

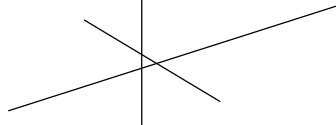
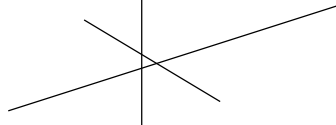


## APPROVAL SHEET

CUSTOMER : \_\_\_\_\_  
 DEVICE NAME : **Thermopile IR Sensors**  
 CODE No. : \_\_\_\_\_  
 ITEM No. : **RTS-J148SR-T**  
 ISSUED DATE : 2020. 08. 19

### [ CUSTOMER APPROVAL ]

|             |           |       |          |         |
|-------------|-----------|-------|----------|---------|
| ACCEPT No.  |           |       |          |         |
| ACCEPT DATE |           |       |          |         |
| ACCEPT      | INSPECTER | CHECK | APPROVAL | COMMENT |
|             |           |       |          |         |

|              |                                                                                     |                                                                                      |                                                                                      |                                                                                       |
|--------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ISSUED DEPT. | ISSUE                                                                               | REVIEW                                                                               | REVIEW                                                                               | APPR'D                                                                                |
|              |  |  |  |  |

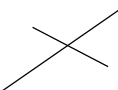
Sensor Innovator  
For Human & Future

**raytron 레이트론 |주|**

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<http://www.raytron.co.kr>

CUSTOMER :

| RECORD OF REVISION |           |                       |                |                  | DATE          |    | 2020. 08. 19 |  |
|--------------------|-----------|-----------------------|----------------|------------------|---------------|----|--------------|--|
|                    |           |                       |                |                  | MODEL NAME    |    |              |  |
| PART NAME          |           | Thermopile IR Sensors |                |                  | TYPE No.      |    | RTS-J148SR-T |  |
| PART No.           |           |                       |                |                  | APPROVAL DATE |    | 2020. . .    |  |
| No.                | DATE      | PAGE                  | REVISED CLAUSE | REVISION DETAILS | Ma            | Ch | AP           |  |
| 1                  | '20.08.19 |                       | Initial        |                  | Cho           |    | Jung         |  |
|                    |           |                       |                |                  |               |    |              |  |

|                                                                                                                                                                                                                                                                      |                                                                                       |                                                                                       |                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  <b>RAYTRON Co., Ltd.</b><br>HEAD OFFICE & FACTORY (KOREA)<br>6-28, Yuseong-daero 1205 beaon-gil, Yuseong-Gu,<br>Daejeon, KOREA<br>TEL : +82-42-863-2840    FAX : +82-42-861-0843 | MANAGER                                                                               | CHECK                                                                                 | APPROVAL                                                                              |
|                                                                                                                                                                                                                                                                      |  |  |  |
|                                                                                                                                                                                                                                                                      | FILE No.                                                                              | RTS-200819-01                                                                         |                                                                                       |

CUSTOMER :

| SPECIFICATIONS |                       | SHEET No.  | 1 of 5       |
|----------------|-----------------------|------------|--------------|
|                |                       | DATE       | 2020. 08. 19 |
| PART NAME      | Thermopile IR Sensors | MODEL NAME |              |
| PART No.       |                       | TYPE No.   | RTS-J148SR-T |

### 1. Application

This Specification is applied to inspection and approval of the Thermometrics Thermopile IR sensors are used for non-contact surface, or infrared, temperature measurement.

- 1) Ear thermometers
- 2) Forehead thermometers
- 3) Surface temperature measurement of the human body

### 2. Description

The **RTS-J148SR-T** Model consists of thermo-element, flat infrared filter and thermistor for temperature compensation, all in one hermetically –sealed TO-46 sensor package.

There are a variety of filters avail-able to maximize performance in specific applications.

