SENSSET
SENSOR SEQUENCE

SSN-GS-CO

Planar Toxicity CO Gas Sensor

PRODUCTS FEATURES

- Low power consumption.
- Good stability, long service life
- Small volume
- Application circuit is simple
- Low cost

The SSN-GS-CO planar semiconductor gas sensing element for carbon monoxide detection uses an advanced planar thick film production process.

It consists of a heater and a metal oxide semiconductor material formed on a miniature Al2O3 ceramic substrate, which is leaded by electrodes and encapsulated in a metal tube holder and cap. The high and low temperature cycle detection method is used to detect carbon monoxide (1.5V), and the high temperature (5.0V) is used to clean the impurity gas adsorbed at low temperature. The conductivity of the sensor increases with the concentration of carbon monoxide gas in the air, and the change in conductivity can be converted into an output signal corresponding to the concentration of the gas using a simple circuit.

1. Technical parameter

Table 1. characteristics

Parameter			Condition	
Product type			Planar semiconductor gas-sensitive element	
Standard package			TO-5	
Detection gas			Carbon monoxide	
Detection concentration			100-1000 ppm	
Standard circuit	Heating voltage	V_H	5.0 V ± 0.2 V AC/DC	
Standard test conditions element characteristics	Circuit voltage	V_C	5.0 V ± 0.2 V DC	Ps≤15mW
	Load resistance	R_L	Adjustable	Ps≤15mW
	Heating the sheet resistance	R_H	90Ω±10kΩ (at room temperature)	
	Heater current	I_H	60mA	
	Heating plate power	P_H	230mW	
	Sensitivity change		0.4 V ~ 0.7 V	100ppm (CO)
Standard test conditions	Temperature, humidity		20°C±2°C; 65%±5%RH	
	Warm-up time		Less than 24 hours	
	Response time		≤30s	
	Desorption time		≤60s	

2. Mechanical dimension and pin definition

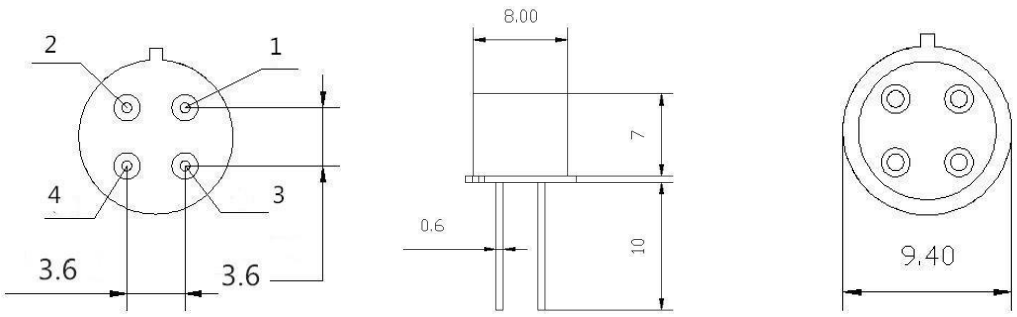

Figure 2.1. Mechanical dimension in mm and tolerance - ±0.1mm

The structure of the planar type device is shown in Figure 2.2. A heating wire is fixed on the ceramic sheet, with gold electrode leads connected at both ends, and a sensitive semiconductor material is coated between the two electrodes. The heating material heats the entire ceramic sheet to 200-400°C, allowing the sensor to reach the desired operating temperature. A counter electrode on the outside of the core measures the electrical properties of the material in real time. The solder leads of the sensor correspond to the diagram shown in the figure, with a prominent mark on the lead holder, pins 1 and 2 adjacent to this mark are the heating wire pins, and pins 3 and 4 are the sensor signal pins.

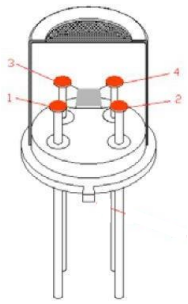

Figure 2.2.

Table 3. Pin definition

Pin number	1	2	3	4
Definition	Heating circuit	Heating circuit	Measuring circuit	Measuring circuit

Pins 1 and 2 of the sensor are connected to the heating circuit, and pins 3 and 4 are connected to the measurement circuit. Pins 1 and 2 are connected to the heating circuit and pins 3 and 4 are connected to the measurement circuit; heating and measurement can share the same power supply circuit provided that the electrical performance of the sensor is met. Note: Please note the prominent symbol on the sensor, the two pins adjacent to the symbol are heating electrodes.

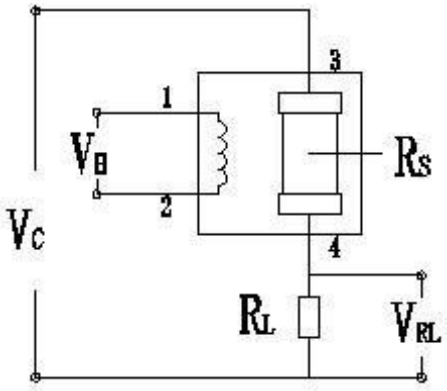

Figure 2.3. Basic Test Circuit

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Development, production and supply of high-tech sensors