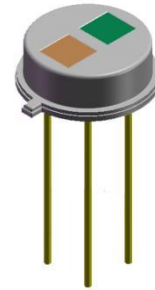


# XGZG363 SH6 SENSOR

## FEATURES

- 1) MEMS Thermopile element
- 2) TO-39 Package(two channels)
- 3) High sensitivity, fast response
- 4) 10.6/3.95 $\mu$ m Narrow band Filter
- 5) High accuracy NTC



## APPLICATIONS

- 1) NDIR SF6 Gas detector
- 2) Industrial process monitor
- 3) Equipment corrosion monitor
- 4) Electric Power system etc.

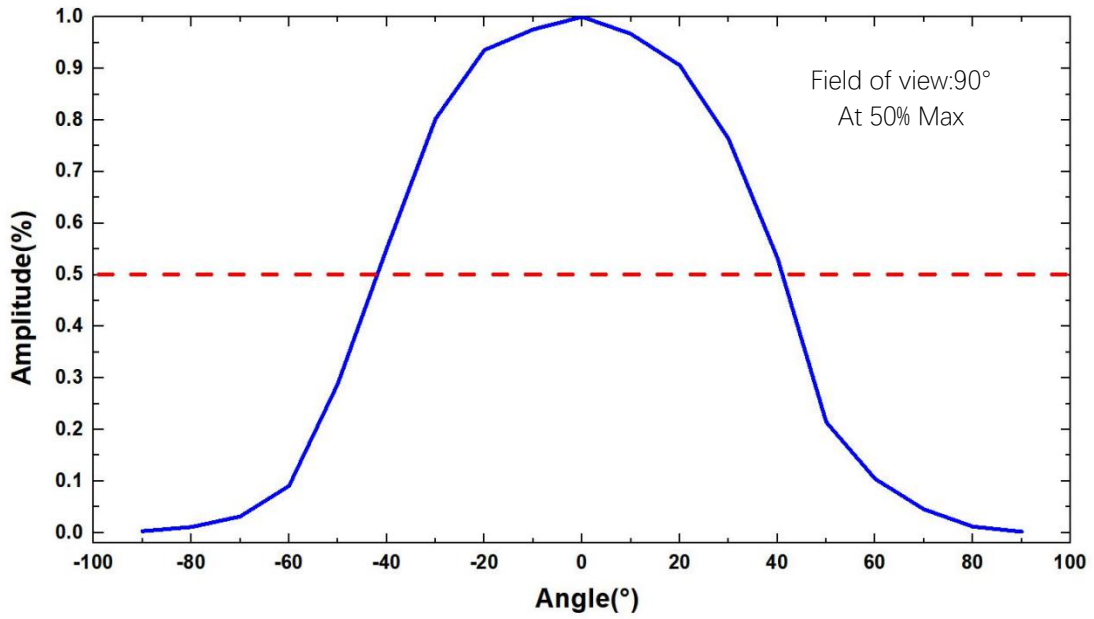
## PERFORMANCE SPECS

| Parameter                       | Value         | Unit             | Conditions                             |
|---------------------------------|---------------|------------------|--|
| Chip size                       | 1.1 X 1.1     | mm               |  |
| Sensitive area                  | 0.76 X 0.76   | mm               |  |
| Field of view                   | 82            | o                | At 50 % intensity points               |
| Thermopile resistance           | 129 $\pm$ 30% | k $\Omega$       | temp=25 $^{\circ}$ C                   |
| Noise voltage                   | 46.2          | nV/Hz $^{1/2}$   | temp=25 $^{\circ}$ C                   |
| Responsivity                    | 87            | V/W              | 500K(5.5 $\mu$ m, long pass)           |
| Temp. Coefficient of resistance | 0.1           | %/ $^{\circ}$ C  | temp=25 $^{\circ}$ C - 75 $^{\circ}$ C |
| Time constant                   | 25            | ms               |  |
| Specific detectivity            | 1.1E08        | cmHz $^{1/2}$ /W | 500K, 1Hz                              |
| NCT                             | 100 $\pm$ 3%  | K $\Omega$       | 25 $^{\circ}$ C                        |
| Thermistor BETA-value           | 3950 $\pm$ 1% | K                | 25 $^{\circ}$ C/50 $^{\circ}$ C        |