### 3. Features

- 1) Compact design
- 2) High sensitivity
- 3) Fast response time
- 4) Low cost
- 5) Included ambient temperature (thermistor) sensor



### 4. Absolute Maximum Ratings

- 1) Operating temperature : -20 °C ~ 100 °C
- 2) Storage temperature : -40 °C ~ 120 °C

### 5. Thermopile Chip

| Parameter           | Limits |           |      | Unit                   | Condition     |
|---------------------|--------|-----------|------|------------------------|---------------|
|                     | MIN    | TYP       | MAX  |                        |               |
| Chip Size           |        | 1.8 x1.8  |      | mm <sup>2</sup>        |               |
| Active Area         |        | 1.0 x 1.0 |      | mm <sup>2</sup>        | Absorber area |
| Internal Resistance | 60     | 85        | 111  | kΩ                     | @25°C         |
| Resistance T.C.     |        |           | 0.12 | %/°C                   |               |
| Responsivity        | 43     | 61        | 79   | V/W                    | 500K , 1Hz    |
| Responsivity T.C.   |        | -0.07     |      | %/°C                   |               |
| Noise Voltage       |        | 37        |      | nV rms                 | R.M.S, 25°C   |
| NEP                 |        | 0.61      |      | nW/Hz <sup>1/2</sup>   |               |
| Detectivity         |        | 1.14      |      | cmHz <sup>1/2</sup> /W |               |
| Time Constant       |        | 32        |      | ms                     |               |

CUSTOMER :

| SPECIFICATIONS |                       | SHEET No.  | 2 of 5       |
|----------------|-----------------------|------------|--------------|
|                |                       | DATE       | 2020. 08. 19 |
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| PART No.       |                       | TYPE No.   | RTS-J148SR-T |

#### -. NTC Thermistor for Temperature Compensation

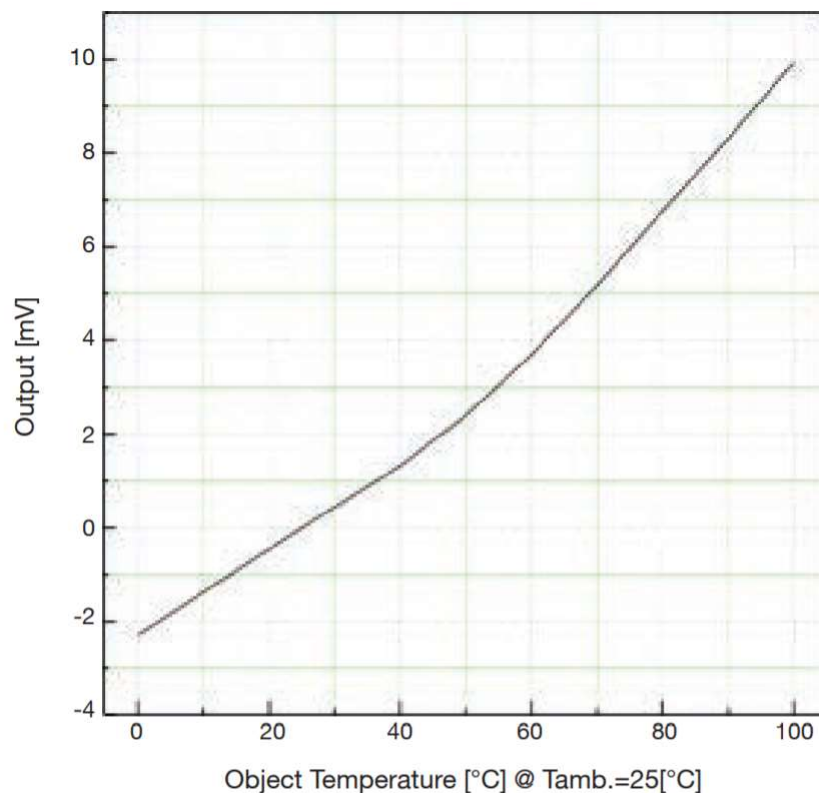
| Parameter  | Limits |      |      | Unit       | Condition                     |
|------------|--------|------|------|------------|-------------------------------|
|            | Min    | Typ  | Max  |            |                               |
| Resistance | 97     | 100  | 103  | k $\Omega$ | Tol.:3%,@25°C                 |
| Beta-Value | 3920   | 3960 | 4000 | K          | Tol.:1%, Defined at 25°C/50°C |

#### -. Absolute Maximum Ratings

- ◆ Operating temperature : -20°C ~ 100°C
- ◆ Storage temperature : -40°C ~ 120°C

