

New SMD Dual Channel Thermopile Sensor for NDIR Gas Analysis

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We are proud to present our new **SMD type** dual channel thermopile sensor preferably intended for NDIR gas analysis. Heimann Sensor is the market leader in thermopile arrays and sensors. With our patented thermopile technology, we are able to produce very fast thermopiles and fully monolithic thermopile arrays with high signal and high specific detectivity.

In 2019 we were able to integrate two thermopile chips together with integrated circuits for signal conditioning and temperature reference into a small 5x5mm² SMD ceramic package. Two filters, one for each channel, complete the dual channel SMD thermopile sensor.

For gas concentration measurements one channel is typically equipped with a reference filter and the other channel with a gas specific filter. Heimann Sensor provides a large variety of filters for gases like CO₂, CO, N₂O, NO, HC and CH₄. On request we are also able to provide custom filters for special applications.

The largest applicable thermopile chips have an element size of 1.2 mm² each, which results in a high sensitivity of 44 V/W while the time constant is still very small at 10 ms.

The dual channel SMD modules are available with build-in integrated circuits for analog or digital signal processing. The analog modules can be operated from 2.7 V up to 5.5 V and provides a high operating temperature range from -20°C up to 120°C.

Important applications for NDIR gas detection are for example indoor and outdoor air quality monitoring, gas leak detection or industrial process control. But there are also medical applications such as monitoring the CO₂ concentration during inhalation and exhalation for capnography or controlling the N₂O anesthetic gas.

If you are interested in this product series, we can provide datasheets and sample parts to evaluate your application.