



**THE DATASHEET OF  
BPS140-HG100P-1SG**





## Features

- Compensated output
- Certain harsh media monitoring
- Absolute and gauge types
- Isolated onboard electronics
- Ceramic port
- 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

## BPS140 Series - 10 mm Analog High Pressure Sensor for Certain Harsh Media

### Electrical Characteristics

Supply Voltage ( $V_S$ )	4.5 V minimum, 5 V typical, 5.5 V maximum
Supply Current	10 mA
Output Current	2.5 mA
Short Circuit Current	±25 mA
Reverse Polarity Protection	-33 V
Overshoot Protection	33 V

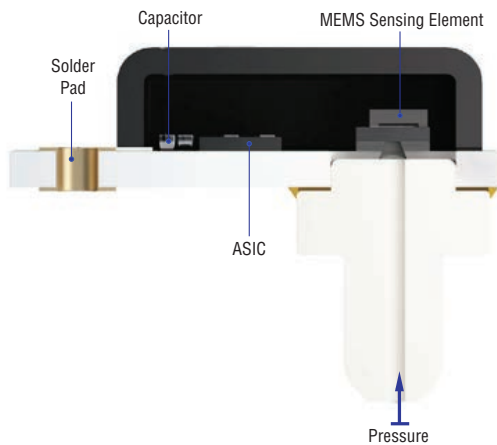
### Performance Characteristics

Operating Temperature	-40 °C to +150 °C (-40 °F to +302 °F)
Storage Temperature	-55 °C to +150 °C (-67 °C to +302 °F)
Output Range $V_{out}$ ****	10 % to 90 % $V_S$
Output Clamping Limit $V_{out}$ ****	5% to 95% $V_S$
Resolution (>12 bit DAC)	0.02 % FS
Accuracy @ 25 °C	±0.25 % FS
Total Error Band @ -40 °C to +150 °C (-40 °F to +302 °F)	±2.5 % FS
Static Proof Pressure	2X full scale PSIA
Burst Pressure	3X full scale PSIA
Lifetime Drift	±0.5 % FS

### Product Characteristics

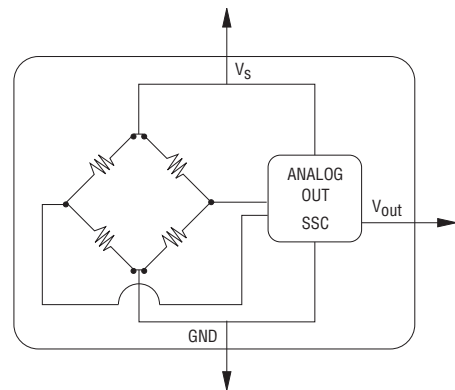
Media Compatibility	Harsh media (air, liquid and gas)
Moisture Sensitivity Level	1
ESD Classification (HBM)	>4 kV
Marking	Partial model number, media compatibility, pressure type, pressure rating, lot code
Standard Packaging	250 pcs./13-inch reel
Weight	1.042 grams (0.037 oz)

### Cross Section



“Wetted” Materials: Silicon, glass, ceramic  
Any material in contact with the media is considered a “wetted” material.

### Basic Circuit Schematic



Note: Power supply decoupling and output filtering included.

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

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

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\*\*\* Custom engineered solutions. Check with factory for availability. \*\*\*\* 5 V input voltage.

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## BPS140 Series - 10 mm Analog High Pressure Sensor for Certain Harsh Media

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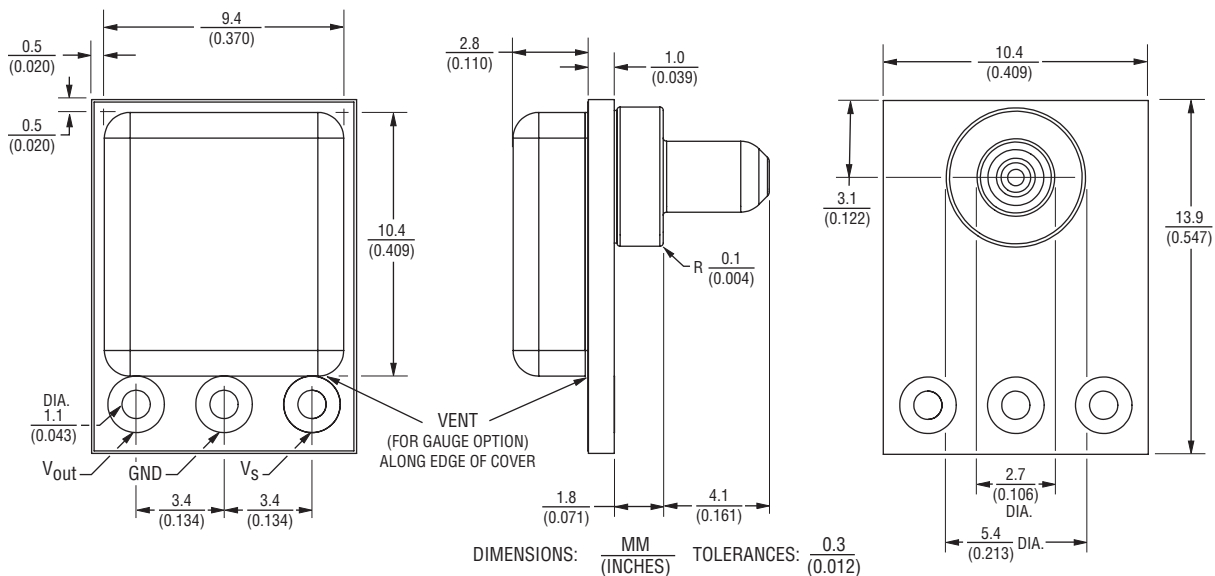
### Transfer Function Formula

