Model TS418-3N426 Thermopile Sensor

Thermopile IR-Sensor
Filter for NDIR CO2 Gas Detection
Single Element
Very High Signal
Flat Filter
Small Package
Accurate Reference Sensor

RoHS

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.

FEATURES

- Very High Signal
- Accurate Reference Sensor
- 4.26µm Narrow Band Pass
- Small TO-18 package

APPLICATIONS

- NDIR CO_2 Gas Detection

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min	Typical	Max	Unit	Description
Storage Temperature	T_S	-20	+20	+85	°C	permanent
Storage Temperature	T_S	-20	+20	+100	°C	non permanent

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PERFORMANCE SPECS

Parameter	Symbol	Value	Unit	Condition
Operating Ambient Temperature	T_{Amb}	-20 to +85	°C	permanent
Operating Ambient Temperature	T_{Amb}	-20 to +100	°C	non permanent
Package		TO-18		
Absorber Area	A	1.4 × 1.4	mm^2	
Thermopile Resistance	R_{TP}	180 ± 60	kΩ	T_{Amb} = +25°C
Temperature Coefficient of Thermopile Resistance	TCR_{TP}	-0.06 ± 0.04	%/K	T_{Amb} = +25°C to +75°C
Voltage Response	V_{TP}	depends on light source	mV	
Temperature Coefficient of Voltage Response	TCV_{TP}	-0.45 ± 0.08	%/K	T_{Amb} = +25°C to +75°C
Noise Equivalent Voltage	NEV	130	$nV/Hz^{½}$	T_{Amb} = +25°C
Rise Time	τ_{63}	22 ± 5	ms	
Ambient Temperature Sensor		Ni-RTD		
Ambient Temperature Sensor Resistance	$R_{Ni\text{-}RTD}$	1000 ± 4	Ω	T_{Amb} = 0°C
Temperature Coefficient of Ni-RTD	$TC_{Ni\text{-}RTD}$	6178 ±150	ppm/K	T_{Amb} = 0°C to +100°C

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OPTICAL CHARACTERISTICS

Parameter	Symbol	Value	Unit	Description
Field of View	FOV	120	deg	at 50% of maximum signal

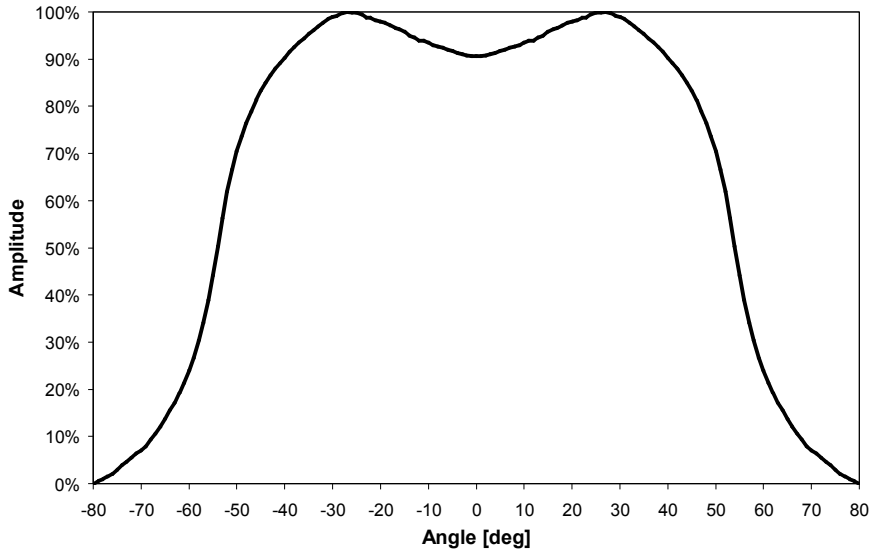

Figure 2: Field of View Curve

FILTER CHARACTERISTICS

Parameter	Symbol	Value	Unit	Description
Filter Type	NBP	4.26 ±0.18	µm	Narrow Band Pass

