

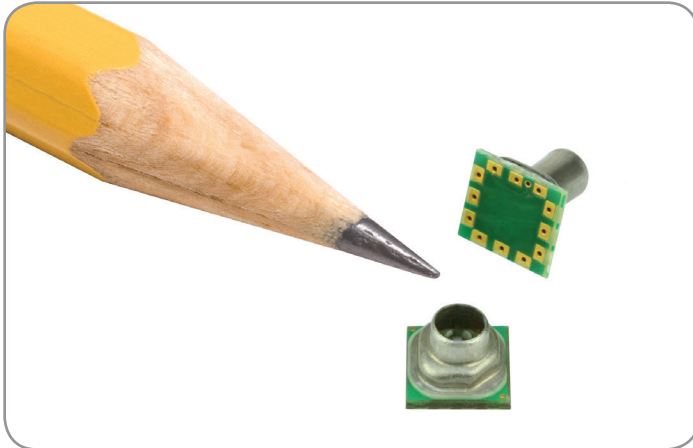
MicroPressure Board Mount Pressure Sensors

MPR Series—Compact, High Accuracy, Compensated/Amplified

32332628

Issue A

Datasheet



DESCRIPTION

The MPR Series is a very small piezoresistive silicon pressure sensor offering a digital output for reading pressure over the specified full scale pressure span and temperature range. It is calibrated and compensated over a specific temperature range for sensor offset, sensitivity, temperature effects, and non-linearity using an on-board Application Specific Integrated Circuit (ASIC). This product is designed to meet the requirements of higher volume medical (consumer and non-consumer) devices and commercial appliance applications.

VALUE TO CUSTOMERS

- Very small form factor: Enables portability by addressing weight, size, and space restrictions; occupies less area on the PCB.
- Wide pressure ranges simplify use.
- Enhances performance: Output accelerates performance through reduced conversion requirements and direct interface to microprocessors.
- Value solution: Cost-effective, higher volume solution with configurable options.
- Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements: Allows avoidance of thermal and mechanical damage during solder reflow attachment and/or repair that lesser rated sensors may incur; allows unlimited floor life when stored as specified (simplifying storage and reducing scrap); eliminates lengthy bakes prior to reflow, and allows for lean manufacturing due to stability and usability shortly after reflow.
- Low power/energy efficient: Reduces system power requirements and enables extended battery life.

FEATURES

- 5 mm x 5 mm [0.20 in x 0.20 in] package footprint
- Calibrated and compensated
- ± 40 mbar to ± 2.5 bar | ± 4 kPa to ± 250 kPa | ± 0.6 psi to ± 30 psi
- 24-bit digital I²C or SPI-compatible output
- IoT (Internet of Things) ready interface
- Low power consumption (<10 mW typ.), energy efficient
- Stainless steel pressure port
- Medical and food grade gel options
- Compatible with a variety of liquid media
- Absolute and gage pressure types
- Total Error Band after customer auto-zero: As low as ± 1.5 %FSS
- Compensated temperature range: 0°C to 50°C [32°F to 122°F]
- REACH and RoHS compliant
- Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1

DIFFERENTIATION

- Application-specific design addresses various application needs and challenges.
- Digital output: Plug and play feature enables ease of implementation and system level connectivity.
- Total Error Band: Provides true performance over the compensated temperature range, which minimizes the need to test and calibrate every sensor, thereby potentially reducing manufacturing cost; improves sensor accuracy and offers ease of sensor interchangeability due to minimal part-to-part variation. (See Figure 1.)

POTENTIAL APPLICATIONS

- Consumer medical: Non-invasive blood pressure monitoring, negative-pressure wound therapy, breast pumps, mobile oxygen concentrators, airflow monitors, CPAP water tanks, and medical wearables
- Non-consumer medical: Invasive blood pressure monitors, ambulatory blood pressure measurement
- Industrial: Air braking systems, gas and water meters
- Consumer: Coffee machines, humidifiers, air beds, washing machines, dishwashers

PORTFOLIO

The MPR Series joins an extensive line of board mount pressure sensors for potential use in medical, industrial, and consumer applications.

MicroPressure Board Mount Pressure Sensors, MPR Series

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