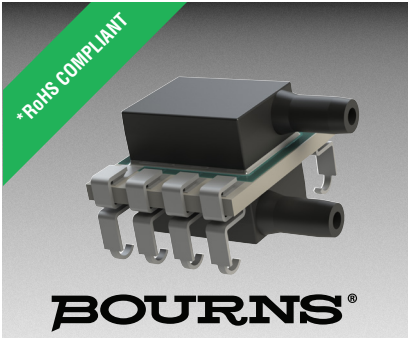


# PRELIMINARY



## Features

- Compensated analog output
- Ultra-low pressure sensing
- Gage and differential types
- For use in clean, dry air and non-corrosive gas environments
- Tape and reel packaging
- RoHS compliant\*

## Applications

- Industrial:
- HVAC systems
  - Process monitoring
  - Packaging automation
- \*\*Medical:
- Diagnostic equipment
  - Analysis equipment

## BPS110 Series - 12 mm Analog Low Pressure Sensor

### Electrical Characteristics

Supply Voltage (V <sub>s</sub> ) .....	2.7 V minimum, 5 V typical, 5.5 V maximum
Supply Current @ 5 V .....	1.25 mA minimum, 2 mA typical, 2.4 mA maximum
Output Current .....	1.9 mA
Minimum Output Load Resistance .....	5 kΩ minimum

### Performance Characteristics

Operating Temperature .....	-40 °C to +85 °C (-40 °F to +185 °F)
Storage Temperature .....	-55 °C to +100 °C (-67 °C to +212 °F)
Pressure Range .....	0.15 to 1.0 psi (10.3 to 68.9 mbar; 1.03 to 6.89 KPa; 4.2 to 27.7 in H <sub>2</sub> O)
Output .....	Amplified analog
DAC Resolution .....	12 bit
Ratiometric Output Range (V <sub>out</sub> ) .....	0.5 V to 4.5 % V <sub>s</sub>
Accuracy over 0 °C to 60 °C (+32 °F to +140 °F) .....	± 1.5 % FS
Lifetime Drift .....	± 0.5 % FS
Startup Time .....	8 ms maximum
Analog Update Time .....	25 ms typical
Sampling Range .....	200 Hz
Proof Pressure .....	5X full scale pressure
Burst Pressure .....	10 psi

### Product Characteristics

Media Compatibility .....	Non-corrosive dry gasses
Moisture Sensitivity Level .....	1
ESD Classification (HBM) .....	2 kV
Marking .....	<b>B</b> , model number, pressure, date code
Standard Packaging .....	250 pcs./reel
Weight .....	1.306 grams (0.046 oz)

### Transfer Function Formula

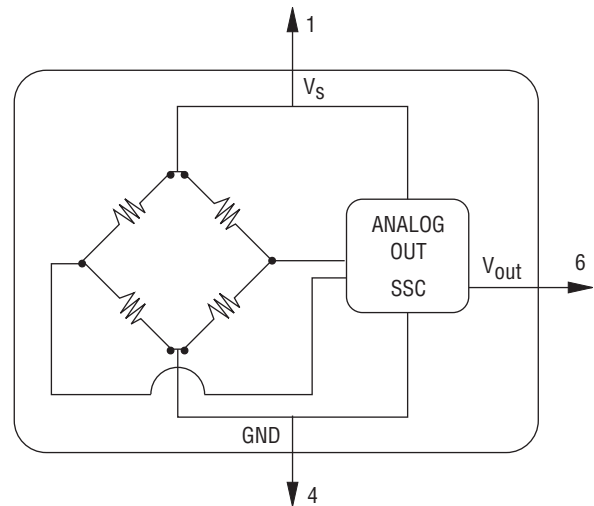
$$P_{\text{psi}} = (P_{\text{max}} - P_{\text{min}}) \cdot \left( \frac{V_{\text{out}} - V_{\text{minCompV}}}{V_{\text{maxCompV}} - V_{\text{minCompV}}} \right) + P_{\text{min}}$$

#### Where

- P<sub>psi</sub> = Measured Pressure in PSI
- P<sub>max</sub> = Maximum Pressure
- P<sub>min</sub> = Minimum Pressure
- V<sub>min</sub> = Minimum Voltage (Usually 0.5 V)
- V<sub>max</sub> = Maximum Voltage (Usually 4.5 V)
- V<sub>out</sub> = Output Voltage (Pin 6)

Consult factory for custom options such as supply voltage, temperature calibration range, output range accuracy specification, and update rate.

### Basic Circuit Schematic



Note: Power supply decoupling and output filtering included.

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

\*\* Bourns® products have not been specifically designed and tested for FDA Class III applications and equivalent applications covered by other regulatory authority such as the European Council, and their use in such applications is neither recommended nor supported.

