

## PT1907 Pressure & Temperature Sensor Die

NovaSensor PT1907 is a family of MEMS multi-sensor die products, each combining two sensors on the same chip: (1) high stability piezoresistive absolute pressure sensor and (2) very linear high-resolution temperature sensor integrated in proximity to the pressure sensor.

A reference cavity formed on the top side of the die with the help of a silicon cap hermetically bonded to the device layer provides reference for absolute pressure measurement. Pressure is applied from the back side of the die, which eliminates direct contact between the sensor circuitry and the applied media. Some PT1907 products have a 0.8mm thick glass pedestal.

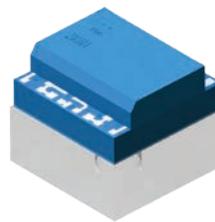
The PT1907 die allows for simultaneous pressure and temperature measurements in chemically aggressive media, including strong bases, most acids and all automotive fluids. The PT1907 product family is based on the P1905 pressure sensor die used in various automotive applications. Similar to the P1905 die, the PT1907 die has outstanding overload capability and excellent long-term stability made possible by the NovaSensor SenStable<sup>®</sup> process. The integrated on-chip temperature sensor allows for high accuracy measurement of temperature. This data can be used to improve the accuracy of the pressure sensor in the operating temperature range.

### Features

- Pressure Ranges: 60, 120, 180, 300, 450, 600 and 1000 PSIA
- Operating Temperature Range: -40°C to 150°C
- Harsh media compatibility
- High Sensitivity Pressure Sensor: Typical span 160mV
- High Sensitivity Temperature Sensor: Typical span 410mV
- Excellent long-term stability and repeatability (typically <0.1%/year)
- Small Nonlinearity Error: Pressure <0.1% span (typically); Temperature <0.5°C (typically)
- Practically no dependence of temperature sensor output on pressure (<0.2% FSO)
- High Resolution: Pressure 18 bit, Temperature 14 bit (0.01°C). Resolution may be affected by signal processing by ASIC.
- Die Dimensions (L x W x H):
  - 1.9 mm x 1.9 mm x 1.6 mm (with glass)
  - 2.0 mm x 2.0 mm x 0.8 mm (without glass)
- Layout of bond pads allows for wire bonding, either to only one side or two sides of the die

### Applications

- Automotive Systems
- Process Control Systems
- Aerospace
- Pressure and temperature measurements in aggressive media



PT1907 with glass pedestal



PT1907 without glass pedestal

### Related Downloads:

[NovaSensor PT1907 Datasheet](#)