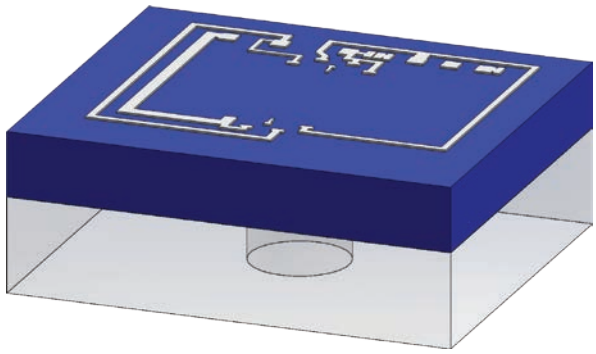
NOVA SENSOR

P2701

High Sensitivity Low Pressure Sensor Die



The P2701 product is high sensitivity low pressure sensor die. When excited with 5.0 V, the P2701 die produces a millivolt output that is proportional to input pressure. P2701 die is usable over a wide pressure range of 0.5 kPa (2" H_2O) to 7.5 kPa (30" H_2O). With NovaSensor's SenStable® process, the P2701 die provides excellent long-term stability and repeatability.

Applications

- Respiratory ventilators
- Sleep apnea
- Spirometers
- HVAC

Features

- High sensitivity solid state silicon pressure sensor die
- Available as differential / gauge version
- Standard pressure ranges: 0.5 kPa to 7.5 kPa
- Available for other low pressure ranges as requested
- Nonlinearity < 0.15 %FSO BFSL
- Over 5x proof pressure and 100x burst pressure

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P2701 Specifications

Product Number	Full Pressure	Proof Pressure	Burst Pressure	Sensitivity (mV/V/kPa)
51604	0.5 kPa	25 kPa	500 kPa	4.75 ± 1.25
51603	1.25 kPa	25 kPa	500 kPa	4.5 ± 1
51562	2.5 kPa	35 kPa	700 kPa	3.5 ± 1.5
51602	7.5 kPa	35 kPa	700 kPa	2.5 ± 1

Parameter	Value	Units	Notes
Electrical @ 72°F (25°C) unless noted			
Excitation (DC)	5	Volt	10VDC
Bridge Resistance	5000 ±20%	Ω	Maximum
Environment			
Operating Temp.	-40 to 125	°C	
Storage Temp.	-55 to 150	°C	
Mechanical			
Dimensions	2.4 x 2.0 x 0.9	mm	L x W x H
Media Compatibility	Clean dry air, non-corrosive gases		

Performance Parameters (1)	Value for 51604, 51603	Value for 51562, 51602	Units	Notes
Zero Offset	± 10	± 10	mV/V	2
Pressure Non Linearity (BFSL)	± 0.25	± 0.15	%FSO	3
Pressure Hysteresis	0.1	0.1	%FSO	4
Temperature Coefficient of Zero	± 12	± 3	µV/V/°C	4, 5
Temperature Coefficient of Resistance	0.08	0.08	%/°C	4, 5
Temperature Coefficient of Sensitivity	-0.19	-0.19	%/°C	4, 5
Zero Thermal Hysteresis	<10	<10	µV/V	4, 5

1. All values measured at 25°C and 5 VDC excitation, unless otherwise noted. Samples from each wafer are used to verify bridge resistance, offset, span, linearity and die performance in the temperature range between 0°C to 70°C.
2. Parameter is 100% measured at wafer probing at normal conditions.
3. Best fit straight line. Measured in 0 to 2.5 kPa range for 51562, 51603 and 51604. Measured in 0 to 7.5 kPa range for 51602.
4. Typical value.
5. Between 0°C to 70°C.

P2701 Specifications

Shipping and Handling

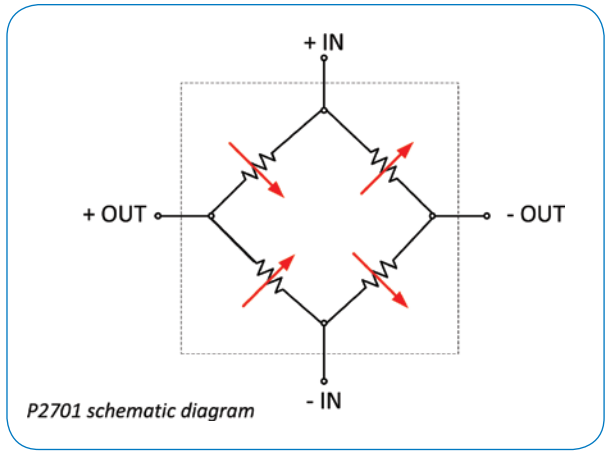
All wafers are shipped in protective containers. The wafers are sawn on sticky tape with plastic rings or metal frames. All wafers are electrically probed and visually inspected. Electrical rejects and visual rejects are marked with colored dots. Each wafer will have the following information: Lot number, wafer number, device part number and the number of good die.

Ordering Information

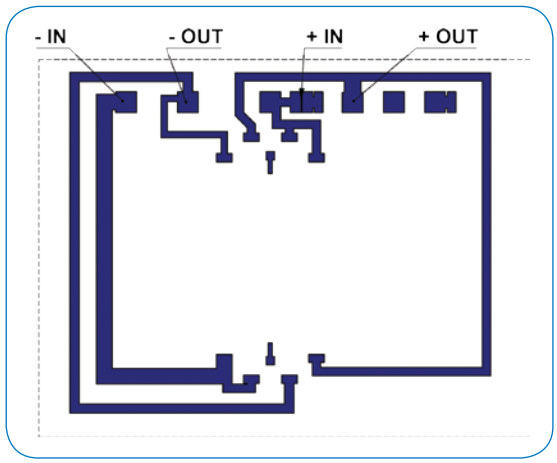
Contact Amphenol Sales

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 of fitness for a particular purpose shall apply.



P2701 schematic diagram



P2701 Bonding Diagram
Bond pad size L x W (0.1 mm x 0.1 mm)

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