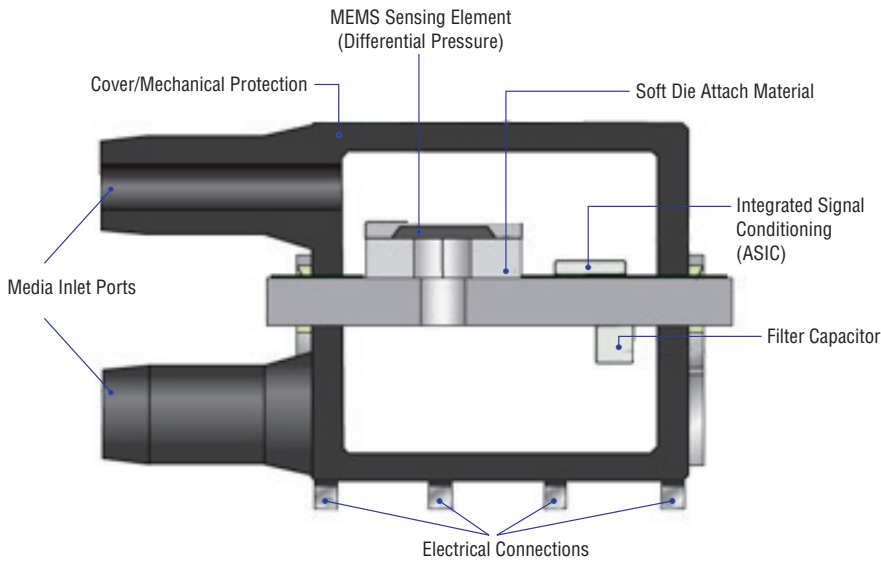
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

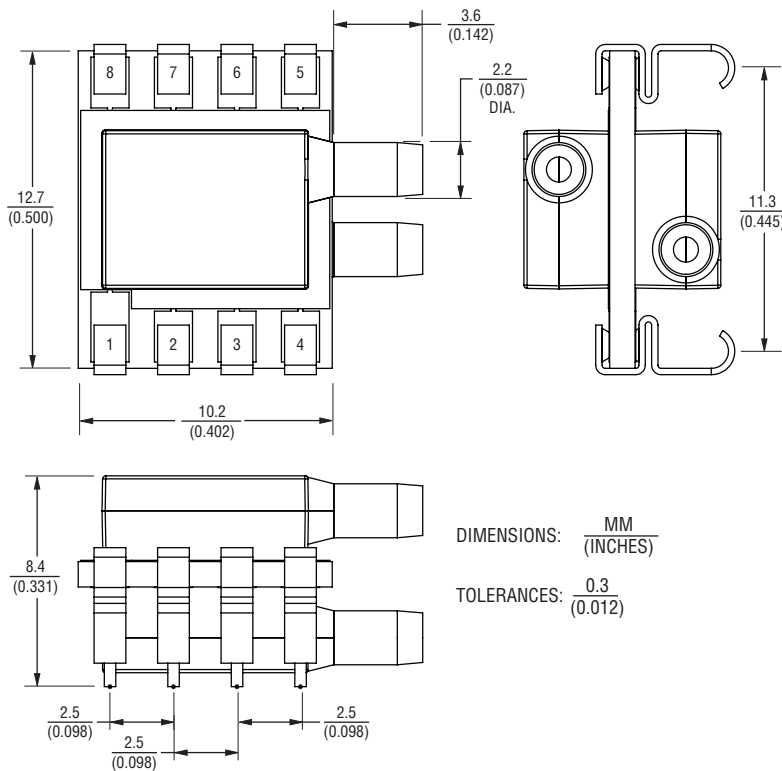
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# BPS110 Series - 12 mm Analog Low Pressure Sensor

## Cross Section



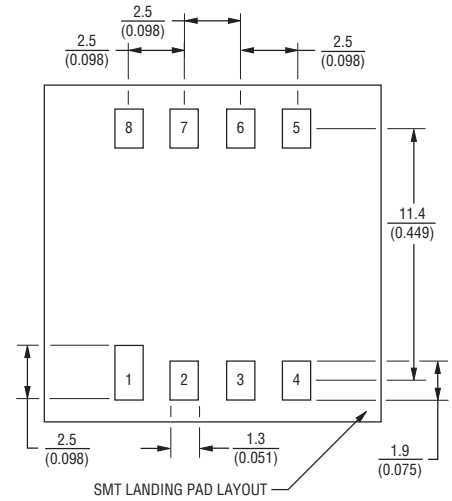
## Product Dimensions



## Terminal Assignment

DEVICE PINOUT	
P1	$V_s$
P2	N/C
P3	N/C
P4	Ground
P5	N/C
P6	$V_{out}$
P7	N/C
P8	N/C

## Recommended PCB Layout



Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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# BPS110 Series - 12 mm Analog Low Pressure Sensor

