



# P112 Medium Pressure Sensor Die

## Silicon Pressure Sensor Die

### Features

- High reliability, solid state silicon pressure sensors
- Available in absolute, differential and gauge versions
- Standard pressure ranges: 15, 30, 50, 100, 200, 300, and 500 psi (1.03, 2.06, 3.44, 6.89, 13.78, 20.68, and 34.47)
- Nonlinearity <0.25 % FSO
- Can be temperature compensated to run off a voltage or current supply.
- 2X overpressure limit

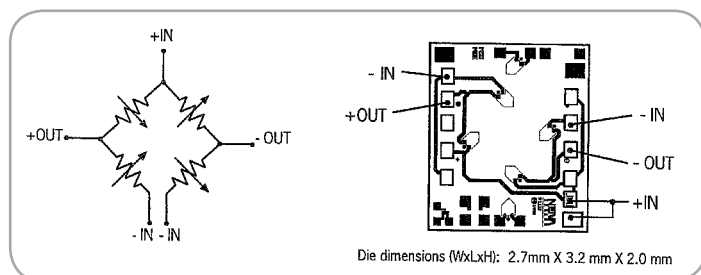
### Applications

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

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## Description

The NovaSensor P112 piezoresistive pressure sensor is offered in a miniature 2.7mm x 3.2 mm (0.10 in x 0.12 in) die. When excited with 1.0 mA, the P112 produces a millivolt output that is proportional to input pressure. The P112 is available as an absolute pressure sensor where the media pressure is referenced to an internal vacuum sealed in the die. The P112 is also available as a differential and gauge sensor. With NovaSensor's SenStable® process, the P112 will provide very good long-term stability and excellent repeatability. With NovaSensor's "flat process," the P112 can be temperature compensated for either a constant current or a constant voltage power supply.



Schematic and wirebond diagram

## P112 Medium Pressure Sensor Die Specifications

Parameter	Value	Units	Notes
<b>General</b>			
Pressure Ranges	15	psi	≈103 kPa
	30	psi	≈207 kPa
	50	psi	≈345 kPa
	100	psi	≈689 kPa
	200	psi	≈1379 kPa
Maximum Overpressure	2X	rated pressure	
<b>Electrical @ 25°C (77°F) unless otherwise stated</b>			
Excitation	1.0	mA	10 VDC Max
Input Impedance	5000 ±20%	ohms	
Output Impedance	5000 ±20%	ohms	
<b>Environmental</b>			
Temperature Range			
Operating	-40 to 125	°C	40°F to 257°F
Storage	-55 to 150	°C	-67°F to 302°F (Note 6)
<b>Mechanical</b>			
Weight	0.04	grams	
Media Compatibility	Clean, dry air noncorrosive gases		
<b>Performance Parameters (Note 5)</b>			
	Units	Value (5)	Notes
Zero Offset	mV	±25	1
Full Scale Output	mV	85 to 127	
Linearity	%FSO	±.25	2
Pressure Hysteresis	%FSO	0.05	
Temperature Coefficient of Zero	μV / V / °C	30	3
Temperature Coefficient of Resistance	% / °C	0.38	3
Temperature Coefficient of Sensitivity	%FSO / °C	-0.19	3
Thermal Hysteresis of Zero	%FSO	0.2	3
Long Term Stability of FSO	% FSO	0.2	4

### Notes:

- 0 kPaA for absolute sensors, 0 KPaG for differential or gauge 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
- Sensor die only. Does not include ring, tape or case.

## Ordering Information

Pressure	Gauge	Absolute
15 psi	51155	51156
30 psi	51206	51247
50 psi	51157	51158
100 psi	51159	51160
200 psi	51212	51269

Minimum release quantity: 2 wafers or approximately 900 dice.

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