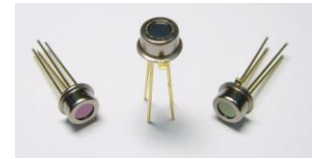


## NDIR SENSOR

### NDIR CO2 Gas Sensor

#### OGS-402F2

Revision Date: 2014/04/25



### Introduction

OGS-402F2 is a single channel thermopile device having an output signal voltage directly proportional to the incident infrared (IR) radiation power. An infrared narrow band pass filter in front of the sensor makes the device sensitive to CO<sub>2</sub> gas concentration.

### Features

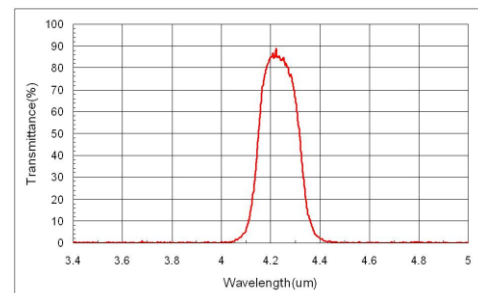
- Thermistor temperature reference included
- High sensitivity
- Fast response time
- Narrow band pass filters

### Applications

- IR absorption (NDIR) gas sensing with reference channel to monitor light source
- Demand Control Ventilation (DCV)
- In door air quality monitoring
- Obstructive Sleep Apnea monitoring
- Industrial control
- Climate Control for Automobiles
- Combustion Control for Furnace
- Greenhouse

### Specifications

| Model                       | OGS-402F2           |                         |               |
|-----------------------------|---------------------|-------------------------|---------------|
| Target Gas                  | CO <sub>2</sub>     |                         |               |
| Filter CWL                  | 4.26 μm             |                         |               |
| Window Size (mm)            | 2.5mm               |                         |               |
| Package Type                | TO-46               |                         |               |
| Parameter                   | Typical             | Unit                    | Conditions    |
| Sensitivity                 | 46                  | V/W                     | 500K, Typical |
| TC of sensitivity           | 0.22±0.05           | %/K                     | Typical       |
| Sensitive area in diameter  | 0.7                 | mm                      |               |
| Resistance of thermopile    | 115±35              | KΩ                      | 25°C          |
| TC of resistance            | 0.11±0.05           | %/K                     | Typical       |
| Time constant               | 20                  | ms                      | 500K, Typical |
| Noise voltage               | 43                  | nV/Hz <sup>1/2</sup>    | r.m.s. 300K   |
| NEP                         | 0.95                | nW/Hz <sup>1/2</sup>    | 500K, Typical |
| Normalized detectivity (D*) | 0.9*10 <sup>8</sup> | cm*Hz <sup>1/2</sup> /w | 500K, Typical |
| Thermistor                  | Typical             | Unit                    | Conditions    |
| Resistance                  | 100±5%              | KΩ                      | 25°C          |
| β value                     | 3964±0.5%           | K                       | 25°C /100°C   |



Transmittance of 4.26um filter