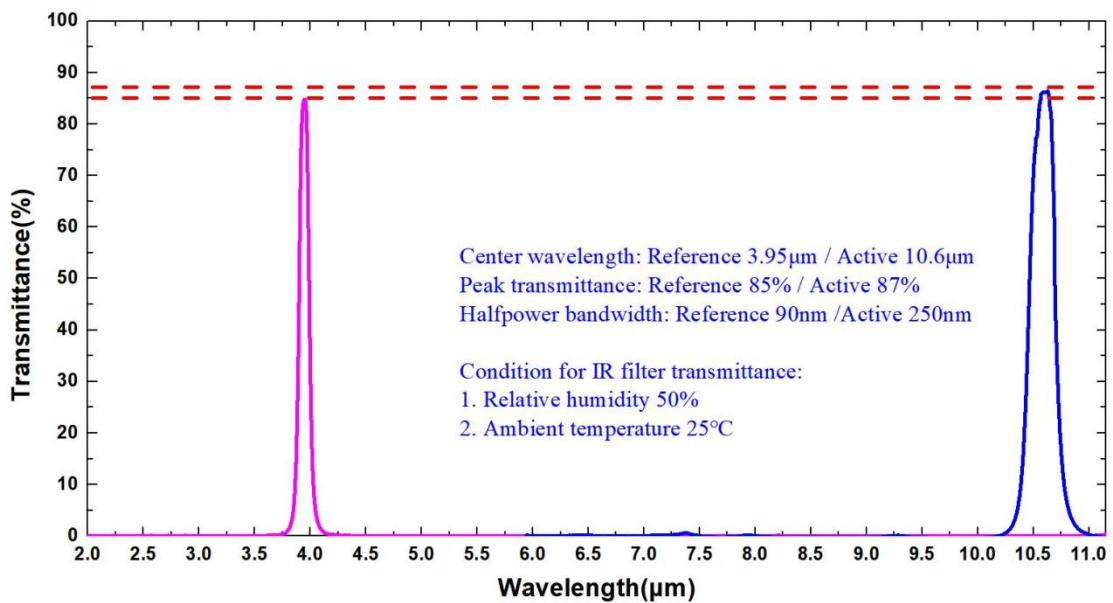
## ABSOLUTE MAXIMUM RATINGS

| Parameter             | Value       | Unit |
|-----------------------|-------------|------|
| Operating temperature | -20 to +100 | °C   |
| Storage Temperature   | -40 to +125 | °C   |

