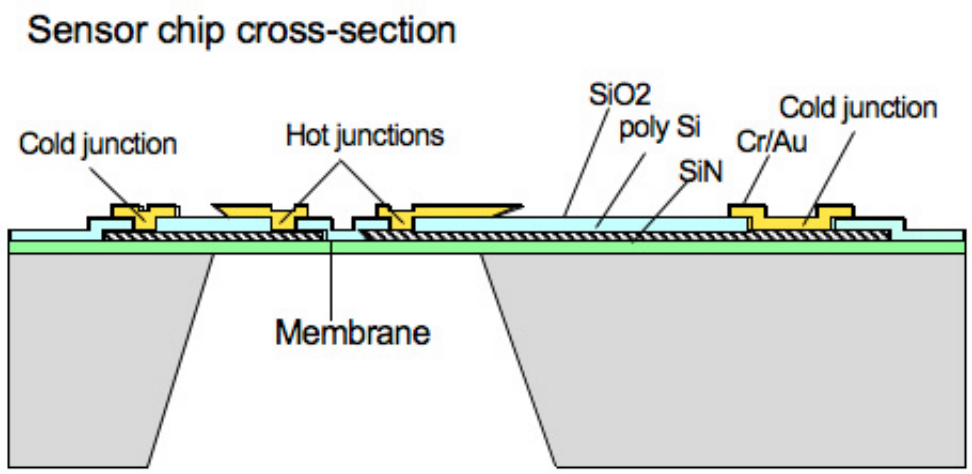
Omron sensor can do security and hot-soup checks (w/ Video)

July 15 2012, by Nancy Owano



(Phys.org) -- Japan-based Omron is promoting its small-sized thermal area sensor with a flexible future of use as a security system check, energy-saver or smartphone companion, to warn you that your turkey broth is still too hot to drink. Omron demonstrated its D6T thermal sensor earlier this week at the Micromachine/MEMS ROBOTECH 2012 exhibition in Tokyo. The device is described as an infrared thermal area sensor using MEMS technology that can check for situations such as human presence and hot food.

Thermal sensors can measure temperature by receiving energy radiated

from target objects on thermopile elements.

For security system applications, for example, Omron is suggesting its use as a sensor in a low power consumer device. It can tell if there is someone present, by detecting body heat. As an energy saving application, it can detect if there is no one present, and can be used to save energy, by turning off lights, or turning down air conditioners. The thermal-area sensor can also monitor the temperature of a room as it can detect the slightest temperature changes.

Along with smartphone camera, one can use the sensor as a restaurant or kitchen aid. The demo showed viewers the device's "Too hot to eat" sensor. Placed under the camera of the smartphone, the sensor detects the actual temperature of objects. According to the demo, when the image of a mug is displayed, the person can press the "Too hot to eat" button, and find out the temperature of the liquid inside the mug. The demonstrator said it was not a very serious application but sufficed to show the technology at hand. Other use could be in factory automation where temperature control and irregular temperature detection are important.

Omron promotes its technology as a useful alternative to pyroelectric human presence sensors that rely on motion detection, as they are unable to detect the presence of objects that are not moving, whereas the Omron device does. Also, Omron points out that while standard thermal sensors are only able to measure temperature at one certain contact point, the D6T can measure the temperature of an entire area without contact.

Overall, MEMS (Micro Electro Mechanical System) technology has grown in interest as MEMS uses semiconductor processing technology to enable super-high-precision processing at micrometer or even nanometer levels,-a degree of precision that is impossible for humans to replicate,

according to the company.

Omron provides products and services in industrial automation, electronic components, healthcare, and the environment. With its Omron MEMS technology in the D6T, said a company release, “we are aiming to contribute to the creation of new advanced energy-saving household appliances as well as home and building energy management systems plus a wide variety of factory automation applications.”

More information: Press release