

TECHNICAL DATA

CZ GQ-139a GAS SENSOR

FEATURES

Wide detecting scope Fast response and High sensitivity
 Stable and long life Simple drive circuit

APPLICATION

They are used in the gas detector for Freon in house or environment, and they are suitable for detecting of R11, R22, R113, R134A, R409A, R410A, etc.

SPECIFICATIONS

A. Standard work condition

| Symbol | Parameter name | Technical condition | Remarks |
|----------------|---------------------|---------------------|----------|
| V _c | Circuit voltage | 5V±0.1 | AC OR DC |
| V _H | Heating voltage | 5V±0.1 | AC OR DC |
| R _L | Load resistance | can adjust | |
| R _H | Heater resistance | 33Ω±10% | Room Tem |
| P _H | Heating consumption | less than 850mw | |

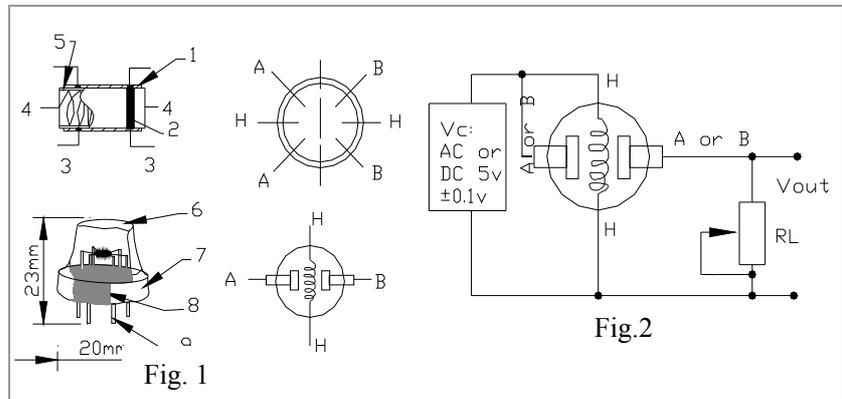
B. Environment condition

| Symbol | Parameter name | Technical condition | Remarks |
|-----------------|------------------|---------------------|---------|
| T _{ao} | Using Tem | -20°C-50°C | |
| T _{as} | Storage Tem | -20°C-70°C | |
| R _H | Related humidity | less than 95%Rh | |

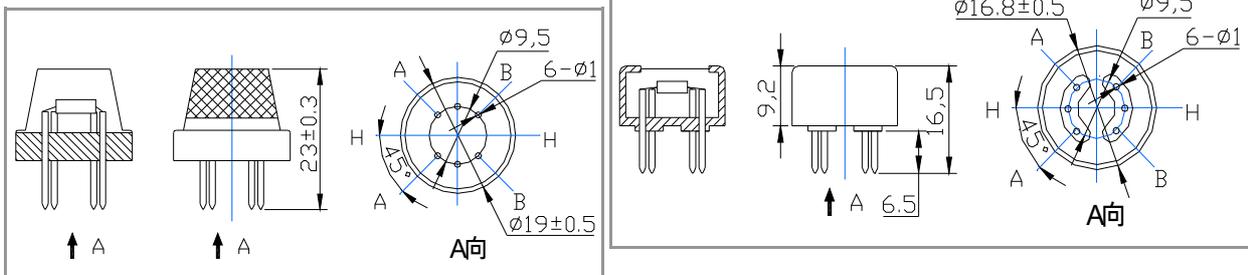
C. Sensitivity characteristic

| Symbol | Parameter name | Technical parameter | Remarks |
|------------------------------|---|-------------------------------|--|
| R _s | Sensing Resistance | 30KΩ-200KΩ (100ppm R134a) | Detecting concentration scope : 10ppm-1000ppm R134a |
| α (200/50) R134a | Concentration Slope rate | ≤0.65 | |
| Standard Detecting Condition | Temp: 20°C±2°C V _c :5V±0.1 Humidity: 65%±5% V _h : 5V±0.1 | | |
| Preheat time | Over 24 hours | | |

| Parts | Materials |
|--------------------------|---|
| 1 Gas sensing layer | SnO ₂ |
| 2 Electrode | Au |
| 3 Electrode line | Pt |
| 4 Heater coil | Ni-Cr alloy |
| 5 Tubular ceramic | Al ₂ O ₃ |
| 6 Anti-explosion network | Double deck stainless steel gauze (SUB316 100-mesh) |
| 7 Clamp ring | Copper plating Ni |
| 8 Resin base | Bakelite |
| 9 Tube Pin | Copper plating Ni |