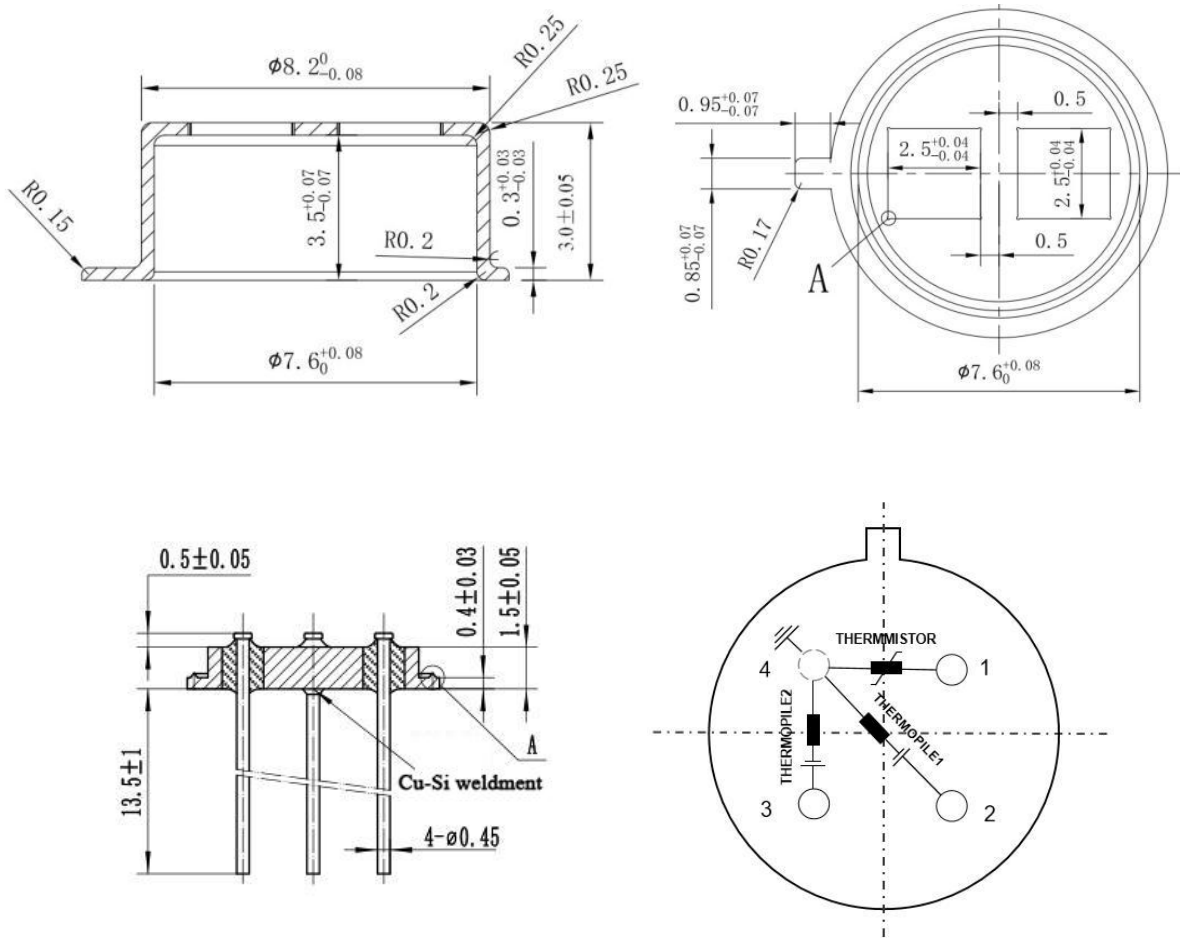
## OPTICAL CURVES



## IR FILTER CHARACTERISTICS



## MECHANICAL DIMENSION



## ELECTRICAL CONNECTIONS

| Pin        | 1   | 2            | 3            | 4   |
|------------|-----|--------------|--------------|-----|
| Definition | NTC | Thermopile 1 | Thermopile 2 | GND |

### 【 SAFETY NOTES 】

Using these sensors products may malfunction due to external interference and surges, therefore, please confirm the performance and quality in actual use. Just in case, please make a safety design on the device (fuse, circuit breaker, such as the installation of protection circuits, multiple devices, etc.), so it would not harm life, body, property, etc even a malfunction occurs.

To prevent injuries and accidents, please be sure to observe the following items:

- The driving current and voltage should be used below the rated value.
- Please follow the terminal connection diagram for wiring. Especially for the reverse connection of the power supply, it will cause an accident due to circuit damage such as heat, smoke, fire, etc.
- In order to ensure safety, especially for important uses, please be sure to consider double safety circuit configuration.
- Do not apply pressure above the maximum applied pressure. In addition, please be careful not to mix foreign matter into the pressure medium. Otherwise, the sensor will be discarded, or the media will blow out and cause an accident.
- Be careful when fixing the product and connecting the pressure inlet. Otherwise, accidents may occur due to sensor scattering and the blowing out of the media.
- Because the sensor PIN is sharp, please be careful not to hurt your body when using it.

### 【 WARRANTY 】

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. CFSensor reserves the right to make changes without further notice to any product herein. CFSensor makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does CFSensor assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. CFSensor does not convey any license under its patent rights nor the rights of others.

