



P1300 Low Pressure Sensor Die

Silicon Pressure Sensor Die

Features

- High reliability, solid state silicon pressure sensors
- Standard pressure ranges: 2.5 kPa (0.3 psi) and 7 kPa (1 psi)
- 5X Overpressure Limit

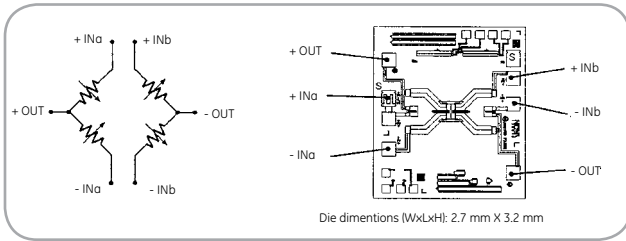
Applications

- Process control systems
- HVAC
- Cabin pressure, respirators

Description

The NovaSensor P1300 piezoresistive pressure Sensor Die is offered in a miniature 2.7 mm x 3.2 mm die. When excited with 1.5 mA, the P1300 produces a millivolt output that is proportional to input pressure. The sensor will operate with a constant voltage supply; however, the sensitivity will change $-0.2\%/^{\circ}\text{C}$. The P1300 is available as a differential and gauge sensor. NovaSensor's SenStable[®] process provides good long-term stability and excellent repeatability.

The die substrate must be connected to the positive power supply in order to maintain good long-term stability. To achieve this, +INa is connected to the sensor as well as the substrate pad, which is labeled with an "S."



Schematic and wirebond diagram

Die Height (H)

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

P1300 Low Pressure Sensor Die Specifications

Parameter	Value	Units	Notes	
General				
Pressure Ranges	2.5	KPa	»0.3 psi	
	7	KPa	»1 psi	
Maximum Overpressure	5X	rated pressure	rated pressure	
Electrical @ 25°C (77°F) unless otherwise stated				
Excitation	1.5	mA	10 VDC Max	
Input Impedance	5000 ±20%	Ω		
Output Impedance	5000 ±20%	Ω		
Environmental				
Temperature Range				
Operating	-40 to 125	°C	40°F to 257°F	
Storage	-55 to 150	°C	-67°F to 302°F (Note 6)	
Mechanical				
Weight	0.04	grams		
Media Compatibility	Clean, dry air noncorrosive gases			
Performance Parameters (Note 1, 4)				
Pressure Ranges	Units	2.5 kPa	7 kPa	
	Value	±75	±75	Notes
Zero Offset	mV	30 to 150	75 to 200	
Full Scale Output	mV	±0.5	±0.5	2
Linearity	% FSO	0.2	0.2	
Pressure Hysteresis	% FSO	30	30	3
Temperature Coefficient of Zero	μV/°C	.38	.38	3
Temperature Coefficient of Resistance	%/°C	-0.2	-0.2	3
Temperature Coefficient of Sensitivity	% FSO/°C	±0.25	±0.25	3, 4
Thermal Hysteresis of Zero	% FSO	0.2	0.1	5
Position Sensitivity	% FSO/g			

Notes:

1. All values measure at 25°C (77°F) and 1.5 mA excitation, unless otherwise noted.
2. Best fit straight line, $51314 \pm 0.25\%$ FSO
3. Typical between 0°C and 70°C (32°F and 158°F)
4. Die performance will vary depending on the die attach material. The die attach should be chosen to minimize the package stress transmitted to the sensor die.
5. Typical sensitivity with silicone gel on top of the die
6. Die only. Does not include tape, ring or case.

Ordering Information

Part Number	Description
51313	2.5 kPaD/G (No glass)
51314	7 kPaD/G (No glass)
51391	2.5 kPaD/G (33 mil glass)
51392	7 kPaD/G (33 mil glass)
51367	7 kPaD/G (93 mil glass)

Minimum release quality: 2 wafers or approximately 400 dice (1 wafer)

Amphenol
Advanced Sensors

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