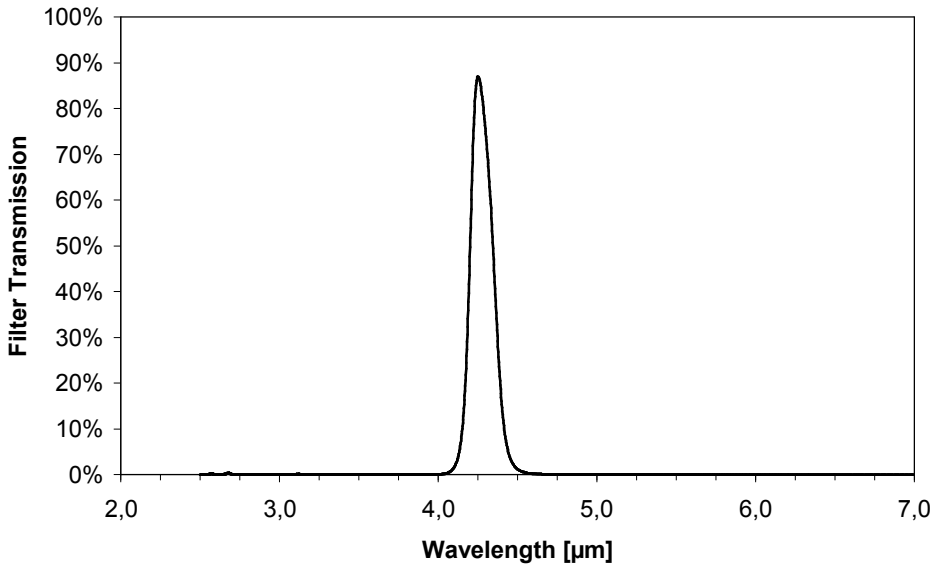

Figure 3: Filter transmission curve

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ELECTRICAL CONNECTIONS

Pin	Symbol
1	TP +
2	Ni-RTD
3	TP -
4	GND

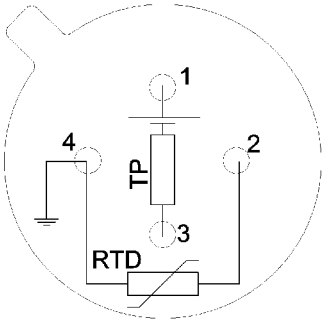

Figure 4: Electrical connections - bottom view of thermopile

MECHANICAL DIMENSIONS

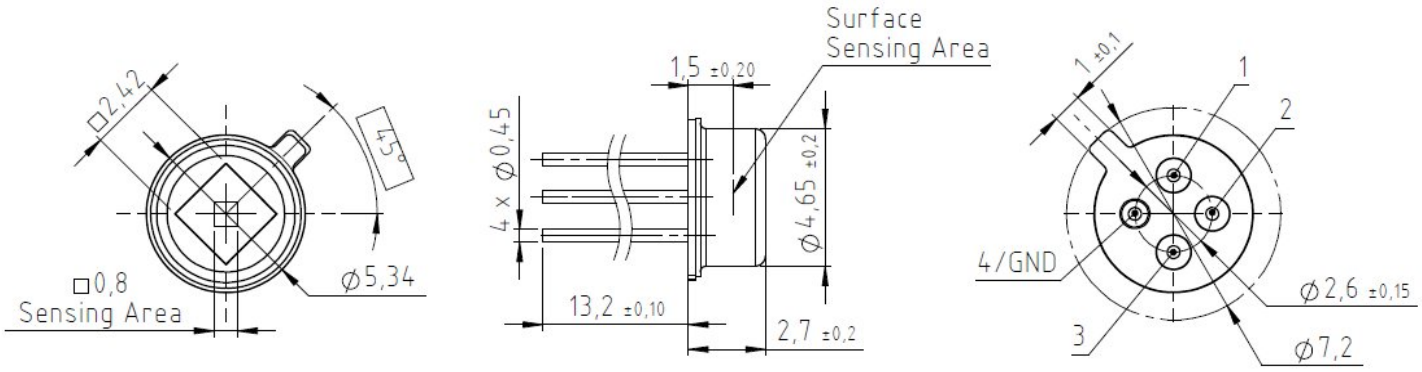

Figure 5: Mechanical dimensions of thermopile

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ORDERING INFORMATION

Part Description	TS418-3N426
Part No.	G-TPCO-024

TECHNICAL CONTACT INFORMATION

North America	Europe	Asia
Measurement Specialties, Inc. 1000 Lucas Way Hampton, VA 23666 Tel: 1-800-745-8008 Fax: 1-757-766-4297	MEAS Deutschland GmbH Hauert 13, D-44227 Dortmund, Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20	北京赛斯维测控技术有限公司 北京市朝阳区望京西路48号 金隅国际D座302 电话：+86 010 8477 5646 传真：+86 010 5894 9029 邮箱：sales@sensorway.cn http://www.sensorway.cn