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## Appendix

## Temperature vs. Resistance of NTC

| Temp. (°C) | R_Cent (Kohm) | Temp. (°C) | R_Cent (Kohm) | Temp. (°C) | R_Cent (Kohm) | Temp. (°C) | R_Cent (Kohm) |
|------------|---------------|------------|---------------|------------|---------------|------------|---------------|
| -40        | 3225.545      | 1          | 308.903       | 42         | 49.073        | 83         | 11.21         |
| -39        | 3023.332      | 2          | 293.781       | 43         | 47.155        | 84         | 10.853        |
| -38        | 2834.987      | 3          | 279.483       | 44         | 45.321        | 85         | 10.509        |
| -37        | 2659.483      | 4          | 265.958       | 45         | 43.569        | 86         | 10.177        |
| -36        | 2495.874      | 5          | 253.161       | 46         | 41.892        | 87         | 9.858         |
| -35        | 2343.289      | 6          | 241.049       | 47         | 40.289        | 88         | 9.55          |
| -34        | 2200.924      | 7          | 229.582       | 48         | 38.755        | 89         | 9.253         |
| -33        | 2068.041      | 8          | 218.722       | 49         | 37.286        | 90         | 8.967         |
| -32        | 1943.955      | 9          | 208.435       | 50         | 35.881        | 91         | 8.691         |
| -31        | 1828.036      | 10         | 198.687       | 51         | 34.536        | 92         | 8.424         |
| -30        | 1719.704      | 11         | 189.447       | 52         | 33.248        | 93         | 8.167         |
| -29        | 1618.419      | 12         | 180.686       | 53         | 32.014        | 94         | 7.919         |
| -28        | 1523.686      | 13         | 172.377       | 54         | 30.832        | 95         | 7.68          |
| -27        | 1435.046      | 14         | 164.495       | 55         | 29.699        | 96         | 7.449         |
| -26        | 1352.073      | 15         | 157.015       | 56         | 28.614        | 97         | 7.226         |
| -25        | 1274.376      | 16         | 149.914       | 57         | 27.573        | 98         | 7.01          |
| -24        | 1201.590      | 17         | 143.173       | 58         | 26.576        | 99         | 6.802         |
| -23        | 1133.379      | 18         | 136.770       | 59         | 25.619        | 100        | 6.601         |
| -22        | 1069.430      | 19         | 130.688       | 60         | 24.701        | 101        | 6.407         |
| -21        | 1009.455      | 20         | 124.908       | 61         | 23.821        | 102        | 6.22          |
| -20        | 953.185       | 21         | 119.413       | 62         | 22.976        | 103        | 6.039         |
| -19        | 900.373       | 22         | 114.190       | 63         | 22.166        | 104        | 5.864         |
| -18        | 850.787       | 23         | 109.222       | 64         | 21.388        | 105        | 5.694         |
| -17        | 804.212       | 24         | 104.497       | 65         | 20.641        | 106        | 5.531         |
| -16        | 760.451       | 25         | 100.000       | 66         | 19.923        | 107        | 5.373         |
| -15        | 719.319       | 26         | 95.720        | 67         | 19.234        | 108        | 5.22          |
| -14        | 680.643       | 27         | 91.646        | 68         | 18.572        | 109        | 5.072         |
| -13        | 644.265       | 28         | 87.766        | 69         | 17.936        | 110        | 4.929         |
| -12        | 610.035       | 29         | 84.071        | 70         | 17.325        | 111        | 4.79          |
| -11        | 577.816       | 30         | 80.550        | 71         | 16.738        | 112        | 4.656         |
| -10        | 547.478       | 31         | 77.195        | 72         | 16.173        | 113        | 4.527         |
| -9         | 518.903       | 32         | 73.997        | 73         | 15.630        | 114        | 4.401         |
| -8         | 491.979       | 33         | 70.947        | 74         | 15.108        | 115        | 4.28          |
| -7         | 466.601       | 34         | 68.039        | 75         | 14.605        | 116        | 4.162         |
| -6         | 442.674       | 35         | 65.265        | 76         | 14.122        | 117        | 4.048         |
| -5         | 420.105       | 36         | 62.618        | 77         | 13.657        | 118        | 3.938         |
| -4         | 398.813       | 37         | 60.092        | 78         | 13.209        | 119        | 3.831         |
| -3         | 378.717       | 38         | 57.681        | 79         | 12.779        | 120        | 3.728         |
| -2         | 359.744       | 39         | 55.379        | 80         | 12.364        | 121        | 3.628         |
| -1         | 341.826       | 40         | 53.180        | 81         | 11.965        | 122        | 3.531         |
| 0          | 324.899       | 41         | 51.080        | 82         | 11.580        | 123        | 3.437         |