Model TS305-10C50 Thermopile Sensor

- **Thermopile IR-Sensor**
- **For Contactless Temperature Measurement**
- **Single Element**
- **Flat Filter**
- **Accurate Reference Sensor**

DESCRIPTION

Thermopiles are mainly used for contactless temperature measurement in many applications. Their function is to transfer the heat radiation emitted from the objects into a voltage output. Major applications are appliances like microwave oven, clothes dryer, automatic cooking, medical devices like ear and fore head thermometer, automotive applications like car climate control, seat occupancy, blind spot alert, black ice detection, consumer products like printer, copier, mobile phone and many industry applications like paper web, plastic parts etc.

FEATURES

- High Signal
- Accurate Reference Sensor

APPLICATIONS

- Industrial Pyrometers
- Climate Control
- Medical

PERFORMANCE SPECS

Parameter	Unit	TS305-10C50	Condition
Package		TO-5	
Absorber	mm^2	0.64	
TP Resistance	kΩ	70±25	+25°C ambient
TP TCR	%/K	-0.06±0.04	+25°C → +75°C ambient
TP Voltage	mV	6.5±1.9	+25°C, BB +100°C,DC, totally filled field of view
TC of sensitivity	%/K	-0.45±0.08	+25°C → +75°C ambient
NEV	$nV/Hz^{½}$	45	+25°C ambient
Rise Time	ms	12±5	τ_{63}
Field of View		90°	at 50%
Filter Type		LWP	LWP = long wave pass*
Wavelength	µm	≥5.0	transmission range
Temperature	°C	-20...+85	permanent operation
Temperature	°C	-20...+100	non permanent
ATS		NTC	ambient temperature sensor
Resistance		100kΩ±5% at 25°C	
ATS TCR	ppm/K		0°C → +100°C ambient
ATS β-Value	K	3955 ±0.3%	0°C → +50°C ambient
Connections			
Pin 1		TP +	
Pin 2		NTC	
Pin 3		TP -	
Pin 4		GND	

* The *long wave pass filter* is also known as *cut on filter* (COF)

