TGS6814-for the detection of Methane

Features:

* Highly sensitive to methane
* Linear output
* Small sensitivity to organic vapors
* Output baseline with excellent stability

Applications:

* Detectors for methane

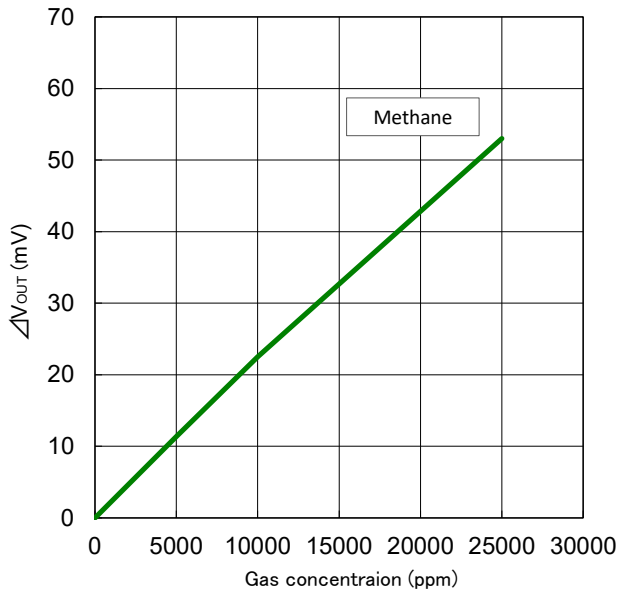
TGS6814 is a catalytic gas sensor which detects levels of methane gas up to 100%LEL. The sensor features excellent durability and fast response. Meanwhile, linear output and highly stable output are also the main characteristics of the sensor.

The special-designed filter inside the sensor cap makes TGS6814 highly insensitive to organic vapors. In addition, the sensor is more resistant to silicone compounds and better adapted to harsh environments.

Sensitivity Characteristics:

The figure below represents typical sensitivity characteristics, all data having been gathered at standard test conditions (see reverse side of this sheet). The Y-axis is indicated as sensor output sensitivity--ΔVout (mV):

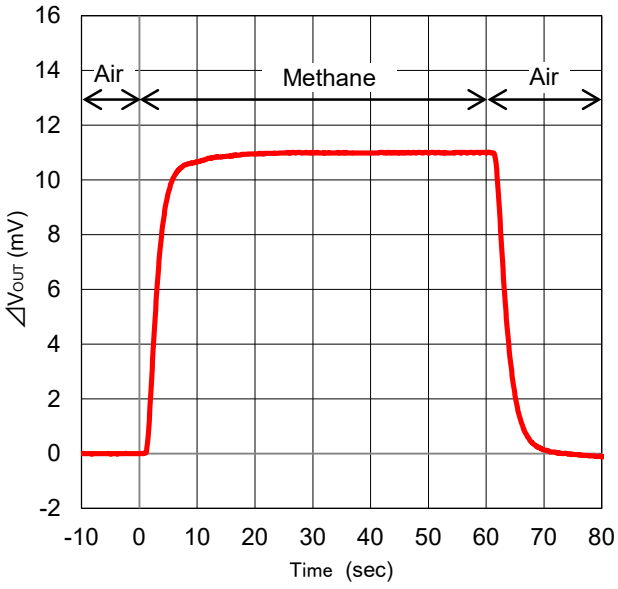
ΔVOUT = VOUT(in gas) − VOUT(in air)



Response Features:

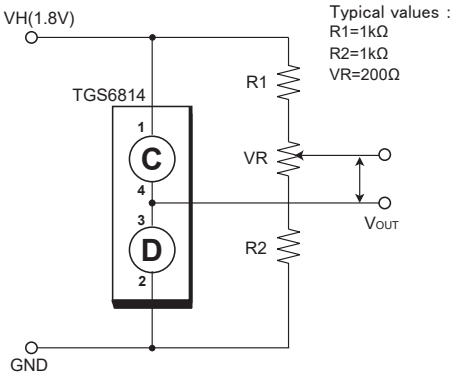
The figure below shows sensor's response feature in 5000ppm methane gas. The Y-axis is indicated as sensor output voltage-VOUT（mV）:

ΔVOUT = VOUT(in gas) − VOUT(in air))



Basic Measuring Circuit:

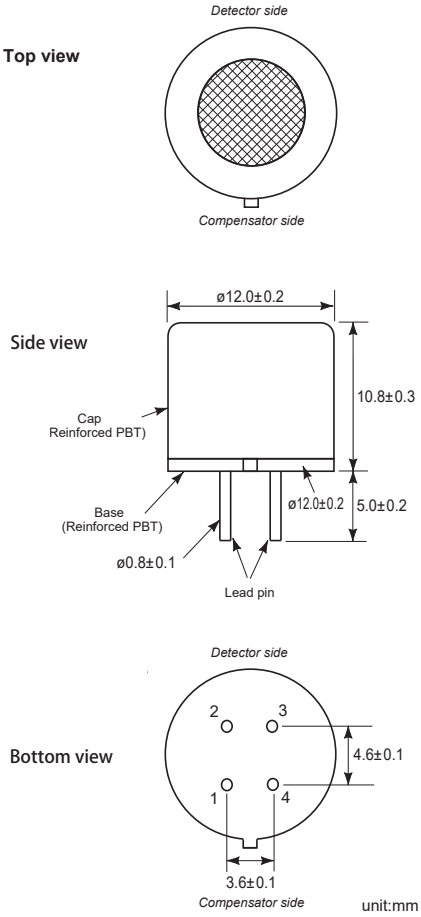
TGS6814 is comprised of two elements: 1) element (D) which is sensitive to combustible gases and 2) a reference element (C) which is not sensitive to combustible gases. These elements are installed into a "Wheatstone Bridge". A variable resistor should be adjusted so that the bridge will produce a stable baseline signal when in an environment free of combustible gases. When combustible gases are present, they will be combusted on the detecting element, causing its temperature to rise. Accordingly the resistance of this element will increase. This results in an "out-of-balance" signal across the bridge and a corresponding change in output voltage which can be measured.



Specifications:

Model number		TGS 6814	
Element sensing type		Catalitic	
Target gas		Methane	
Typical detection range		0~100%LEL	
Standard circuit conditions	Operating voltage	1.80±0.05V AC/DC	
Electrical characteristics under standard test conditions	Heater current	180mA (Typical)	
	Heater power consumption	324mW (Typical)	
	Zero offset	- 34～+34mV	
	Output sensitivity (ΔVOUT)	Methane	11mV @ 5000ppm（Typical）
			53mV @25000ppm（Typical）
Operating conditions		-40° C~+70° C, ⩽95%RH (non-condensing)	
Storage conditions		-40° C~+70° C, ⩽95%RH (non-condensing)	
Standard test conditions	Test gas conditions	Methane 20±2°C, 65±5%RH	
	Circuit conditions	1.80±0.05V AC/DC	
	Warm-up before test	⩽30 sec.	

Structure and Dimensions:



<Pin connection>
1-4 : Compensator
2-3 : Detector