



## 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> )*** .....	10 % to 90 % 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 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 .....	Partial model number, media compatibility, pressure type, pressure rating, lot code
Standard Packaging .....	250 pcs./reel
Weight .....	1.307 grams (0.046 oz)

## Transfer Function Formula

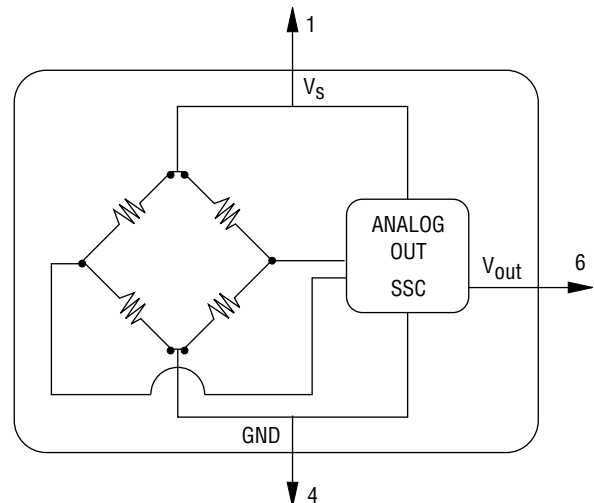
$$P_{\text{psi}} = (P_{\text{max}} - P_{\text{min}}) \cdot \left( \frac{V_{\text{out}} - V_{\text{minComp}}}{V_{\text{maxComp}} - V_{\text{minComp}}} \right) + P_{\text{min}}$$

### 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.

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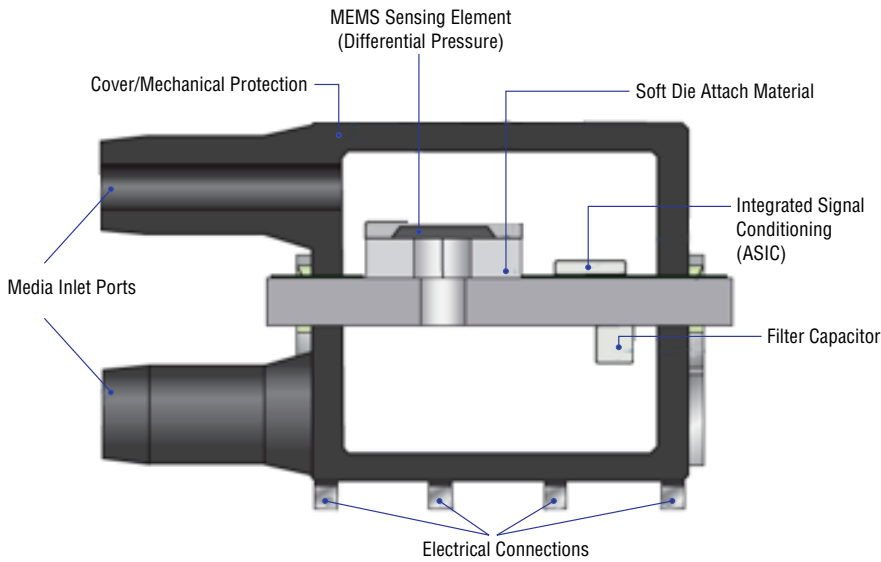
Users should verify actual device performance in their specific applications.

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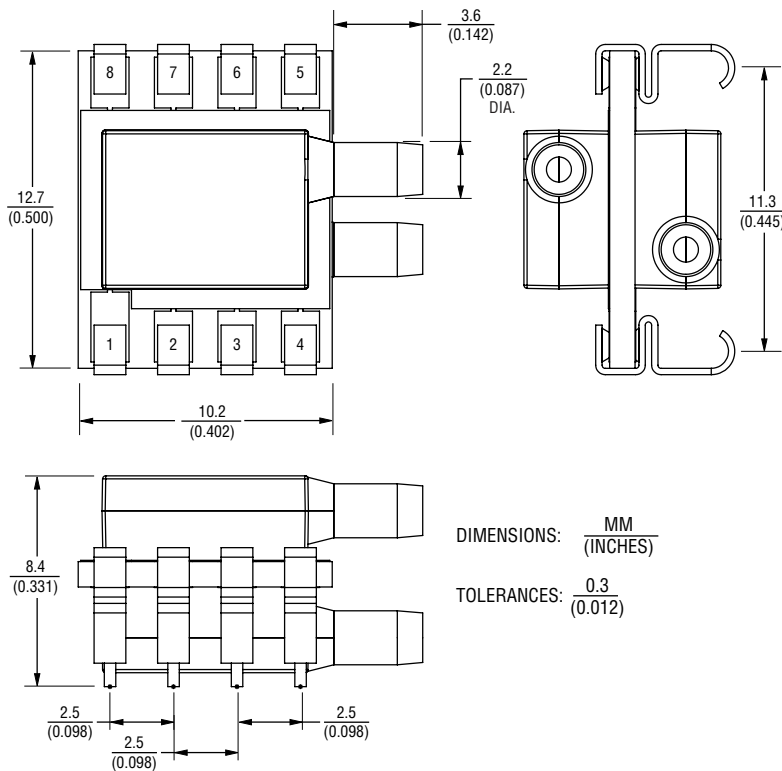
# BPS110 Series - 12 mm Analog Low Pressure Sensor

