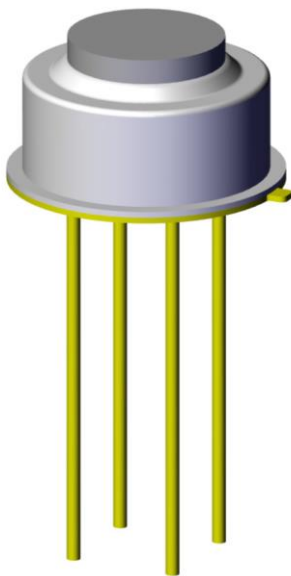


Thermopile Temperature Sensor MTP10-A6LF55



Specification:

- MEMS Thermopile Element
- TO-39 Package
- High Sensitivity
- 5.5um LWP Filter and Silicon Lens
- High Accuracy NTC

Application:

- Non-contact Temperature Measurements
- Continuous Temperature Control of Manufacturing
- Consumer Applications
- Home Appliance Temperature Measurements

Model No.: MTP10-A6LF55

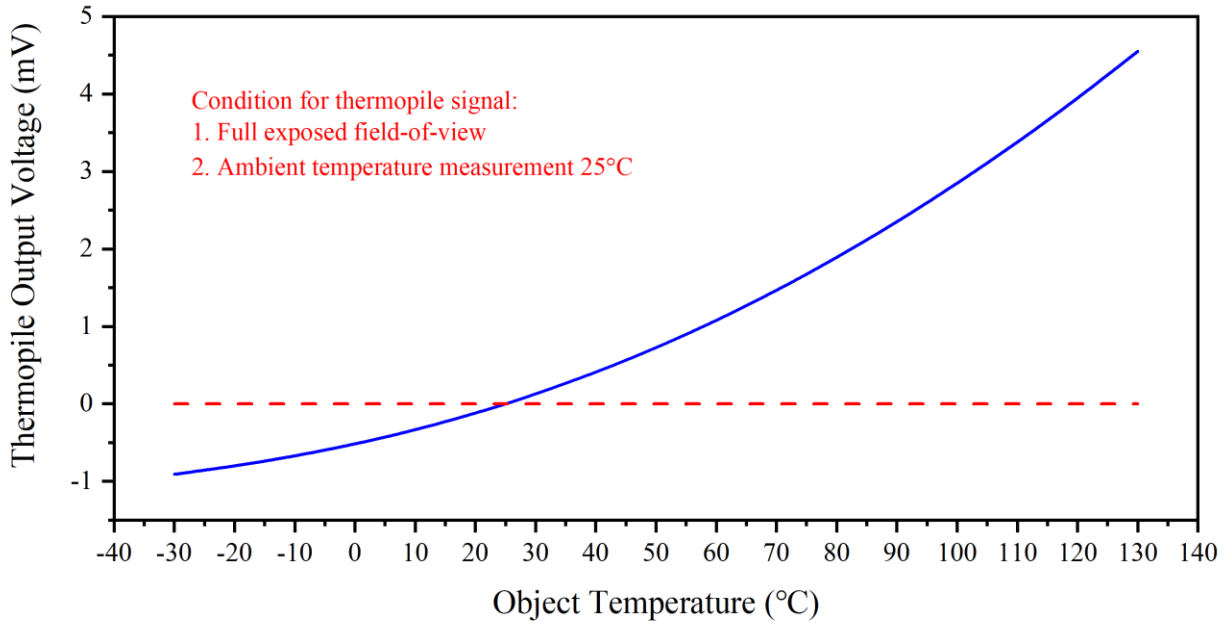
Absolute Maximum Rating

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

Performance Specification

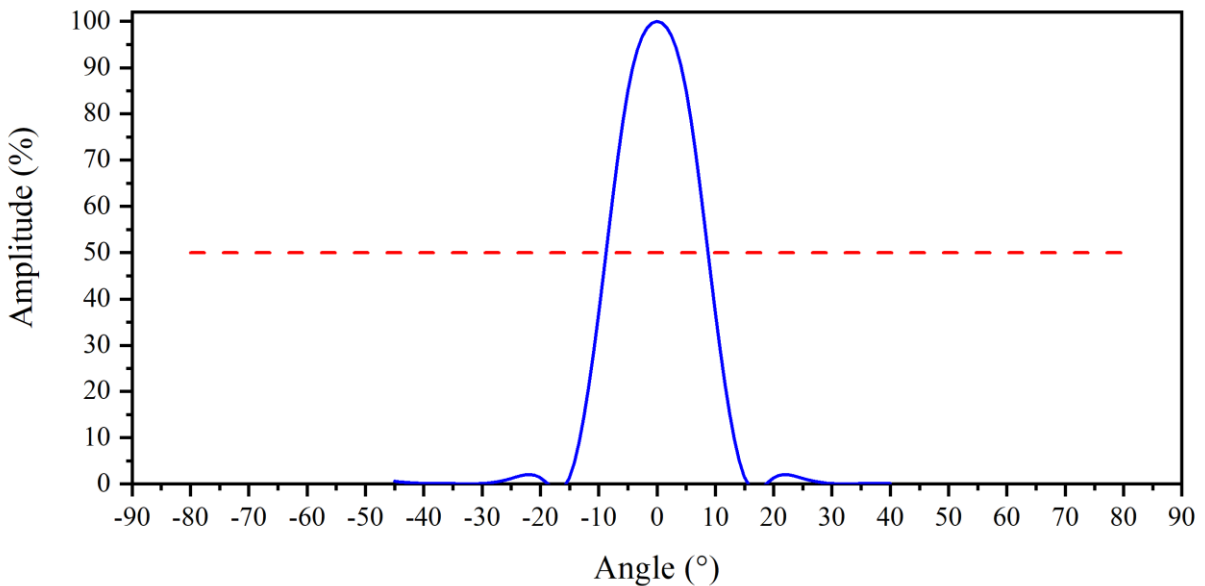
| Parameter | Value | Unit | Conditions |
|--------------------------------|-----------|------------------------|--------------------------|
| Chip Size | 1.8*1.8 | mm ² | |
| Sensitive Area | 1.35*1.35 | mm ² | |
| Field of View | 18 | ° | at 50 % intensity points |
| Thermopile Resistance | 43 ± 10% | kΩ | Temp=25°C |
