



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 μm) 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 ¹	typ. 2.2	mV
DC Sensitivity ¹	typ. 295	V/W
Temperature Coefficient of Sensitivity ²	typ. -0.4	%/K
Noise Voltage ³	typ. 18	nV/Hz ^{1/2}
Noise Equivalent Power NEP ¹	typ. 0.06	nW/Hz ^{1/2}
Specific Detectivity D^*^1	typ. 7.2×10^8	cmHz ^{1/2} /W
Resistance of Thermopile ³	20 ± 8	k Ω
Temperature Coefficient of Resistance ²	typ. -0.03	%/K
Thermistor	0 – no thermistor Customer specific solution on request.	
Filling Gas ⁴	N ₂ / Kr	
Filters	Micro-Hybrid standard band pass filters (f.e. 8-14 μm) and more information please see document “infrared filters”. Customized filters possible on request.	
Operation Temperature	-20 ... +180	°C
Mass	1	g
Housing	TO39 (modified)	

¹ on air without windows, Blackbody T=500 K; E=38 W/m²

² temperature range from +25 to +70°C

³ at T_{amb}=25 °C

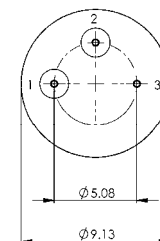
⁴ In case of Kr-filling increase of DC Output Voltage, DC Sensitivity, Specific Detectivity and Time Constant by the factor 1.8. Decrease of NEP by the same factor. Other gases on customer's request



Bottom View

Pin Assignment:

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



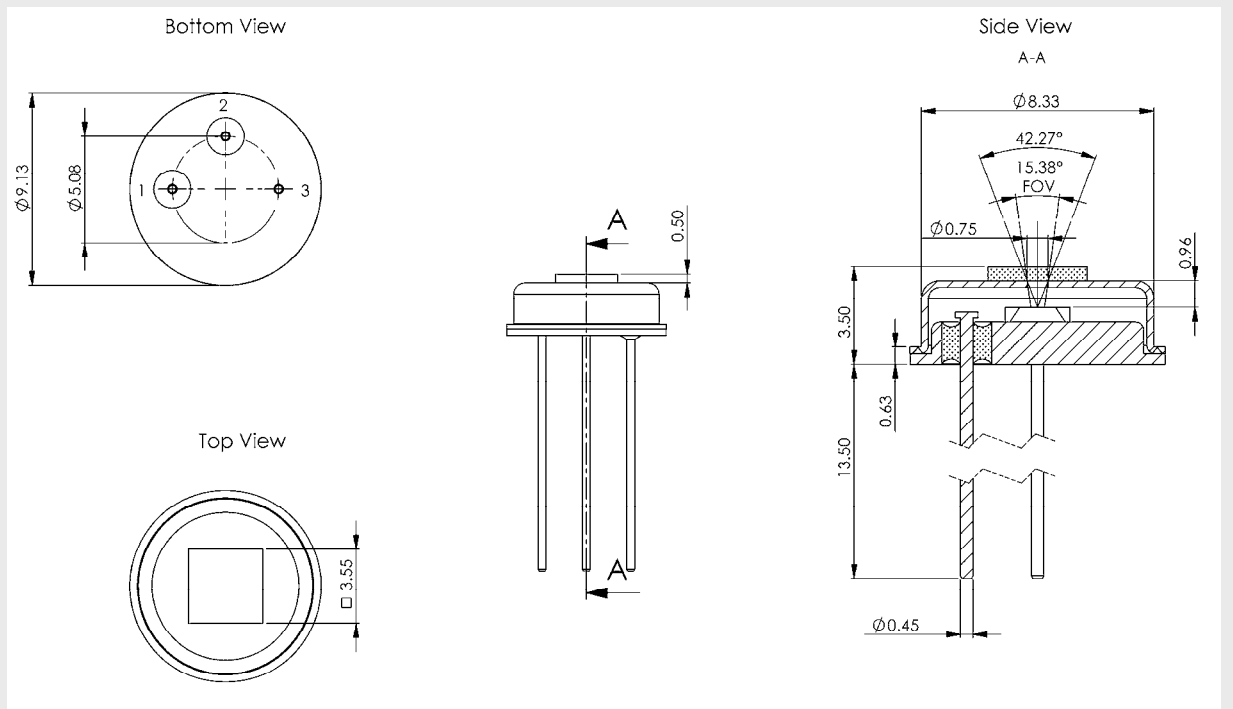
Ordering Information:

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

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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 CO₂-Gas Measurement Module for operating temperatures up to 190 °C and external electronics. Perfectly suitable for monitoring CO₂-concentration in gas mixtures and measuring the ambient air temperature.

Parameter	Value
Concept	optical double beam configuration atmosphere pressure compensated
Measuring Gas	CO ₂
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