CHINA SENSOR
中国传感器 – 原装正品，现货直供

TGS2620 Sensor for Detection of Organic Solvent Gas

characteristic：

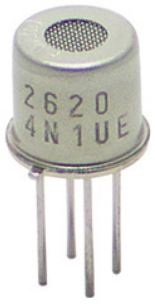
* low power consumption
* High sensitivity to ethanol and organic solvents
* Long service life and low cost
* Simple application circuit
* small volume

apply：

:: Ethanol detectors
* Detector and alarm for organic solvent detection
* Solvent detectors for factories, dry cleaners and the semiconductor industry

The sensor element consists of an integrated heater and a metal oxide semiconductor on an alumina substrate. When the detected gas is present in the air, its concentration increases, thereby raising the sensor's conductivity. A simple circuitry converts these conductivity changes into corresponding signal outputs that directly reflect the gas concentration.

The TGS2620 demonstrates exceptional sensitivity to organic solvents and volatile gases, making it the ideal solution for organic solvent gas detectors. Featuring a compact sensor design, the device requires only 42mA of heating current while being housed in a standard TO-5 metal package.

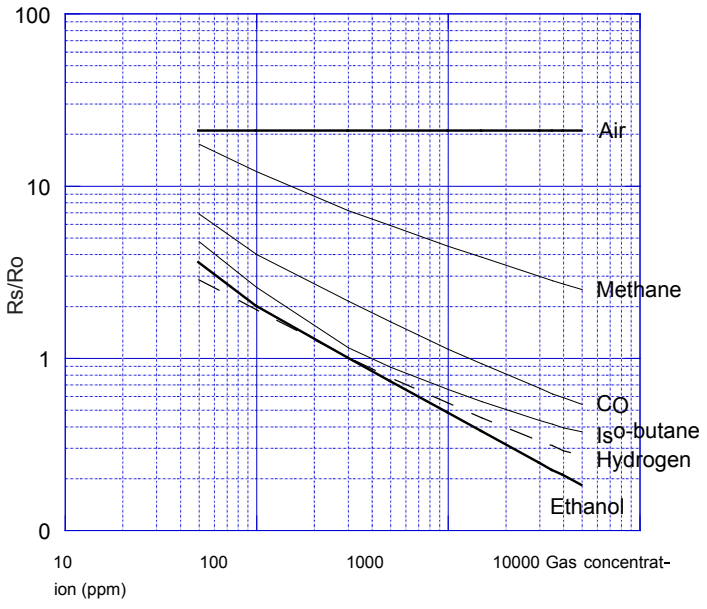


Sensitivity characteristics:

The representative sensitivity characteristic curve is shown in the figure below under standard test conditions (see back).

The vertical axis shows the sensor resistance ratio Rs / Ro, where Rs and Ro are defined as follows:

Rs = resistance of the sensor in various concentrations of gas Ro = resistance of the sensor in 300ppm ethanol



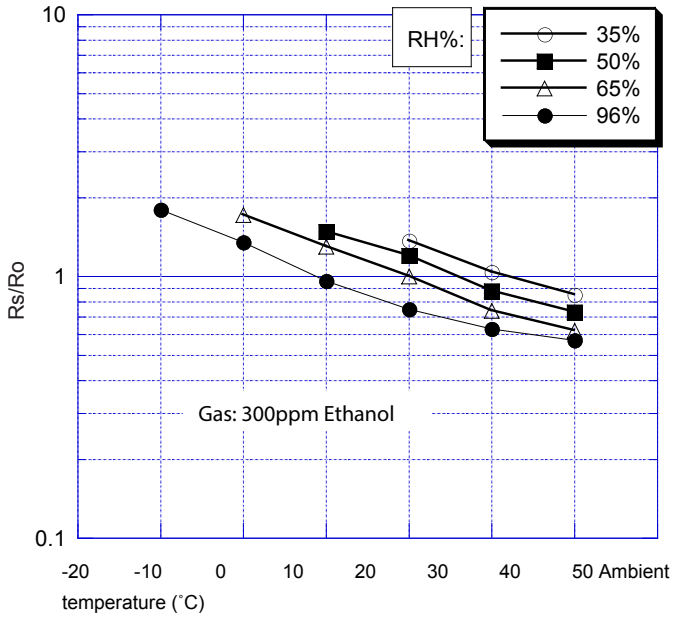
Temperature and humidity characteristics:

The following figure shows the representative characteristic curve affected by temperature and humidity.

