



# P1301

## Low Pressure Silicon Pressure Sensor Die

NovaSensor P1301 Low Pressure Die is a piezoresistive sensing element measuring 2.7mm x 3.2mm (0.11in x 0.13in). When excited with constant voltage or constant current, it produces a milliVolt output proportional to input pressure. Manufactured with NovaSensor SenStable<sup>®</sup> process, P1301 die provides excellent long term stability and repeatability. The die can be used in differential and gauge pressure sensors.

### Features

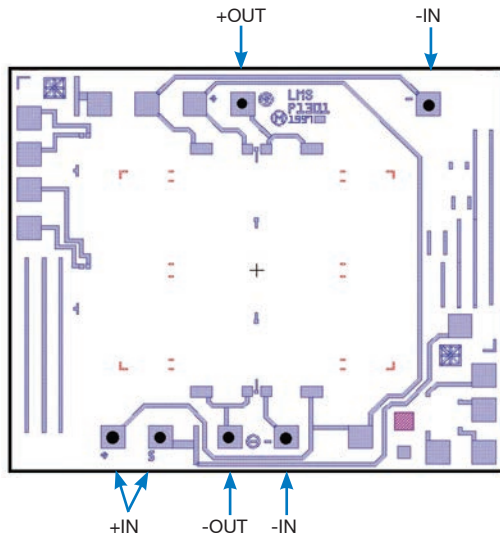
- High Reliability
- Available Versions: Differential / Gauge
- Standard Pressure Ranges: 1 psi (6.9kPa), 2.5psi (17.2kPa), 5psi (34.5kPa)
- Nonlinearity: <0.25%, <0.5% FSO
- Overpressure Limit: 15psi

### Applications

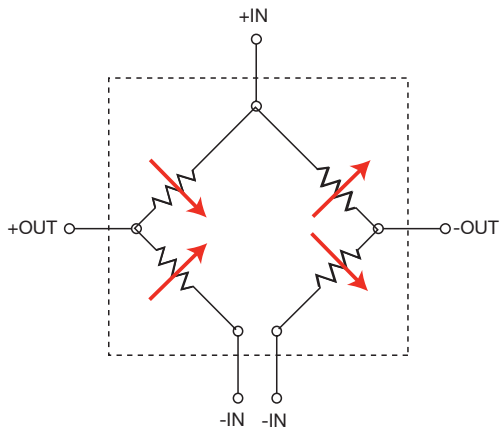
- Process control systems
- Pneumatic controls
- Biomedical instruments
- Hydraulic systems

# P1301 Specifications

## P1301 Schematic Diagrams



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



### Die Height (H)

2.0mm with 63 mil glass  
2.8mm with 93 mil glass

Parameter	Value	Units	Notes
<b>General</b>			
Pressure Range	1	psi	6.9kPa
	2.5	psi	17.2kPa
	5	psi	34.5kPa
<b>Electrical @ 25°C (72°F) unless noted</b>			
Excitation	1.5	mA	10VDC 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 <sup>(5)</sup></b>			
	Value <sup>(6)</sup>	Units	Notes
Zero Offset	±75	mV	1
Full Scale Output (FSO)	80 to 120	mv	1psi
Full Scale Output (FSO)	140 to 300	mv	2.5,5psi
Linearity (5psi)	±0.25	%FSO	2
Linearity (1,2.5psi)	±0.5	%FSO	2
Pressure Hysteresis	±0.1	%FSO	
Temperature Coefficient of Zero	±30	μV/V/°C	3
Temperature Coefficient of Resistance	0.36	%/°C	3
Temperature Coefficient of Sensitivity	-0.21	%FSO/°C	3
Thermal Hysteresis of Zero	0.25	%FSO	3,7

- 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 1mA excitation, unless otherwise noted.
- 51445 TCS -0.25% FSO / °C.
- 0.5% FSO for 1psi range.

### 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 and visual rejects are marked with ink 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

Part Number	Description
51626	1 psi D/G, 63 mil glass
51315	2.5 psi D/G, 63 mil glass
51446	2.5 psi D/G, 93 mil glass
51316	5 psi D/G, 63 mil glass
51447	5 psi D/G, 93 mil glass

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