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

#### Where

- $P_{\text{psi}}$  = 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



### How To Order

**BPS140 - H A 015P - 1 S G**

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

Analog \_\_\_\_\_

Media Compatibility \_\_\_\_\_

H = Certain Harsh Media \_\_\_\_\_

Pressure Type \_\_\_\_\_

A = Absolute \_\_\_\_\_

G = Gauge \_\_\_\_\_

Pressure (psi) \_\_\_\_\_

015P = 15      100P = 100 \_\_\_\_\_

030P = 30      300P = 300 \_\_\_\_\_

Terminal Pins \_\_\_\_\_

1 = No Terminal Pins \_\_\_\_\_

Port Style \_\_\_\_\_

S = Single Port \_\_\_\_\_

Packaging Designator \_\_\_\_\_

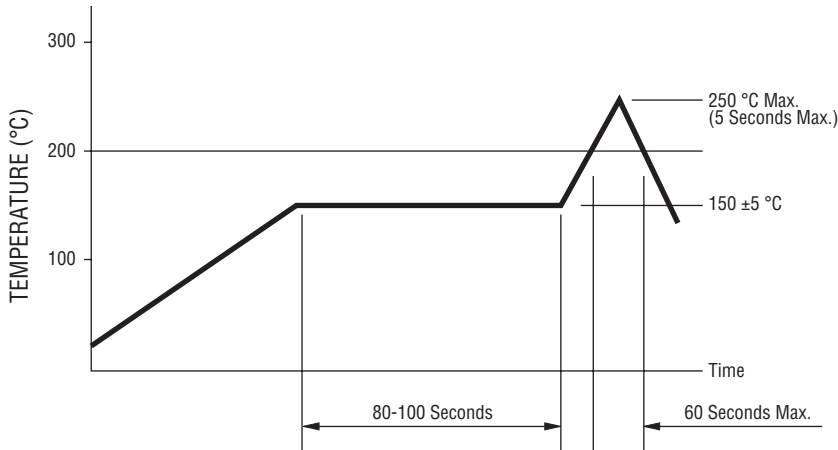
G = 250 pcs. per 13-inch Reel \_\_\_\_\_

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**Solder Profile**



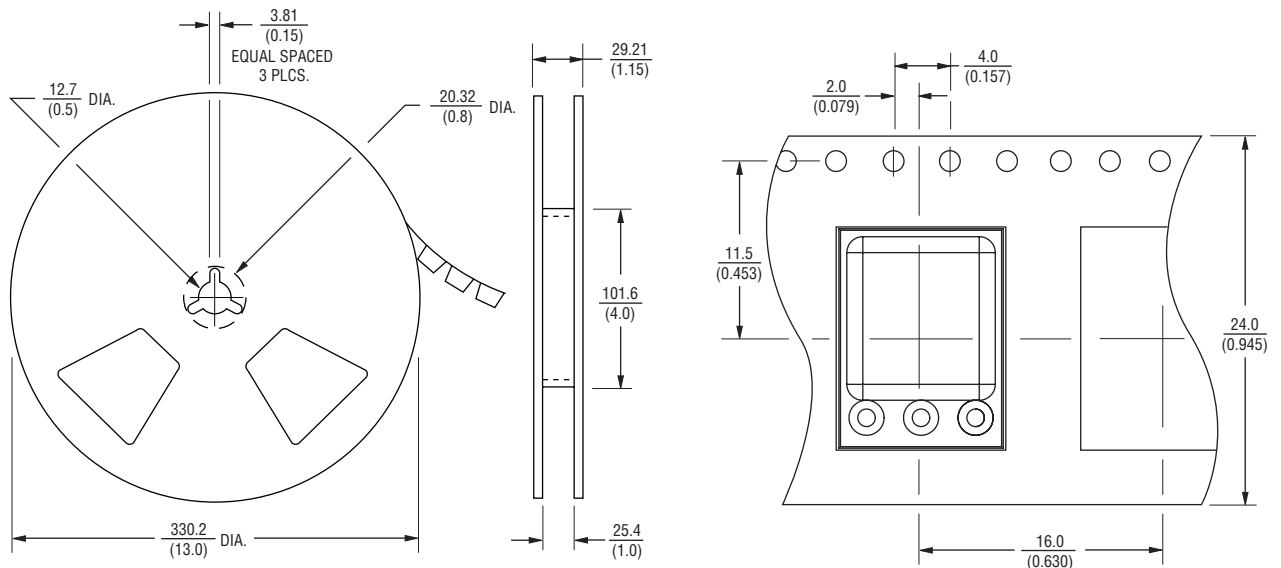
**Notes:**

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).

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

REV. 12/19

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