

# GAS SENSORS : TYPE AF23

## CO GAS SENSOR

PROVISIONAL DATA

### DESCRIPTION:

CO gas sensor made with thick film element.

### FEATURES:

- Constant heater voltage
- Tight resistance tolerance

### DATA:

#### Operating conditions:

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

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

**Load Resistor  $R_L$**  ..... Variable

**Heater resistance** ..... 27Ω (nom)

**Rated power consumption  $P_s$**  ..... <15mW

**Rated working voltage of circuit  $V_c$**  .....

..... 5V d.c. or 5V a.c. rms (max 12V)

**Rated working voltage of heater** .....

..... 5 ± 0.2V d.c.

..... 5 ± 0.2 Vrms a.c.

#### Parts and material:

**Sensing element** ..... Semiconducting oxide

**Thick film heater** ..... Platinum

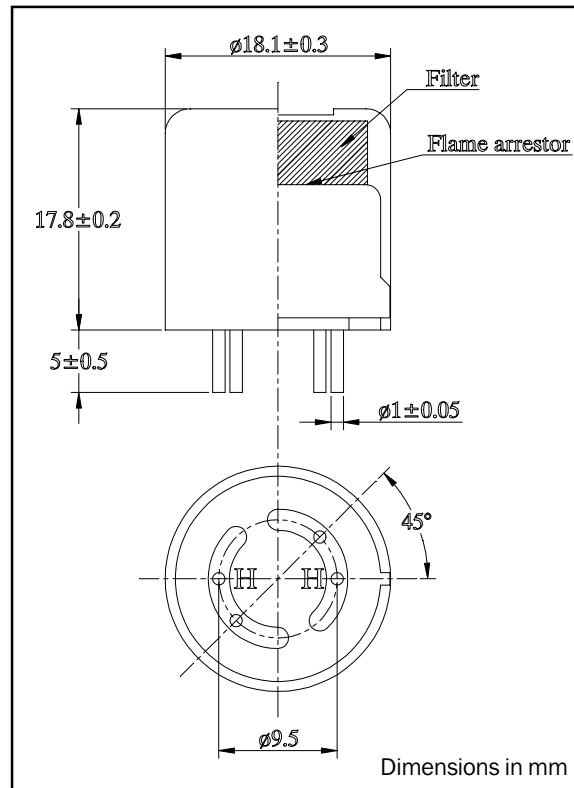
**Case** ..... Nylon 66

**Pin** ..... Nickel alloy

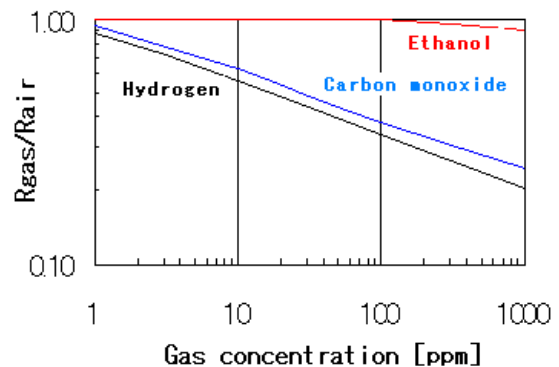
**Filter** ..... Activated carbon (charcoal)

**Flame arrestor** .....

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



### Typical gas sensitivity:

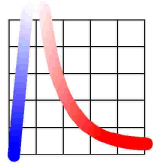


### Sensitivity characteristics:

	Specification	Conditions
<b>Sensor resistance</b> <b><math>R_{gas}</math></b>	15k to 60k Ω	100 ppm CO/air
<b>Gas sensitivity</b> <b><math>R_{gas}/R_{air}</math></b>	0.10 to 0.35	Resistance ratio at 100ppm CO to clean air
<b>Power consumption</b>	510mW (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



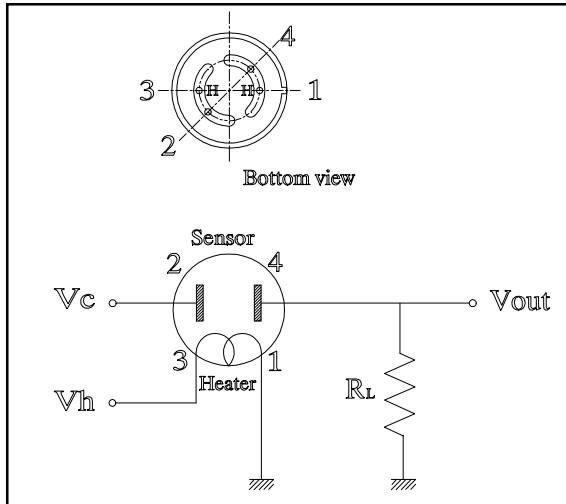
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### NOTES:

#### 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

$V_c$  (circuit voltage) .....  $5 \pm 0.05\text{V}$

$V_h$  (heater voltage) .....  $5 \pm 0.05\text{V}$

$R_L$  .....  $60\text{k}\Omega$

Preheat time ..... 48 hours

##### Test gas

Carbon monoxide ..... 100ppm

### 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.