



# P1302

## NovaSensor Low Pressure Silicon Pressure Sensor Die

### Features

- High reliability, solid state silicon pressure sensors
- Available in differential version
- Standard pressure ranges: 2.5 KPa (10 inH<sub>2</sub>O), 7 KPa (1 psi)
- Nonlinearity < 0.25% FSO
- 5X overpressure limit

### Applications

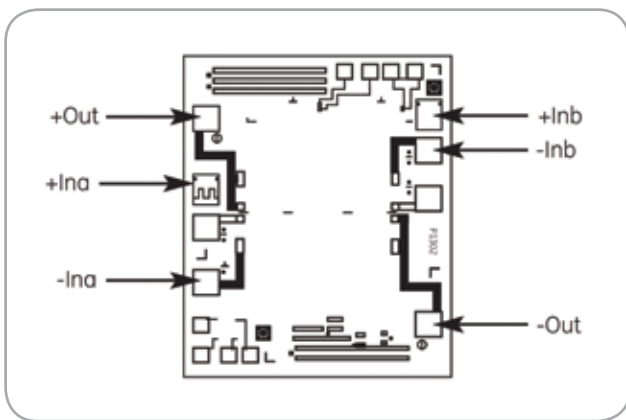
- Process control systems
- HVAC
- Respirators
- Cabin pressure

# P1302 Specifications

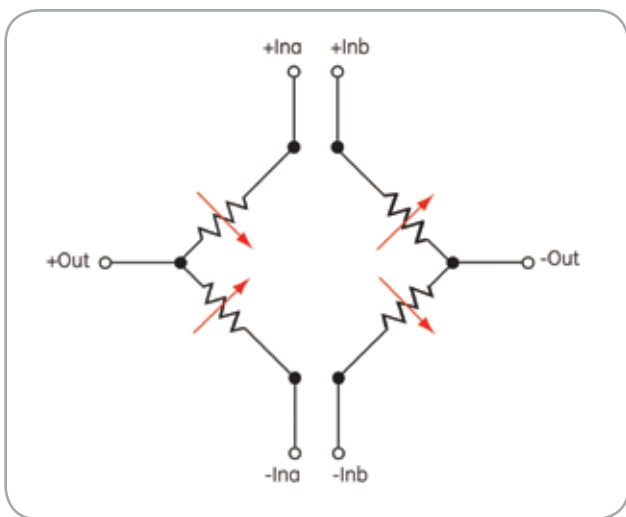
## Description

The P1302 piezoresistive pressure sensors are offered in a miniature 2.7 mm x 3.2 mm ( 0.10 in x 0.12 in ) die. When excited with 1.5 mA, the P1302 produces a millivolt output that is proportional to input pressure. The P1302 is available as a differential and gage sensor. With NovaSensor's SenStable® process, the P1302 will provide very good long-term stability and excellent repeatability.

## Schematic Diagrams



Die dimensions: 2.7 mm x 3.2 mm x 0.4 mm  
(0.10 in x 0.12 in x 0.02 in)



P1302 schematic diagrams

## Die Height (H)

No glass 0.4 mm  
33 mil 1.2 mm  
93 mil 2.8 mm

Parameter	Value	Units	Notes
<b>General</b>			
Pressure Range	2.5	KPa	10 inH <sub>2</sub> O
	7	KPa	1 psi
<b>Electrical @ 25°C (72°F) unless noted</b>			
Excitation	1.5	mA	10 VDC Maximum
Input Impedance	5000±20%	Ω	
Output Impedance	5000±20%	Ω	
<b>Environmental</b>			
Temperature Range			
Operating	-40 to 125	°C	(-40°C to 257°F)
Storage (undiced)	-55 to 150	°C	(-55°C to 302°F)
<b>Mechanical</b>			
Weight	0.04	g	(0.00008 lb)
Media Compatibility	Clean dry air, non-corrosive gases		

<b>Performance Parameters (1)</b>			
	Value (6)	Units	Notes
Zero Offset	±75	mV	1
Full Scale Output (FSO)	40 to 120	mv	2.5 kPa, 7
Full Scale Output (FSO)	75 to 200	mv	7 kPa
Linearity (7 kPa)	±0.25	%FSO	2
Linearity (2.5 kPa)	±0.5	%FSO	2
Pressure Hysteresis	±0.2	%FSO	
Temperature Coefficient of Zero	±30	µV/V/°C	3
Temperature Coefficient of Resistance	0.29	% /°C	3
Temperature Coefficient of Sensitivity	-0.2	%FSO/°C	3, 6
Thermal Hysteresis of Zero	0.25	%FSO	3

- 0 KPaA for absolute sensors, 0 KPaG for differential or gage sensors.
- Best fit straight line.
- Typical value between 0°C and 70°C (32°F and 158°F).
- Typical value over one year.
- All values measured at 25°C (77°F) and 1 mA excitation, unless otherwise noted.
- 51445 TCS -25% FSO / °C.
- 51443 FSO: 80 - 120 mV.

## Shipping and Handling

All wafers are shipped in protective containers. The wafers are sawn on sticky tape with rings. All wafers are electrically probed and visually inspected. Samples from each wafer verify offset, FS output, and linearity. Electrical rejects are inked with red dots. Visual rejects are inked with black or blue dots. Each wafer will have the following information: Lot number, wafer number, device number, and the number of good dice.

## Warranty

NovaSensor warrants its products against defects in material and workmanship for 12 months from the date of shipment. Products not subjected to misuse will be repaired or replaced. NovaSensor reserves the right to make changes without further notice to any products herein. NovaSensor makes no warranty, representation or guarantee regarding the suitability of its products for any particular application. NovaSensor does not assume any liability arising out of the application or use of any product or circuit and specifically disclaims, and all liability, without limitation consequential or incidental damages. The foregoing warranties are exclusive and in lieu of all other warranties, whether written, oral, implied or statutory. No implied statutory warranty of merchantability or fitness for a particular purpose shall apply.

## Ordering Information

<b>Part Number</b>	<b>Description</b>
51317	2.5 KPa D/G (10 in H <sub>2</sub> O), no glass
51318	7 KPa D/G (1 psi), no glass
51444	7 KPa D/G (1 psi), 93 mil glass
51445	2.5 KPa D/G, 93 mil glass
51433	2.5 KPa D/G, no glass

*Minimum Release Quantity: Approximately 400 die (1 wafer)*

