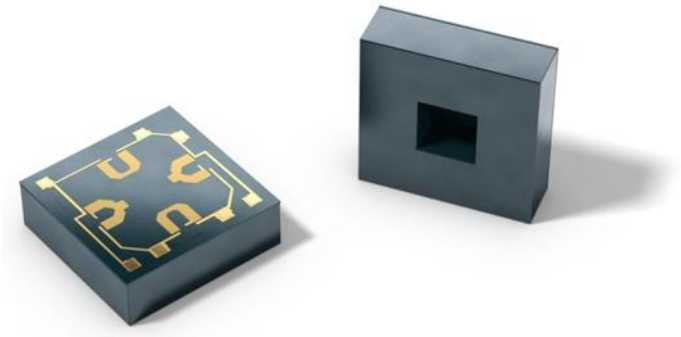
Press Release

AMSYS GmbH & Co. KG

Measuring Pressure in Compact Spaces with the SM30F Pressure Sensing Die

AMSYS GmbH & Co. KG, Mainz, March 2025 – For pressure measurement in high-volume devices, pressure dies are an excellent choice, as they can be integrated even more efficiently into the available space than packaged sensors. Additionally, manufacturers can fully control the entire setup, which is crucial for sterile applications in medical technology. To meet these needs, AMSYS offers not only sensors in plastic or ceramic housings but also pure micromechanical silicon-based pressure sensing dies (MEMS).



SM30F pressure sensor for maximum pressures from 350 mbar to 10 bar with an edge length of only 1.34 mm

Silicon MEMS technology has long replaced mechanical sensors with elastic (polymer) membranes and has proven its worth in millions of applications, including ventilation technology (HVAC), as well as in medical and automotive industries. Their advantages lie in their compact size, stability, and cost-effectiveness.

AMSYS has been distributing pressure sensing dies and sensors from Silicon Microstructures, Inc. (SMI), now part of TE, for over 25 years. The complete range of sensors covers all pressure types and ranges. These include differential/relative pressure and absolute pressure sensing dies, the latter also designed for harsh environments. Notably, the back-side pressurized SM97A is available for 10, 20, and 50 bar applications.

The SM30F presented here is designed for measuring medium-range relative and differential pressures from under 5 psi to 150 psi (approximately 350 mbar to 10 bar). These chips are available with an open or closed measurement bridge and provide an output signal of typically 80 mV (30 psi and 150 psi versions) or even 90 mV (5, 15, and 80 psi variants).

From a pressure range of 15 psi onwards, these sensing dies exhibit a consistently low non-linearity of typically only ±0.1% of the span on both the front and back sides. This makes the SM30F ideal for back-side pressurization, where the medium comes into contact only with the rear side during relative pressure measurements. Since this side consists solely of silicon, the SM30F pressure sensing die is also well-suited for measuring conductive and mildly corrosive liquids.

AMSYS' range of silicon pressure sensing dies is further complemented by the SM9520 differential pressure die for ultra-low pressures between 10 mbar and 100 mbar, as well as the ultra-compact SM5108E absolute pressure die for 30, 60, and 100 psi (2, 4, and 7 bar). Additionally, AMSYS offers particularly robust ceramic sensing dies, especially for higher pressure ranges. Given the complexity of selecting the optimal solution, consulting a sensor specialist is recommended to find the best fit for your specific application.

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Outstanding Features

- 0 – 5 psi (350 mbar), 0 – 15 psi (1 bar), 0 – 30 psi (2 bar), 0 – 80 psi (5.5 bar), and 0 – 150 psi (10 bar) differential pressure
- Sensitivity of typically 90 mV (5 psi, 15 psi, 80 psi) or 80 mV (30 psi, 150 psi) at 5 Vdd
- Identical linearity for both top and bottom sides of typically only ±0.1% (5 psi: ±0.1% / ±0.2%)
- Only 1.34 x 1.34 mm² in size

Product Page

https://www.amsys-sensor.com/products/ceramic-and-silicon-pressure-measuring-cells/sm30f-medium-pressure-sensor-die/

The Company

AMSYS GmbH & Co. KG is a German company specializing in sensor technology, particularly pressure measurement. Its product range includes pressure sensors from 1.25 mbar to 800 bar, as well as humidity, temperature, and inclination sensors, along with wireless solutions. In addition to standard products, AMSYS offers custom adaptations to meet specific customer requirements.

Adress

AMSYS GmbH & Co. KG
An der Fahrt 4
55124 Mainz
Tel: +49 (0) 6131 / 469 8750
https://www.amsys-sensor.com

Press Contact

Mr. Fruci
v.fruci@amsys.de