MERIT SENSOR™

DATA SHEET

**7000 Series**

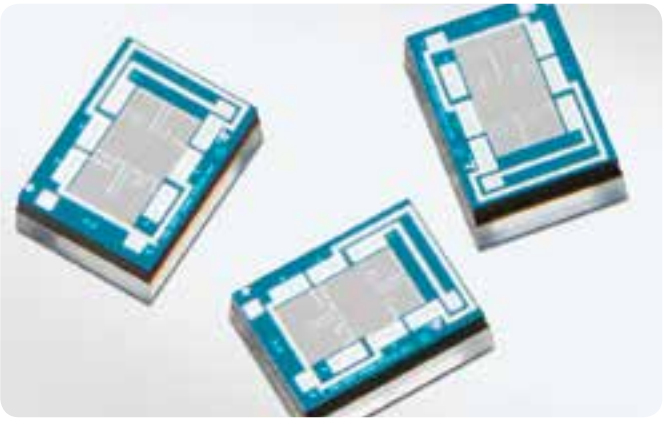
# **The 7000 Series** is ideal for high-volume, medium-pressure applications.

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 Sentium® 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

| | |
|---|---|
| **Range** | 15 to 500 psi (1 to 34.5 bar; 103 to 3,447 KPa) |
| **Type** | Absolute, gage, differential and vacuum |
| **Media** | Clean, dry air and non-corrosive gases |
| **Shipping** | Wafers on tape, waffle pack |
| **Flexibility** | Sensitivity, resistance, bridge, constraint, etc. |

## BENEFITS

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

## **7000 Series** Part Number Configurator

XSX-XXXX-XT

***Impedance***
7 = 5kohm Bridge
8 = 3.5kohm Bridge

***Bridge***
O = Open
H = 1/2 Open
C = Closed

***Constraint***
5 = Absolute
9 = Gage

***µV/V/psi***
1000 = 15 psi
0500 = 50 psi
0300 = 100 psi
0100 = 300 psi
0070 = 500 psi

***Example:*** 7SO-0300-9T offers 5kohm Impedance, Open Bridge,100psi and Gage Constraint

***Note:*** "T" in part number = sawn wafer on tape in metal frame

## **7000 Series** Standard Part Numbers

| | | |
|---|---|---|
| 7SO-1000-5T | 7SC-1000-5T | 8SH-1000-5T |
| 7SO-0500-5T | 7SC-0500-5T | 8SH-0500-5T |
| 7SO-0300-5T | 7SC-0300-5T | 8SH-0300-5T |
| 7SO-0100-5T | 7SC-0100-5T | 8SH-0100-5T |
| 7SO-0070-5T | 7SC-0070-5T | 8SH-0070-5T |
| 7SO-1000-9T | 7SC-1000-9T | 8SH-1000-9T |
| 7SO-0500-9T | 7SC-0500-9T | 8SH-0500-9T |
| 7SO-0300-9T | 7SC-0300-9T | 8SH-0300-9T |
| 7SO-0100-9T | 7SC-0100-9T | 8SH-0100-9T |
| 7SO-0070-9T | 7SC-0070-9T | 8SH-0070-9T |
| 7SH-1000-5T | 8SO-1000-5T | 8SC-1000-5T |
| 7SH-0500-5T | 8SO-0500-5T | 8SC-0500-5T |
| 7SH-0300-5T | 8SO-0300-5T | 8SC-0300-5T |
| 7SH-0100-5T | 8SO-0100-5T | 8SC-0100-5T |
| 7SH-0070-5T | 8SO-0070-5T | 8SC-0070-5T |
| 7SH-1000-9T | 8SO-1000-9T | 8SC-1000-9T |
| 7SH-0500-9T | 8SO-0500-9T | 8SC-0500-9T |
| 7SH-0300-9T | 8SO-0300-9T | 8SC-0300-9T |
| 7SH-0100-9T | 8SO-0100-9T | 8SC-0100-9T |
| 7SH-0070-9T | 8SO-0070-9T | 8SC-0070-9T |

