



# GAS SENSORS : TYPE AD81

CO & NO<sub>2</sub> GAS SENSOR

PROVISIONAL DATA

## DESCRIPTION:

Gas sensor made of thick film element.

## FEATURES:

- Two sensing element on one chip: for CO(gasoline exhaust gas) and NO<sub>2</sub>(diesel exhaust gas)
- Low influence of ambient atmosphere
- Typical applications include automatic damper in automotive cabin.

## DATA:

### Operating conditions:

Operating temperature..... -10 to + 55°C

Storage temperature..... -30 to + 85°C

Load Resistor R<sub>L</sub> ..... Variable

Heater resistance ..... 19Ω (nom)

Rated power consumption P<sub>s</sub> ..... 20mW nom

Rated working voltage of circuit V<sub>c</sub> .....

..... 5 ± 0.2V d.c.

..... 5 ± 0.2 Vrms a.c.

### Parts and material:

Sensing element..... Semiconducting oxide

Thick film heater..... Platinum

Case..... Nylon 66

Pin..... Nickel alloy

Flame arrestor .....

.... Double 100-mesh stainless gauze(SUS316)

### Sensitivity characteristics:

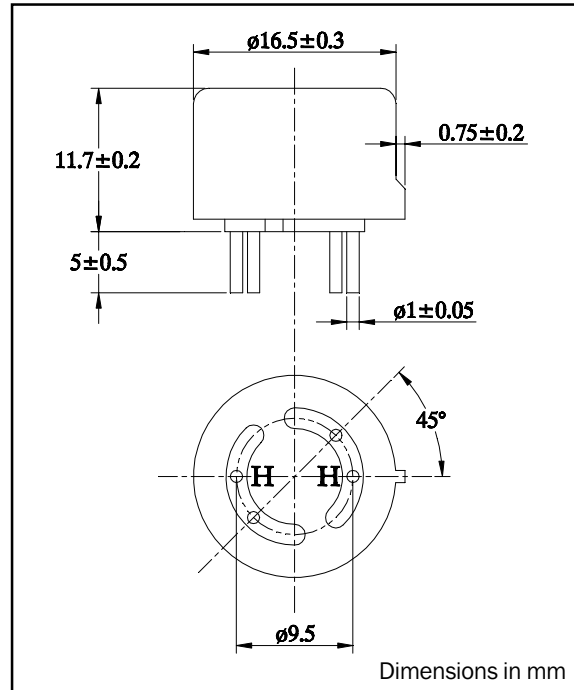
	Specification	Conditions
Output voltage in clean air	2 - 0.3 V	
Voltage change in gas	-0.5 - 0.15V	2ppm of NO <sub>2</sub>
Power consumption	620mW (nom)	

### Mechanical characteristics:

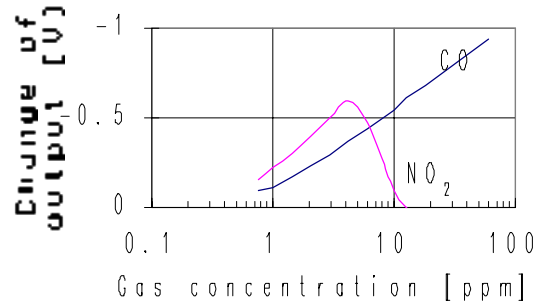
Test	Condition	Performance
<b>Vibration</b>	Frequency:	10 - 500 Hz
	Amplitude (10 - 50Hz):	2 mm
	Acceleration (50 - 500 Hz)	10G
	Reciprical scanning time:	5 min
	Test time: 2 hours each for X, Y and Z directions	
<b>Shock</b>	Acceleration:	100G
	Number of impacts:	5

Should satisfy the specifications shown in the sensitivity characteristics

## DIMENSIONS:



### Typical gas sensitivity:



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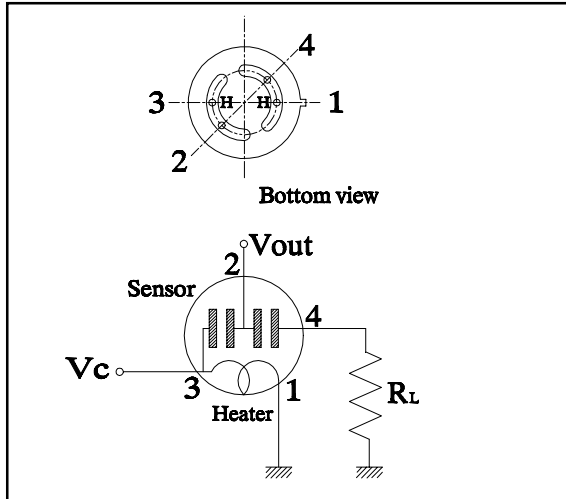
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## NOTES:

**Pin allocation and standard test circuit:**



## Test conditions:

### Atmosphere

Clean air at  $25 \pm 2^\circ\text{C}$  and  $50 \pm 5\%$  RH without noise gas.

### Circuit condition

V<sub>c</sub> (circuit voltage) .....  $5 \pm 0.05\text{V}$

R<sub>L</sub> .....  $340$  to  $1000\Omega$

Preheat time ..... 24 hours

### Test gas

NO<sub>2</sub> ..... 2ppm

## WARNING:

Do not use if the case or wire netting is damaged, otherwise built-in heater may cause explosions or fires.  
Do not disassemble or change any parts.  
Use only within specified conditions.

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