#### -. Typical Characteristic Data

Sensitivity

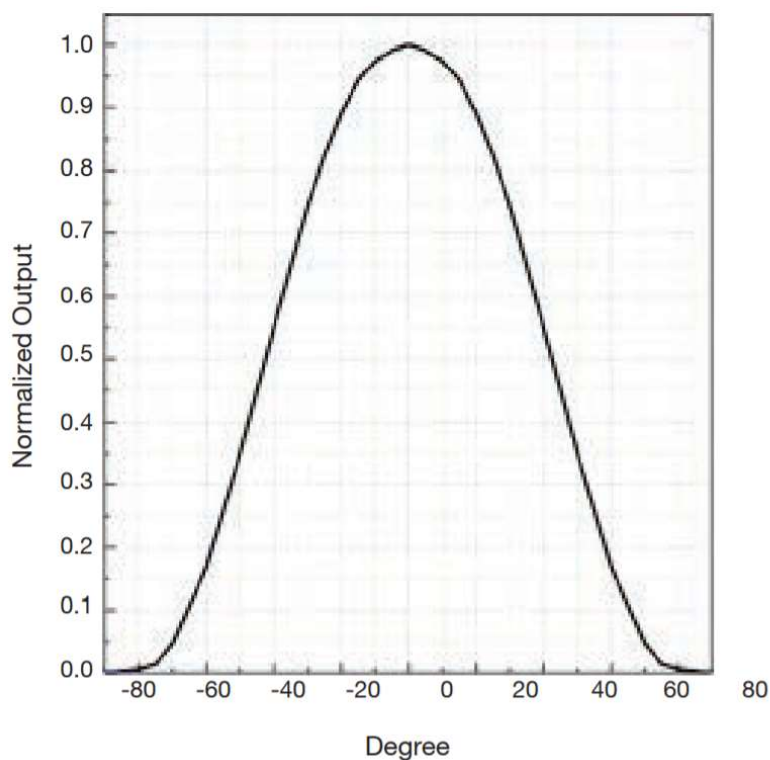


CUSTOMER :

| SPECIFICATIONS |                       | SHEET No.  | 3 of 5       |
|----------------|-----------------------|------------|--------------|
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| PART No.       |                       | TYPE No.   | RTS-J148SR-T |

-. Field of View

| Parameter     | Limits |     |     | Unit   | Condition             |
|---------------|--------|-----|-----|--------|-----------------------|
|               | Min    | Typ | Max |        |                       |
| Field of View | 80     | 85  | 90  | Degree | 50% of Maximum Output |



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| MANAGER  | CHECK         | APPROVAL |
|----------|---------------|----------|
|          |               |          |
| FILE No. | RTS-200819-01 |          |

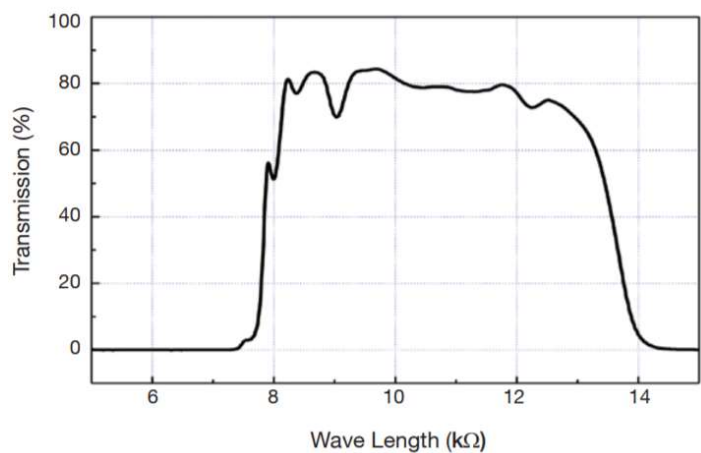
CUSTOMER :

