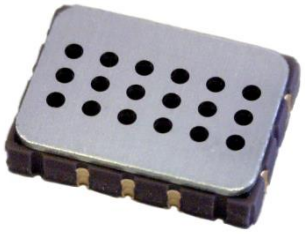
Data Sheet **MiCS-2614**
1087 rev 5

SGX SENSORTECH

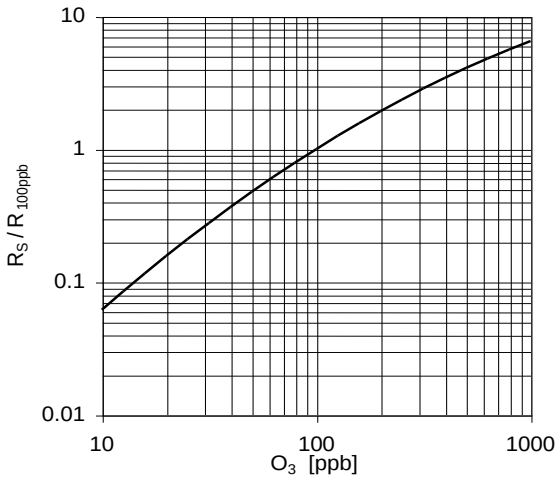
The MiCS-2614 is a compact MOS sensor.

The MiCS-2614 is a robust MEMS sensor for ozone detection; suitable also for gas leak detection and outdoor air quality monitoring.



Features

- Smallest footprint for compact designs (5 x 7 x 1.55 mm)
- Robust MEMS sensor for harsh environments
- High-volume manufacturing for low-cost applications
- Short lead-times



Continuous power ON, 25°C, 50% RH

Detectable gases

• Ozone	O_3	10 – 1000ppb

Performance sensor

Characteristic RED sensor	Symbol	Typ	Min	Max	Unit
Sensing resistance in air (see note 1)	R_0	11	3	60	kΩ
Typical O_3 detection range	FS		10	1000	ppb
Sensitivity factor (see note 2)	S_R	2	1.5	4	-

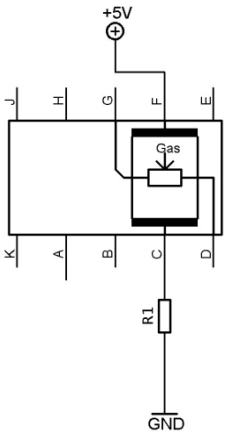
Notes:

1. Sensing resistance in air R_0 is measured under controlled ambient conditions, i.e. synthetic air at 23 ±5°C and 50 ± 10% RH. Sampling test.

2. Sensitivity factor is defined as R_s at 100 ppb of O_3 divided by R_s at 50 ppb of O_3. Test conditions are 25 ± 2°C and 50 ± 5% RH. Indicative values only. Sampling test.

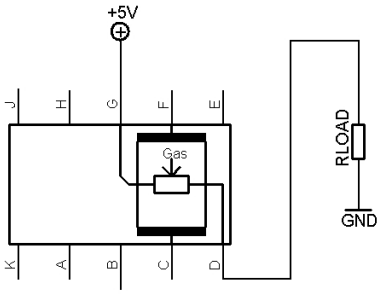
IMPORTANT PRECAUTIONS:
Read the following instructions carefully before using the MiCS-2614 described here to avoid erroneous readings and to prevent the device from permanent damage.

- The sensor must be reflow soldered in a neutral atmosphere, without soldering flux vapours.
- The sensor must not be exposed to high concentrations of organic solvents, silicone vapours or cigarette-smoke in order to avoid poisoning the sensitive layer.
- Heater voltage above the specified maximum rating will destroy the sensor due to overheating.
- This sensor is to be placed in a filtered package that protects it against water and dust projections.
- SGX sensortech strongly recommends using ESD protection equipment to handle the sensor.



MiCS-2614 with recommended supply circuit (top view)

R1 is 82 Ω. This resistor is necessary to obtain the right temperature on the heater while using a single 5V power supply. The resulting voltage is typically VH = 2.35V.

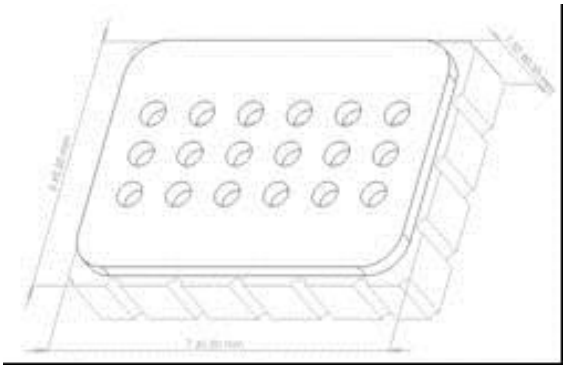


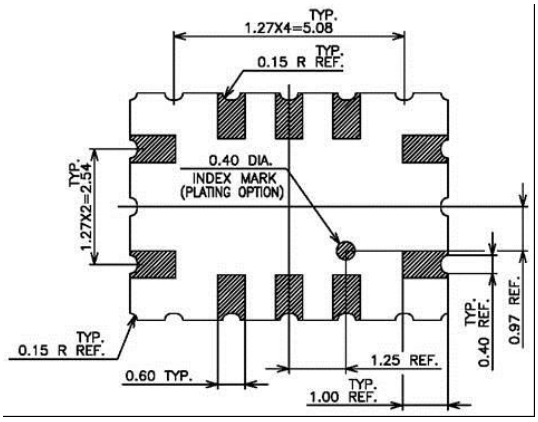
MiCS-2614 with measurement circuit (top view)

The voltage measured on the load resistor is directly linked to the resistance of the sensor respectively. RLOAD must be 820 Ω at the lowest in order not to damage the sensitive layer.

