

## Features

- Compensated analog output
- Ultra-low pressure sensing
- Gauge 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 Devices (low/medium risk):

- 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> )***	5 % to 95 % V <sub>s</sub>
Accuracy @ 25 °C	±0.25 % FS
Total Error Band 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 Rate	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	Partial model number, media compatibility, pressure type, pressure rating, lot code
Standard Packaging	250 pcs./reel
Weight	1.306 grams (0.046 oz)

## Transfer Function Formula

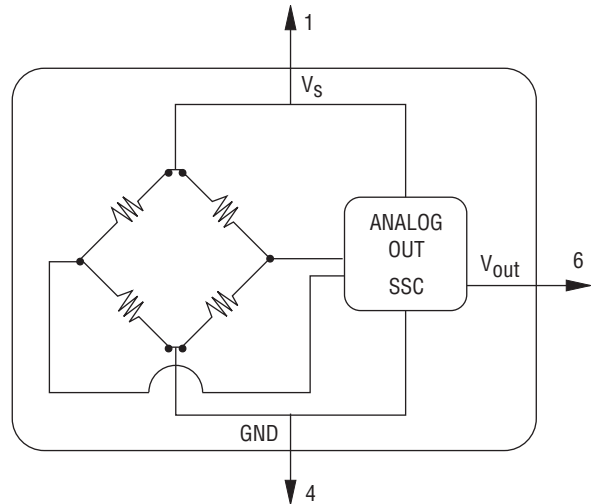
$$P_{\text{psi}} = (P_{\text{max}} - P_{\text{min}}) \cdot \left( \frac{V_{\text{out}} - V_{\text{minComp}}}{V_{\text{maxComp}} - V_{\text{minComp}}} \right) + P_{\text{min}}$$

### Where

- P<sub>psi</sub> = Measured Pressure in PSI
- P<sub>max</sub> = Maximum Pressure
- P<sub>min</sub> = Minimum Pressure
- V<sub>minComp</sub> = Minimum Voltage (Usually 0.5 V)
- V<sub>maxComp</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.

\* RoHS3 Directive 2015/863 Amendments of Annex II on March 31, 2015

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\*\*\* 5 V input voltage.

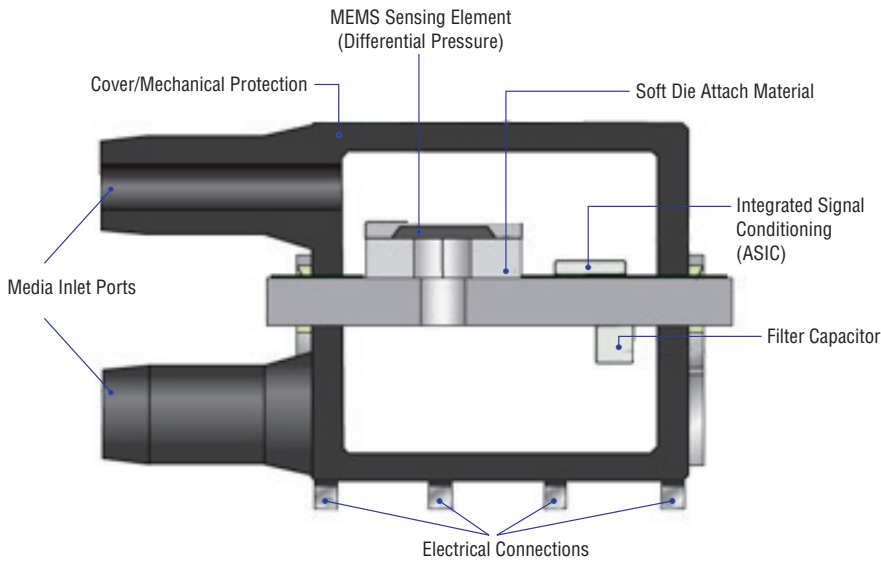
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

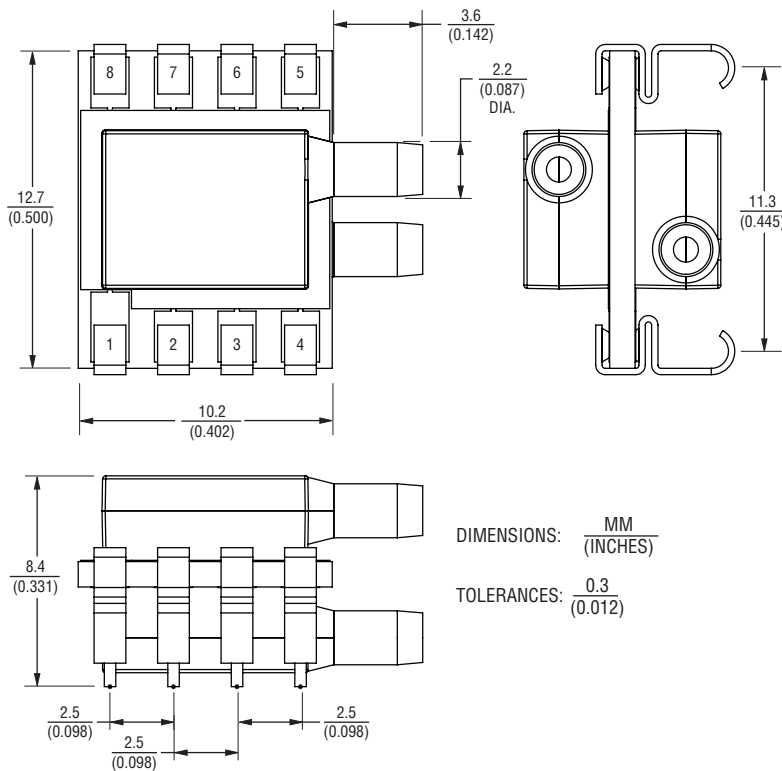
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# BPS110 Series - 12 mm Analog Low Pressure Sensor

