

Four Channel Thermopile Detector TS4xQ200B-A-S1.5

High sensitive thermopile quad-detector based on thin film technology with narrow band filters for gas analysis – Docking of electrical and physical channel parameters by “One-Chip” solution.

Active Area (four active areas on one chip)	4 x (1.2 x 1.2)	mm ²
Aperture	4 x (1.5 x 1.5)	mm ²
Number of Thermocouples per Channel	200	
Time Constant $t_{(0-63\%)}^1$	typ. 30	ms
DC Output Voltage ¹	typ. 4.4	mV
DC Sensitivity ¹	typ. 80	V/W
Temperature Coefficient of Sensitivity ²	typ. -0.4	%/K
Noise Voltage ³	typ. 33	nV/Hz ^{1/2}
Noise Equivalent Power NEP ¹	typ. 0.41	nW/Hz ^{1/2}
Specific Detectivity D* ¹	typ. 2.95 x 10 ⁸	cmHz ^{1/2} /W
Resistance of Thermopile ³	65 ± 15	kΩ
Temperature Coefficient of Resistance ²	typ. -0.06	%/K
Thermistor	1 – PTC 1 kΩhm 2 – NTC 30 kΩhm 3 – NTC 100 kΩhm Technical specifications see document “thermistors”.	
Filling Gas ⁴	N ₂ / Kr	
Filters	All Micro-Hybrid standard narrow band pass filters can be combined. Customized filters on request. For more information please see document “infrared filters”.	
Operation Temperature	-20 ... +70	°C
Mass	1	g
Housing	T039 (modified)	

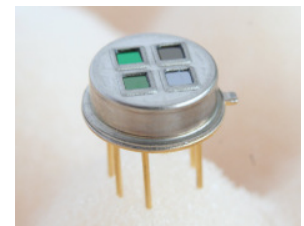
¹ on air without windows, Blackbody T=500 K; E=38 W/m²

² temperature range from +25 to +70 °C

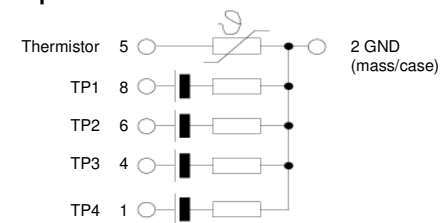
³ at T_{amb}=25 °C

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.

March 16th 2011 – subject to change without notice



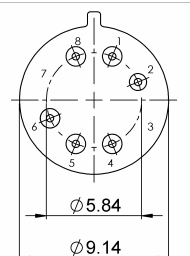
Equivalent Circuit



Bottom View

Pin Assignment:

- Pin 1 Output TP4
- Pin 2 Mass (GND)
- Pin 4 Output TP3
- Pin 5 Thermistor
- Pin 6 Output TP2
- Pin 8 Output TP1



Ordering Information:

TS4xQ200B-A-S1.5 – Thermistor (F) – Backfill Gas (GG) – Filters (H/H/H/H)

e.g. TS4xQ200B-A-S1.5-1-Kr-E1/F1/G1/D1

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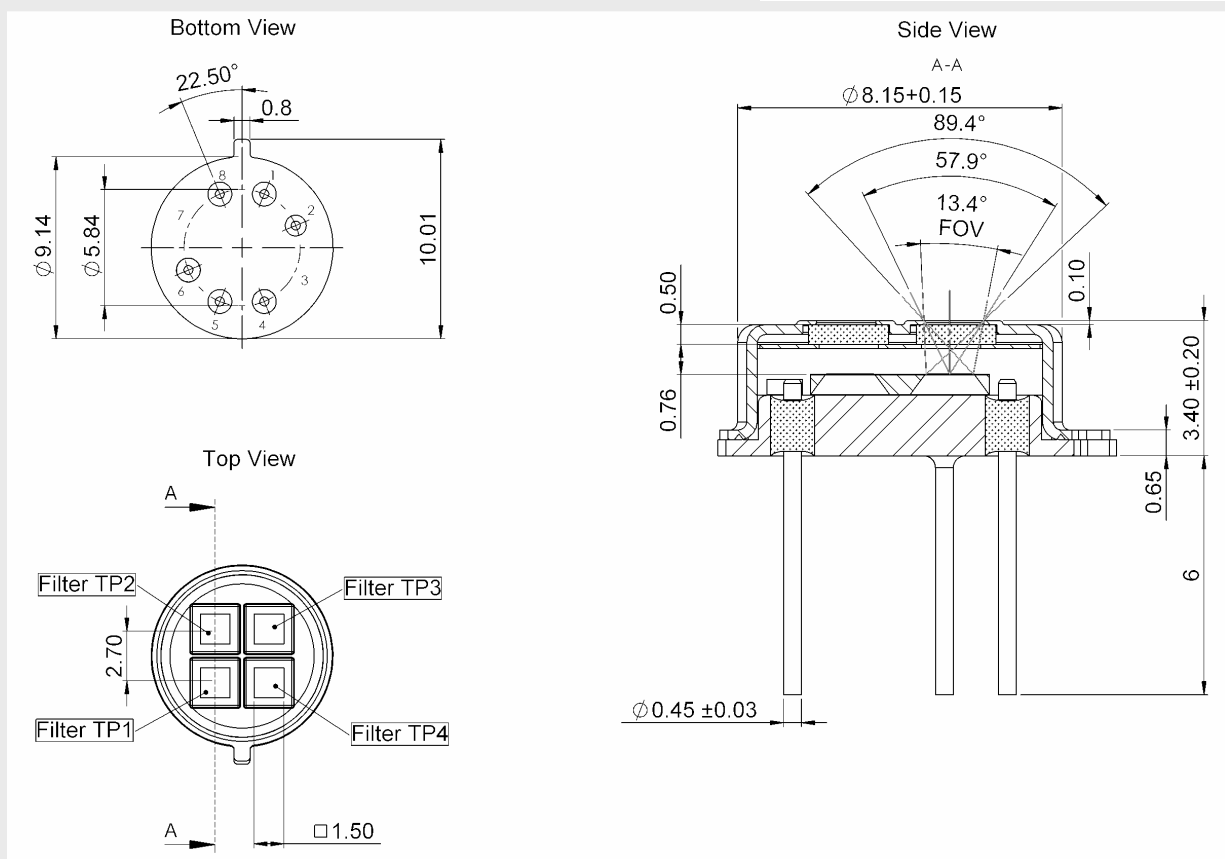
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Four Channel Thermopile Detector TS4xQ200B-A-S1.5

Housing
T039 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 - Broadband IR emitter high performance for heavily absorbing media
Art.-Nr. 6350.01-3.01

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