D. Structure and configuration,



basic measuring circuit

Structure and configuration of CZ GQ-139a 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 CZ GQ-139a 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

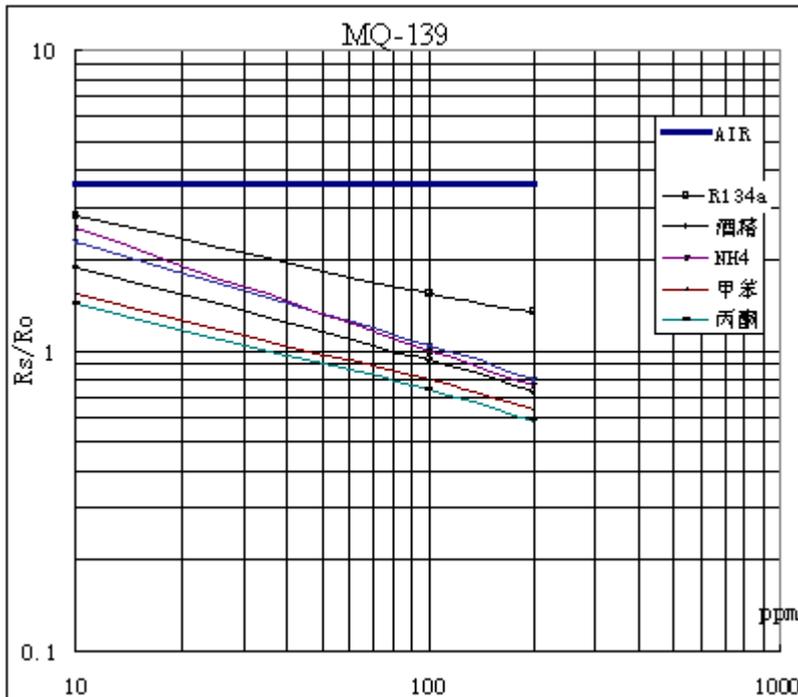


Fig.3 is shows the typical sensitivity characteristics of the CZ GQ-139a. in their:

Temp: 20°C、

Humidity: 65%、

O₂ concentration 21%

RL=20kΩ

Rs :sensor resistance at various concentrations of different gases.

Ro: sensor resistance in the clean air.

Fig.3 sensitivity characteristics of the CZ GQ-139a

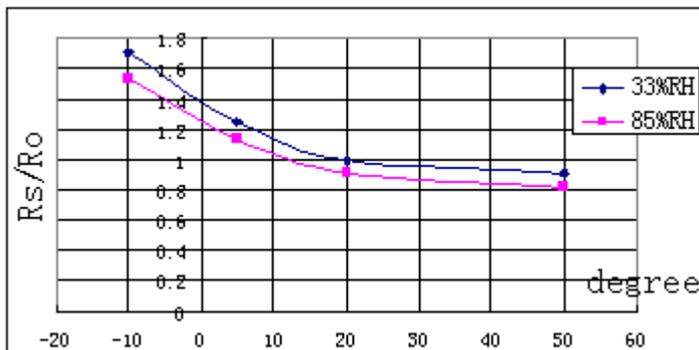


Fig.4 is shows the typical dependence of the CZ GQ-139a on temperature and humidity.

Ro: sensor resistance at 100ppm R134a at 33%RH and 20 degree.

Rs: sensor resistance at 100ppm R134a at different temperatures and humidity

Fig.4 dependence on temperature and humidity of the CZ GQ-139a

SENSITIVITY ADJUSTMENT

.Resistance value of CZ GQ-139a 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 100ppm R134a.

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

