

TECHNICAL DATA

MQ-214

GAS SENSOR

FEATURES

Wide detecting scope
Stable and long life

Fast response and High sensitivity
Simple drive circuit

APPLICATION

They are used in gas leakage detecting equipment in family and industry, are suitable for detecting of methane LPG, i-butane, propane.

SPECIFICATIONS

A. Standard work condition

Symbol	Parameter name	Technical condition	Remarks
V _c	Circuit voltage	6V±0.1	AC OR DC
R _L	Load resistance	50Ω	
P _H	Heating consumption	less than 100mw	@20mA

B. Environment condition

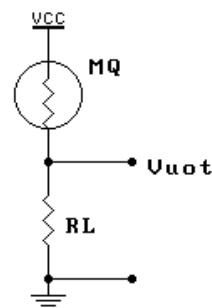
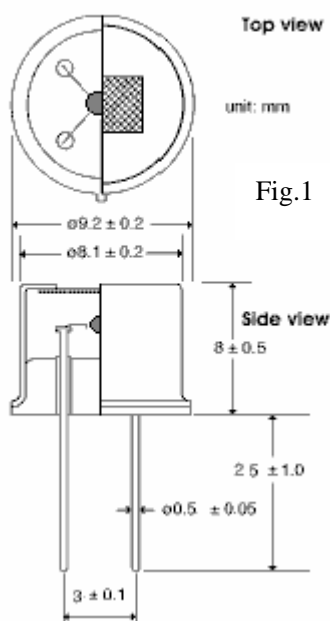
Symbol	Parameter name	Technical condition	Remarks
T _{ao}	Using Tem	0℃...+50℃	
T _{as}	Storage Tem	0℃...+70℃	
R _H	Related humidity	less than 95%Rh	
O ₂	Oxygen concentration	21%(standard condition)Oxygen concentration can affect sensitivity	Minimum value is over 2%

C. Sensitivity characteristic

Symbol	Parameter name	Technical parameter	Remarks
R _s	Sensing Resistance	50Ω -200Ω (5000ppm methane)	Detecting concentration scope : 3000ppm-20000ppm methane 500ppm-10000ppm LPG and propane 500ppm-10000ppm butane
α (3000/1000) isobutane	Concentration Slope rate	≤ 0.6	
Standard Detecting Condition	Temp: 20℃±2℃ Humidity: 65%±5%	V _c :6V±0.1 R _L =50Ω	
Preheat time	Over 24 hour		

D. Structure and configuration, basic measuring circuit

Structure and Dimensions:



Structure and configuration of MQ-214 gas sensor is shown as Fig. 1, micro Tin Dioxide (SnO₂) sensitive bead with measuring electrode are fixed into a crust composed of plastic and stainless steel gauze, Without the heater providing necessary working conditions for sensitive components. The enveloped MQ-214 have 2 pin , they are used to fetch signals.

Electric parameter measurement circuit is shown as Fig.2

E. Sensitivity characteristic curve

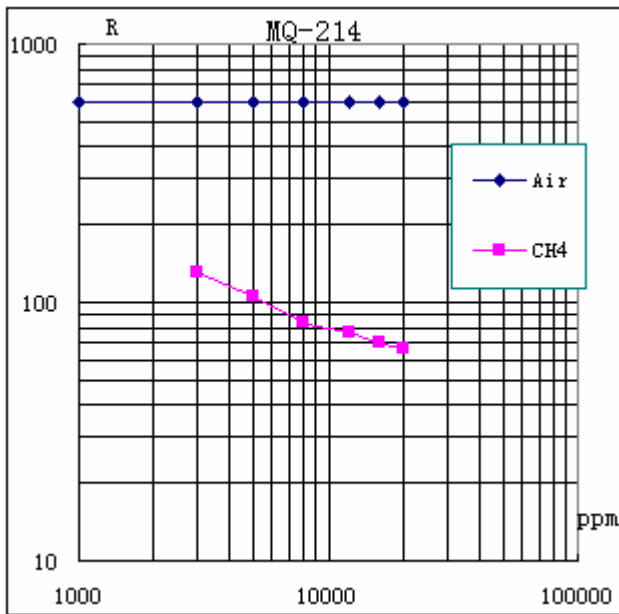


Fig.3 is shows the typical sensitivity characteristics of the MQ-214 for several gases.

in their: Temp: 20°C、

Humidity: 65%、

O₂ concentration 21%

RL=50Ω

R: sensor resistance at various concentrations of CH₄ gases.

Fig.3 sensitivity characteristics of the MQ-214

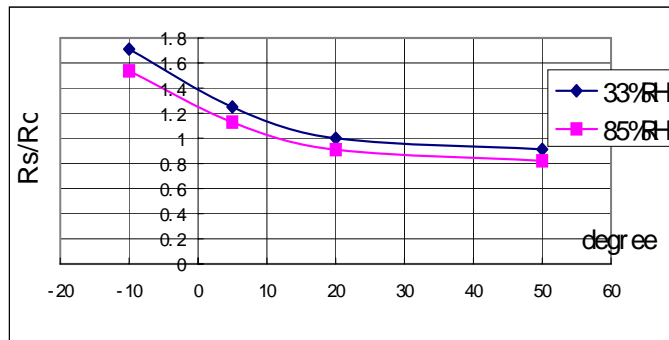


Fig.4 is shows the typical dependence of the MQ-214 on temperature and humidity.

R₀: sensor resistance at 1000ppm of i-butane in air at 33%RH and 20 degree.

R_s: sensor resistance at 5000ppm of CH₄ at different temperatures and humidities.

SENSITIVITY ADJUSTMENT

Resistance volume of MQ-214 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 3000ppm CH₄ concentration in air .

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

Notifications: When the sensor in preheating or working, do not connect VC on the two pins, it need one resistor of 50-100Ω in series, otherwise, it will destroy the sensor.

Basic application circuit

