

# GAS SENSORS : TYPE AF56

## PROPANE (C<sub>3</sub>H<sub>8</sub>) SENSOR

### DESCRIPTION:

Propane gas sensor made with thick film sensing element.

### FEATURES:

- Constant heater voltage
- Tight resistance tolerance
- High sensitivity
- Low humidity sensitivity
- Typical applications include gas leak detector, gas appliances

### DATA:

#### Operating conditions:

**Operating temperature** ..... -10 to +55°C  
**Storage temperature** ..... -30 to +60°C  
**Load Resistor R<sub>L</sub>** ..... Variable  
**Heater resistance** ..... 19Ω (nom)  
**Rated power consumption P<sub>s</sub>** ..... <15mW  
**Rated working voltage of circuit V<sub>c</sub>** .....  
 ..... 5V d.c. or 5V rms a.c. (max 12V)  
**Rated working voltage of heater** .....  
 ..... 5 ±0.2V d.c.  
 ..... 5 ±0.2 V rms a.c.

#### Parts and material:

**Sensing element** ..... Semi-conducting oxide  
**Thick film heater** ..... Platinum  
**Case** ..... Nylon 66  
**Pin** ..... Nickel alloy  
**Flame arrestor** .....  
 ... Double 100-mesh stainless gauze (SUS316)

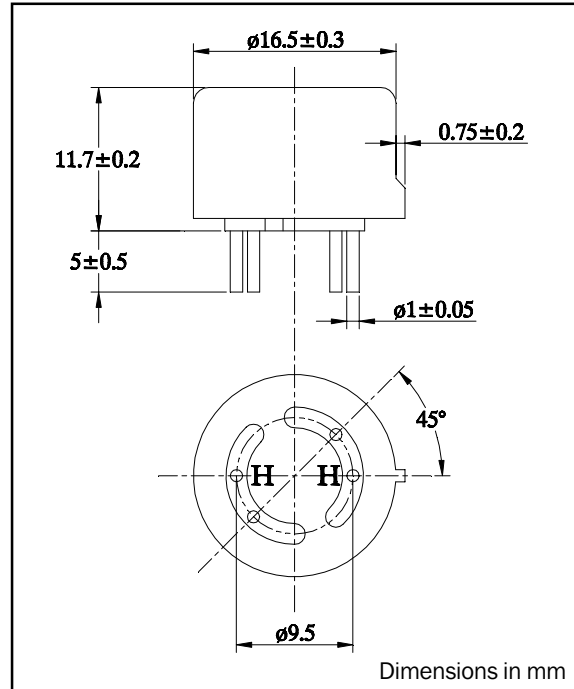
#### Sensitivity characteristics:

	Specification	Conditions
<b>Sensor resistance R<sub>gas</sub></b>	1.5k to 6.0k Ω	In 2000 ppm of methane in clean air
<b>Gas sensitivity R<sub>gas</sub>/R<sub>air</sub></b>	0.08 to 0.25	Resistance ratio at 2000ppm isobutane to clean air
<b>Power consumption</b>	690mW (max)	

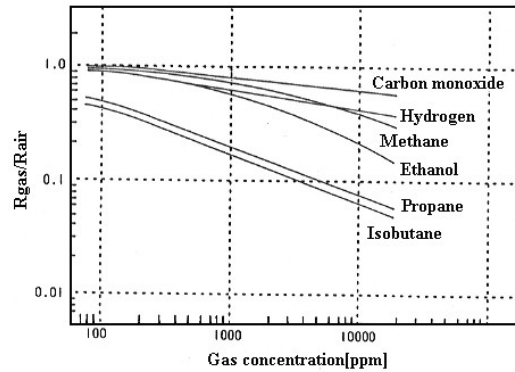
#### Mechanical characteristics:

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	Should satisfy the specifications shown in the sensitivity characteristics
<b>Shock</b>	Acceleration: 100G Number of impacts: 5	

### DIMENSIONS:



### Typical gas sensitivity:



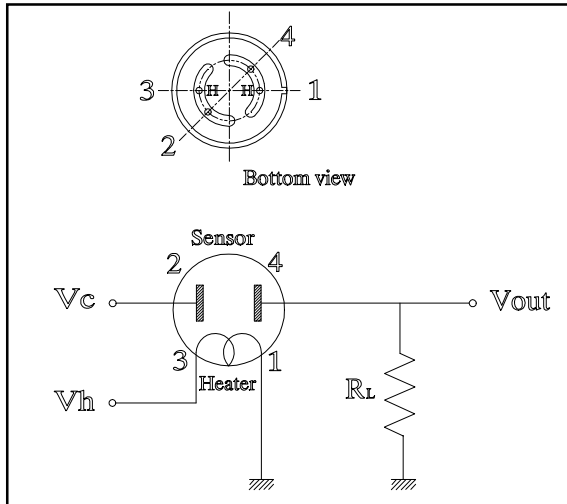
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### NOTES:

#### Pin allocation and standard test circuit:



#### Test conditions:

##### Atmosphere

Clean air at 25± 2°C and 50±5% RH without noise gas.

##### Circuit condition

V<sub>c</sub> (circuit voltage) ..... 5±0.05V

V<sub>h</sub> (heater voltage) ..... 5±0.05V

Preheat time ..... 48 hours

##### Test gas

Isobutane ..... 2000ppm

### 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.