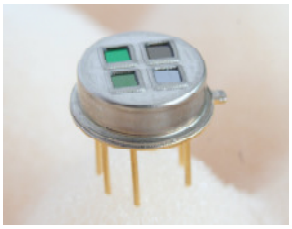
Four Channel Thermopile Detector TS4x180S-A-S1.5

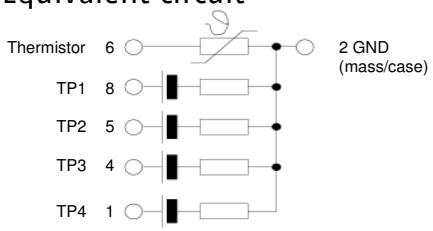
Thermopile quad-detector based on thin film technology with low time constant and narrow band filters for gas analysis.

Active Area	4 x (0.8 x 0.8)	mm²
Aperture	4 x (1.5 x 1.5)	mm²
Number of Thermocouples per Channel	180	
Time Constant $t_{(0-63\%)}$ [1]	12±5	ms
DC Output Voltage [1]	typ. 1.5	mV
DC Sensitivity [1]	typ. 62	V/W
Temperature Coefficient of Sensitivity [2]	-0.45±0.08	%/K
Noise Voltage [3]	typ. 34	nV/Hz$^{1/2}$
Noise Equivalent Power NEP [1]	typ. 0.55	nW/Hz$^{1/2}$
Specific Detectivity D* [1]	typ. 1.45 x 10^8	cmHz$^{1/2}$/W
Resistance of Thermopile [3]	70 ± 30	kΩ
Temperature Coefficient of Resistance [2]	-0.06±0.04	%/K
Thermistor	1 – PTC 1 kOhm 2 – NTC 30 kOhm 3 – NTC 100 kOhm Technical specifications see document "thermistors".	
Filling Gas	N_2	
Filters	All Micro-Hybrid standard narrow band pass filters can be combined. Customized filters on request. For more information please see document "standard filters".	
Operation Temperature	-20 ... +85	°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 +75°C
[3] at T_{amb}=25 °C



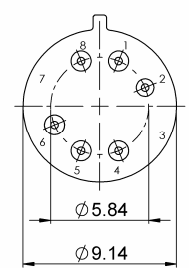
Equivalent Circuit



Bottom View

Pin Assignment:

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



Ordering Information:

TS4x180S-A-S1.5 – Thermistor (F) – Backfill Gas (GG) – Filters (H/H/H/H)
e.g. TS4x180S-A-S1.5-1-N2-E1/F1/G1/D1

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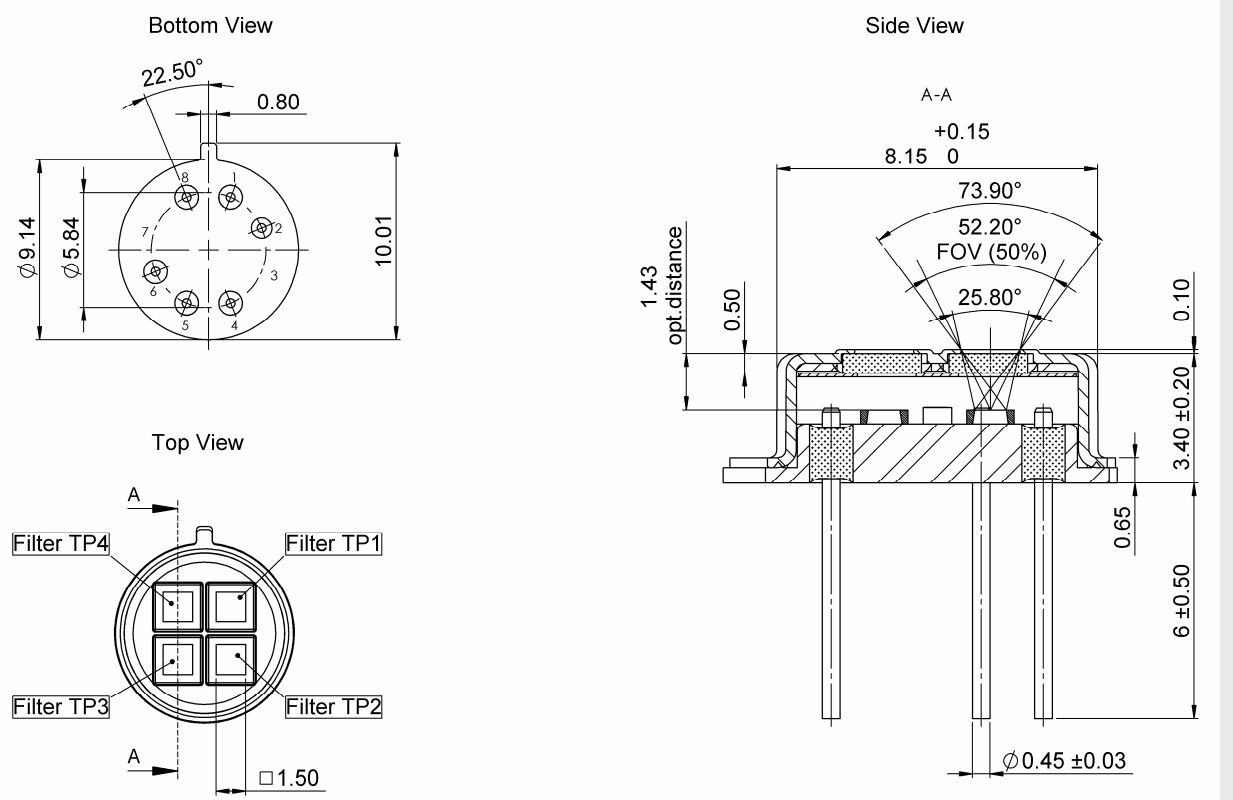
Housing
T039 package



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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