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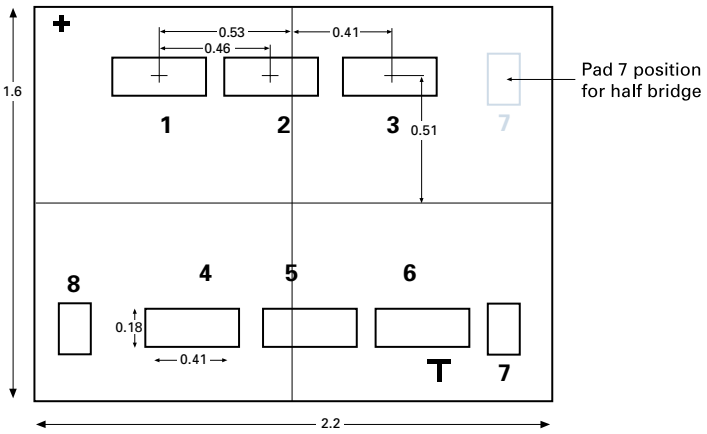
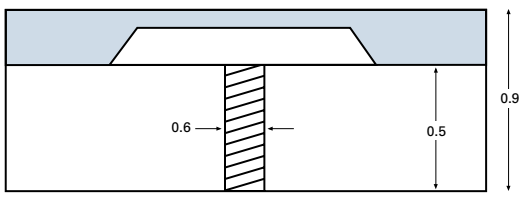
## SPECIFICATIONS

| Parameter | Minimum | Typical | Maximum | Units | Notes |
|---|---|---|---|---|---|
| **Electrical & Environmental** | | | | | |
| Excitation (In) | | 5 | 15 | V | Maximum: 3 mA |
| Impedance | 4000 | 5000 | 6000 | Ω | Optional: 3,500 +/- 500 |
| Operating Temperature | -40 | | 150 | °C | Sentium® technology |
| Storage Temperature | -55 | | 160 | °C | |
| **Performance** | | | | | |
| 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 | µV/V/°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 |
| Thermal Hysteresis | -0.1 | 0 | 0.1 | % FSO | Zero pressure |
| Long-Term Stability | -0.1 | 0 | 0.1 | % FSO | |
| Burst Pressure | 3X | | | | Full scale pressure |
| **Full-Scale Output** (@ 5 volts excitation) | | | | | |
| 15 psi (1 bar; 103 KPa) | 60 | 75 | 90 | mV | Other outputs available upon request |
| 50 psi (3.4 bar; 345 KPa) | 100 | 125 | 150 | mV | |
| 100 psi (6.9 bar; 689 KPa) | 120 | 150 | 180 | mV | |
| 300 psi (20.7 bar; 2,068 KPa) | 120 | 150 | 180 | mV | |
| 500 psi (34.5 bar; 3,447 KPa) | 140 | 175 | 210 | mV | |

## DIMENSIONS (millimeters, post-cut)

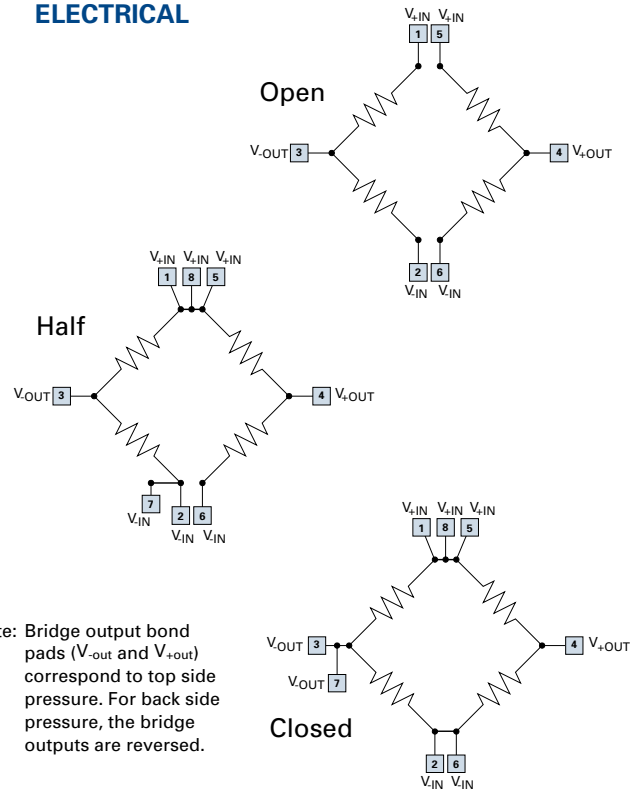



Standard Bond Pad Metallization = Aluminum




Absolute also; other constraints available

## ELECTRICAL




Note: Bridge output bond pads ($V_{-out}$ and $V_{+out}$) correspond to top side pressure. For back side pressure, the bridge outputs are reversed.

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LifeElectronics
Живое партнерство

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