

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

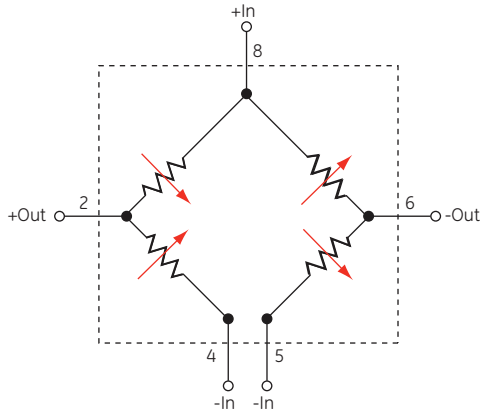
- Automotive tire pressure
- Pneumatic controls
- Pressure switches and controllers
- Altimeters and barometers
- Cable leak detection
- Consumer appliances
- Portable gauges and manometers

NPP-301 Series Specifications

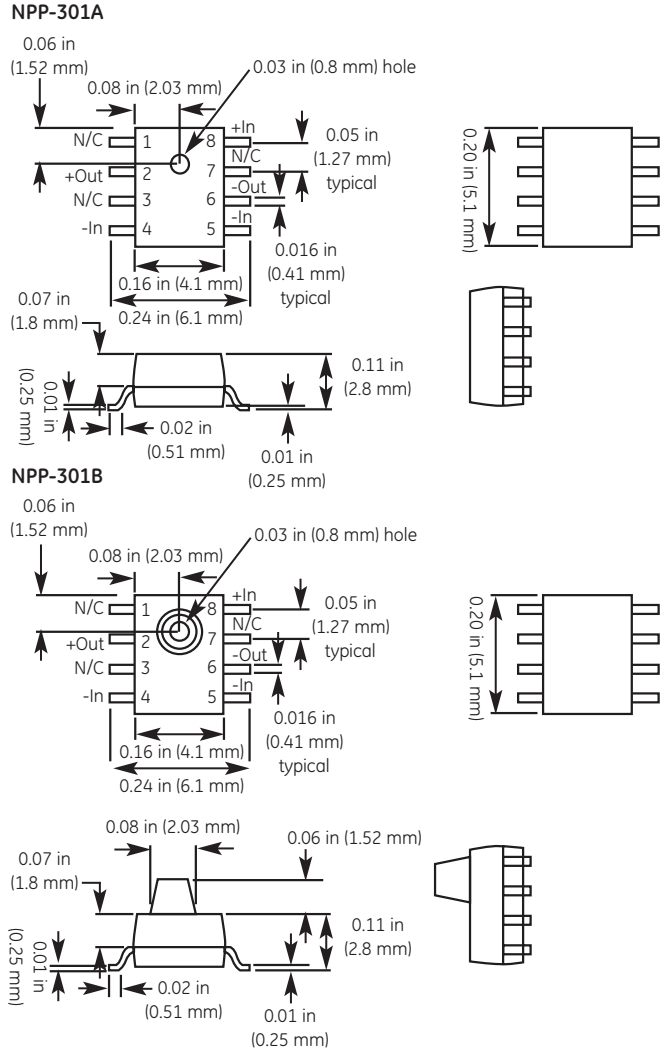
Description

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



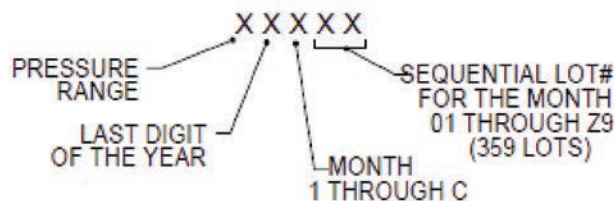
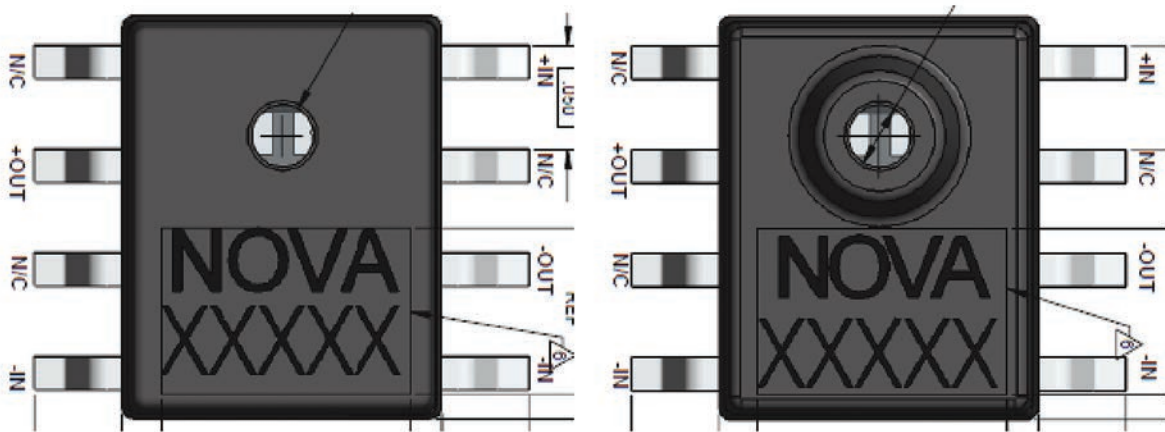
NPP-301 Series package diagram

NPP-301 Series Specifications

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 Damage (ESD)	Class 1		
Operating Temperature Range	-40°F to 257°F		(-40°C to 125°C)
Mechanical ⁽¹⁾			
Weight ≈	0.0002	lb	(0.10 g)

Parameter	Value	Units	Notes		
General					
Media Compatibility	Clean, dry air and non-corrosive gases				
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.
- Values measured at 3 VDC and 77°F (25°C), unless otherwise noted.
- Best fit straight line.
- Typical coefficients, between 32°F to 158°F (0° to 70°C).
- 32°F to 158°F (0° to 70°C).
- 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"

Ordering Information

The code number to be ordered may be specified as follows:

NPP	Code	Description	Shipping
↓	301A-100A	5 psia (1.03 bar), non-ported	IC tubes
	301A-200A	30 psia (2.06 bar), non-ported	IC tubes
	301A-700A	100 psia (6.89 bar), non-ported	IC tubes
	301A-100AT	15 psia (1.03 bar), non-ported	Tape and reel
	301A-200AT	30 psia (2.06 bar), non-ported	Tape and reel
	301A-700AT	100 psia (6.89 bar), non-ported	Tape and reel
	301B-100A	15 psia (1.03 bar), ported	IC tubes
	301B-200A	30 psia (2.06 bar), ported	IC tubes
	301B-700A	100 psia (6.89 bar), ported	IC tubes
	301B-100AT	15 psia (1.03 bar), ported	Tape and reel
	301B-200AT	30 psia (2.06 bar), ported	Tape and reel
	301B-700AT	100 psia (6.89 bar), ported	Tape and reel

NPP - ↓ Typical model number