



P883

Medium Pressure Silicon Pressure Sensor Die

Description

The NovaSensor P883 utilizes four matched valued piezoresistors in a wheat stone bridge circuit . When excited (1.0 mA), the P883 produces a differential millivolt output signal that is directly proportional to the pressure applied. Available as gage (differential) or absolute, the P883 is also designed for reduced temperature hysteresis over a wide temperature range. All die are visually inspected and are electrically probed to verify zero offset . Samples from each wafer are tested for sensitivity, linearity and temperature coefficients.

Applications

- Level Sensing
- Automotive Systems
- Process Control
- Pneumatic Controls
- Hydraulic Systems

Features

- High Reliable, Solid State
- Available in absolute or gage (differential)
- Available with varying glass thickness or no glass at all (consult NovaSensor for more information)
- Designed to be temperature compensated using constant current or voltage
- NovaSensor®'s proprietary SenStable® process produces excellent long term stability

P883 Specifications

Parameter	Value	Units	Notes
General			
	5	psi	
	15	psi	
	30	psi	
	70	psi	
	150	psi	
	300	psi	
Maximum Pressure	3 x	rated pressure	
Environmental			
Electrostatic damage (ESD) Class 1			MIL-STD 883 method 3015
Temperature Range			
Operating	-40 to 125	°C	-40°F to 257°F
Storage	-55 to 150	°C	-67°F to 302°F
Mechanical (1)			
Weight	0.04 grams		
Media Compatibility	Clean, dry air, and noncorrosive gases		
Electrical @ 25°C (72°F), 1.0mA, and note 6 unless otherwise stated			
Excitation	1.0	mA	10 VDC max.
Input Impedance	5000 ± 20%	Ω	
Output Impedance	5000 ± 20%	Ω	
Zero Offset	±10	mV/V	1
Full Scale (FS) Output	133 ±33	mV	
Linearity	0.25	%FSO	2, 5
Zero Pressure Repeatability	0.1	%FSO	1
Thermal Coefficient of Zero	25	μV/V/°C	3
Thermal Coefficient of Resistance	0.38	%/°C	3
Thermal Coefficient of Sensitivity	-0.19	%FSO/°C	3
Zero Thermal Repeatability	0.50	%FSO	4

1. 0 kPa for absolute sensors, 0 kPaG for differential or gage sensors.
2. Best fit straight line.
3. Between 32°F and 158°F (0°C and 70°C)
4. Between -40°F and 257°F (-40°C and 125°C)
5. 5 psig (0.34 bar) linearity: 0.30 %FSO best fit straight line.

Shipping and Handling

All wafers are sawn on sticky tape with plastic rings and are shipped in protective plastic containers. Electrical rejects and visual rejects are inked. Each wafer will have the following information: Lot #, Wafer #, Part #, and the number of good (yielded) die.

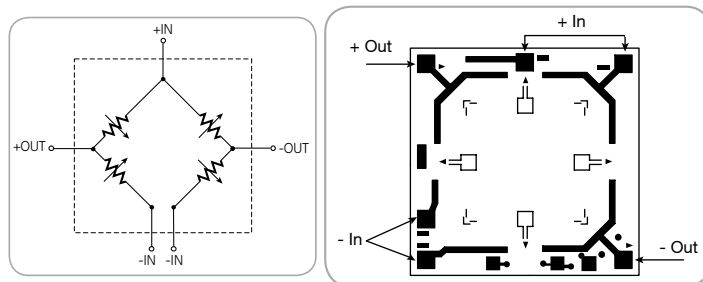
Warranty

NovaSensor warrants its products against defects in material and workmanship for 12 months from date of shipment. Products not subjected to misuse will be repaired or replaced. THE FOREGOING IS IN LIEU OF ANY OTHER EXPRESSED OR IMPLIED WARRANTIES. 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, nor does NovaSensor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims all liability, including without limitation consequential or incidental damages.

Ordering Information

Part Number—63 mil Glass (Standard)		Part Number—93 mil Glass (Optional)	
51322	5 psig (0.34 bar)	51333	5 psig (0.34 bar)
51323	15 psig (1.03 bar)	51334	15 psig (1.03 bar)
51324	30 psig (2.06 bar)	51335	30 psig (2.06 bar)
51325	70 psig (4.82 bar)	51336	70 psig (4.82 bar)
51326	150 psig (10.34 bar)	51337	150 psig (10.34 bar)
51327	300 psig (20.64 bar)	51338	300 psig (20.64 bar)
51328	15 psia (1.03 bar)	51339	15 psia (1.03 bar)
51329	30 psia (2.06 bar)	51340	30 psia (2.06 bar)
51330	70 psia (4.82 bar)	51341	70 psia (4.82 bar)
51331	150 psia (10.34 bar)	51342	150 psia (10.34 bar)
51332	300 psia (20.64 bar)	51343	300 psia (20.64 bar)

Minimum release Quantity: Two wafers or approximately 1600 die



Die dimensions with 63 mil Glass:
0.08 in x 0.08 in x 0.08 in (2.1 mm x 2.1 mm x 2.0 mm)

P883 schematic and wirebond diagram

Amphenol
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www.amphenol-sensors.com

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