



## One Channel Thermopile Detector TS1x80B-A-D0.75-...-180

Thermopile Detector based on thin film technology with a small active area recommended for temperature measurements with a band pass filter (8-14  $\mu\text{m}$ ) in high temperature ambient.

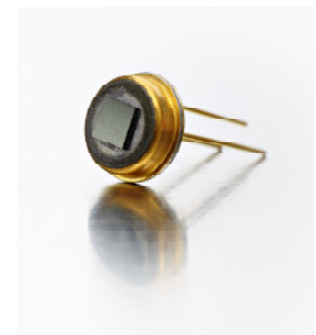
Active Area	$\varnothing 0.5$	mm
Aperture	$\varnothing 0.75$	mm
Number of Thermocouples	80	
Time Constant $t_{(0-63\%)}^1$	typ. 36	ms
DC Output Voltage <sup>1</sup>	typ. 2.2	mV
DC Sensitivity <sup>1</sup>	typ. 295	V/W
Temperature Coefficient of Sensitivity <sup>2</sup>	typ. -0.4	%/K
Noise Voltage <sup>3</sup>	typ. 18	nV/Hz <sup>1/2</sup>
Noise Equivalent Power NEP <sup>1</sup>	typ. 0.06	nW/Hz <sup>1/2</sup>
Specific Detectivity D* <sup>1</sup>	typ. $7.2 \times 10^8$	cmHz <sup>1/2</sup> /W
Resistance of Thermopile <sup>3</sup>	$20 \pm 8$	k $\Omega$
Temperature Coefficient of Resistance <sup>2</sup>	typ. -0.03	%/K
Thermistor	0 – no thermistor Customer specific solution on request.	
Filling Gas <sup>4</sup>	N <sub>2</sub> / Kr	
Filters	Micro-Hybrid standard band pass filters (f.e. 8-14 $\mu\text{m}$ ) and more information please see document "infrared filters". Customized filters possible on request.	
Operation Temperature	-20 ... +180	$^{\circ}\text{C}$
Mass	1	g
Housing	TO39 (modified)	

<sup>1</sup> on air without windows, Blackbody T=500 K; E=38 W/m<sup>2</sup>

<sup>2</sup> temperature range from +25 to +70 $^{\circ}\text{C}$

<sup>3</sup> at T<sub>amb</sub>=25  $^{\circ}\text{C}$

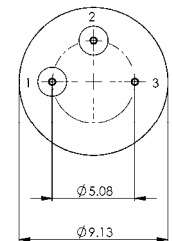
<sup>4</sup> In case of Kr-filling increase of DC Output Voltage, DC Sensitivity, Specific Detectivity and Time Constant by the factor 1.8. Decrease of NEP by the same factor. Other gases on customer's request



### Bottom View

Pin Assignment:

- Pin 1 Output TP+
- Pin 2 Output TP-
- Pin 3 GND



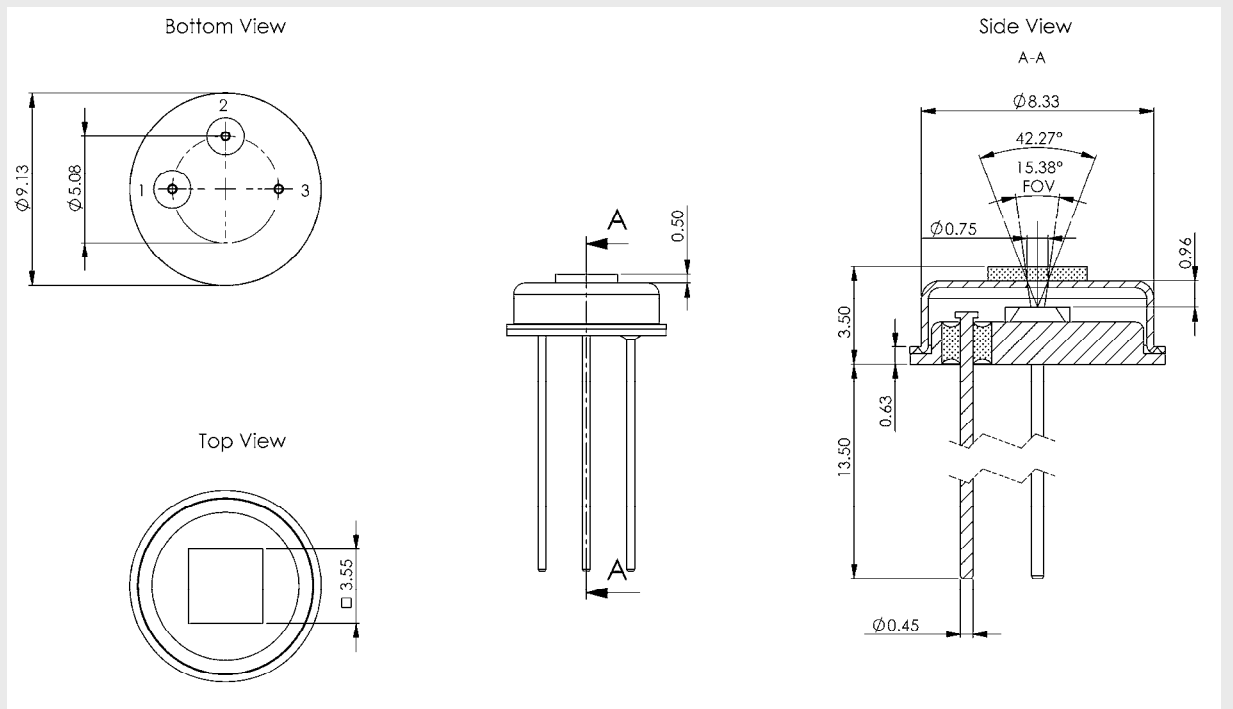
### Ordering Information:

TS1x80B-A-D0.75 – Thermistor (F) – Backfill Gas (GG) – Filter (H) – Extended Temperature Range (III)

e.g. TS1x80B-A-D0.75-0-Kr-B1-180

# One Channel Thermopile Detector TS1x80B-A-D0.75-...-180

Housing  
TO39 package



## Optional parts:

IR-Source JSIR 350 - Fast IR emitter based on thin film technology  
Art.-Nr. 6351.01-3.01

IR-Source JSIR 450 - Spiral wound broadband IR emitter  
Art.-Nr. 6350.01-3.01

## NDIR Gas Measurement Module

High Temperature CO<sub>2</sub>-Gas Measurement Module for operating temperatures up to 190 °C and external electronics. Perfectly suitable for monitoring CO<sub>2</sub>-concentration in gas mixtures and measuring the ambient air temperature.

Parameter	Value
Concept	optical double beam configuration atmosphere pressure compensated
Measuring Gas	CO <sub>2</sub>
Measurement Range	0 ... 20 vol%
Measuring Temperature Range	0 ... 190 °C
Measurement Accuracy	±(0.2 vol% + 2 % of read)
Additional Errors	< 2 % of the measured value for temperature and atmospheric pressure
Response Time	< 30 s
Heat Up Time	< 15 min
Temperature Range Sensor	-25 ... +200 °C
Temperature Range Ext. Electronics	-25 ... +85 °C
Interfaces	4 – 20 mA 0 – 1 V, 0 – 10 V RS232, CAN
Supply Voltage	12 V ±1 V max. 2 W



### Ordering Information:

7202.02-A.00