NDIR Gas Sensor

STG-EA12-F4.26/F3.91 Specification V1.0

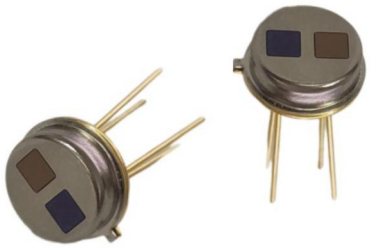
The NDIR gas sensor can measure the CO_2 gas concentration through the change of the resistance value of the internal thermistor. The product is packaged in a TO-39 metal socket and has two separate filters: one is the reference filter and the other is a narrow bandpass filter for the CO2 gas band. The sensor integrates electronic components such as thermopile chips and thermistor, with high reliability and high sensitivity.

Features:

- TO-39 Package
- High sensitivity
- NTC Thermistor Compensation
- Fast response
- 4.26μm, 3.91μm narrowband filter

Application:

- Indoor Air Monitoring
- Central ventilation system
- In-car air purification
- Industrial gas measurement



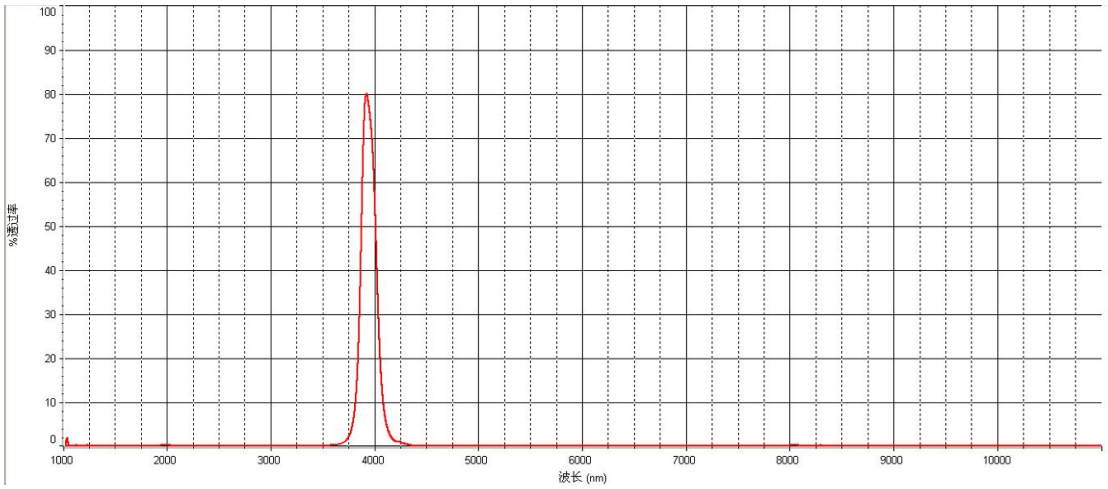
Technical Data

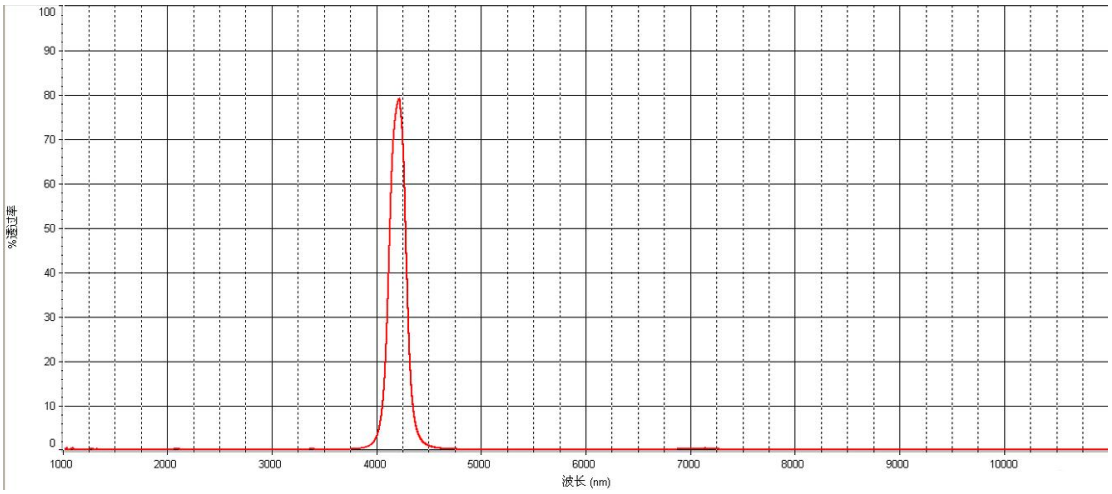
Parameter	Min.	Typ.	Max.	Unit	Conditions
Chip size		1.1×1.1		mm^2	
Sensitive area		0.35×0.35		mm^2	
Thermopile resistance	80	98	115	KΩ	Temp=25℃
Noise voltage		36±2		nV/ $Hz^{1/2}$	Temp=25℃
NEP		0.23		$nW/Hz^{1/2}$	Blackbody=500K,1Hz@25℃
Responsivity	134	164	194	V/w	Blackbody=500K,1Hz@25℃
Temp. coefficient of resistance		0.06		%/℃	Temp=25℃～ 75℃
Time constant		≤ 13		ms	
Specific detectivity		1.51×10^8		$cmHz^{1/2}/w$	Blackbody=500K,1Hz@25℃
NTC Resistance		100±3%		KΩ	25℃
NTC β		3950±1%		K	25/50℃

