MERIT SENSOR™

DATA SHEET

S Series

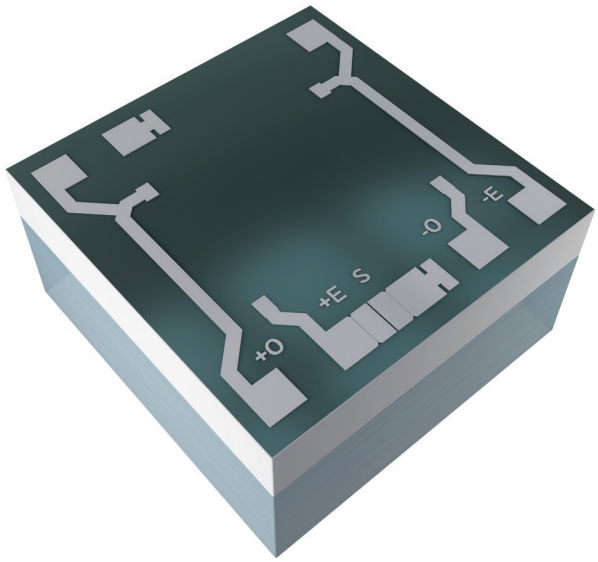
The S Series, designed with Merit Sensor's new proprietary MeritUltra® technology, is an ideal pressure-sensing solution for applications with low to medium pressure.

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.

MeritUltra®: Merit Sensor's new proprietary MeritUltra® technology provides 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 and REACH compliant.

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



FEATURES

Range	5 to 300 psi / 0.34 to 21 bar / 34 to 2,068 kPa
Type	Absolute or gage
Media	Clean dry air and non-corrosive gases
Shipping	Wafers on tape
Flexibility	Sensitivity, bridge resistance, half-closed and closed bridge, and bond-pad layout

BENEFITS

Performance	Enjoy best-in-class performance due to Merit Sensor's new proprietary MeritUltra® 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.

S Series Part Number Configurator

S1XX-XXXX-XXT

Bridge
H = ½ Closed
C = Closed

Impedance
1 = 5kohm Bridge

Constraint
A8 = 0.5 mm Absolute
B2 = 0.5 mm Gage

µV/V/psi
4000 = 5 psi
1333 = 15 psi
0667 = 30 psi
0200 = 100 psi
0067 = 300 psi

Example:
S1C1-1333-A8T offers Closed Bridge, 5kohm Bridge Impedance, 15 psi, and 0.5mm Absolute constraint

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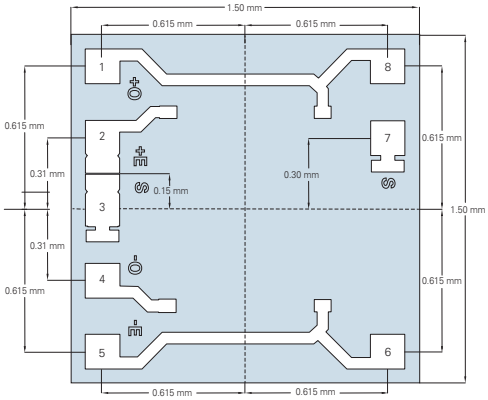
SPECIFICATIONS

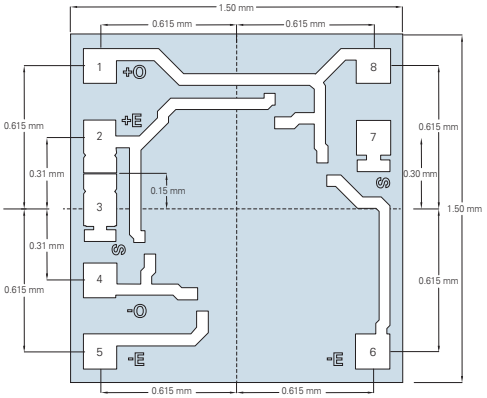
Parameter	Minimum	Typical	Maximum	Units	Notes
Electrical & Environmental					
Excitation (+IN)		5	10	V	Maximum: 2mA
Impedance	4000	5000	6000	Ω	@25°C
Operating Temperature	-40		150	°C	MeritUltra® technology
Storage Temperature	-55		160	°C	
Performance					
Offset	-10	0	10	mV/V	Zero pressure; gage only; @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	-30	0	30	µV/V/°C	-40°C to 150°C
Temp Coeff – Resistance		2500		PPM/°C	-40°C to 150°C
Temp Coeff – Sensitivity		-1900		PPM/°C	-40°C to 150°C
Thermal Hysteresis	-0.2	0	0.2	% FSO	Zero pressure -40°C to 150°C
Long-Term Stability	-0.2	0	0.2	% FSO	-40°C to 150°C
Burst Pressure	3X				Full-scale pressure
Full-Scale Output (@ 5 volts excitation)					
5, 15, 30, 100, and 300 psia/psig	75	100	125	mV	@25°C Other outputs are available upon request.

DIMENSIONS (millimeters, post-cut)

Closed Bridge

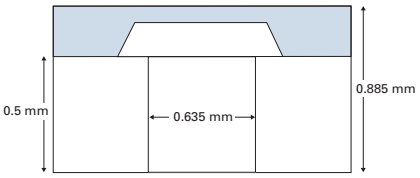


Half-closed Bridge



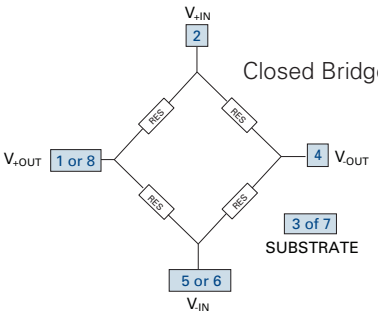
Standard Bond Pad Metallization:
Aluminum

Substrate Glass Layer:
Different glass thicknesses for absolute and gage versions are available.

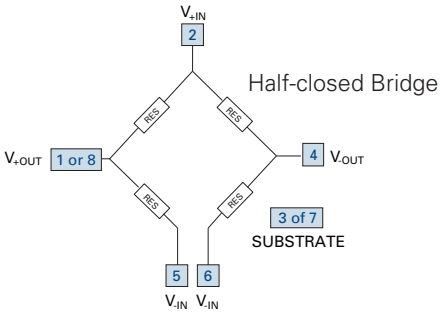


Bond Pad (1-8) Size = 0.15 mm x 0.15 mm

ELECTRICAL



Pad	Connection
1,8	O+
2	E+
3,7	SUB
4	O-
5,6	E-



Pad	Connection
1,8	O+
2	E+
3,7	SUB
4	O-
5,6	E-

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