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## Cross Section



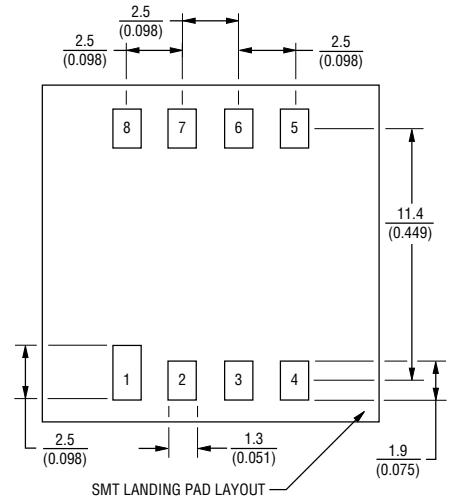
## Product Dimensions



## Terminal Assignment

DEVICE PINOUT	
P1	V <sub>S</sub>
P2	N/C
P3	N/C
P4	Ground
P5	N/C
P6	V <sub>out</sub>
P7	N/C
P8	N/C

## Recommended PCB Layout



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# BPS110 Series - 12 mm Analog Low Pressure Sensor

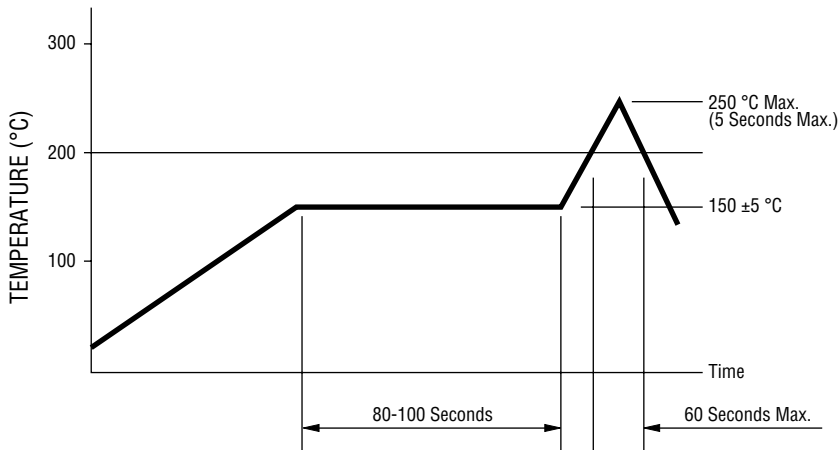
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## How To Order

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

Model Series \_\_\_\_\_  
 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



### 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.

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

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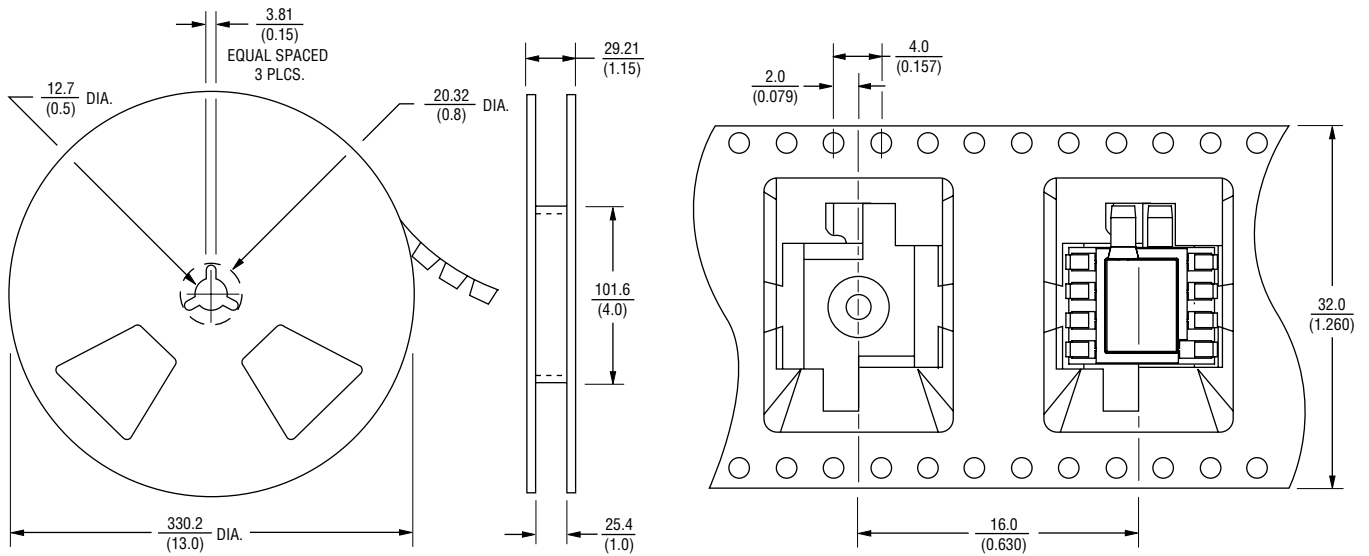
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## Packaging Specification

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



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

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

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