Specification Thermopile Sensor (preliminary)

HTS A10 F8-14-HT

Part No. 1050

R 02

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Revision History

Version	Date	Remarks
R 01	14.05.2008	Draft of HEIMANN Sensor GmbH
R02	04.02.2009	Update Dimensions

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1. Purpose, Scope

The new thermopile infrared sensor from Heimann Sensor, comprising a new type CMOS compatible sensor chip plus a thermistor reference chip, features good sensitivity, small temperature coefficient of sensitivity as well as high reproducibility and reliability. The sensor meets the requirements of the European Union RoHS (Regulation of Hazardous Substances) Directive.

The sensor will be available in a standard transistor outline package, equipped with an IR transmitting filter window (transmission curve as shown below).

2. Absolute Maximum Ratings

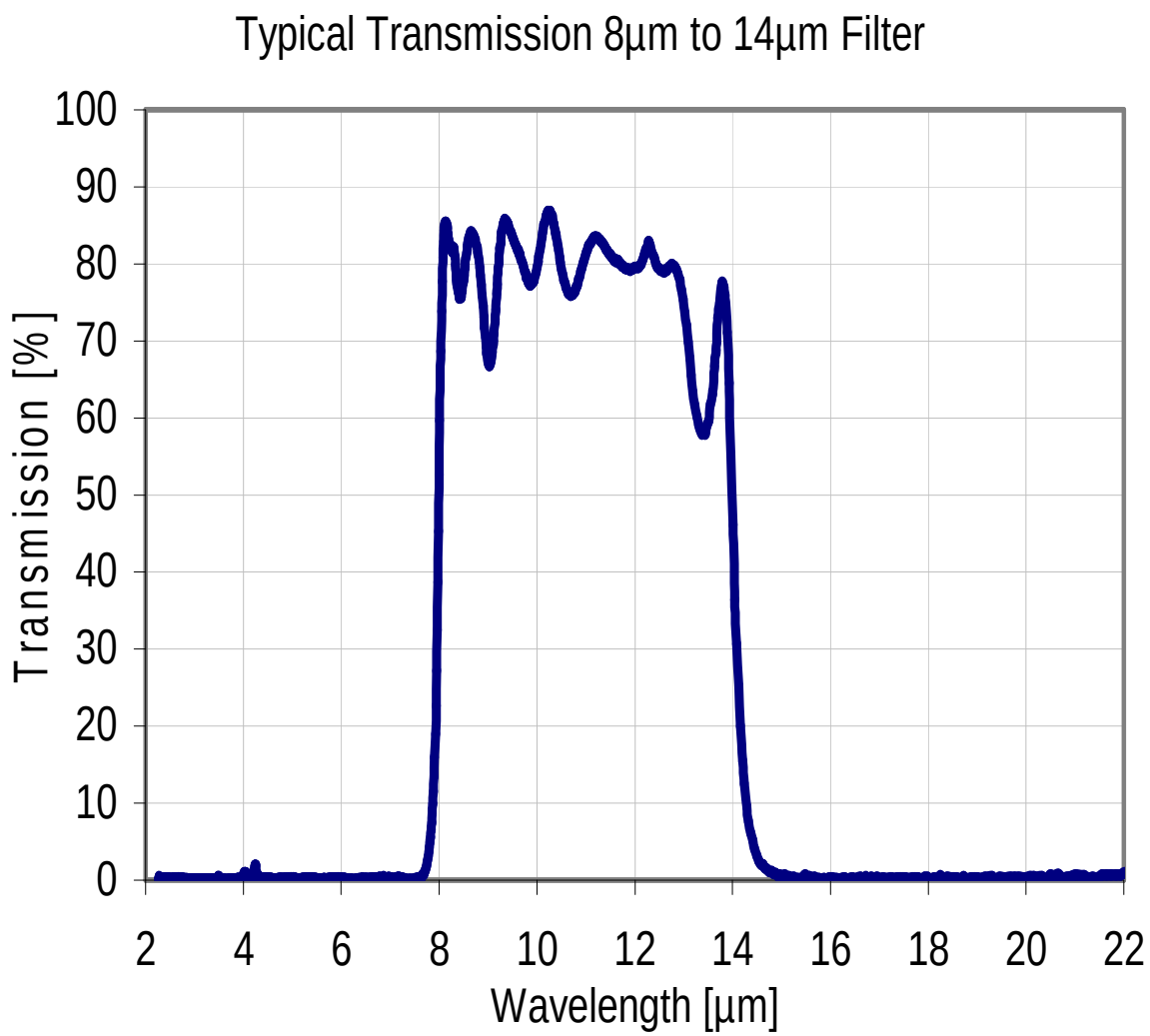
Parameter	*Symbol*	*Limits*			*Units*	*Conditions*
		Min	*Typ.*	*Max*		
storage temperature		-40		185	℃	
operating temperature		-20		180	℃	

