MERIT SENSOR™

PRELIMINARY

DATA SHEET

LP Series – Digital

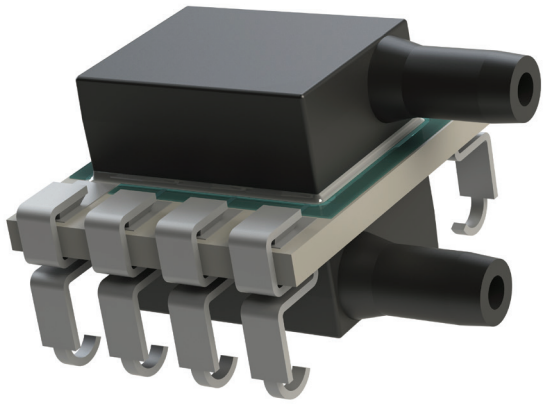
LP Series - Digital is a surface mountable pressure sensor package with a compensated digital output suitable fo **ultra-low pressure sensing applications.**

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 85°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, tests, sells and services die and packaged products from a state-of-the-art facility near Salt lake City, Utah.



RoHS Compliant

FEATURES

Pressure Range	0.15 to 1 psi (10.3 to 68.9 mbar; 1.03 to 6.89 KPa; 4.2 to 27.7 in H_2O)
Output	I^2C
Type	Gage and Differential
Media	Clean, Dry Air and Non-corrosive Gases
Packaging	Tape and Reel
Customization	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

1420 Family Part Number Configurator

1420-XXXX-XX11-111

Pressure
P15 = .15psi
P20 = .20psi
P30 = .30psi
P50 = .50psi
1P0 = 1.0psi

Reference
D = Differential
G = Gage

Clock Speed
1 = 4MHz

I²C Address
0 = 0x28
1 = 0x38
2 = 0x48
3 = 0x58
4 = 0x68
5 = 0x78
6 = Open*

Pin Type
1 = J-lead

Port
1 = Dual horizontal, facing same direction

Input Buffer
1 = None**

Update Rate
1 = 0.5ms

Operation Mode
1 = Update mode constant

*Device will respond to any address.

**47nF capacitor recommended between Vdd and Ground.

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SPECIFICATIONS

Parameter	Minimum	Typical	Maximum	Units	Notes
Electrical					
Supply Voltage (Vdd)	2.7	5	5.5	V	
Supply Current		3		mA	(1)
Operating Temperature	-40		85	°C	
Storage Temperature	-55		100	°C	
Performance					
Pressure ADC Resolution			14	Bits	
Temperature ADC Resolution			10	Bits	
Pressure Accuracy	-1.5		1.5	% FSO	(3)
Startup time			8	ms	
Digital update time	0.5		125	ms	
Proof Pressure	5X				(4)
Burst Pressure	10 psi				
Media Compatibility					
For Use With Non-corrosive Dry Gasses Solder temperature: max 250 °C, 5 seconds max					

Notes:

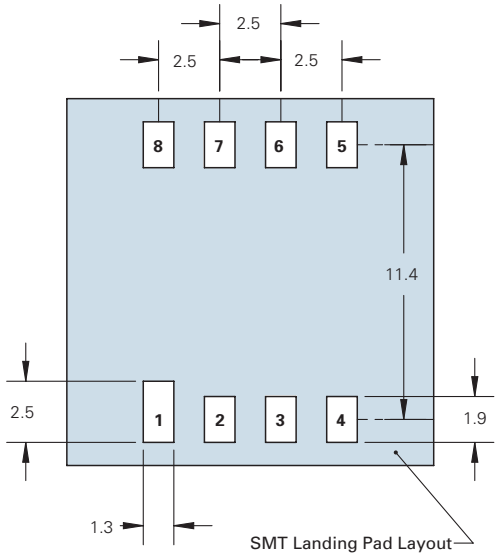
(1) Supply current depends on update rate (update mode)

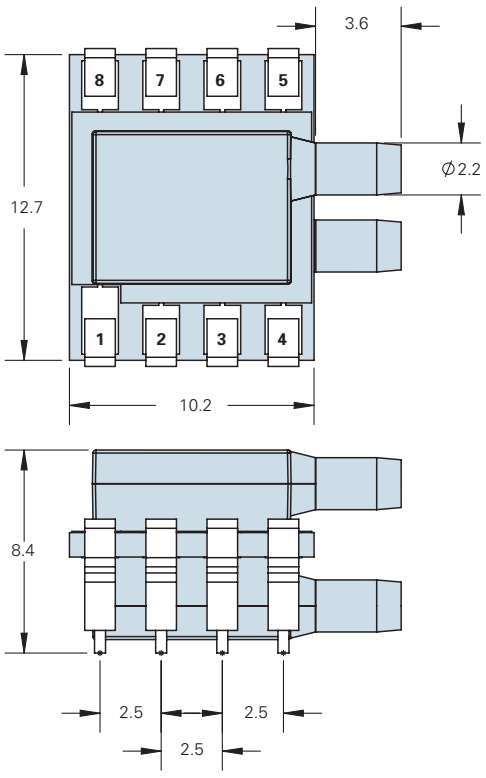
(2) @5V input voltage,

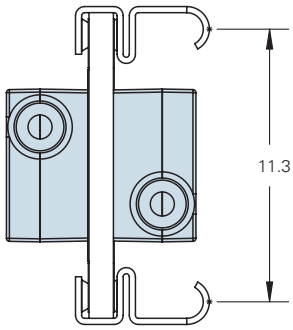
(3) Over -40°C to 85°C

(4) Full scale pressure

DIMENSIONS (millimeters)







Device Pinout
P1 = Vdd - Supply voltage
P2 = N/C
P3 = N/C
P4 = VSS - Ground
P5 = N/C
P6 = SS - I²C conversion complete signal/SPI slave select
P7 = SDA/MISO - I²C data/SPI data
P8 = SCL/SCLK - I²C clock/SPI clock

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