



**The Merit Sensor Blood Pressure sensor** is ideal for low cost, high-volume, disposable medical applications including blood pressure monitoring. The BP Series sensor is temperature compensated, dielectric gel protected and can easily be installed into a customer's pressure device housing.

**COMPANY:** Merit Sensor is a leader in piezoresistive pressure sensing and partners with clients to create high performing solutions for a variety of applications and industries. Design, engineering and manufacturing of Merit Sensor products takes place in state-of-the-art wafer fabrication facility in Utah, US.

**TECHNOLOGY:** Merit Sensor utilizes a piezoresistive Wheatstone bridge with a chemically etched silicon diaphragm. All products are RoHS compliant.

**CAPABILITIES:** Merit Sensor designs, engineers, fabricates, dices, assembles, tests and sells and services die and packaged products from a state-of-the-art facility near Salt Lake City, Utah.

#### FEATURES

- Pressure range of -30 to 300 mmHg
- Excellent burst pressure
- Compliant with AAMI BP22 specifications
- Dielectric gel barrier
- Fully tested
- Small, disposable, low-cost package
- Temperature compensated
- Solid state piezoresistive sensor
- Top side pressure entry
- Easy to install into customer's disposable blood pressure device housing
- Compatible with automated assembly equipment
- Compatible in air, gas and liquid
- Shipped as 120UP snapstrates or on tape and reel
- Automated testing and assembly
- Custom options available
- Engineering, design, and manufacturing under one roof in Utah, USA.

#### APPLICATIONS

- Disposable blood pressure measurement
- Kidney dialysis machines
- Infusion pumps
- Surgical procedures



**BP Series** Standard Part Number

BP0001


**SPECIFICATIONS**

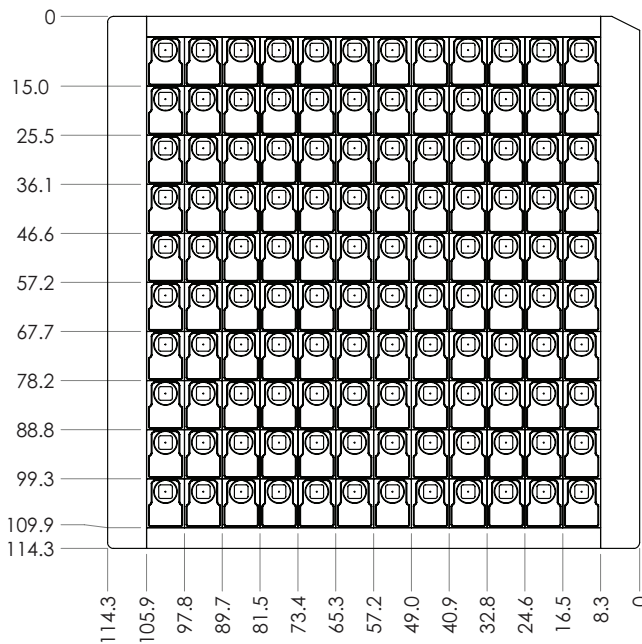
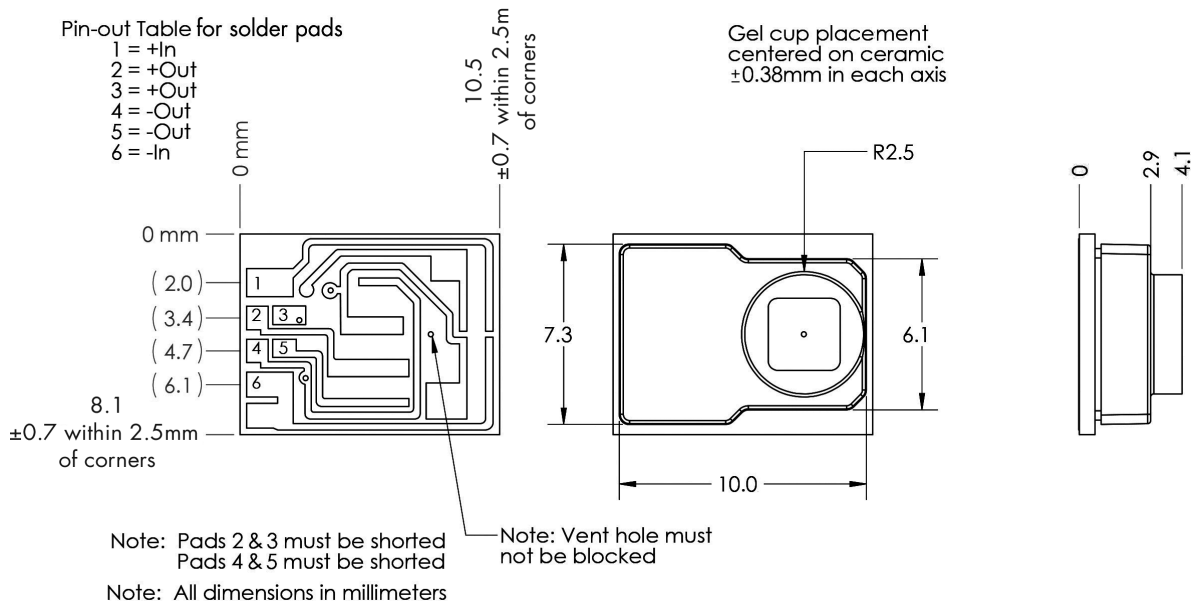
Parameter	Minimum	Typical	Maximum	Units	Notes
<b>General</b>					
Pressure Range	-30		300	mmHg	
Overpressure	125			PSI	Typical burst of +800 PSI
<b>Electrical</b> (22°C unless otherwise stated)					
Input Excitation (In)	1		10	VDC	Calibrated to 6 VDC
Risk Current			2	μA	5
Input Impedance	1,200		3000	Ω	
Output Impedance	285		315	Ω	
Dielectric Breakdown	10,000			VDC	5
<b>Environmental</b>					
Temp (Comp/Operating)	15		40	°C	
Temperature (Storage)	-25		70	°C	
Humidity	10		90	%	(Non Condensing)
Light Sensitivity			1	mmHg	5 - Per AAMI BP22
Operating Product Life	168			Hours	
Shelf Life	3			Years	
Sterilization (ETO)	3			Cycles	7
<b>Mechanical</b>					
Weight			2	Grams	
Volume Displacement			.02	mm <sup>3</sup>	
Media Interface					Medical grade, dielectric gel
Gel Tube Interface Material					Polycarbonate
<b>Performance 1</b>					
Offset	-25	0	25	mmHg	Zero
Sensitivity	4.95	5	5.05	μV/V/mmHg	
Calibration	97.5	100	102.5	mmHg	2
Symmetry	-5		5	%	
Accuracy (-30 to 50 mmHg)	-1 mmHg - 1% of Reading	0	+1 mmHg + 1% of Reading		6 - Per AAMI BP22
Accuracy (50 to 300 mmHg)	-3	0	3	% of Reading	6 - Per AAMI BP22
Temp Coeff – Zero	-0.3	0	0.3	mmHg/°C	3, 5
Temp Coeff – Sensitivity	-0.1	0	0.1	%/°C	3, 5
Frequency Response	1,200			Hz	5
Phase Shift			5	degrees	5
Offset Drift			1	mmHg/8 hrs	4, 5

