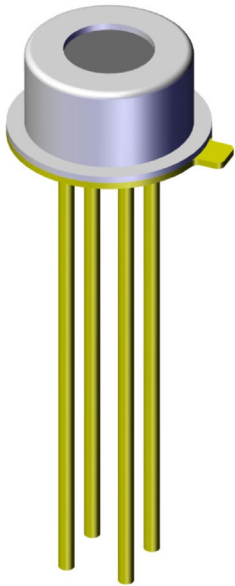


# Thermopile Temperature Sensor

## MTP10-B6F8



### Features:

- MEMS Thermopile Element
- TO-46 Package
- High Sensitivity
- 8~14um BP Filter
- High Accuracy NTC

### Applications:

- Non-contact Temperature Measurements
- Continuous Temperature Control of Manufacturing
- For industrial Temperature Measurement
- Industrial Pyrometer

<b>Model No.: MTP10-B6F8</b>	Approved by	Checked by	Drawn by
<b>Rev. 04 / Date: 2021.07</b>			

**Model No.:** MTP10-B6F8

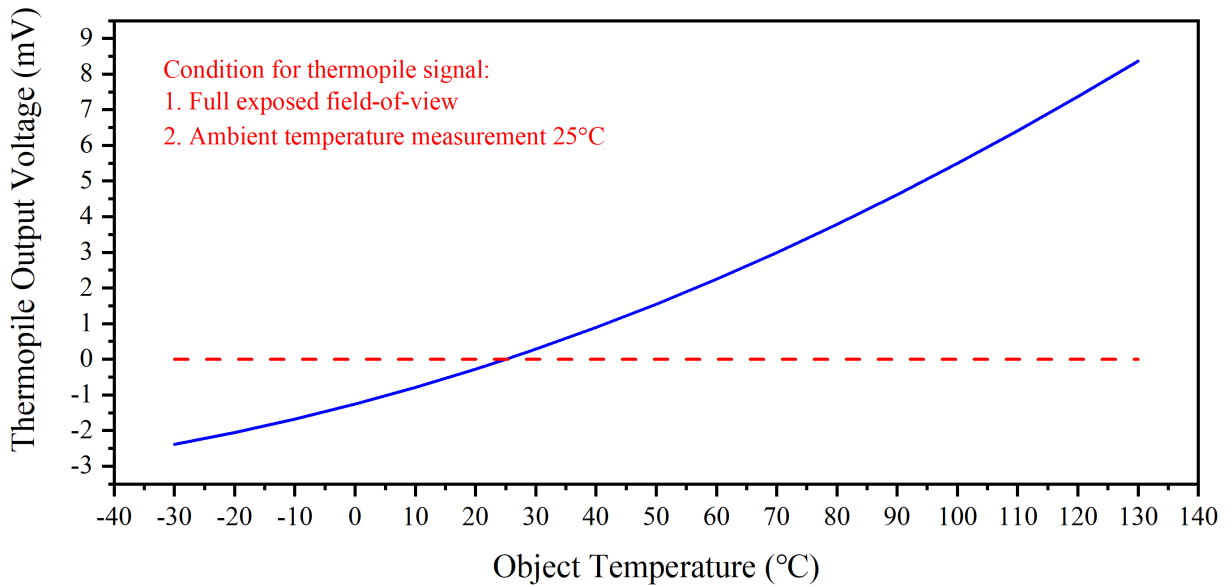
## Absolute Maximum Rating

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

## Performance Specification

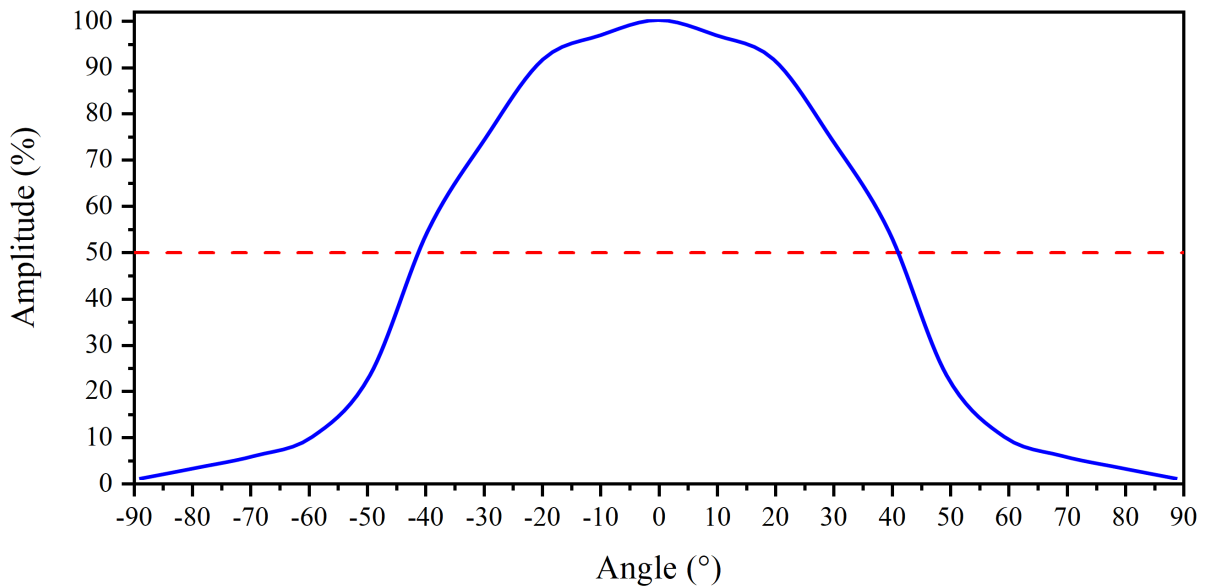
Parameter	Value	Unit	Conditions
Chip Size	1.8*1.8	mm <sup>2</sup>	
Membrane Area	1.35*1.35	mm <sup>2</sup>	
Field of View	83	°	at 50 % intensity points
