorber size and a  $30 \text{ k}\Omega$  thermistor as temperature reference. The round window opening is equipped with a 5.5 mm longpass (standard) infrared filter. The sensor shows a flat sensitivity characteristic over the wavelength.

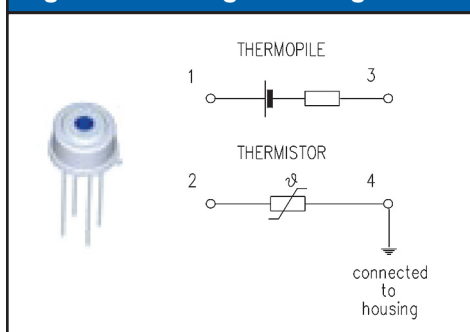
The TPS 434 can be equipped with a G9 (8 ... 14  $\mu\text{m}$ ) filter for precision pyrometers (TPS 434 G9).

### Features

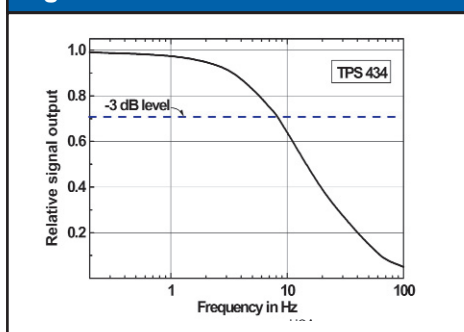
- Extremely Small Absorber Size - for High Precision Pyrometers
- Thermistor Temperature Reference included
- Low Temperature Coefficient of Sensitivity
- Applications: Ear Thermometers and Pyrometers

# TPS 434 - Thermopile Detector Extremely Small Absorber Size

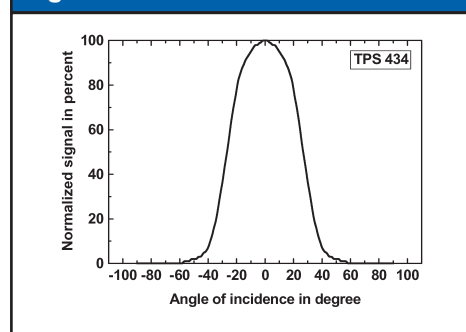
**Figure 1. Package Drawing**



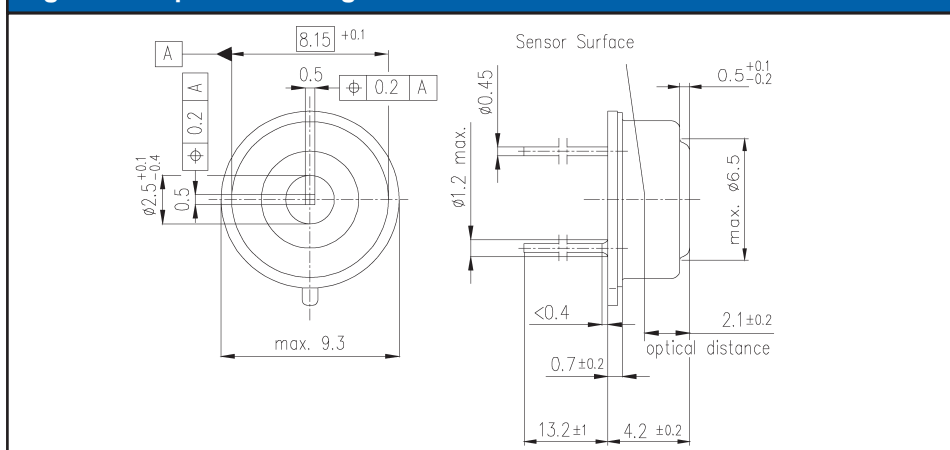
**Figure 2.**



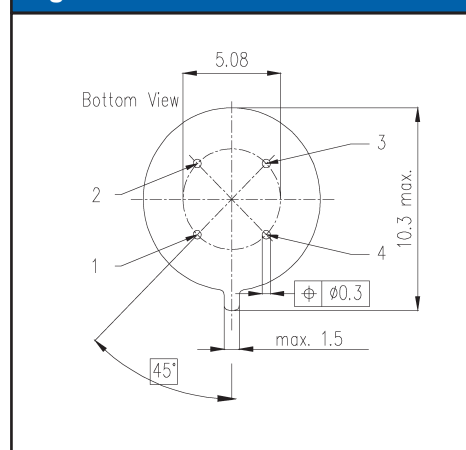
**Figure 3.**



**Figure 4. Top View Package Dimension**



**Figure 5. Bottom View**



**Table 1. TPS 434**

Parameter	Typical	Units	Condition
Sensitive area	0.5 x 0.5	mm <sup>2</sup>	absorbing area
Window size	2.5	mm	diameter
DC sensitivity	35	V/W	500K BB 5 ... 14μm
Resistance	35	kΩ	
Noise	21	nV/√Hz	r.m.s. 300K
NEP	0.6	nW/√Hz	500K BB 5 ... 14μm
D*	0.84 x 10 <sup>8</sup>	cm√Hz/W	500K BB 5 ... 14μm
TC of sensitivity	0.02	%/K	
TC of resistance	0.02	%/K	
Time constant	20	ms	
Operating temperature	-40 to 100	°C	non permanent
Storage temperature	-40 to 100	°C	non permanent
Thermistor resistance	30	kΩ	25°C
beta	3964	K	25°C/100°C
Field of view	55	°	at 50% points