**NOTES:**

1. Assumes 6 VDC, 22°C and after five second warm-up unless otherwise specified.
2. Output of sensor with no pressure applied and a150 KΩ resistor shorted across + IN to + OUT.
3. Over a temperature range of 15°C to 40°C.
4. Normalized offset/bridge voltage – 8 hours after 20 second warm-up.
5. Previously qualified, not tested in production.
6. Combined effect of sensitivity, repeatability, nonlinearity and hysteresis errors.
7. Sterilization performed by customer.

## DIMENSIONS (millimeters)

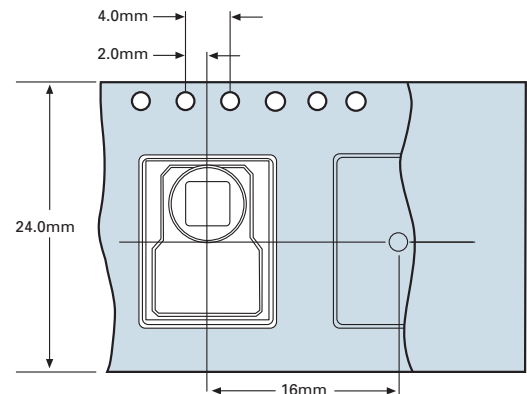
Standard Bond Pad Metallization = Ag/Pt



### NOTE:

- When sensors are shipped as 120UP snapstrates, the ceramic plates must be singulated by the customer.
- Each plate may include units that have failed electrical or visual test. Bad units are identified with a red dot on the backside of the unit.
- Plates are shipped in dust free anti-static containers to prevent damage to the gel.

## PACKAGING AND SHIPPING





*Merit Sensor is based in Salt Lake City, Utah*

