FIGARO

product presentation

TGS26 18 Gas Sensor for LP Detection

characteristic：

* low power consumption
High sensitivity to LP and gases containing LP components (propane, butane)
* Long service life and low cost
* Simple application circuit

apply：

* Household LP gas leak alarm
Portable LP gas detector
* Detection of LP gas and other combustible gases

The TGS2618 sensor demonstrates exceptional sensitivity for propane and butane, making it the optimal LPG monitor. Its low sensitivity to volatile alcohol (a common environmental interference gas) positions it as an ideal choice for gas leak detection systems. Featuring a compact sensor design, the TGS2618 requires only 56mA of heating current while housing its detection element within a standard TO-5 metal package.

TGS2618-C00 is not only small in size, but also excellent in response. It is the best choice for gas leak detector.

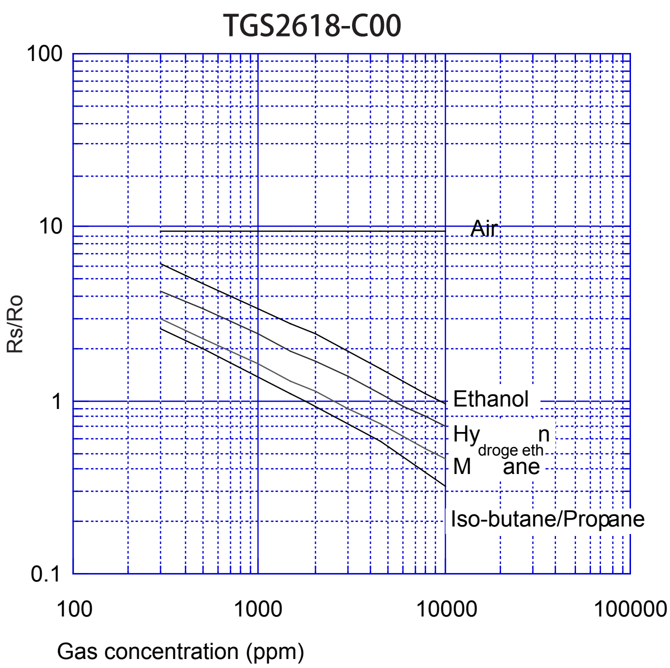
The TGS2618-D00 is equipped with a filter that eliminates interference gases such as alcohol, featuring highly selective sensitivity for LP gas. It is particularly suitable for detecting complex atmospheres and strict requirements in household environments, making it the ideal sensor for home gas leak detectors.

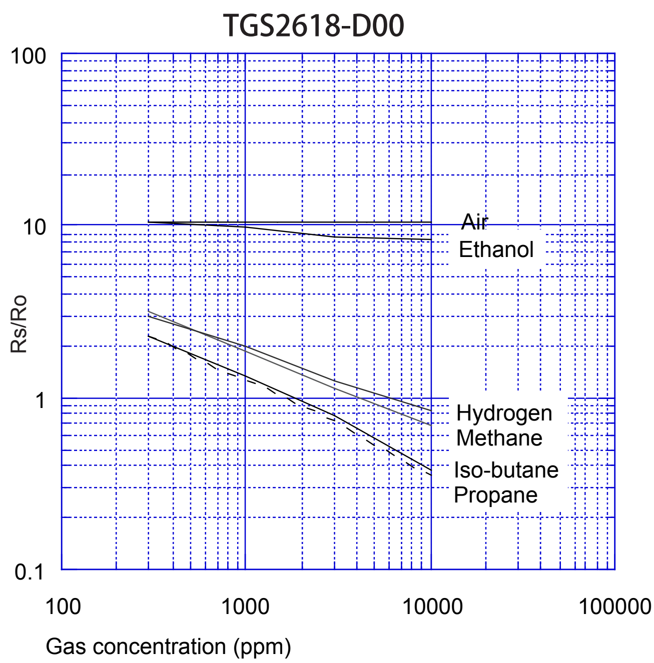
Sensitivity characteristics:

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

The vertical coordinate represents the sensor resistance ratio Rs/Ro, where Rs = the resistance of the sensor in a variety of gas concentrations

Ro = Resistance of the sensor in 1800 ppm isobutane



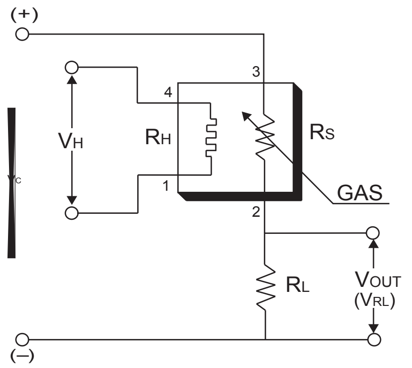


Important Notice: The application conditions for Feigaro sensors may vary depending on specific customer requirements. Feigaro strongly recommends consulting our technical team before use, particularly when detecting gases not listed in the catalog. Feigaro assumes no liability for any unauthorized use that has not undergone professional testing by Feigaro.

