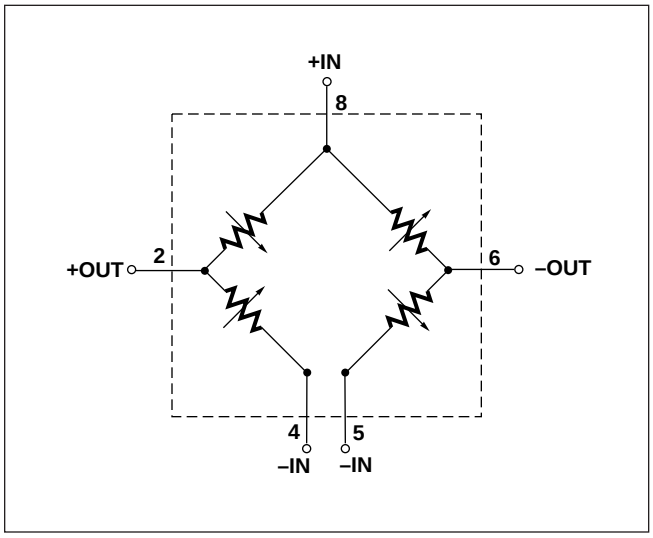
NPP-301 Series
Surface Mount Pressure Sensor

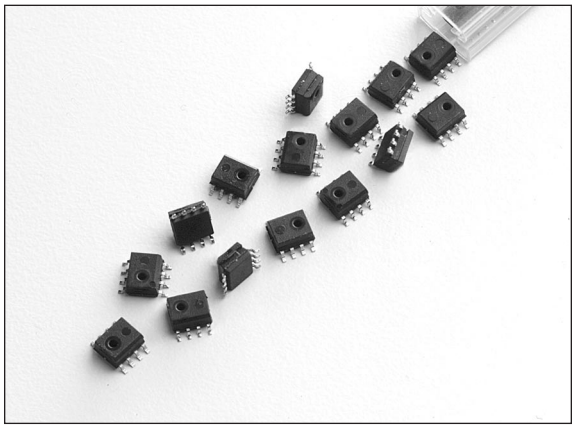
DESCRIPTION

The NPP Series features silicon pressure sensors in surface mount packages. An ultra-small Silicon Fusion Bonded (SFB), ultra-high stability SenStable® piezoresistive chip from Lucas 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.

With constant voltage excitation, the NPP-301 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 Series is compatible with most noncorrosive gases and dry air.

SCHEMATIC DIAGRAM





FEATURES

- ❑ Low-cost surface mount package: SO-8
- ❑ Wide operating temperature range: -40 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 Gages and Manometers

HOW TO ORDER

Part Number:	Description:
NPP-301-100A	15 psia, SO-8
NPP-301-200A	30 psia, SO-8
NPP-301-700A	100 psia, SO-8

Lucas VARITY

NPP-301 Specifications

PARAMETER	VALUE	UNITS	NOTES
GENERAL			
Pressure Range	100	kPa	≈ 15 psi
	200	kPa	≈ 30 psi
	700	kPa	≈ 100 psi
Maximum Pressure	3 x		rated pressure
ELECTRICAL @ 25°C (77°F) unless otherwise stated			
Excitation	3.0	V	10VDC max.
Input Impedance	5,000 ± 20%	Ω	
Output Impedance	5,000 ± 20%	Ω	
ENVIRONMENTAL			
Electrostatic Damage (ESD)	Class 1		
Operating Temperature Range	–40 to +125	°C	–40° to +257°F
MECHANICAL(1)			
Weight	≈ 0.10	grams	
Media Compatibility	Clean, dry air and noncorrosive gases		

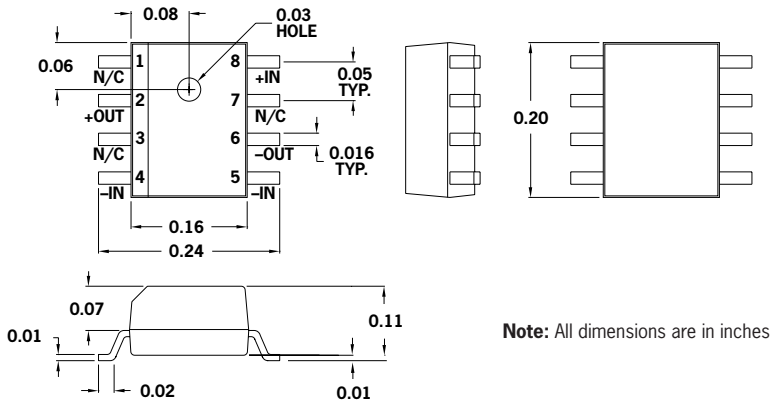
PERFORMANCE(2)

PARAMETER	UNITS	MIN.	TYP.	MAX.	NOTES
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		+0.30		4
Thermal Coefficient of Sensitivity	%FSO/°C		–0.20		4
Thermal Hysteresis of Zero	%FSO		±0.10		5
Long-Term Stability of FSO	%FSO		±0.20		6

Notes: 1. Standard IC industry bake operations should be used prior to surface mount operations. Consult factory for further information. 2. Values measured at 3VDC and 22°C, unless otherwise noted. 3. Best fit straight line. 4. Typical coefficients, between 0° and +70°C. 5. 0° to 70°C. 6. Typical value over one year.

PACKAGE DIAGRAM

ATTENTION
Static-Sensitive
Devices



Note: All dimensions are in inches

Sales Terms: Lucas NovaSensor standard sales terms apply. Prices and specifications are subject to change without notice.

Warranty: Lucas 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. Lucas NovaSensor reserves the right to make changes without further notice to any products herein. Lucas 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 and and all liability, including without limitation consequential or incidental damages.

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