| Noise Voltage | 27 ± 2 | nV/Hz ^{1/2} | Temp=25°C |
| NEP | 0.62 | nW/Hz ^{1/2} | 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 ^{1/2} /W | 500K,1Hz |
| Thermistor Resistance | 100 ± 3% | kΩ | 25°C |
| Thermistor BETA-Value | 3950 ± 1% | K | 25°C/50°C |

Typical Performance Curve



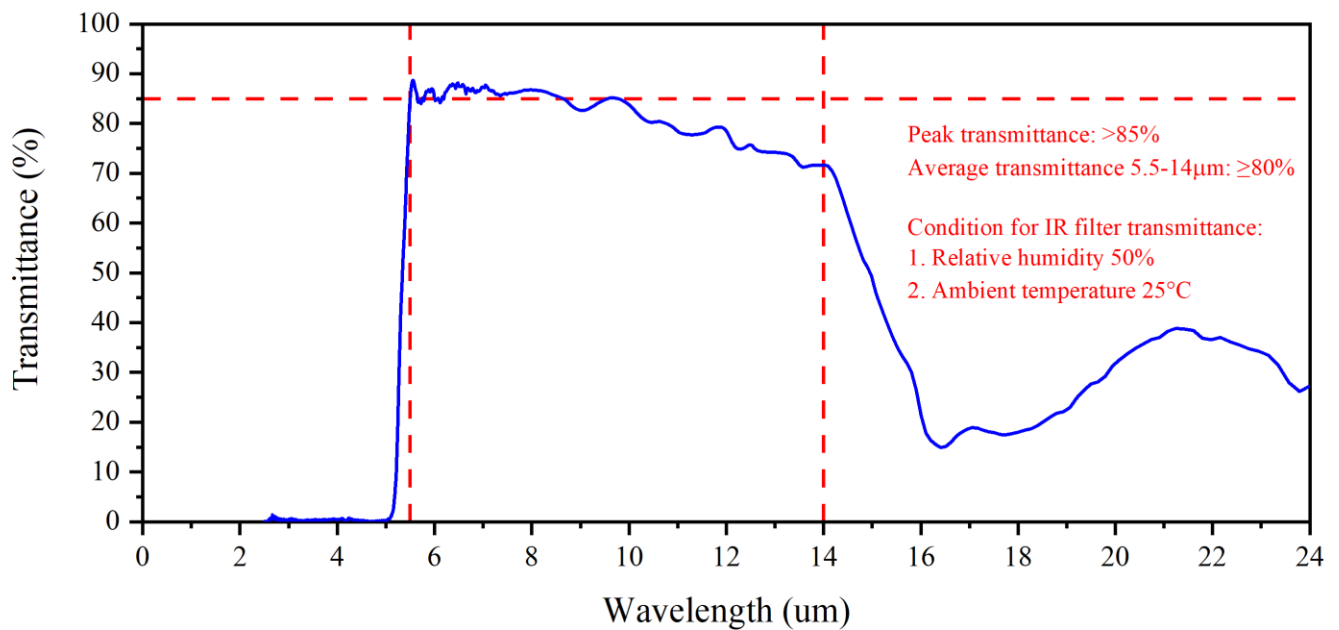
Optical Characteristic

| Parameter | Value | Unit | Description |
|---------------|-------|------|--------------------|
| Field of View | 18 | ° | 50% Maximum Signal |



Filter Specification

| Parameter | Value | Unit | Description |
|-------------------------------|-----------|------|-------------|
| Transmission Range | 5.5~14 | um | LWP |
| Transmission | ≥ 80 | % | 5.5~14um |
| Transmission Blocking Average | 1 | % | <5um |



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 |

Electrical Connection

| Pin | 1 | 2 | 3 | 4 |
|---------------|-----|------|-----|-----|
| Define | TP+ | NTC+ | TP- | GND |

Mechanical Dimension

