MERIT SENSOR™

DATA SHEET

K Series

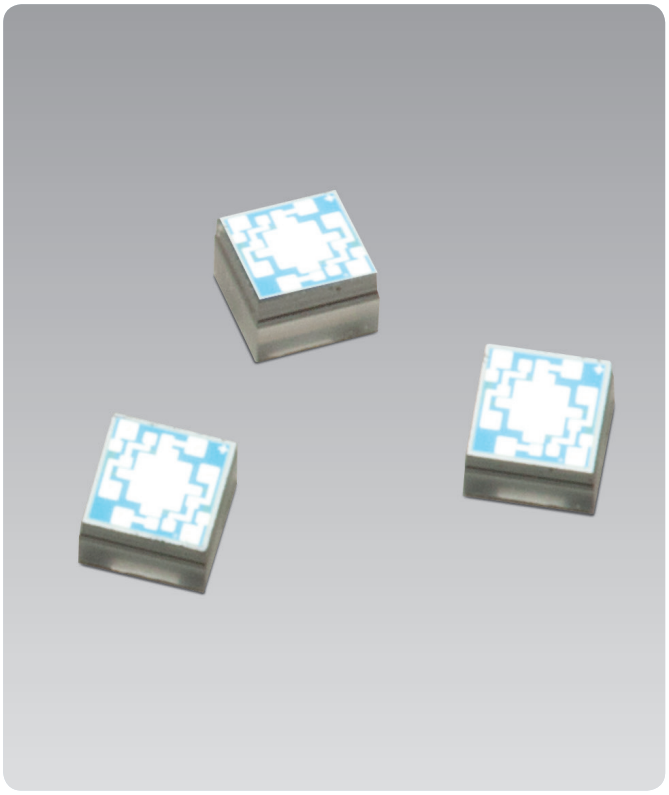
The K Series is ideal for high-volume, high-pressure applications.

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	1,000 to 10,000 psi (68.9 to 690 bar; 6,895 to 68,948 KPa)
Type	Absolute
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

K Series Part Number Configurator

KXX-XXXX-5T

Impedance
1 = 5kohm Bridge
2 = 3.5kohm Bridge

Bridge
O = Open
H = 1/2 Open

µV/V/psi
0003 = 10,000 psi
0006 = 5,000 psi
0030 = 1,000 psi

Constraint
5 = Absolute

Example: K1O-0003-5T offers 5kohm Impedance, Open Bridge,10,000 psi and Absolute Constraint

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

Sales +1 801.208.4722 • Customer Service +1 801.208.4700 • Fax +1 801.208.4798 • sensors@merit.com • www.MeritSensor.com
1600 W. Merit Parkway • South Jordan, Utah • 84095 • USA

MERIT SENSOR™

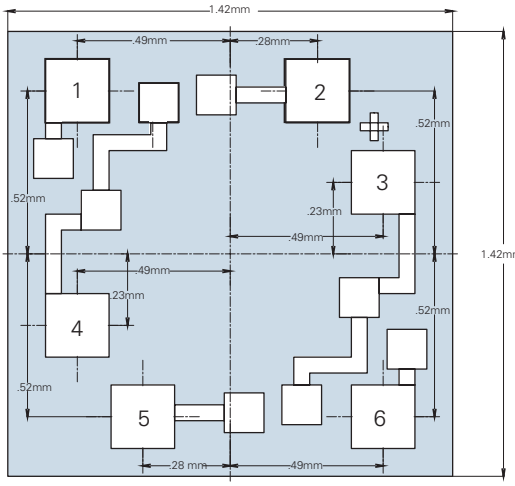
K Series

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; @25°C
Non-linearity	-0.2	0	0.2	% FSO	BFSL; @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	2500	3000	3500	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; for 1,000 psi part
Thermal Hysteresis	-0.25	0	0.25	% FSO	Zero Pressure; for 5,000 psi and 10,000 psi part only
Long-Term Stability	-0.1	0	0.1	% FSO	
Burst Pressure	3X				Full scale pressure
Full-Scale Output (@ 5 volts excitation)					
1,000 psi (68.9 bar; 6,895 KPa)	125	150	175	mV	Other outputs available upon request
5,000 psi (345 bar; 34,474 KPa)	125	150	175	mV	
10,000 psi (689 bar; 68,948 KPa)	125	150	175	mV	

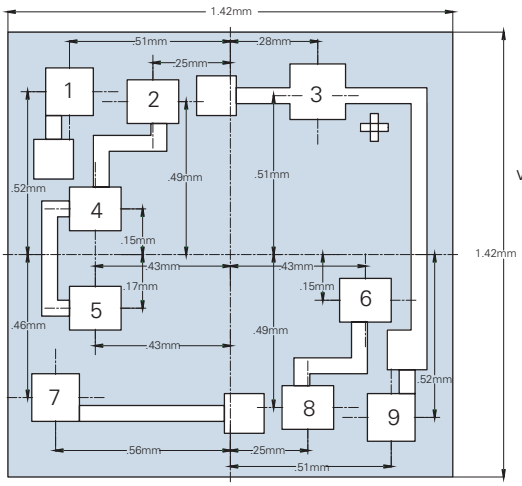
DIMENSIONS (millimeters, post-cut)

Open Bridge



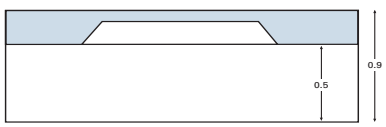
Bond Pad Size (1-6) = 0.2 x 0.2

Half Bridge



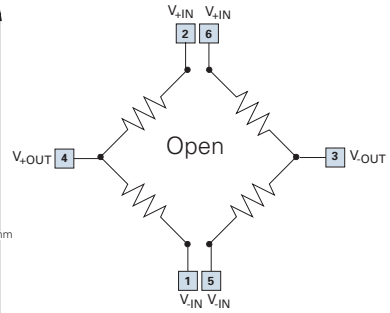
Bond Pad Size (1, 7, 9) = .15 x .15
Bond Pad Size (2, 4, 5, 6, 8) = .14 x .17
Bond Pad Size (3) = .18 x .18

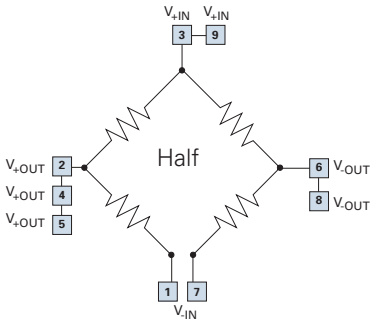
Standard Bond Pad
Metallization = Aluminum



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.

Sales +1 801.208.4722 · Customer Service +1 801.208.4700 · Fax +1 801.208.4798 · sensors@merit.com · www.MeritSensor.com
1600 W. Merit Parkway · South Jordan, Utah · 84095 · USA