Description

The IDT SGAS701 is a solid-state chemiresistor sensor designed to detect hydrogen in air. The sensor uses an integrated heater with highly sensitive MOx material tailored for detection of hydrogen.

The chemiresistor sensors of IDT's SGAS family are based upon the principle that metal oxide materials undergo surface interactions (physisorption and chemisorption) with gas molecules at elevated temperatures, resulting in a measurable change in electrical resistance. As these materials are polycrystalline (i.e., composed of multiple grains with distinct grain boundaries), the adsorbed gases have significant electronic effects on the individual grains. These gas-solid interactions result in a change in electron (or hole) density at the surface (i.e., a space charge forms), which in turn changes the electrical conductivity of the oxide. IDT has developed a set of nanostructured gas sensing materials with excellent sensitivity and stability.

Figure 1. Product Photo

Features

- High sensitivity to low hydrogen concentrations (< 10 to 1000 ppm)
- Fast response time (<15 seconds at 100ppm)
- Environmental temperature range of -20°C to 50°C
- Environmental humidity range of 0% to 90% RH, noncondensing
- Low dependence on flow rate
- Rugged, reliable sensor based on IDT's exclusive technology

Typical Applications

- Leak Detection
- Gas Concentration Detection
- Breath Detection

Available Support

- Evaluation Kit – SMOD701KITV1
- Application Notes
- Instruction Videos
- Reference Design

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