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ELECTRICAL CONNECTIONS

ambient temperature sensor: NTC
TS305-10C50

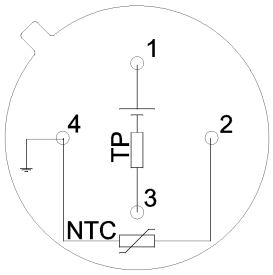

Figure 1: Electrical connections- bottom view of thermopile

MECHANICAL DIMENSIONS

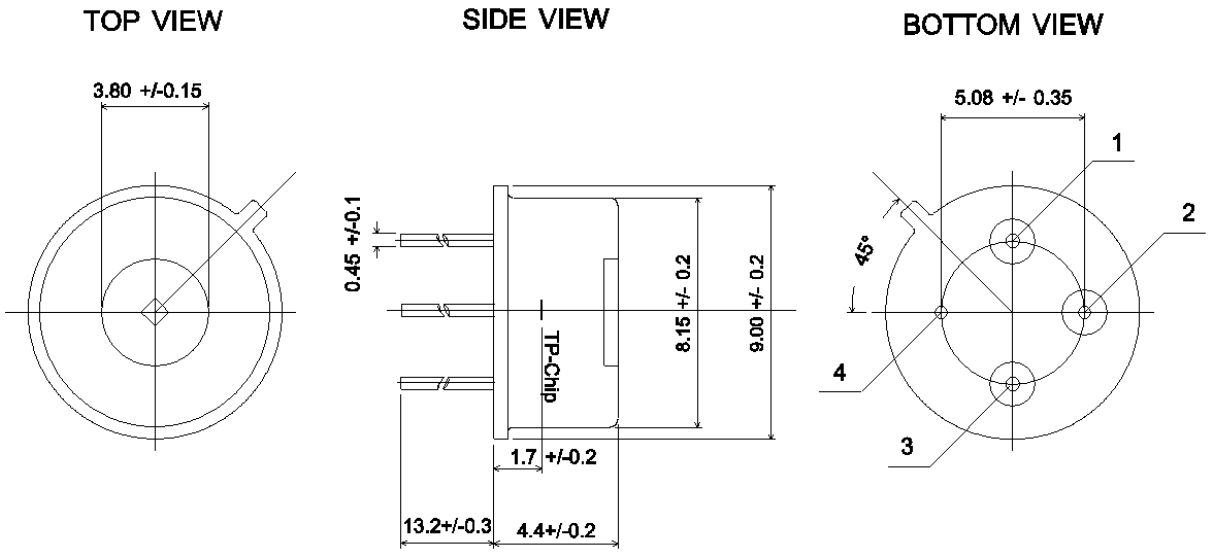

Figure 2: Mechanical dimensions of thermopile

TYPICAL PERFORMANCE CURVES

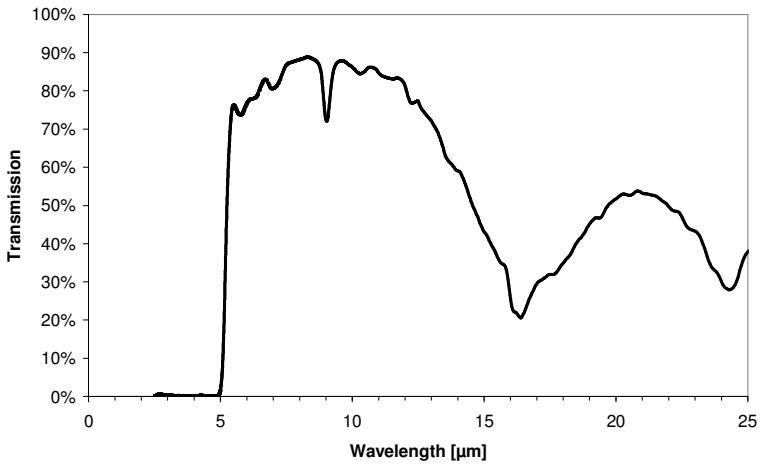

Figure 3: Filter transmission curve

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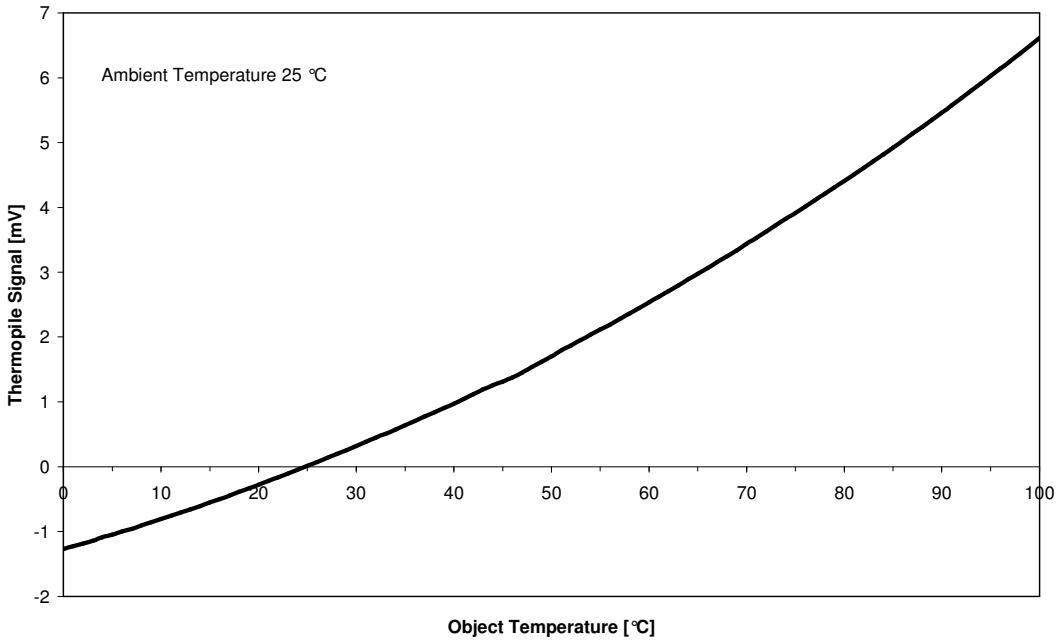

Figure 3: Thermopile signal versus object temperature at 25°C ambient temperature

ORDERING INFORMATION

Product codes and part numbers:

Product	TS305-10C50
Part#	G-TPCO-023

Contact information:

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