## Cross Section



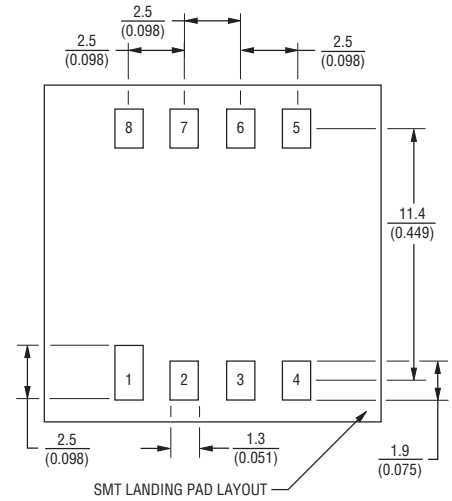
## Product Dimensions



## 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



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# BPS110 Series - 12 mm Analog Low Pressure Sensor

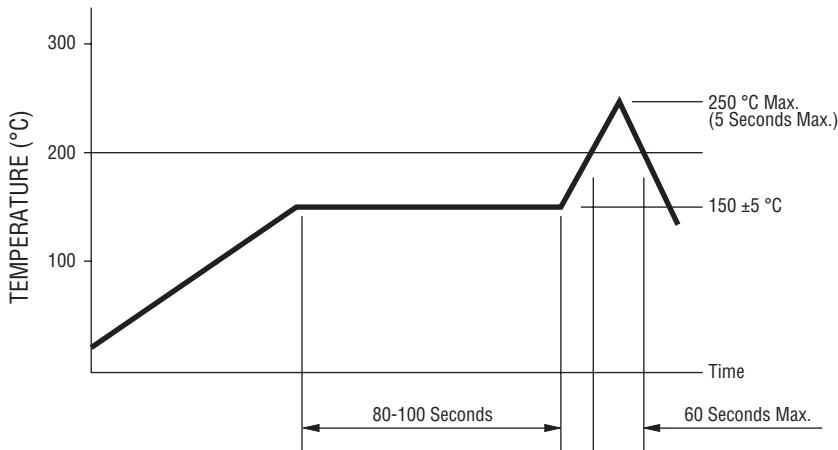
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## How To Order

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

Model Series _____	BPS110
Analog Amplified _____	A
Media Compatibility _____	G
A = Air/Gas _____	
Pressure Type _____	0P15
G = Gauge _____	
D = Differential _____	
Pressure (psi) _____	2
0P15 = 0.15 _____	
0P30 = 0.30 _____	
01P0 = 1.0 _____	
Terminal Pins _____	D
2 = Surface Mount Terminals _____	
Port Style _____	G
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.
5. Other SMD processes and profiles should be verified by the customer.

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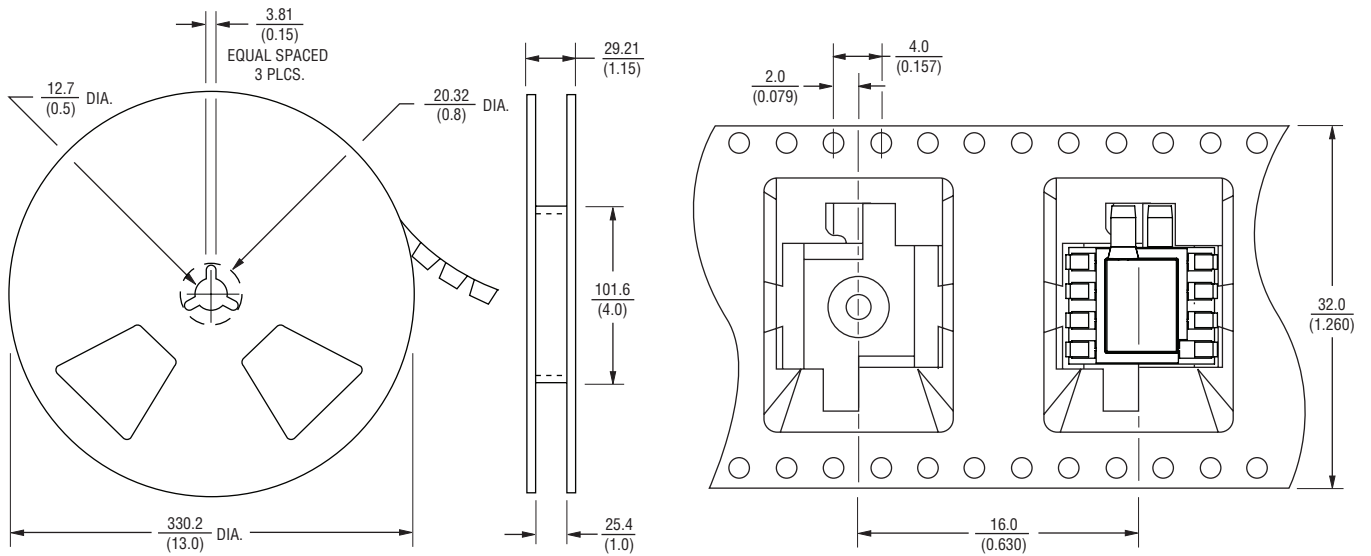
Users should verify actual device performance in their specific applications.

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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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