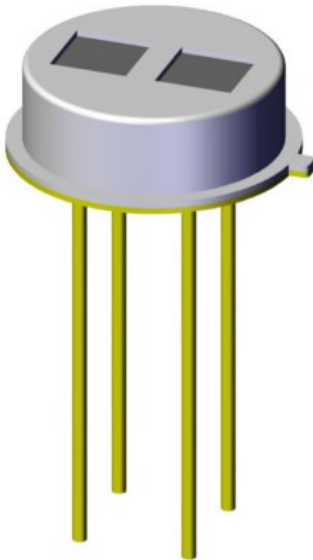


# Thermopile Gas Sensor

## MTP20-A6-1000/1056



### Features:

- MEMS Thermopile Element
- TO-39 Package (Dual Channel)
- High Sensitivity
- 10.56/10.0um NBP Filter
- High Accuracy NTC

### Applications:

- NDIR SF<sub>6</sub> Gas Detection
- Power Equipment Safety Monitoring
- Industrial Process Control
- Electrical Power System

<b>Model No.: MTP20-A6-1000/1056</b>	Approved by	Checked by	Drawn by
<b>Rev. 04 / Date: 2021.07</b>			

**Model No.:** MTP20A6-1000/1056

## Absolute Maximum Rating

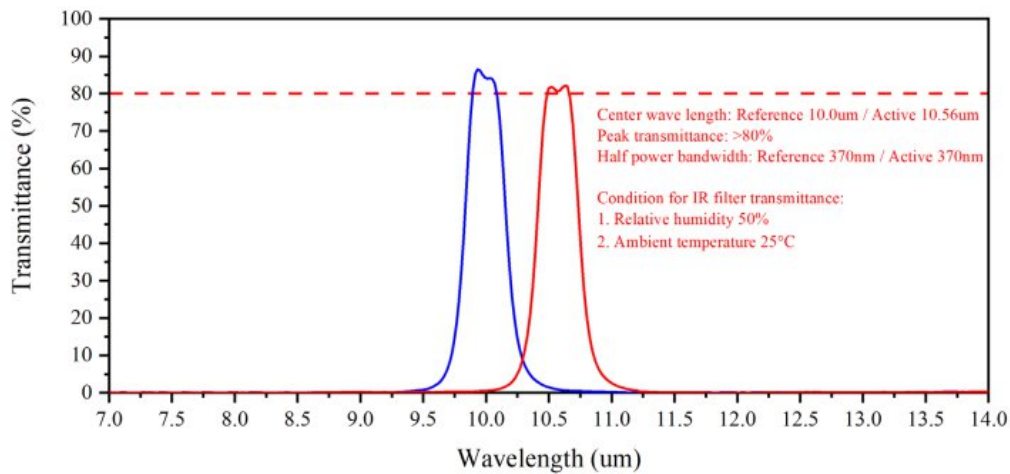
Parameter	Value	Unit
Operating Temperature	-30~100	°C
Storage Temperature	-40~125	°C

## Performance Specification

Parameter	Value	Unit	Conditions
Chip Size	1.8*1.8	mm <sup>2</sup>	
Membrane Area	1.35*1.35	mm <sup>2</sup>	
Field of View	43±10%	kΩ	Temp=25°C
Thermopile Resistance	27±2	nV/Hz <sup>1/2</sup>	Temp=25°C
Noise Voltage	0.62	nV/Hz <sup>1/2</sup>	500K,1Hz
NEP	43	V/W	500K,5.5um(LWP)
Responsivity	0.1	%/°C	25°C/50°C
Temp Coefficient of Resistance	32	ms	
Time Constant	6.8E+07	cmHz <sup>1/2</sup> /W	500K,1Hz
Specific Detectivity	100±3%	kΩ	25°C
Thermistor Resistance	3950±1%	K	25°C/50°C

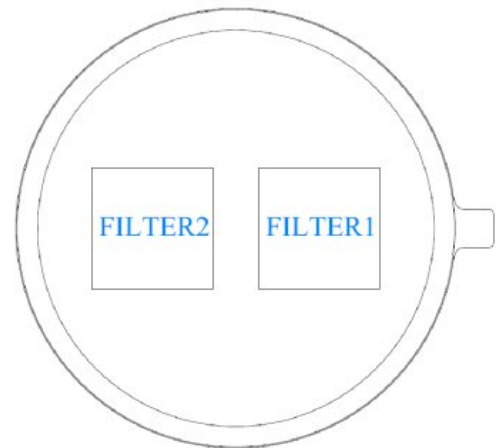
## Filter Specification

Parameter	Active Channel	Reference Channel	Unit
Center Wave Length	10.56	10.0	um
Half Power Bandwidth	370	370	nm
Peak Transmission	>80	>80	%



## Optical Characteristic

Filter1	10.0um (Reference)
Filter2	10.56um (Active)