| SPECIFICATIONS |                       | SHEET No.  | 4 of 5       |
|----------------|-----------------------|------------|--------------|
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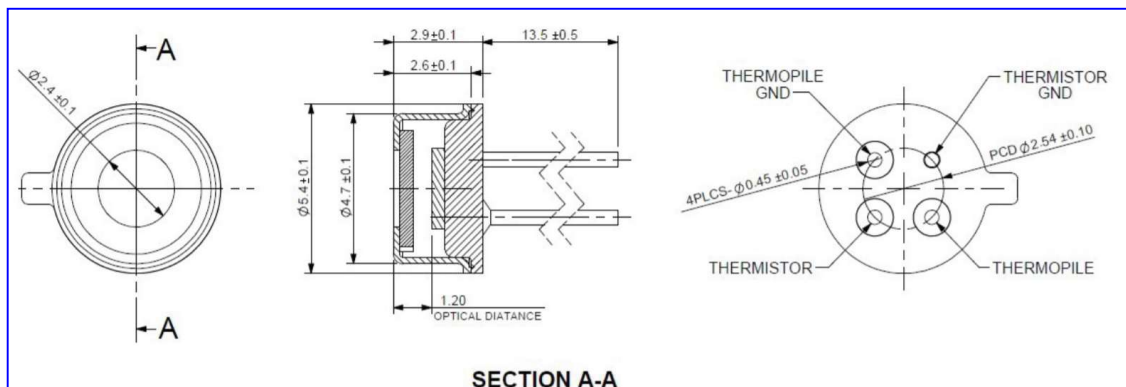
### -. Thermistor Resistance

| Tambient<br>(kΩ) | Rmin<br>(kΩ) | Rcent<br>(kΩ) | Rmax<br>(kΩ) |
|------------------|--------------|---------------|--------------|
| -20              | 893.8        | 942.3         | 992.6        |
| -15              | 677.07       | 712.5         | 748.4        |
| -10              | 518.2        | 543.3         | 569.2        |
| -5               | 399.4        | 417.6         | 436.4        |
| 0                | 310.1        | 323.5         | 337.1        |
| 5                | 242.6        | 252.4         | 262.4        |
| 10               | 191.1        | 198.3         | 205.7        |
| 15               | 151.5        | 156.9         | 162.3        |
| 20               | 120.9        | 124.9         | 128.9        |
| 25               | 97.00        | 100.0         | 103.0        |
| 30               | 77.97        | 80.55         | 83.15        |
| 35               | 93.03        | 65.25         | 67.50        |
| 40               | 51.22        | 53.14         | 55.09        |
| 45               | 41.85        | 43.50         | 45.18        |
| 50               | 34.36        | 35.79         | 37.24        |
| 55               | 28.35        | 29.58         | 30.84        |
| 60               | 23.49        | 24.56         | 25.66        |
| 65               | 19.56        | 20.49         | 21.44        |
| 70               | 16.35        | 17.16         | 17.99        |
| 75               | 13.73        | 14.43         | 15.15        |
| 80               | 11.57        | 12.18         | 12.81        |
| 85               | 9.78         | 10.32         | 10.88        |
| 90               | 8.313        | 7.495         | 7.923        |
| 95               | 7.085        | 7.495         | 7.923        |
| 100              | 6.058        | 6.420         | 6.769        |

### Transmission Data of Filter



### -. Outline of Sensor PKG & Pin Map (Unit : mm)



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| SPECIFICATIONS |                       | SHEET No.  | 5 of 5       |
|----------------|-----------------------|------------|--------------|
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## 15. Packing Specifications

### 1) Label Specification (Bar Code Sticker)



Label Dimensions (Unit : mm)

| Label Type | L  | W  | Remark |
|------------|----|----|--------|
| Label #1   | 80 | 40 |        |

### 2) Box Specifications & Packing Method

(Unit : mm)

| Packing Type | Materials               | L x W x H       | Quantity   |
|--------------|-------------------------|-----------------|------------|
| Plastic Tube | Polystyren (Antistatic) | 15" -24mm       | 50 pcs     |
| RS-#2N       | Corrugated Cardboard    | 400 x 315 x 405 | 10,000 pcs |
| RS-#3N       | Corrugated Cardboard    | 660 x 425 x 430 | 20,000 pcs |



1. Put 50pcs of products in a Tube.



3. Put 2pcs of #2N packing boxes in a #3N packing box.



2. Put them(50pcs of tube) in a #2N packing box.

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