

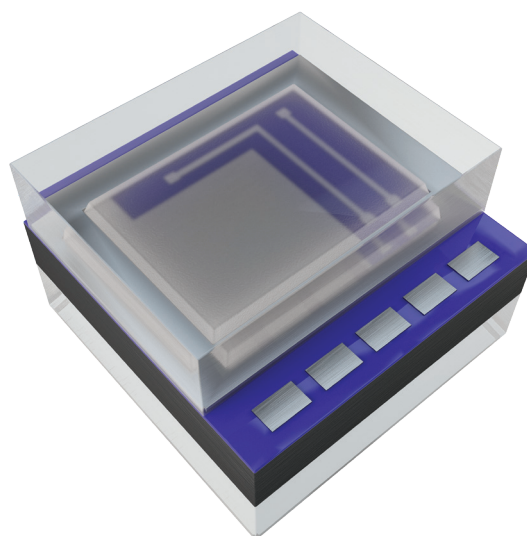
**The HM Series** is ideal for high-volume, low and medium pressure, harsh-media applications.

**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.

**SENTIUM:** Merit Sensor products incorporate a proprietary Sentiium® technology, developed to provide a best-in-class operating temperature range (-40°C to 150°C) and superior stability.

**TECHNOLOGY:** Merit Sensor utilizes a piezoresistive Wheatstone bridge in a design that anodically bonds glass to a chemically etched silicon diaphragm. All products are RoHS compliant.

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



### FEATURES

|                    |                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------|
| <b>Range</b>       | 15 to 500 psi (1 to 34.5 bar; 103 to 3,447 KPa)                                               |
| <b>Type</b>        | Absolute; pressurized from cavity side<br>Gage; pressurized from either side of the diaphragm |
| <b>Media</b>       | Air, gases and liquids that are compatible with silicon and glass                             |
| <b>Shipping</b>    | Wafers on tape, waffle pack                                                                   |
| <b>Flexibility</b> | Sensitivity, resistance, bridge, constraint, etc.                                             |

### BENEFITS

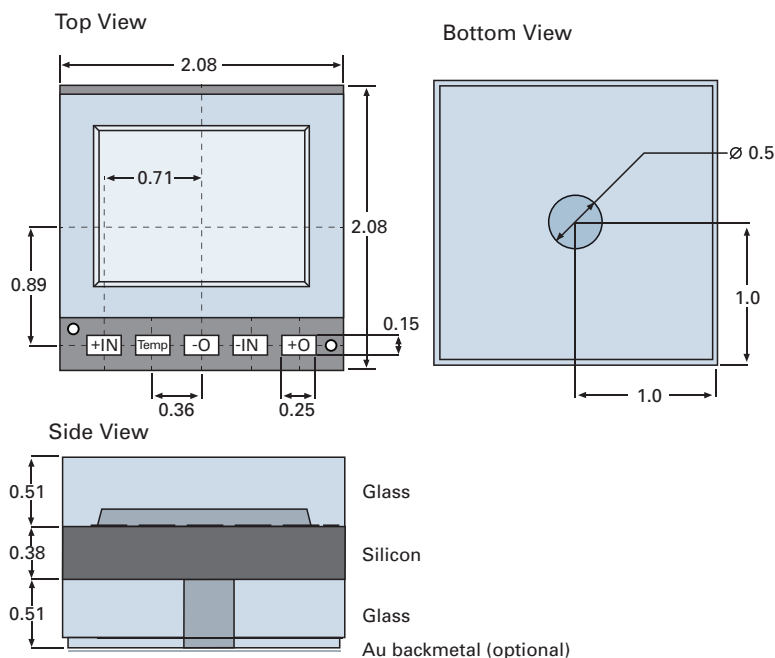
|                    |                                                                                                           |
|--------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Performance</b> | Enjoy best-in-class performance due to Merit's proprietary Sentiium technology                            |
| <b>Cost</b>        | Save money over time with high-performing die                                                             |
| <b>Security</b>    | Feel confident doing business with an experienced company backed by a solid parent company (NASDAQ: MMSI) |
| <b>Speed</b>       | Get to market quickly with creative and flexible solutions                                                |
| <b>Service</b>     | Experience prompt, personal, and professional support                                                     |