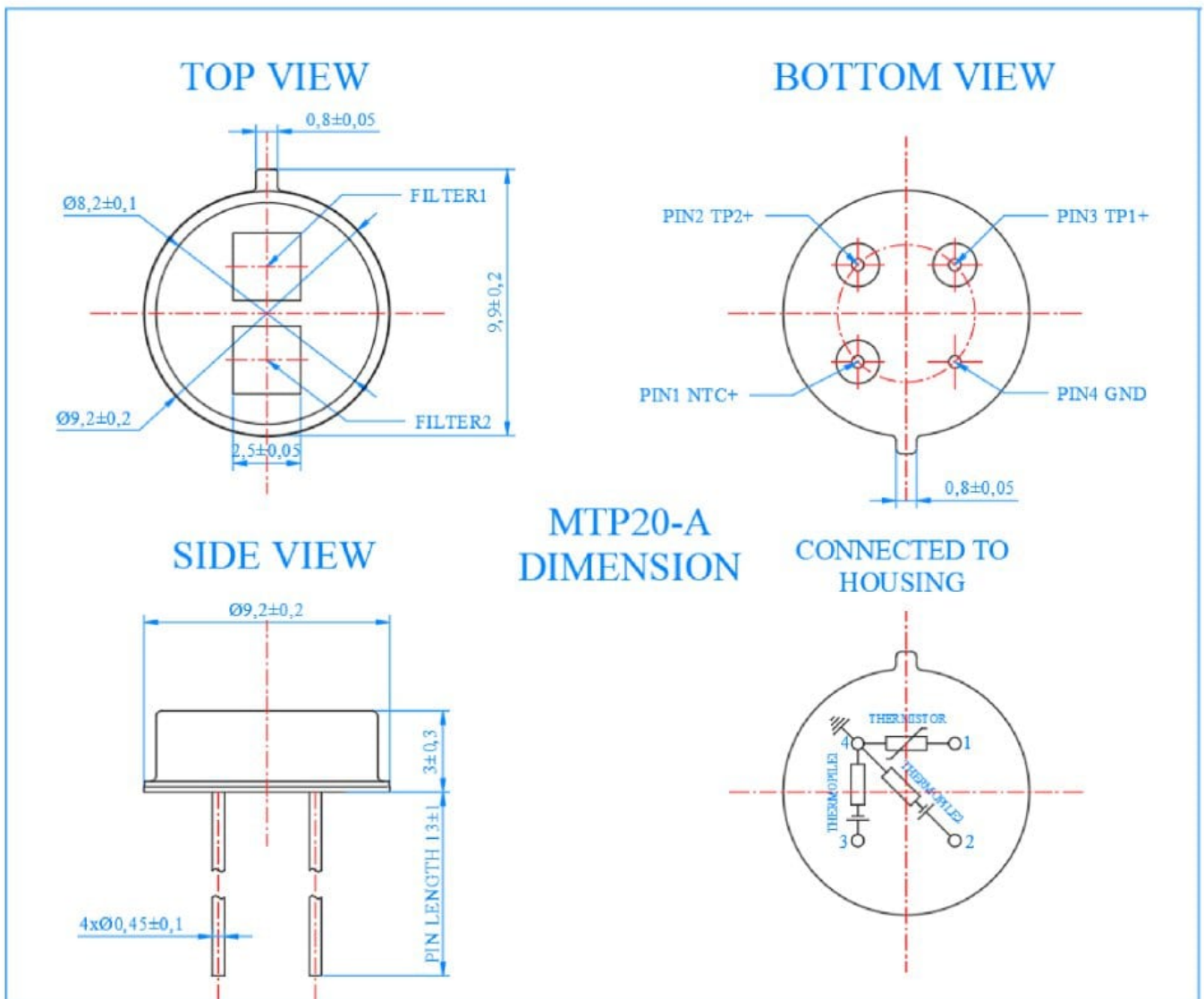
## Electrical Connection

Pin	1	2	3	4
Definition	NTC+	TP2+	TP1+	GND

## Resistance vs. Temperature Table of NTC

T (°C)	R (kΩ)	T (°C)	R (kΩ)	T (°C)	R (kΩ)
-20	953.19	20	124.91	60	24.701
-19	900.37	21	119.41	61	23.821
-18	850.79	22	114.19	62	22.976
-17	804.21	23	109.22	63	22.166
-16	760.45	24	104.50	64	21.388
-15	719.32	25	100.00	65	20.641
-14	680.64	26	95.72	66	19.923
-13	644.27	27	91.65	67	19.234
-12	610.04	28	87.77	68	18.572
-11	577.82	29	84.07	69	17.936
-10	547.48	30	80.55	70	17.325
-9	518.90	31	77.20	71	16.738
-8	491.98	32	74.00	72	16.173
-7	466.60	33	70.95	73	15.630
-6	442.67	34	68.04	74	15.108
-5	420.11	35	65.265	75	14.605
-4	398.81	36	62.618	76	14.122
-3	378.72	37	60.092	77	13.657
-2	359.74	38	57.681	78	13.209
-1	341.83	39	55.379	79	12.779
0	324.90	40	53.180	80	12.364
1	308.90	41	51.080	81	11.965
2	293.78	42	49.073	82	11.580
3	279.48	43	47.155	83	11.210
4	265.96	44	45.321	84	10.853
5	253.16	45	43.569	85	10.509
6	241.05	46	41.892	86	10.177
7	229.58	47	40.289	87	9.858
8	218.72	48	38.755	88	9.550
9	208.44	49	37.286	89	9.253
10	198.69	50	35.881	90	8.967
11	189.45	51	34.536	91	8.691
12	180.69	52	33.248	92	8.424
13	172.38	53	32.014	93	8.167
14	164.50	54	30.832	94	7.919
15	157.02	55	29.699	95	7.680
16	149.91	56	28.614	96	7.449
17	143.17	57	27.573	97	7.226
18	136.77	58	26.576	98	7.010
19	130.69	59	25.619	99	6.802
				100	6.601

## Mechanical Dimension



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