

Hydrogen sensitive elements based on MIS (metal-insulator- semiconductor) structure.

Sensitive elements to hydrogen based on MIS structures are designed to measure the concentration of hydrogen in various media of 0-4% vol.

The advantages of this type of sensitive elements are:

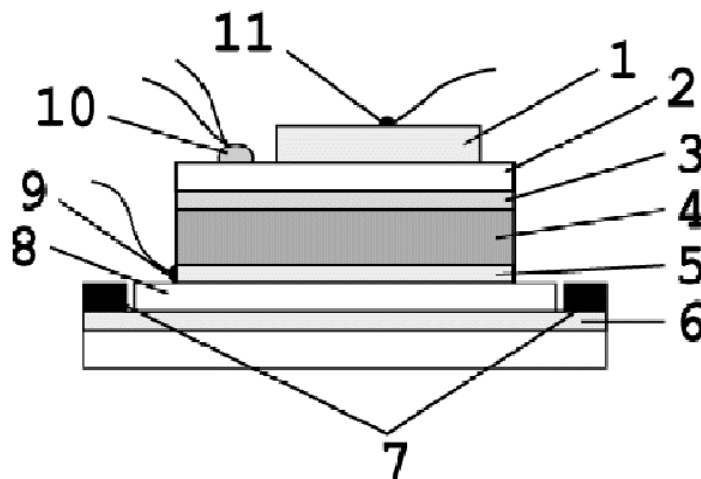
- high sensitivity (up to 0.05 ppm)
- long-term stability
- long service life (7+ years)
- operational temperature -40C__+120C
- very small crossensitivity to other gases
- vibration and shock resistant
- small form factor (5 x 5 mm. without wires)
- operates regardless of the gas flow rate



Fig.1 Image of the sensitive element

Principle of operation

The sensitive element based on the MIS structure is a semiconductor device with a metal-dielectric-semiconductor (MIS) type structure. This structure is a capacitor, the capacitance of which changes under the action of gas falling on the surface of the metal electrode.



- 1;2;3;6 - layers of metals
- 5 - semiconductor
- 6 - heater
- 7 - heater' contacts
- 8 - insulator
- 9 - contact
- 10 - heater
- 11 - contact

Fig.2 Schematic diagram of the sensing element