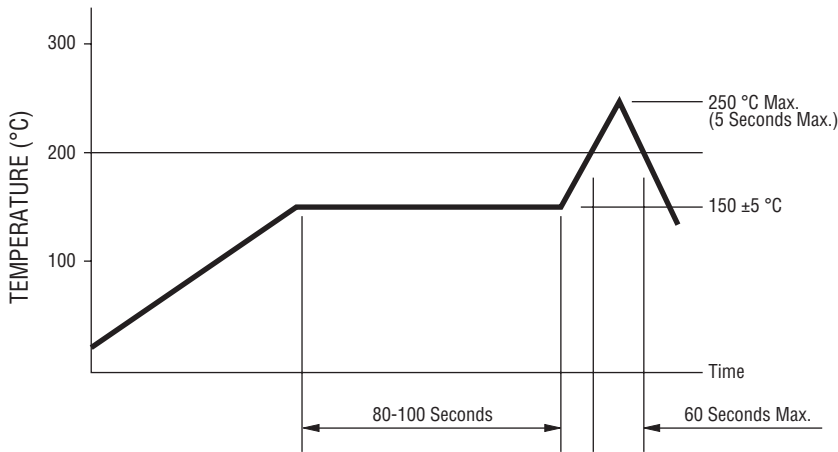
**BOURNS®**

## How To Order

**BPS110 - A G 0P15 - 2 D G**

Model Series \_\_\_\_\_  
 Analog Amplified \_\_\_\_\_  
 Media Compatibility \_\_\_\_\_  
 A = Air/Gas \_\_\_\_\_  
 Pressure Type \_\_\_\_\_  
 G = Gauge \_\_\_\_\_  
 D = Differential \_\_\_\_\_  
 Pressure (psi) \_\_\_\_\_  
 0P15 = 0.15 \_\_\_\_\_  
 0P30 = 0.30 \_\_\_\_\_  
 01P0 = 1.0 \_\_\_\_\_  
 Terminal Pins \_\_\_\_\_  
 2 = Surface Mount Terminals \_\_\_\_\_  
 Port Style \_\_\_\_\_  
 D = Dual Port, Horizontal \_\_\_\_\_  
 Packaging Designator \_\_\_\_\_  
 G = 250 pcs. per 13-inch Reel \_\_\_\_\_

## Solder Profile



Processing Method: Reflow soldering with infrared heat or forced air convection (only once).

### Notes:

1. No clean solder paste is recommended.
2. Aqueous wash is not recommended.
3. Use of water soluble soldering flux should be avoided due to possible corrosion.
4. Multiple passes through the soldering process is not recommended.

Specifications are subject to change without notice.

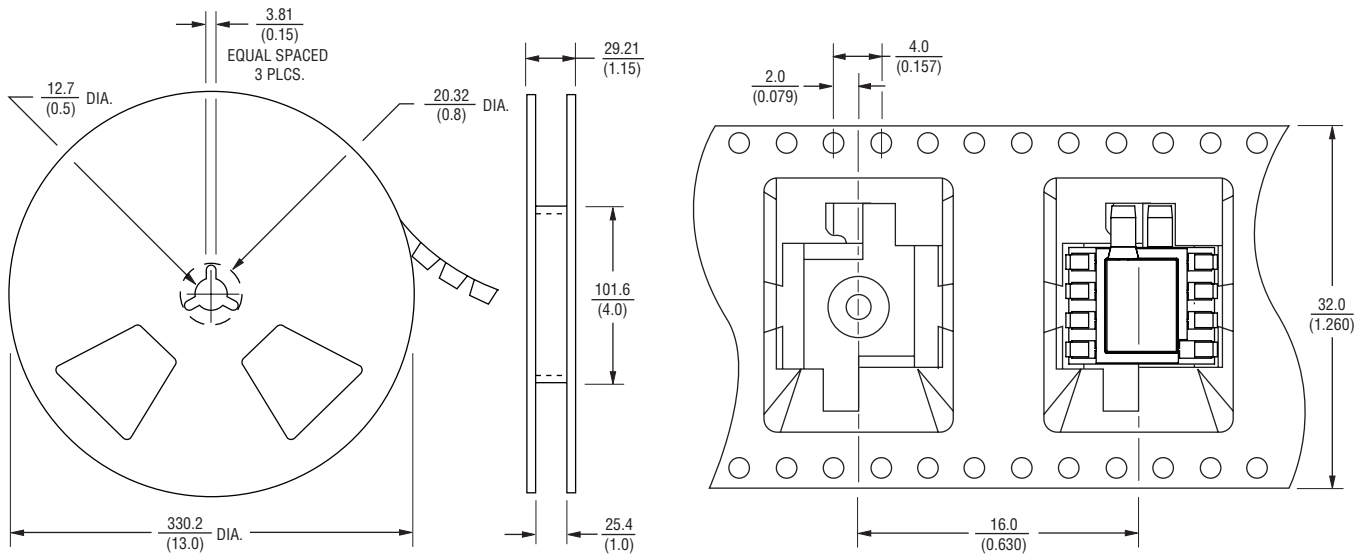
Users should verify actual device performance in their specific applications.

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# BPS110 Series - 12 mm Analog Low Pressure Sensor

## Packaging Specification

250 pieces per 13-inch reel.  
Meets specifications of EIA-481-1 or EIA-481-2.



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

TOLERANCES:  $\frac{0.25}{(0.010)}$

## **BOURNS®**

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