The vertical axis shows the sensor resistance ratio Rs / Ro, where Rs and Ro are defined as follows:

Rs = Resistance value of the sensor at 300ppm ethanol, various temperature and humidity

Ro = Sensor resistance in air at 300ppm ethanol, temperature and humidity of 20° C, 65% R.H

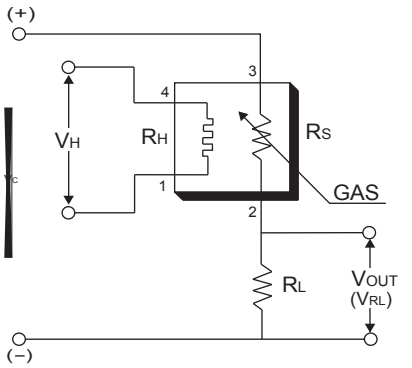


Important Notice: The application conditions for Feigaro sensors may vary depending on specific customer requirements. Feigaro strongly recommends consulting our technical team prior to use, particularly when the detected gas is not listed. Feigaro assumes no liability for any usage that has not undergone professional testing by Feigaro.

Basic test circuit:

This sensor requires both heater voltage (V H) and loop voltage (V C). The V H is applied to the integrated heater to maintain a temperature in the sensing element that corresponds to the target gas. The V C measures the loop output voltage (V RL) across the load resistor (R L) connected in series with the sensor.

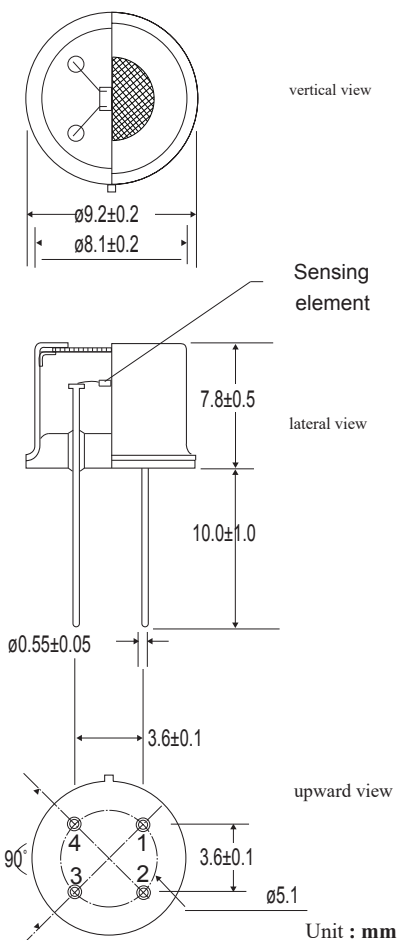
This sensor has polarity requirements, so the circuit must be powered by DC. As long as the electrical characteristics of the sensor are satisfied, V C and V H can share the same power supply circuit. When selecting load resistance, choose values that provide optimal response ranges for the detected gas concentrations. Additionally, ensure the maximum power consumption (P S) of the sensor components remains below 15mW at the maximum load resistance (R L) within the detection range. The maximum power consumption occurs when the resistance value of R L exposed to gas equals that of R S.



specifications：

model			TGS2620-C00	
Detection principle			Oxidized semiconductor type	
Standard encapsulation			TO-5 Metals	
Object gas			Ethanol, organic solvents	
Scope of detection			Ethanol 50 ~ 5000ppm	
Standard loop conditions	heater voltage	VH	5.0±0.2V AC/DC	
	loop voltage	VC	5.0±0.2V DC	PS≤15mW
	load resistance	RL	variable	0.45kΩ min.
Electrical characteristics under standard test conditions	Heating element resistance	RH	Room temperature is about 83Ω	
	Heater current	IH	42±4mA	
	Heater power consumption	PH	About 210mW	
	Sensor resistor	RS	1 ~ 5kΩ 300ppm ethanol in	
	Sensitivity (rate of change of Rs)		0.3~0.5	Rs (ethanol 300ppm) / Rs (ethanol 50ppm)
standard test conditions	Test gas conditions		Alcohol vapor in air 20 ±2. C,65±5%R.H.	
	Loop conditions		VC = 5.0±0.01V DC VH = 5.0±0.05V DC	
	preheating time		7 sky	

Structure and size:



pin connection：
1: Heater
2: Sensor electrode (-)
3: Sensor electrode (+)
4: Heater

The power consumption value (P S) can be calculated by the following formula:

$$P_S = \frac{(V_C - V_{RL})^2 R_S}{}$$

The sensor resistance (R S) can be calculated according to the measured value of V OUT (V RL) by the following formula:

$$R_S = \left(\frac{V_C}{V_{RL}} - 1\right) \times R_L$$

The typical characteristics of the sensor are shown in this product specification. The actual characteristics of the sensor vary from product to product. Please refer to the specifications for each sensor.

深圳市杰晟兴电子有限公司 JM Components Limited

地址：深圳市福田区中航路7号鼎诚国际大厦南座2007室　　邮编：518031
手机：13662266995 马少良 电话：0755-83951311　　传真：0755-83952401
官网：cn-sensor.com　　电邮：jackson@jmcomponents.com