3. General and Electrical Parameter Thermopile

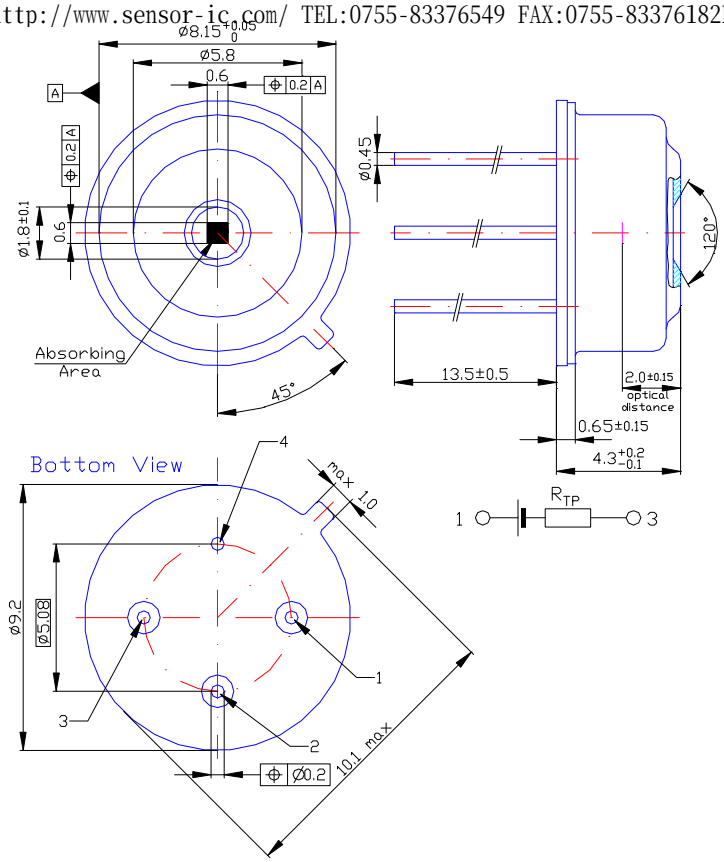
Parameter	*Symbol*	*Limits*			*Units*	*Conditions*
		Min	*Typ.*	*Max*		
filling gas						dry nitrogen
element size			0.6*0.6		mm^2	absorbing area
field of view			75			degree
resistance	R_{TS}	69	86	112	kΩ	-40℃ to 185℃
signal voltage	Vs		600		µV	Filter F8–14 µm, T_{BB} 100℃, f = 4.5 Hz
time constant	τ		15		ms	t90
noise voltage	V_{RMS}		38		nV/√Hz	r.m.s., 25℃
detectivity	D^*		$2.9*10^7$		cm√Hz/W	Filter F8–14 µm

4. Filter Characteristics

Filter F8-14					
Parameter	*Limits*			*Units*	*Conditions*
	Min	*Typ*	*Max*		
average transmission	75			%	9µm to 13µm
average transmission			1	%	visual to pass, pass to 20µm
half power point on	7.8	8	8.2	µm	25℃
Half power point off	13.5	14	14.5	µm	25℃
filter thickness		0.525			
filter material	coated silicon				



5. Drawing and Pin Assignment



6. General Directions for Further Processing

Stresses above the absolute maximum ratings may cause damages to the device. The sensor can be damaged by electrostatic discharges. Please take appropriate precautions for the handling.
Do not expose the sensors to aggressive detergents. Windows may be cleaned with alcohol and cotton swab.
For hand soldering the maximum applicable temperature is 215℃ for a dwell time less than 10s.
Any temperature above 215℃ will lead to an irrever sible damage of the thermopile sensor.
Avoid heat exposure to the top and the window of the detector. Reflow and wave soldering is not recommended.

7. Liability

Important product or process changes require a customer release. Changes or modifications at the product which haven't influence to the performance and/or quality of the device haven't to be announced to the customers in advance. Customers are requested to consult with Heimann Sensor representatives before the use of Heimann Sensor products in special applications where failure or abnormal operation may directly affect human lives or cause physical injury or property damage. The company or their representatives will not be responsible for damage arising from such use without prior approval.