MERIT SENSOR™

ALCYON ÉLECTRONIQUE
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DATA SHEET

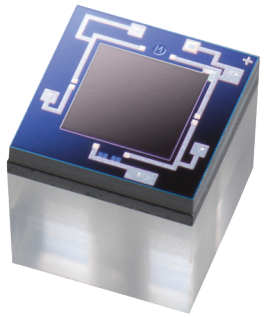
J Series

The J Series is ideal for high-volume, low-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.



FEATURES

Range	1 to 500 psi (0.07 to 34 bar; 7 to 3400 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

J Series Part Number Configurator

JXPX-XXXX-XT

Impedance
1 = 5kohm Bridge
2 = 3.5kohm Bridge

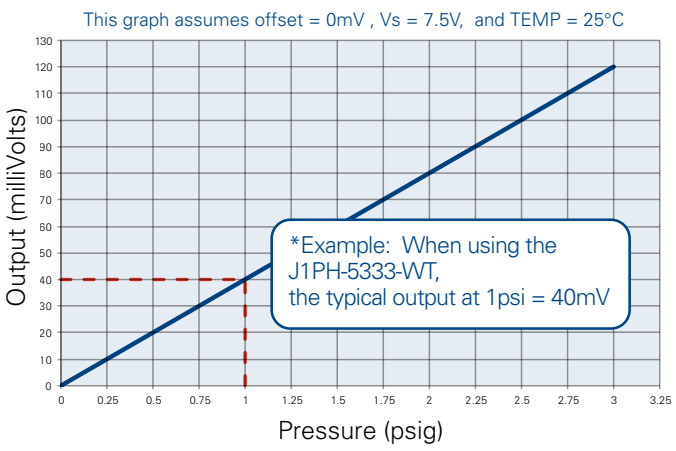
Bridge
H = ½ Open
C = Closed
K = Closed

Constraint
V = 1.5 mm Absolute
W = 1.5 mm Gage
U = 0.5 mm Gage
Z = .89 mm Gage
5 = 0.5 mm Absolute

µV/V/psi
5333 = 1psi or 3psi*
3200 = 5psi
1067 = 15psi
0533 = 30psi
0320 = 50psi
0160 = 100psi
0105 = 150psi
0053 = 300psi
0032 = 500psi

Example:
J1PC-3200-WT
offers 5kohm impedance, Closed Bridge, 5 psi, and 1.5mm Gage Constraint

Typical Transfer Function (Sensor pn J1PH-5333-WT):
Vout = (40 * P) + Offset ± Error



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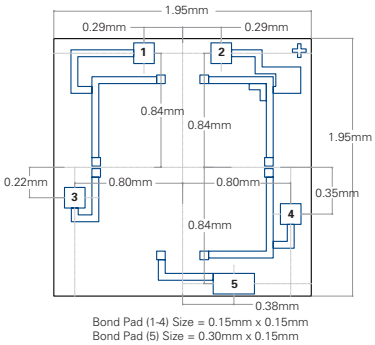
SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Units	Notes
Electrical & Environmental					
Excitation		1.5		mA	Maximum: 3 mA
Impedance	4000	5000	6000	Ω	
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; Tested with Top-side Pressure
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	2500	3000	3500	PPM/°C	-40°C to 150°C
Temp Coeff – Sensitivity	-1500	-2000	-2500	PPM/°C	-40°C to 150°C
Thermal Hysteresis		<0.2		± % FSO	Zero pressure 25°C to 125°C
Long-Term Stability		<0.2		± % FSO	Zero pressure
Burst Pressure	5X				Full scale pressure (top side)
Full-Scale Output (@ 1.5 mA / 7.5 V excitation)					
3 psi (0.21 bar; 21 kPa)	95	120	145	mV	Typical output at 1 psi = 40 mV
5 psi (0.34 bar; 34 kPa)	95	120	145	mV	
15 psi (1 bar; 103 kPa)	95	120	145	mV	
30 psi (2 bar; 207 kPa)	95	120	145	mV	Other outputs available upon request
50 psi (3.5 bar; 345 kPa)	95	120	145	mV	
100 psi (7 bar; 670 kPa)	95	120	145	mV	
150 psi (10 bar; 1035 kPa)	95	120	145	mV	
300 psi (21 bar; 2070 kPa)	95	120	145	mV	
500 psi (34 bar; 3447 kPa)	95	120	145	mV	Only for topside application

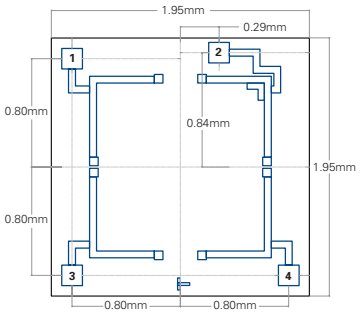
DIMENSIONS (millimeters, post-cut)

Half Closed Bridge



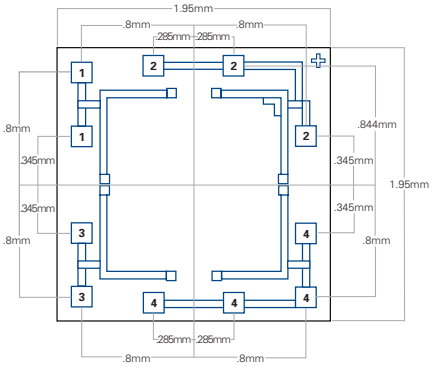
Bond Pad (1-4) Size = 0.15mm x 0.15mm
Bond Pad (5) Size = 0.30mm x 0.15mm

Closed Bridge



Bond Pad Size = 0.15mm x 0.15mm

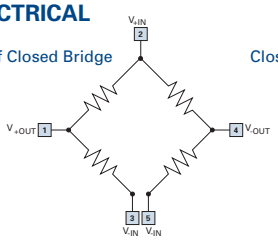
Closed Bridge (K Layout)



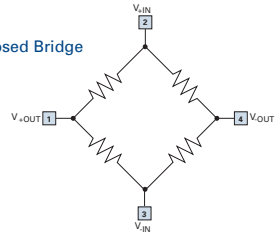
Note: Bridge output bond pads (V_{-out} and V_{+out}) correspond to top side pressure. For back side pressure, the bridge outputs are reversed.

ELECTRICAL

Half Closed Bridge

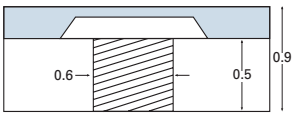


Closed Bridge



Standard Bond Pad
Metallization = Aluminum

Absolute also; other constraints available



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