

# CZ GQ-309Aj

for CARBON MONOXIDE(CO) and Methane Detection

## General Information

CZ GQ-309Aj is a tin dioxide semiconductor gas sensor which has excellent performance in detecting both CO and Methane. It is miniature sensor adopt changing working temperature periodically to detect with high sensitivity and selectivity, the humidity has little influence on it.

## Configuration

Gas sensor sensitivity material is a mini bead, a heater coil and electrode wire are embedded in the element, this element is installed in the metal housing which uses double stainless steel mesh(100mesh) with anti-explosion function. ( As figure1 )

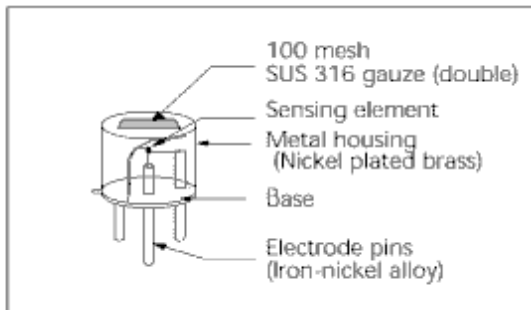


Fig 1a. Configuration

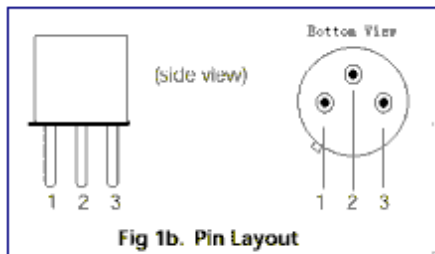


Fig 1b. Pin Layout

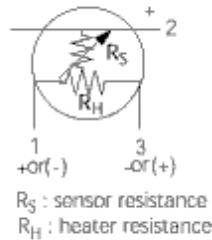
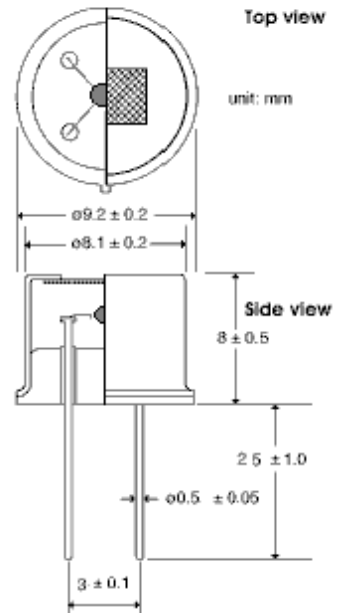


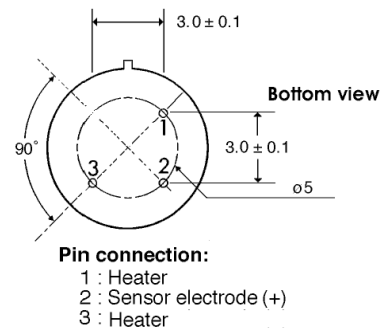
Fig 1c. Equivalent circuit

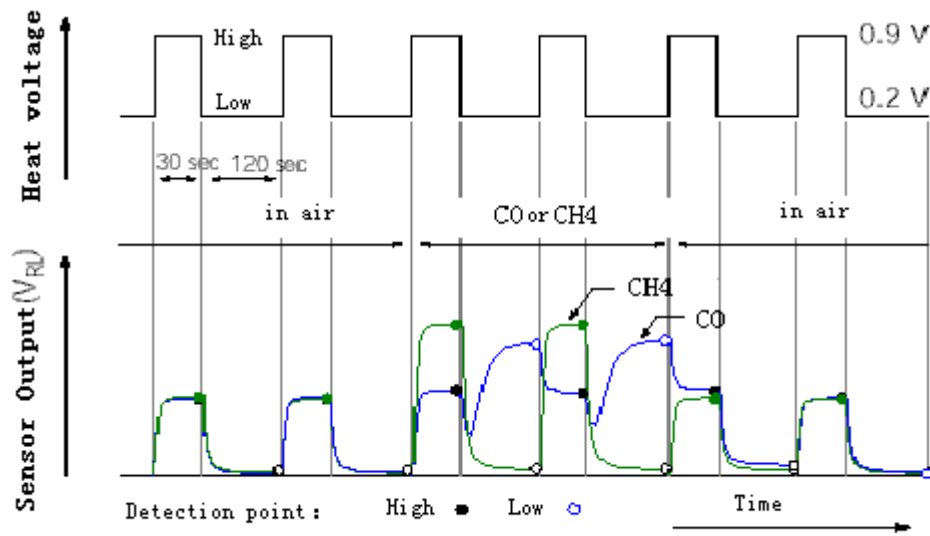
## Structure and Dimensions:



