TECHNICAL DATA

MO-3 GAS SENSOR

FEATURES

- * High sensitivity to alcohol and small sensitivity to Benzine.
- * Fast response and High sensitivity
- * Stable and long life
- * Simple drive circuit

APPLICATION

They are suitable for alcohol checker, Breathalyser.

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
Vc	Circuit voltage	5V±0.1	AC OR DC
V_{H}	Heating voltage	5V±0.1	ACOR DC
$R_{ m L}$	Load resistance	200K Ω	
R_{H}	Heater resistance	$33 \Omega \pm 5\%$	Room Tem
P_{H}	Heating consumption	less than 750mw	

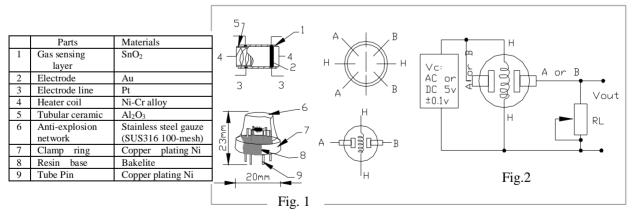
B. Environment condition

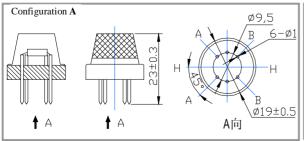
Symbol	Parameter name	Technical condition	Remarks
Tao	Using Tem	-10℃-50℃	
Tas	Storage Tem	-20°C-70°C	
R_{H}	Related humidity	less than 95% Rh	
O_2	Oxygen concentration	21%(standard condition)Oxygen	minimum value is
		concentration can affect sensitivity	over 2%

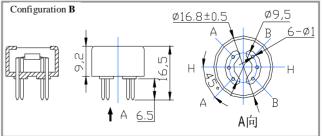
C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Remarks
Rs	Sensing Resistance	1 M Ω - 8 M Ω	Detecting concentration
		(0.4mg/L alcohol)	scope:
		-	0.05mg/L—10mg/L
α			Alcohol
(0.4/1 mg/L)	Concentration slope rate	≤0.6	
Standard	Temp: 20°C ±2°C	Vc:5V±0.1	
detecting	Humidity: 65%±5%	Vh: 5V±0.1	
condition			
Preheat time	Over 24 hour		

D. Structure and configuration, basic measuring circuit







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Structure and configuration of MQ-3 gas sensor is shown as Fig. 1 (Configuration A or B), sensor composed by micro AL₂O₃ ceramic tube, Tin Dioxide (SnO₂) sensitive layer, measuring electrode and heater are fixed into a crust made by plastic and stainless steel net. The heater provides necessary work conditions for work of sensitive components. The enveloped MQ-3 have 6 pin ,4 of them are used to fetch signals, and other 2 are used for providing heating current.

Electric parameter measurement circuit is shown as Fig.2

E. Sensitivity characteristic curve

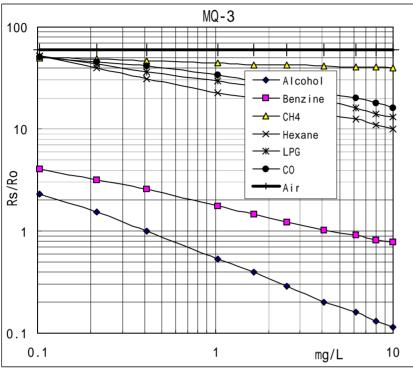


Fig.3 is shows the typical sensitivity characteristics of the MQ-3 for several gases. in their: Temp: 20°C \

in their: Temp: 20°C s. Humidity: 65% s. O_2 concentration 21% $RL=200k \Omega$

Ro: sensor resistance at 0.4mg/L of Alcohol in the clean air. Rs:sensor resistance at various concentrations of gases.

Fig.2 sensitivity characteristics of the MQ-3

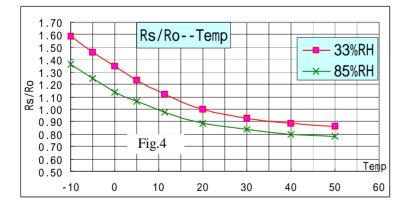


Fig.4 is shows the typical dependence of the MQ-3 on temperature and humidity.

Ro: sensor resistance at 0.4mg/L of Alcohol in air at 33%RH and 20 °C Rs: sensor resistance at 0.4mg/L of Alcohol at different temperatures and humidities.

SENSITVITY ADJUSTMENT

Resistance value of MQ-3 is difference to various kinds and various concentration gases. So,When using this components, sensitivity adjustment is very necessary. we recommend that you calibrate the detector for 0.4mg/L (approximately 200ppm) of Alcohol concentration in air and use value of Load resistancethat(R_L) about 200 $K\Omega\,(100K\,\Omega\,$ to $470\,K\,\Omega$).

When accurately measuring, the proper alarm point for the gas detector should be determined after considering the temperature and humidity influence.