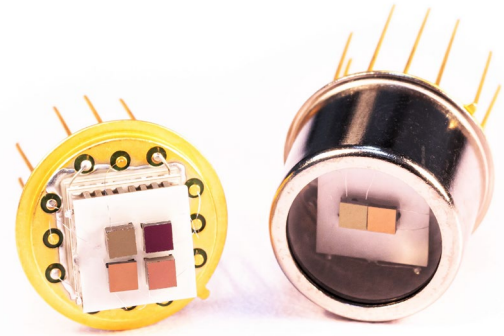


Product news

Thermoelectrically cooled gas sensors in TO packages

June 16, 2020 – Ludwigshafen, Germany – The need for gas sensing solutions has increased significantly in recent times. Particularly, systems for capnometry and ambient air monitoring for both industrial and commercial use are highly sought after.

trinamiX, the technology leader in bare chip PbS and PbSe detectors, now offers gas sensors with multiple detectors inside a thermoelectrically cooled (TEC) TO-8 package. They complement trinamiX existing portfolio of multi-pixel detectors – all equipped with trinamiX revolutionary thin-film encapsulation. The new sensor provides customers with a precise and robust solution to detect very low gas concentrations even in strongly fluctuating environmental conditions.



trinamiX TEC based gas sensors inside a TO-package

Depending on the customer needs and the requirements of the application, it is possible to configure sensors in such a way that they can measure several gases at once. This is achieved by integrating up to four trinamiX PbS/PbSe detectors inside a TEC cooled TO-8 package. The high selectivity to different gases is then achieved by placing custom narrowband optical filters directly over the active area of each photo detector. This is possible thanks to trinamiX patented thin-film encapsulation of the detectors. A gas sensor with two detectors can for example measure carbon dioxide (CO₂) concentration, while a gas sensor with four detectors can additionally analyze carbon monoxide (CO) and the humidity (H₂O) in ambient air. One detector serves as a reference to suppress any drifts due to external changes such as the fluctuations of the infrared radiation source, thus increasing the reliability of the system.

Since the detectors are thermoelectrically cooled, a highly stable measurement and detector performance is always guaranteed independent of the environmental conditions such as ambient temperature. For challenging applications, where high resolution is a must, the performance of the detectors may be boosted further by cooling the sensor down to -30°C. Additional flexibility is provided as trinamiX gas sensors are available with single or 2-stage TECs, a range of detector sizes as well as custom filters and packaging.

About trinamiX:

trinamiX GmbH www.trinamiXsensing.com is a wholly-owned subsidiary of BASF SE, the world's largest chemical company. Founded in 2015, trinamiX has developed a wide-ranging portfolio of technologies and products around both Infrared detection as well as 3D imaging and distance measurement. The company employs a team of more than 100 experts across a wide range of scientific disciplines.

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