

TGS 8101 Integrated IAQ Sensor

Features:

- * Ultra-compact size
- * MEMS gas sensor technology
- * Integrated temperature/humidity sensor
- * Pre-calibrated
- * ASIC technology
- * Digital IAQ output

The **TGS8101** is an ultra-compact sensor for gas, relative humidity, and temperature. The device includes sensors and a mixed signal ASIC which provides measurement information through digital serial interfaces.

The gas sensing element consists of a metal oxide compound deposited over a micro hot plate built for high operating temperatures that enable it to detect VOCs and alcohol gas. The humidity sensing element consists of a fringed capacitor structure capable of detecting relative humidity variations.

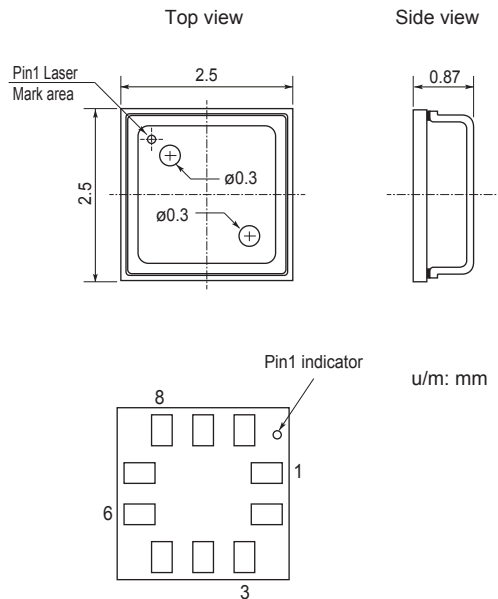
TGS8101 is available in a small top-holed cap land grid array (HLGA) package with two air inlets for an optimized airflow to the gas sensor.

Applications:

- * Indoor air quality control
- * Smart home automation



Dimensions:



Pin Connections:

Pin No	Name	Description
1	VDD_IO (VDD)	Power supply for I/O pins
2	SCL (SCL)	I2C serial dock (SCL)
		SPI serial port dock (SPC)
3	GND (GND)	0V
4	SDA/SDI/SDO	I2C serial data (SDA)
		4-wire SPI (SDI)
		3-wire SPI (SDI/SDO)
5	SDO/SA0	I2C device address (SA0)
		4-wire SPI (SDO)
6	CS (CS)	I2C/SPI mode selection
7	INT1_DRDY	Interrupt or data ready
8	GND (GND)	0V
9	GND (GND)	0V
10	VDD (VDD)	Power supply

Specifications: (tentative)

Model number			TGS8101
Electrical specifications	Supply voltage	V_{DD}	1.7~3.6V
	Supply current	I_{DD}	2mA in pulse mode, ODR 1Hz (typical)
	Supply current in power-down mode	$I_{DDP_{DN}}$	0.5uA at T=25°C (typical)
	Operating temperature range	T_{op}	-40 ~ +85°C
Gas sensor specifications	Operating gas range	G_{op}	0.5 ~ 100ppm of TVOC
Temperature sensor specifications	Operating temperature range	T_{op}	-40 ~ +85°C
	Temperature resolution	T_r	0.03°C (typical)
	Temperature accuracy	T_{acc}	±0.6°C at -10 ~ +60°C
±0.8°C at -40 ~ +85°C			
Humidity sensor specifications	Operating humidity range	H_{op}	0 ~ 100%RH
	Humidity resolution	H_r	0.1%RH (typical)
	Humidity accuracy	H_{acc}	±3.5%RH at 20 ~ 80%RH
±5.0%RH at 0 ~ 100%RH			

Conditions at $V_{DD}=2.5V$, $T=25^{\circ}C$ unless otherwise noted

All sensor characteristics shown in this brochure represent typical characteristics. Actual characteristics vary from sensor to sensor. The only characteristics warranted are those in the Specification table above.

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