Basic test circuit:

This sensor requires two voltages: Heater Voltage (V_H) and Loop Voltage (V_C). V_H is applied to the integrated heater to maintain a temperature in the sensing element that matches the target gas's characteristics. V_C measures the loop output voltage (V_{OUT}) across the load resistor (R_L) connected in series with the sensor.

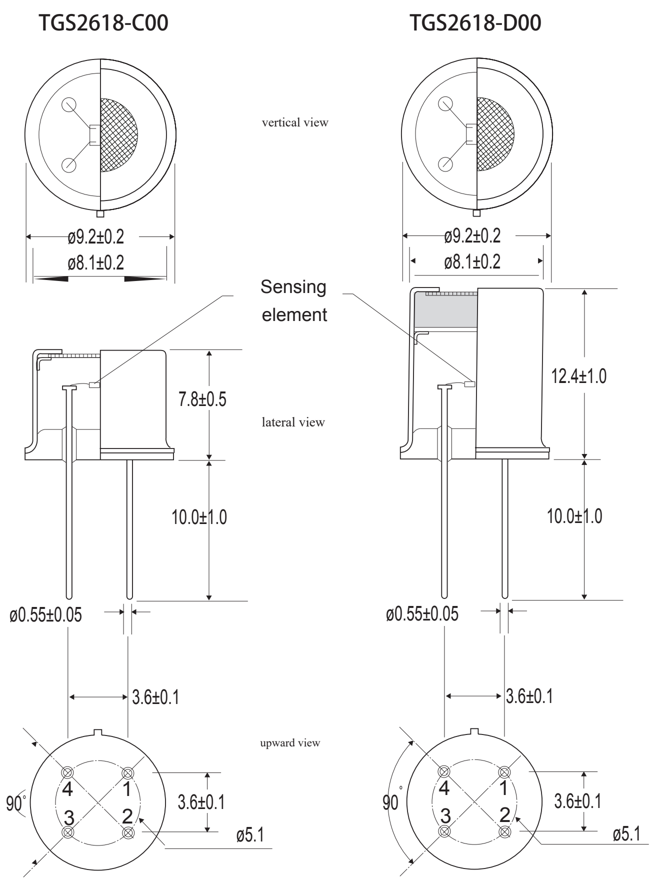
This sensor has polarity requirements, so the circuit must be powered by a DC source. As long as the electrical characteristics of the sensor are satisfied, V_C and V_H can share the same power supply circuit. When selecting load resistance, choose values that provide optimal response within the detected gas concentration range. 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			TGS2618	
Detection principle			Oxidized semiconductor type	
Standard encapsulation			TO-5 Metals	
Object gas			Butane, LP gas	
Scope of detection			500 ~ 10,000ppm	
Standard loop conditions	heater voltage	V_H	5.0±0.2V AC/DC	
	loop voltage	V_C	5.0±0.2V DC	$P_s \leqslant$ 15mW
	load resistance	R_L	variable	0.45kΩ min.
Electrical characteristics under standard test conditions	Heating element resistance	R_H	Room temperature about 59Ω	
	Heater current	I_H	56±5mA	
	Heater power consumption	P_H	280mW	VH=5.0V DC
	Sensor resistor	R_s	0.68~6.8kΩ 1800 ppm in isobutane	
	sensitivity (rate of change in R_s)		0.56±0.06	Rs (3000ppm) / Rs (1000ppm)
standard test conditions	Test gas conditions		Isobutane in air 20±2. C, 65±5%RH	
	Loop conditions		V_C = 5.0±0.01V DC V_H = 5.0±0.05V DC	
	preheating time		7 sky	

Structure and size:



Unit : mm

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 resistor (R_s) depends on V_{OUT} (V_{RL})

The measured value is calculated by the following formula:

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

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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 of the sensor for details.

REV.09/18