

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_s) | 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 ₂ O) |
| Output | Amplified analog |
| DAC Resolution | 12 bit |
| Ratiometric Output Range (V_{out})*** | 10 % to 90 % V_s |
| 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

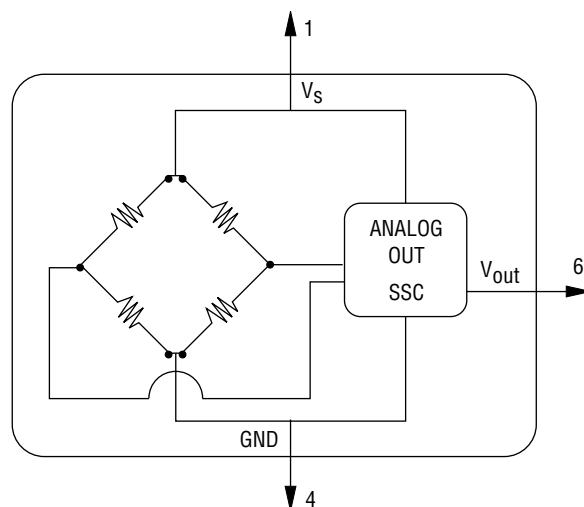
$$P_{psi} = (P_{max} - P_{min}) \cdot \left(\frac{V_{out} - V_{minComp}}{V_{maxComp} - V_{minComp}} \right) + P_{min}$$

Where

| | |
|---------------|-----------------------------------|
| P_{psi} | = Measured Pressure in PSI |
| P_{max} | = Maximum Pressure |
| P_{min} | = Minimum Pressure |
| $V_{minComp}$ | = Minimum Voltage (Usually 0.5 V) |
| $V_{maxComp}$ | = Maximum Voltage (Usually 4.5 V) |
| V_{out} | = 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.

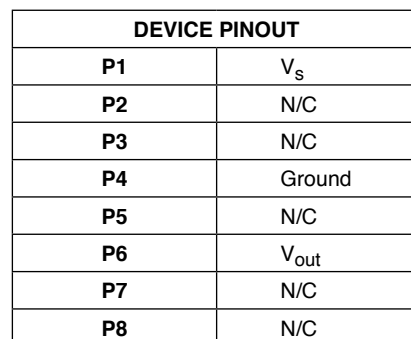
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Users should verify actual device performance in their specific applications.

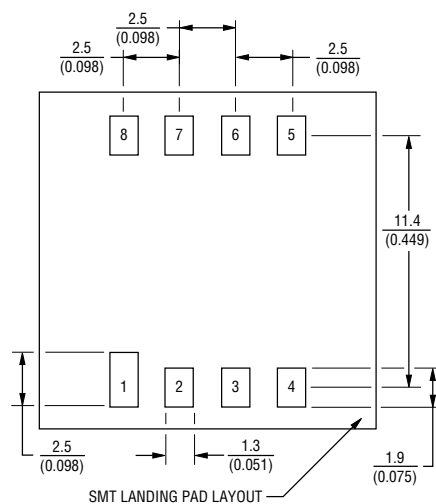
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Terminal Assignment



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 _____

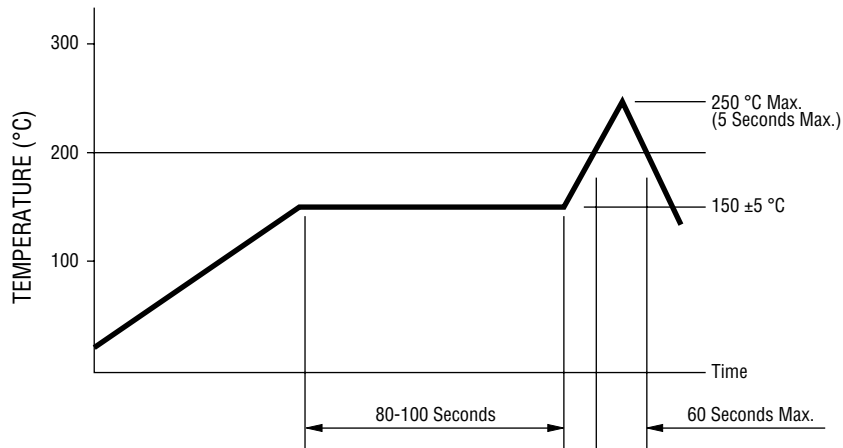
Port Style _____

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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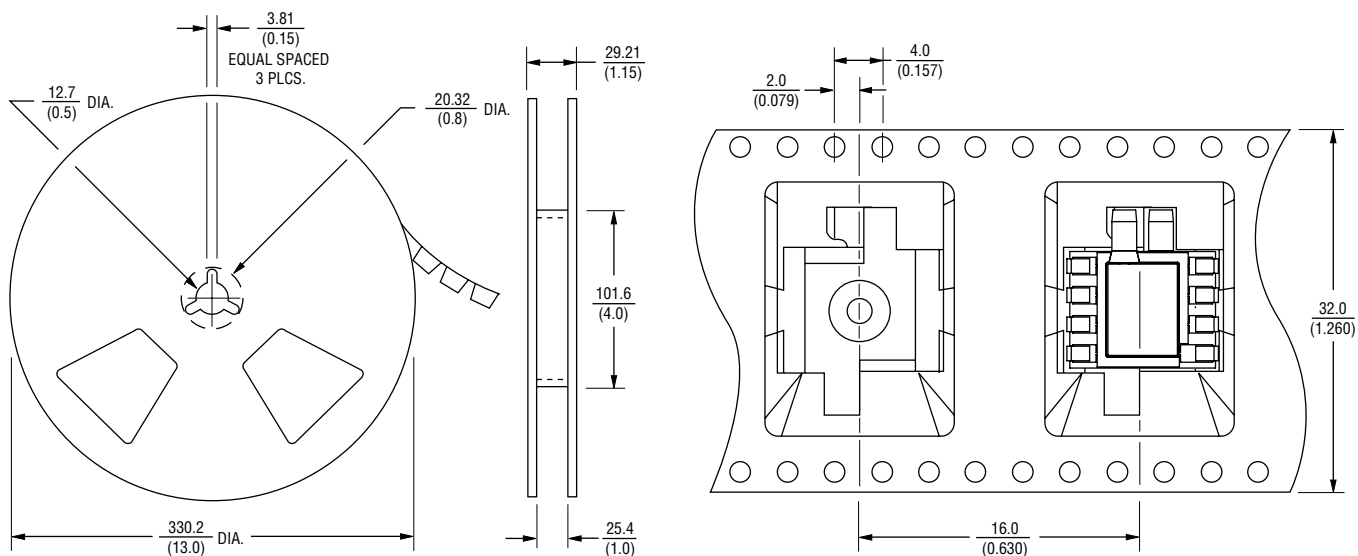
BPS110 Series - 12 mm Analog Low Pressure Sensor

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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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