SENSSET
SENSOR SEQUENCE

SSN-GS-CH8

Tubular semiconductor propane sensors

PRODUCTS FEATURES

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

The SSN-GS-CH8 is a methane/propane gas sensor that uses a multilayer thick film manufacturing process to form a heater and a metal oxide semiconductor gas sensitive layer inside and outside of a micro ceramic tube. The conductivity of the sensor changes when the gas is present in the ambient air, and the higher the concentration of the gas, the higher the conductivity of the sensor. This change in conductivity is converted into an output signal corresponding to the gas concentration 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			Propane (C3H8), natural gas
Detection concentration			300-2000 ppm
Standard circuit conditions	Circuit voltage	Vc	≤24 VDC
	Heating voltage	V_H	5.0 V ± 0.1 V AC/DC
	Load resistance	R_L	Adjustable
Heating resistor		R_H	50Ω±10Ω
Heating power		P_H	≤320mW
Sensitive body electrical resistance		R_S	1kΩ-20kΩ (in 2000ppm propane)
Sensitivity		S	$R_{S(in\ air)}/R_{S(in\ 2000ppm\ propane)}$≥5
Concentration slope		α	≤0.8($R_{5000ppm}/R_{2000ppm}$ propane)
Temperature, humidity			20°C±2°C; 65%±5%RH
Standard test circuit			Vc: 5.0V±0.1V; V_H: 5.0V±0.1V
Warm-up time			Less than 48 hours

2. Mechanical dimension and pin definition

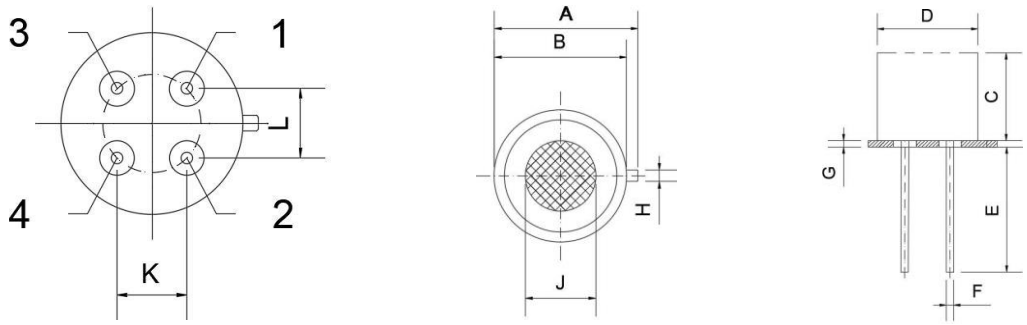

Figure 2.1. Mechanical dimension in mm and tolerance - ±0.1mm

Table 2. Size for figure 2.1. (mm)

A	B	C	D	E	F	G	H	J	K	L
10.22	9.2	7	8	10	0.6	0.52	0.8	5	3.6	3.6

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.

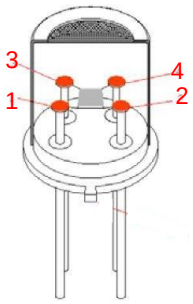

Figure 2.2.

Table 3. Pin definition

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

Pins 1 and 3 of the sensor are connected to the heating circuit, and pins 2 and 4 are connected to the measurement circuit. Pins 1 and 3 are connected to the heating circuit and pins 2 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.

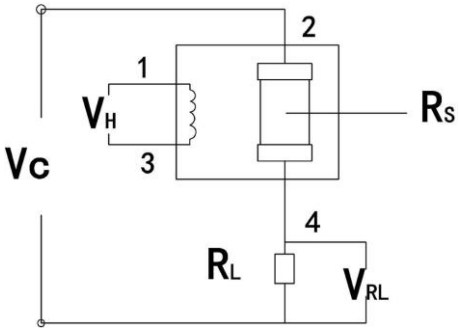

Figure 2.3. Basic Test Circuit

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Development, production and supply of high-tech sensors