Thermopile Resistance	43 ± 10%	kΩ	Temp=25°C
Noise Voltage	27 ± 2	nV/Hz <sup>1/2</sup>	Temp=25°C
NEP	0.62	nV/Hz <sup>1/2</sup>	500K,1Hz
Responsivity	43	V/W	500K,5.5um(LWP)
Temp Coefficient of Resistance	0.1	%/°C	25°C/50°C
Time Constant	32	ms	
Specific Detectivity	6.8E+07	cmHz <sup>1/2</sup> /W	500K,1Hz
Thermistor Resistance	100 ± 3%	kΩ	25°C
Thermistor BETA-Value	3950 ± 1%	K	25°C/50°C

## Typical Performance Curve



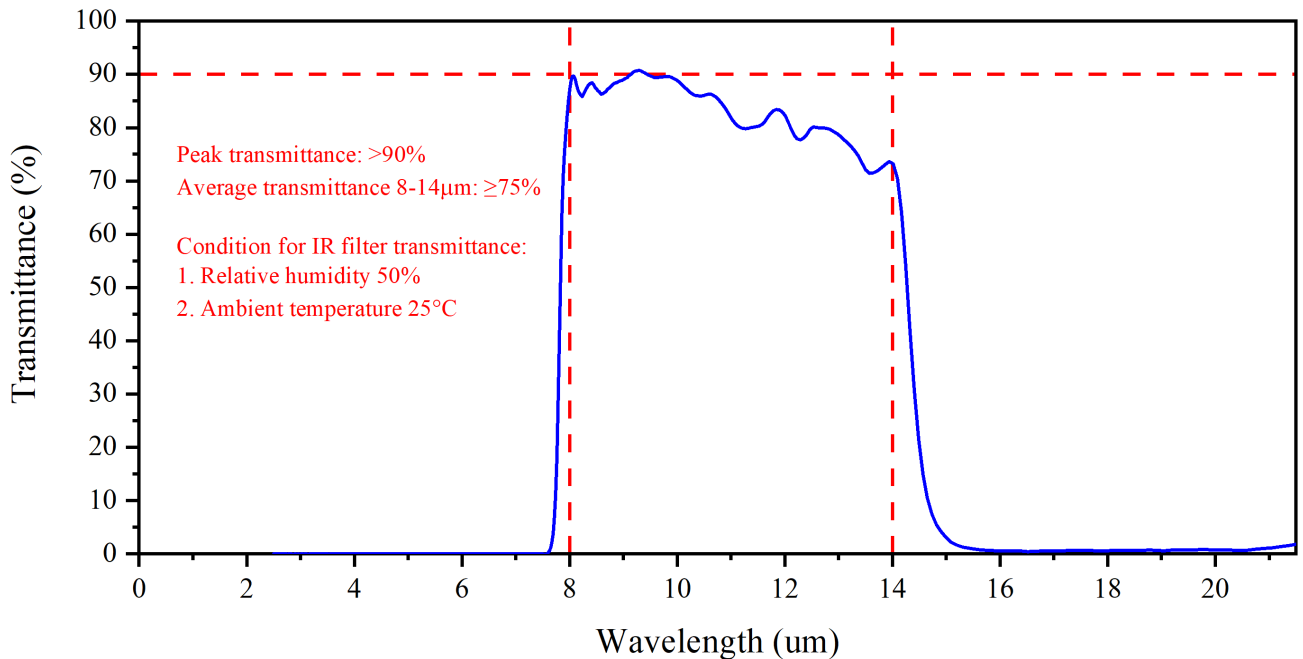
## Optical Characteristic

Parameter	Value	Unit	Description
Field of View	83	°	50% Maximum Signal



## Filter Specification

Parameter	Value	Unit	Description
Transmission Range	8~14	um	BP
Transmission	≥75	%	8~14um
Transmission Blocking Average	1	%	<7.5um
Transmission Blocking Average	1	%	15~21um



## Electrical Connection

Pin	1	2	3	4
Definition	TP+	NTC+	TP-	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