### HM Series Part Number Configurator

|                                                                                                                                                       |  |                                                                                                                                                  |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Impedance</b><br>1 = 5kohm Bridge<br>2 = 3.5kohm Bridge                                                                                            |  | <b>Packing</b><br>T = Sawn wafer on tape in metal frame<br>W = Die in waffle pack                                                                |  |
| <b>Bridge</b><br>C = Closed<br>T = Closed with temp diode*                                                                                            |  | <b>Backglass finish</b><br>M = Au backmetal*                                                                                                     |  |
| <b>Example:</b><br>H1T-0300-L2MT<br>offers 5kohm Impedance, Closed bridge with temp diode, 300 $\mu$ V/V/psi sensitivity, absolute, with Au backmetal |  | <b>Constraint</b><br>L2 = Absolute<br>NL2 = Gage                                                                                                 |  |
|                                                                                                                                                       |  | <b>Sensitivity <math>\mu</math>V/V/psi</b><br>1000 = 15 psi<br>0700 = 50 psi<br>0300 = 100 psi<br>0090 = 300 psi<br>0070 = 500 psi<br>* Optional |  |

**SPECIFICATIONS**

| Parameter                                       | Minimum | Typical | Maximum | Units                          | Notes                                |
|-------------------------------------------------|---------|---------|---------|--------------------------------|--------------------------------------|
| <b>Electrical &amp; Environmental</b>           |         |         |         |                                |                                      |
| Excitation (In)                                 |         | 5       | 15      | V                              | Maximum: 3 mA                        |
| Impedance                                       | 4000    | 5000    | 6000    | $\Omega$                       | Optional: 3,500 +/- 500              |
| Operating Temperature                           | -40     |         | 150     | °C                             | Sentium® technology                  |
| Storage Temperature                             | -55     |         | 160     | °C                             |                                      |
| <b>Performance</b>                              |         |         |         |                                |                                      |
| Offset                                          | -10     | 0       | 10      | mV/V                           | Zero pressure; gage only; @25°C      |
| Non-linearity                                   | -0.2    | 0       | 0.2     | % FSO                          | Best Fit Straight Line; @25°C        |
| Pressure Hysteresis                             | -0.1    | 0       | 0.1     | % FSO                          | @25°C                                |
| Temp Coeff – Zero                               | -25     | 0       | 25      | $\mu\text{V/V}/^\circ\text{C}$ | -40°C to 150°C                       |
| Temp Coeff – Resistance                         | 2300    | 2800    | 3300    | PPM/°C                         | -40°C to 150°C                       |
| Temp Coeff – Sensitivity                        | -1500   | -2200   | -2500   | PPM/°C                         | -40°C to 150°C                       |
| $U_{\text{diode}} @ I_S = 40\mu\text{A}$        | 350     | 530     | 800     | mV                             | Room Temp                            |
| TC of $U_{\text{diode}}$                        | -4.0    |         | -1.0    | mV/°C                          | -40 to 150C                          |
| Long-Term Stability                             | -0.2    | 0       | 0.2     | % FSO                          |                                      |
| Long-Term Stability (15psi only)                | -0.4    | 0       | 0.4     | % FSO                          |                                      |
| Burst Pressure                                  | 5X      |         |         |                                | Full scale pressure                  |
| Burst Pressure (500 psi part)                   | 1500    |         |         | psi                            |                                      |
| <b>Full-Scale Output (@ 5 volts excitation)</b> |         |         |         |                                |                                      |
| 15 psi (1 bar; 103 KPa)                         | 60      | 75      | 90      | mV                             | Other outputs available upon request |
| 40 psi (2.8 bar; 275.8 KPa)                     | 104     | 130     | 156     | mV                             |                                      |
| 100 psi (6.9 bar; 689.5 KPa)                    | 120     | 150     | 180     | mV                             |                                      |
| 300 psi (20.7 bar; 2,068 KPa)                   | 110     | 135     | 160     | mV                             |                                      |
| 500 psi (34.5 bar; 3,447 KPa)                   | 140     | 175     | 210     | mV                             |                                      |

**DIMENSIONS (millimeters, post cut)**

**ELECTRICAL**
