## BPS310 Series - 12 mm Uncompensated Low Pressure Sensor

### Electrical Characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage (Vg)</td>
<td>5 V typical, 15 V maximum</td>
</tr>
<tr>
<td>Impedance</td>
<td>5 ±1 kΩ</td>
</tr>
<tr>
<td>Supply Current @ 5 V</td>
<td>3.0 mA maximum</td>
</tr>
</tbody>
</table>

### 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 H2O)
- 5 to 30 psi (0.34 to 2.1 bar; 34.5 to 207 KPa)

#### Offset
- ±10 mV

#### Non-linearity
- ±0.25 %FS

#### Pressure Hysteresis
- ±0.1 %FS (@25 °C)

#### Temperature Coefficient – Zero
- ±20 µV/V°C

#### Temperature Coefficient – Resistance
- 0.15psi to 1.00psi:
  - Temperature Coefficient – Resistance (3) | 2500 ± 500 PPM/°C |
  - Temperature Coefficient – Sensitivity (0.15 psi (3) | -3000 ± 500 PPM/°C |
  - Temperature Coefficient – Sensitivity (0.2 psi – 1 psi (3) | -2500 ± 500 PPM/°C |

#### Long-Term Stability
- ±0.25 %FS (@125 °C)

#### Proof Pressure
- 5X (Full Scale Pressure)

#### Burst Pressure
- 10 PSI

#### Full Scale Output (@ 5 volta): 3100 + 400 / 600 PPM/°C

### Additional Information

- **Applications**
  - Industrial:
    - HVAC systems
    - Process monitoring
    - Packaging automation
  - *Medical Devices (low/medium risk):
    - Diagnostic equipment
    - Analysis equipment
- **Features**
  - Uncompensated, mV output
  - Ultra-low pressure sensing
  - Absolute and differential types
  - For use in clean, dry air and non-corrosive gas environments
  - Tape and reel packaging
  - RoHS compliant*
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- **Media Compatibility**
- Absolute and differential types
- **Applications**
- HVAC systems
- Process monitoring
- Packaging automation
- Industrial:
- **Product Characteristics**
  - Media Compatibility: Non-corrosive dry gasses
  - Moisture Sensitivity Level: 2
  - 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)
  - Notes:
    - (1) Zero pressure, gauge only, at 25 °C
    - (2) Best fit straight line at 25 °C
    - (3) -25 °C to +75 °C

Bourns®

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BPS310 Series - 12 mm Uncompensated Low Pressure Sensor

**Terminal Assignment**

<table>
<thead>
<tr>
<th>DEVICE PINOUT</th>
<th>OPEN</th>
<th>CLOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>+IN</td>
<td>+IN</td>
</tr>
<tr>
<td>P2</td>
<td>+O</td>
<td>+O</td>
</tr>
<tr>
<td>P3</td>
<td>-IN</td>
<td>-IN</td>
</tr>
<tr>
<td>P4</td>
<td>-O</td>
<td>-O</td>
</tr>
<tr>
<td>P5</td>
<td>+IN</td>
<td>N/C</td>
</tr>
<tr>
<td>P6</td>
<td>N/C</td>
<td>N/C</td>
</tr>
<tr>
<td>P7</td>
<td>N/C</td>
<td>N/C</td>
</tr>
<tr>
<td>P8</td>
<td>-IN</td>
<td>N/C</td>
</tr>
</tbody>
</table>

**Sensor Bridge Configuration**

**Transfer Function Formula**

\[ V_{\text{out}} = (250 \times P) + \text{Offset} \pm \text{Error} \]

**Where**

- Offset = 0 mV
- Error = 0 mV
- \( V_s \) = 5.0 V
- TEMP = 25 °C

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

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Users should verify actual device performance in their specific applications.
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BPS310 Series - 12 mm Uncompensated Low Pressure Sensor

Product Dimensions

Recommended PCB Layout

How To Order

Model Series
- Uncompensated, mV output

Media Compatibility
- A = Air/Gas

Pressure Type
- A = Absolute (15 and 30 psi only)
- D = Differential

Pressure (psi)
- 0P15 = 0.15
- 0P30 = 0.30
- 01P0 = 1.0
- 015P = 15
- 030P = 30

Terminal Pins
- 2 = Surface Mount Terminals

Port Style
- D = Dual Port, Horizontal

Packaging Designator
- G = 250 pcs. per 13-inch Reel

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

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.

Packaging Specification

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