

# INFRARED THERMOPILE SENSOR

Infrared Thermopile Sensor can measure the temperature without contact by detecting the infrared energy of an object. And the higher the temperature, the more infrared energy is produced. Thermopile sensing elements consist of small thermocouples on silicon chips that absorb energy and produce output signals.

Infrared Thermopile Sensor can be widely used in non-contact temperature measurement. This product consists of infrared filters, thermistors and other components, and packaged by TO-46. Made of metal, it has high reliability and high sensitivity.

#### Features:

- TO-46 package
- High sensitivity
- NTC thermistor compensation
- Fast response
- 5 $\mu$ m Long-wave pass filter

#### Uses:

- Non-contact temperature measurement
- Ear thermometer, forehead thermometer
- Industrial continuous temperature control



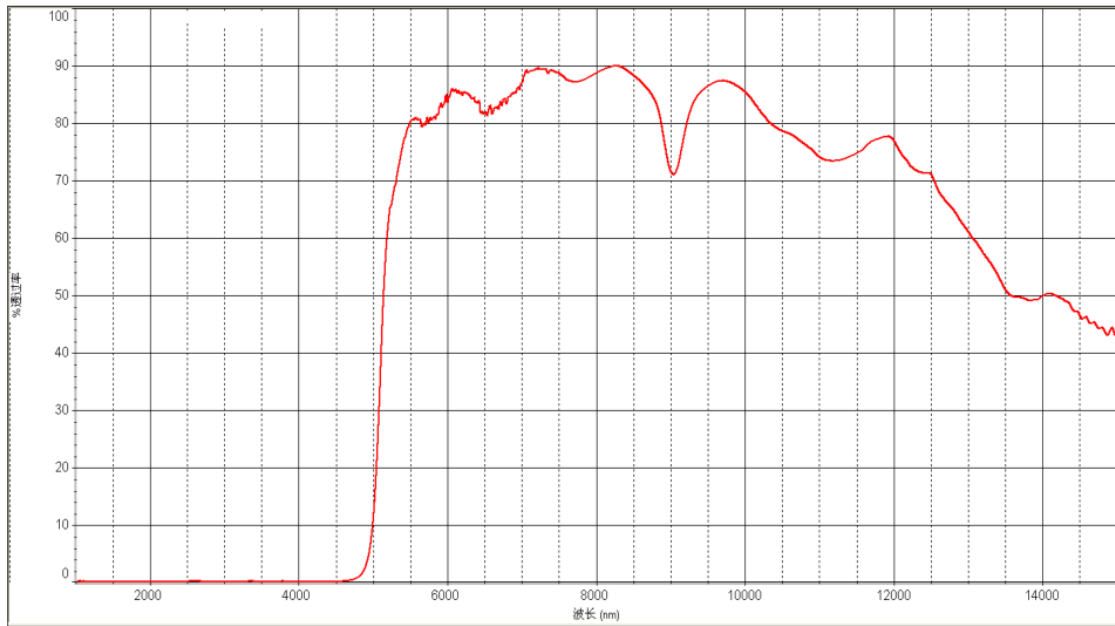
#### Performance parameters

Parameter	Min.	Typ.	Max.	Unit	Conditions
Chip size		1.1×1.1		mm <sup>2</sup>	
Sensitive area		0.35×0.35		mm <sup>2</sup>	
Detection angle		90		°	
Thermopile resistance	80	98	115	k $\Omega$	Temp=25 $^{\circ}$ C
Noise voltage		38		nV/Hz <sup>1/2</sup>	Temp=25 $^{\circ}$ C
NEP		0.23		nW/Hz <sup>1/2</sup>	Blackbody=500K,1Hz@25 $^{\circ}$ C
Voltage Response		20.11		Vmm <sup>2</sup> /w	Blackbody=500K,1Hz@25 $^{\circ}$ C
Responsivity	134	164	194	V/w	Blackbody=500K,1Hz@25 $^{\circ}$ C
Temp. coefficient of resistance		0.06		%/ $^{\circ}$ C	Temp=25 $^{\circ}$ C ~ 75 $^{\circ}$ C
Time constant		$\leq$ 13		ms	
Specific detectivity		1.51 E08		cmHz <sup>1/2</sup> /w	Blackbody=500K,1Hz@25 $^{\circ}$ C
NTC Resistance		100 $\pm$ 3%		k $\Omega$	25 $^{\circ}$ C
NTC $\beta$		3950 $\pm$ 1%		K	25/50 $^{\circ}$ C

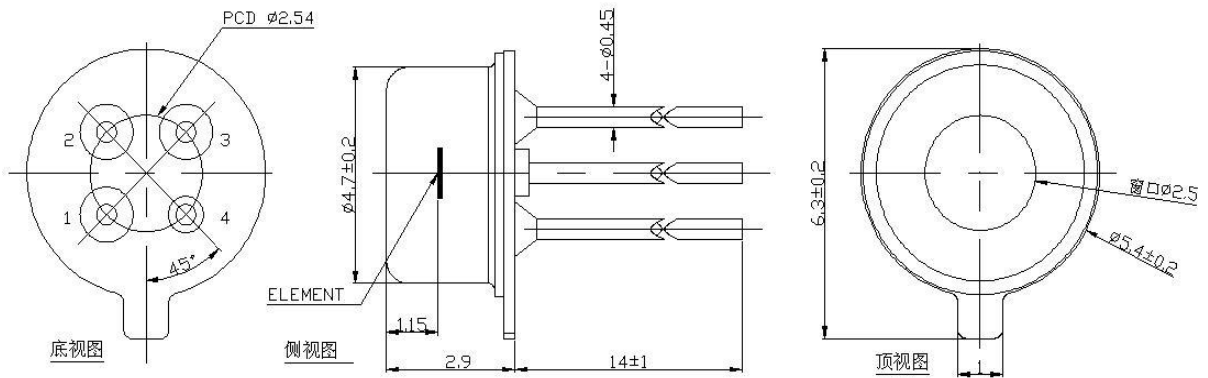
#### Environmental requirements

- Working temperature: -30 $^{\circ}$ C ~ +85 $^{\circ}$ C
- Storage temperature: -30 $^{\circ}$ C ~ +100 $^{\circ}$ C

## Spectral curve



## Dimensions



Unit: mm

- 1.THERMOPILE(+)
- 2.THERMISTOR
- 3.THERMOPILE(-)
- 4.GROUND