



Product brief

XENSIV™ DPS368 pressure sensor

Environmentally protected against water (IPx8), dust and humidity

DPS368 is a miniaturized digital barometric air pressure sensor with a high precision (± 2 cm) and a low current consumption, capable of measuring both pressure and temperature. Due to its robust package, it can withstand 50 m under water for one hour (IPx8). The pressure sensor element is based on a capacitive sensing principle which guarantees high precision during temperature changes. The small package makes the DPS368 ideal for mobile applications and wearable devices.

The internal signal processor converts the output from the pressure and temperature sensor elements to 24-bit results. Each unit is individually calibrated, the calibration coefficients calculated during this process are stored in the calibration registers. The coefficients are used in the application to convert the measurement results to high accuracy pressure and temperature values.

The result FIFO can store up to 32 measurements, allowing for a reduced host processor polling rate. Sensor measurements and calibration coefficients are available through the serial I²C or SPI interface. The measurement status is indicated by status bits or interrupts on the SDO pin.

Key features

- > Package dimensions: 8-pin LGA, 2.0 x 2.5 x 1.1 mm³
- > Operation range:
 - Pressure: 300–1200 hPa
 - Temperature: -40–85°C
- > Precision: ± 0.002 hPa (or ± 0.02 m)
- > Rel. accuracy: ± 0.06 hPa (or ± 0.5 m)
- > Abs. accuracy: ± 1 hPa (or ± 8 m)
- > Temperature accuracy: ± 0.5 °C
- > Avg. current consumption: 1.7 μ A (pressure measurement) at 1 Hz sampling rate, standby: 0.5 μ A
- > Integrated FIFO
- > Interface: I²C and SPI (both with optional interrupt)

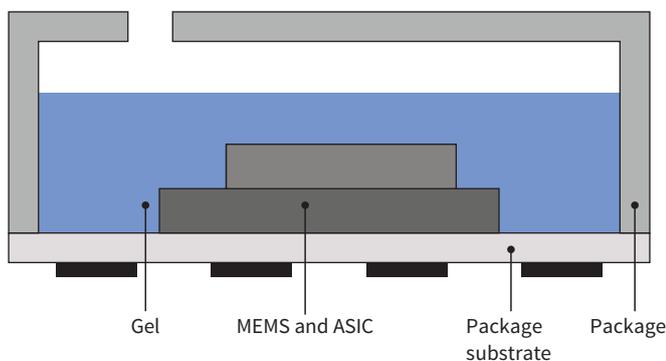
Benefits

- > Fast, ultra-low noise read-out allows for precise measurement of altitude, air flow and body movements
- > Small package size ideal for wearable devices and mobile applications
- > Sensor can be used in harsh environment (water, dust and humidity)
- > Environmentally resistant package facilitates handling in assembly line

Applications

- > Smart watches and wearables (e.g. fitness tracking)
- > Smart phone (e.g. navigation)
- > Home appliances (e.g. air flow control)
- > Drones (e.g. flight stability)

Schematic drawing of DPS368 package



Orderable part number (OPN): DPS368XTSA1

www.infineon.com/dps368