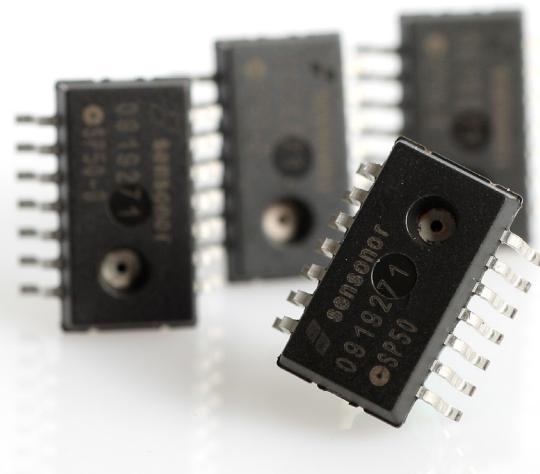


# BAROMETRIC PRESSURE SENSOR

80 to 120 kPa (11.6 to 17.4 psi)

## Features

- **Absolute pressure sensor for barometric pressure measurements**
- **High reliability and low drift over lifetime**
- **High media compatibility**
- **Backside media access**
- **Wide temperature operating range**
- **Robust miniature surface mount package**
- **Electrical connection on one side of package**
- **Tube connection option**



## Description

The SP50-B uncompensated piezoresistive pressure sensor is designed for affordable and reliable barometric pressure measurements in a broad range of industrial applications and designs. The design consists of a bulk micromachined pressure sensor die mounted in a surface mount package.

SP50-B has excellent media compatibility due to the patented triple stack sensor design with buried backside piezoresistive elements. With the backside media access, the piezo resistors will not come in direct contact with the measurement media. The design improves stability and sensor lifetime compared to many traditional sensor designs.

The design and performance of SP50-B makes it ideal for high accuracy measurements, also in harsh environments. The long term stability is outstanding and has been proven in applications during a period of more than 10 years.

SP50-B is packaged in a proven 14 pin, SOIC package that can be handled by automatic production lines.

The sensor can be connected to passive compensation and/or signal conditioning as required for a given application.

The SP50-BT version has a tube connection to ease pressure connection.

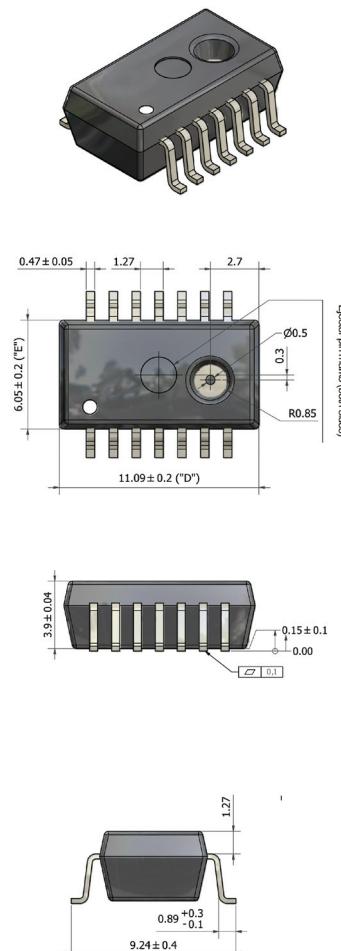
**SP50-B**  
**SP50-BT**

## GENERAL CONDITIONS

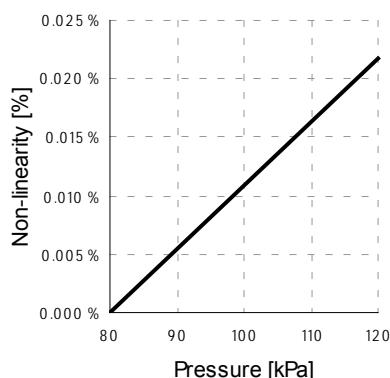
Parameter	Min	Typ	Max	Unit	Comments
Operating supply voltage		5.0		V	
Operating temperature	-40		125	°C	
Operating pressure	80		120	kPa	Absolute pressure
Overload pressure	600			kPa	
Breakdown voltage		14		V	At $I=5.0\mu A$
Leakage current		0.2		nA	At $V_{dd}=4.0V$

## FUNCTIONAL CHARACTERISTICS (@25°C, 5V)

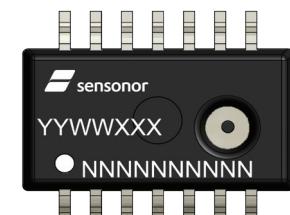
Parameter	Typ	Unit
<b>Bridge resistor</b>		
Bridge resistance	12	kΩ
Temp.coeff. bridge resistor (1 <sup>st</sup> order)	1.5	10 <sup>-3</sup> /°C
Temp.coeff. bridge resistor (2 <sup>nd</sup> order)	8.2	10 <sup>-6</sup> /°C <sup>2</sup>
Common mode voltage	0.5*V <sub>dd</sub>	V
<b>Sensitivity</b>		
Sensitivity	128	µV/VkPa
Temp.coeff. sensitivity drift (1 <sup>st</sup> order)	-2.0	10 <sup>-3</sup> /°C
Non linearity	See separate chart	%FSO
<b>Zero point</b>		
Zero point	-5.1/7.2	mV/V
Temp.coeff. zero point drift (1 <sup>st</sup> order)	±94	µV/V/°C



## NON-LINEARITY



## PIN OUT AND LASER MARKING



YYWWXXXX : Lot number  
NNNNNNNNNNNN: Product name

## PINOUT TABLE    TUBE CONNECTION OPTION

1	NC
2	NC
3	PP
4	PN
5	VDD
6	NEPI
7	VSS
8	VSS
9	NC
10	NC
11	NC
12	NC
13	NC
14	NC



## ORDERING INFORMATION

Description	Model
Delivered on blister tape	SP50-B
With tube connection	SP50-BT

## CONTACT INFORMATION

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