Parameter	Symbol	Typ	Min	Max	Unit
Heating power	P_H	80	66	95	mW
Heating voltage	V_H	2.35	-	-	V
Heating current	I_H	34	-	-	mA
Heating resistance at nominal power	R_H	68	58	78	Ω

Rating	Symbol	Value / Range	Unit
Maximum heater power dissipation	P_H	95	mW
Maximum sensitive layer power dissipation	Ps	1	mW
Voltage supplyHeating current	Vsupply	4.9 – 5.1	V
Relative humidity range	RH	5 – 95	%RH
Ambient operating temperature	Tamb	-40 – 70	°C
Storage temperature range	Tsto	-40 – 50	°C
Storage humidity range	RHsto	5 - 95	%RH

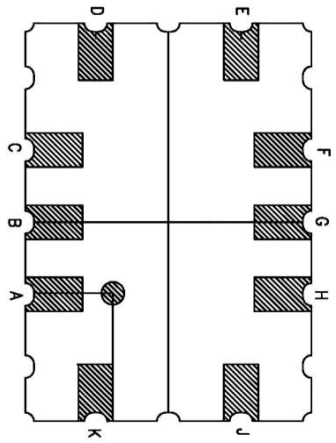




Package outline dimensions

The package is compatible with SMD assembly process.

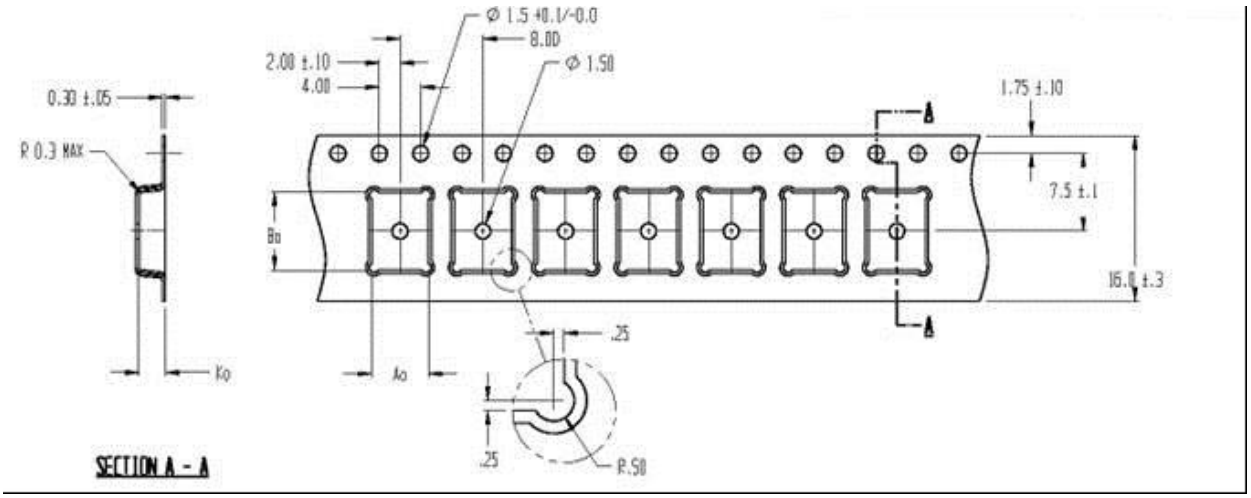
Pin	Connection
A	
B	
C	Rh1
D	Rs1
E	
F	Rh2
G	Rs2
H	
J	
K	



MiCS-2614 configuration (bottom view)

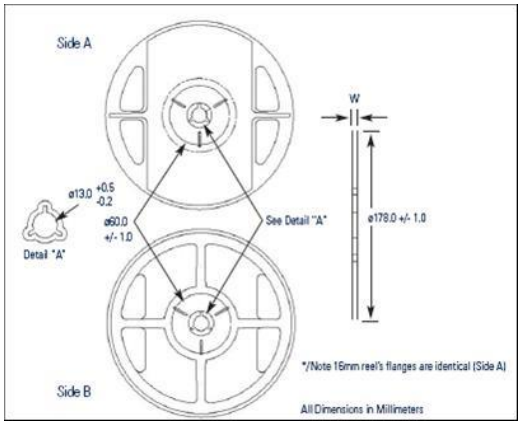
Sensor configuration

The silicon gas sensor structure consists of an accurately micro machined diaphragm with an embedded heating resistor and the sensing layer on top.
The internal connections are shown above.



Packaging

The sensors are packaged in a tape and reel for expedition.
The sensors are placed in a carrier type. The dimensions of the cavity are 5.5 x 7.5 x 2.55 mm (the tolerance is +/- 0.2 mm).
The outside dimension of the reel is either 178 +- mm (for a maximum of 700 sensors) or 330 + 0.25 / -4 mm (for a maximum of 2000 sensors).



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