

► Co-integrated pressure sensor

FEATURES

- ▶ Supply voltage VDD 5V
- ▶ Amplified, calibrated, fully signal conditioned output of 4.0 VDC FS span (0.5 to 4.5V signal)
- ▶ Output ratiometric with supply voltage
- ▶ Digital Signal Processor for correction algorithms
- ▶ Multi-order temperature compensation for gain and offset
- ▶ For gauge, differential, and absolute applications
- ▶ Adjustable output clamps
- ▶ Programmable output filter
- ▶ EEPROM memory for End-of-line calibration
- ▶ -40°C to $+125^{\circ}\text{C}$ operating temperature
- ▶ Available packages:
 - ▶ ASIC^{plus}: SO16w body with nozzle
 - ▶ bare die
 - ▶ customer specific

APPLICATION

- ▶ Automotive pressure sensing (MAP, tire pressure, oil, fuel)
- ▶ Barometric measurement
- ▶ Medical instrumentation
- ▶ Industrial
- ▶ HVAC

DESCRIPTION

The IC of OEM integrated pressure sensor combines state-of-the-art pressure sensor technology with signal conditioning to produce a fully signal-conditioned, amplified, temperature compensated sensor. The sensor utilizes a digital signal processor to allow multiorder linear correction to achieve increased accuracy over conventional amplified pressure systems. The device is a co-integrated die. It is also available as an IC without the sensor and is therefore suitable for the use of a precision signal processor for separate sensors.

The system uses an on-chip EEPROM to store the calibration data. This allows the device to be calibrated end-of-line and so to compensate for packaging stress and/or parametric changes due to the addition of protective gel. Sensor ID information can also be stored in the EEPROM.

The chip is currently configured for operating pressure ranges from 350mbar FS up to 10bar (5PSI to 145PSI FS). For pressure ranges below 350mbar (5PSI), the IC interfaces with an off-chip sensor. The range is extendable above 10bar.

BLOCK DIAGRAM