Operating Conditions

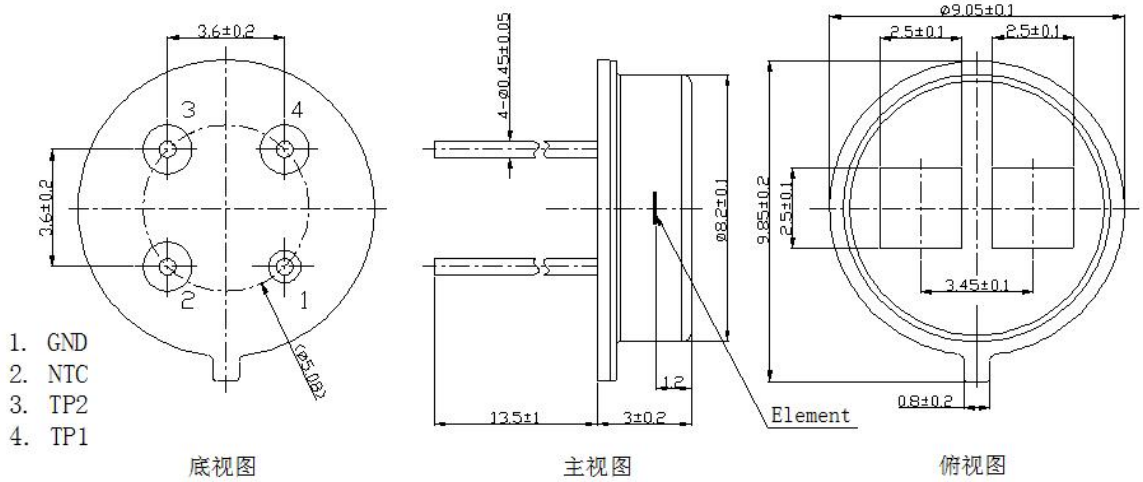
Working temperature: -30℃～ +85℃
Storage temperature: -30℃～ +100℃

Spectral curve





Dimensions



Unit: mm

Precaution

1. Precaution for design

The sensor is designed for indoor use.

When used in outdoor applications, be sure to use appropriate optical filters and moisture construction.

In order to prevent the secondary failures caused by operational failures or malfunctions, the fail-safe functions can be added in advance.

2. Precaution for use

To prevent sensor malfunction, operational malfunction,or any other malfunction, do not use this sensor under the following or similar conditions.

2.1 The ambient temperature changes drastically.
2.2 Strong vibration.
2.3 The detecting area is blocked with barrier material (glass, fog, etc.)
2.4 In liquids, corrosive gas and sea water.
2.5 Continuous use in a high-humidity atmosphere environment.
2.6 Static electric field or strong electromagnetic radiation.
2.7 Corrosive gas or sea breeze.
2.8 Dirty and dusty environment that may contaminate the optical window.

3. Precaution for welding

3.1 Use soldering iron to solder at 260℃ for 10s. Avoid overheating of the sensor pins.

3.2 All flux must be removed after soldering, using a brush to rinse. Using an ultrasonic cleaner may cause performance failures.

4. Other

Use and sell should be under any applicable law or regulation.

The sensor malfunction caused by incorrect mount or storage is not the responsibility of manufacturer.

Contact Info

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