

NPP-301 Series Surface Mount Pressure Sensor



Features

- Low-cost surface mount package: SO-8
- Wide operating temperature range: -40°F to 257°F (-40°C to 125°C)
- Static accuracy <0.20% FSO maximum
- Suitable for automated component assembly
- Four element Wheatstone bridge configuration for circuit design flexibility
- Solid-state reliability
- 100, 200 and 700 kPa absolute pressure ranges available

Applications

- Automotive tire pressure
- Pneumatic controls
- Pressure switches and controllers
- Altimeters and barometers
- Cable leak detection
- Consumer appliances
- Portable gauges and manometers

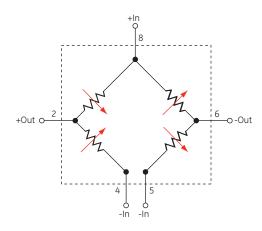


NPP-301 Series Specifications

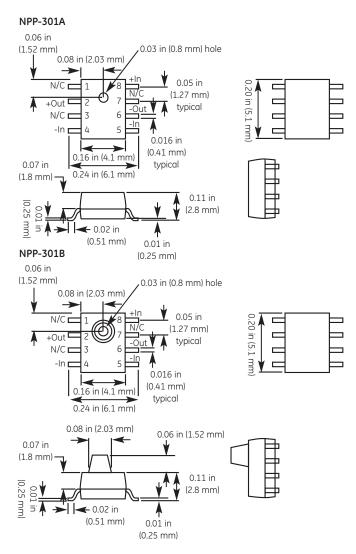
Description

The NPP-301 Series features silicon pressure sensors in surface mount packages. An ultra-small Silicon Fusion Bonded (SFB), ultra-high stability SenStable® piezoresistive chip from NovaSensor is placed in a plastic package that exploits high volume, leadframe package technology to bring forth a low-cost sensor alternative to the OEM user.

The NPP-301 Series produces a voltage output that is linearly proportional to the input pressure. The user can provide NPP Series products with signal conditioning circuitry to amplify the output signal or to maximize OEM value added. The NPP-301 Series is compatible with most non-corrosive gases and dry air.



NPP-301 Series schematic diagram



NPP-301 Series package diagram

NPP-301 Series Specifications

(-40°C to 125°C)

(0.10 g)

Parameter	Value	Units	Notes				
General							
Pressure Range	100	kPa	≈15 psi				
	200	kPa	≈30 psi				
	700	kPa	≈100 psi				
Maximum Pressure	3x		rated pressure				
Electrical @ 77°F (25°C) unless otherwise stated							
Excitation	3.0	V	10 VDC maximum				
Input Impedance	5,000 ±20%	Ω					
Output Impedance	5,000 ±20%	Ω					
Environmental							
Electrostatic	Class 1		<u> </u>				

lb

–40°F to

257°F

0.0002

Damage (ESD)

Operating Temperature

Range

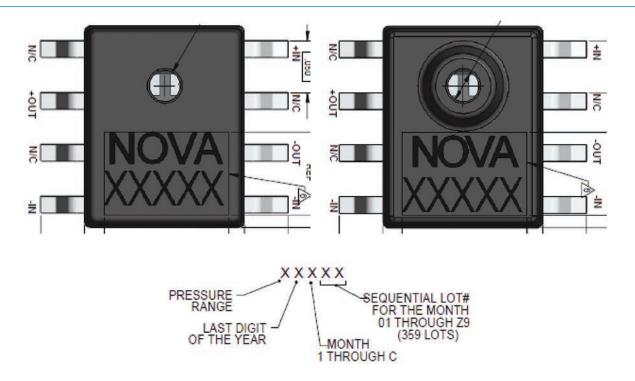
Mechanical (1)

Weight ≈

Parameter General	Value	Units	Notes
Media Compatibility	Clean, dry	air and non-cor	rosive gases

Parameter	Units	Minimum	Туре	Maximum	Notes			
Performance Parameters (Note 2)								
Offset	mV/V		±10					
Full Scale Output	mV		60 ±20					
Linearity	%FSO		±0.20		3			
Hysteresis and Repeatability	%FSO		0.1					
Thermal Coefficient of Zero	%FSO/°C		0.04		4			
Thermal Coefficient of Resistance	%/°C		0.3		4			
Thermal Coefficient of Sensitivity	%FSO/°C		-0.2		4			
Thermal Hysteresis of Zero	%FSO		0.1		5			
Long-Term Stability of FSO	%FSO		0.2		6			

- Standard IC industry bake operations should be used prior to surface mount operations. Consult NovaSensor for further information.
- 2. Values measured at 3 VDC and 77°F (25°C), unless otherwise noted.
- 3. Best fit straight line.
- 4. Typical coefficients, between 32°F to 158°F (0° to 70°C).
- 5. $32^{\circ}F$ to $158^{\circ}F$ (0° to $70^{\circ}C$).
- 6. Typical value over one year.



1st character: Pressure range: 5 = 15 psi, 3 = 30 psi, 0 = 100 psi 2nd character: Last digit of year of manufacture; i.e. 4 ==> 2014 3rd character: 1-9, A, B, C, where 1 = January and C= December 4th and 5th character: Work lot 01 to Z9 NPP-301B-100AT = 15 psi, so the marking will start with a "5" NPP-301B- 700AT = 100 psi, so the marking will start with a "0"