**Features**
- Compensated output
- Direct-media monitoring
- Gauge and absolute types
- Isolated onboard electronics
- Gold-plated Kovar™ port option
- RoHS compliant*

**Applications**
- Industrial:
  - Refrigerant systems
  - Water level & pressure monitoring
- "Medical Devices (low/medium risk):
  - Diagnostic/analysis equipment
- "Heavy Equipment:
  - Oil & fuel systems
  - Exhaust gas pressure sensing

---

**Electrical Characteristics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Voltage $V_a$</td>
<td>4.5 V minimum, 5 V typical, 5.5 V maximum</td>
</tr>
<tr>
<td>Supply Current</td>
<td>10 mA</td>
</tr>
<tr>
<td>Output Current</td>
<td>2.5 mA</td>
</tr>
<tr>
<td>Short Circuit Current</td>
<td>±25 mA</td>
</tr>
<tr>
<td>Reverse Polarity Protection</td>
<td>-33 V</td>
</tr>
<tr>
<td>Overvoltage Protection</td>
<td>.33 V</td>
</tr>
</tbody>
</table>

**Performance Characteristics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-40 °C to +150 °C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55 °C to +150 °C</td>
</tr>
<tr>
<td>Output Range $V_{out}$*</td>
<td>10 % to 90 % $V_a$</td>
</tr>
<tr>
<td>Output Clamping Limit $V_{cl}$*</td>
<td>5 % to 95 % $V_a$</td>
</tr>
<tr>
<td>Resolution (&gt;12 bit DAC)</td>
<td>0.02 % FS</td>
</tr>
<tr>
<td>Accuracy @ 25 °C</td>
<td>±0.25 % FS</td>
</tr>
<tr>
<td>Total Error Band</td>
<td>±2.5 % FS</td>
</tr>
<tr>
<td>Static Proof Pressure</td>
<td>2X full scale PSIA</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>3X full scale PSIA</td>
</tr>
<tr>
<td>Lifetime Drift (1000 hours @ +150 °C)</td>
<td>±0.5 % FS</td>
</tr>
</tbody>
</table>

**Product Characteristics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Compatibility</td>
<td>Harsh media (air, liquid and gas)</td>
</tr>
<tr>
<td>Moisture Sensitivity Level</td>
<td>1</td>
</tr>
<tr>
<td>ESD Classification (HBM)</td>
<td>&gt;4 kV</td>
</tr>
<tr>
<td>Marking</td>
<td>Partial model number, media compatibility, pressure type, pressure rating, lot code</td>
</tr>
<tr>
<td>Standard Packaging</td>
<td>250 pcs./13-inch reel or 100 pcs./tray</td>
</tr>
<tr>
<td>Weight</td>
<td>1.080 grams (0.038 oz)</td>
</tr>
</tbody>
</table>

---

**Cross Section**

- MEMS Sensing Element
- Capacitor
- Solder Pad
- ASIC
- Pressure

**Basic Circuit Schematic**

Note: Power supply decoupling and output filtering included. Consult factory for custom options such as supply voltage, temperature calibration range, output range accuracy specification, and update rate.

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**** 5 V input voltage.
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BPS130 Series - 10 mm Analog High Pressure Sensor

Transfer Function Formula

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

Where

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

Product Dimensions

Manifold Mount

![Manifold Mount Diagram]

(Electrical pin-out for all configurations)

Single Port

![Single Port Diagram]

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BPS130 Series - 10 mm Analog High Pressure Sensor

Product Dimensions (Continued)

Single Port and Pins

Model Series
Analog

Media Compatibility
H = Certain Harsh Media

Pressure Type
A = Absolute
G = Gauge

Pressure (psi)
015P = 15
030P = 30
050P = 300
100P = 100

Terminal Pins and Bracket
1 = No Terminal Pins
3 = Vertical Terminal Pins (Tray Packaging only)
5 = Vertical Terminal Pins and Bracket

Port Style
M = Manifold Mount
S = Single Port

Packaging Designator
G = 250 pcs. per 13-inch Reel
Blank = 100 pcs. per Tray

Accuracy
Blank = Standard
E = TEB ±1.0 % (0 to +85 °C)

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**BPS130 Series - 10 mm Analog High Pressure Sensor**

### Solder Profile

![Solder Profile Graph](image)

**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.

![Package Diagram](image)

**Notes:**
- Dimensions: MM (Inches)
- Tolerances: 0.25 (0.010)

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