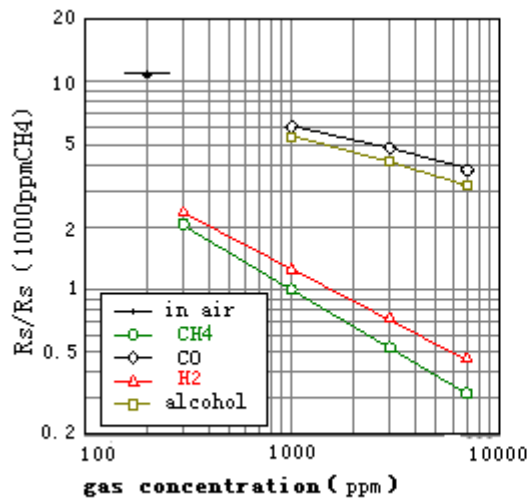
## Operating conditions

When the gas sensor is operated with high/low periodic operation (As figure 2), sensor signal changes according to its temperature dependency. By detecting the sensors signal at sufficient timings (at high temperature for methane and at a low temperature for CO), selective detection of both methane and CO has been achieved. Figs 3 and 3b show the sensitivity characteristics of the CZ GQ-309Aj, at high temperature and at low temperature signals respectively.

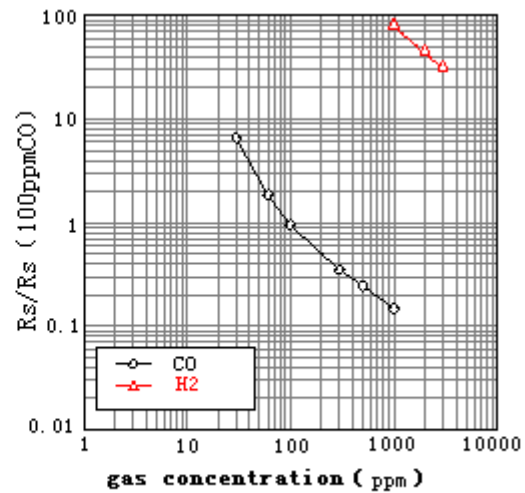




**Fig2 MQ309A Operating conditions and output signal**



**Fig3 sensitivity at high signal for methane**



**Fig 4 sensitivity at low signal for CO**

**A, Standard working conditions**

Symbol	Parament	Specifications	Remarks
VH(H)	Heater voltage ( high )	0.9V ± 0.10V	AC or DC
VH(L)	Heater voltage ( Low )	0.2 V ± 5%	DC (polarity is important)
V <sub>c</sub>	Circuit Voltage	≤ 6 V	
R <sub>L</sub>	Load resistance	Adjustable (> 10 KΩ )	P S < 10 mW
R <sub>H</sub>	Heater Resistance	4.0 Ω ± 1.0 Ω	At room temperature
TH(H)	Heating time ( high )	30sec ± 5 sec	
TH(L)	Heating time ( low )	120 sec ± 10sec	
DT(L)	Detecting time ( low )	< 1 sec	Before switching to Low
I(H)	Currentconsumption ( high )	≤80mA	VH=0.9V
I(L)	Current Consumption ( low )	40±5mW	VH=0.2V
P <sub>s</sub>	Power siddpation	≤10 mW	P S = (V <sub>c</sub> - V <sub>RL</sub> ) <sup>2</sup> / R <sub>s</sub>

