

Surface Mount and DIP Pressure Sensors Low-Cost Packaged Die

DESCRIPTION

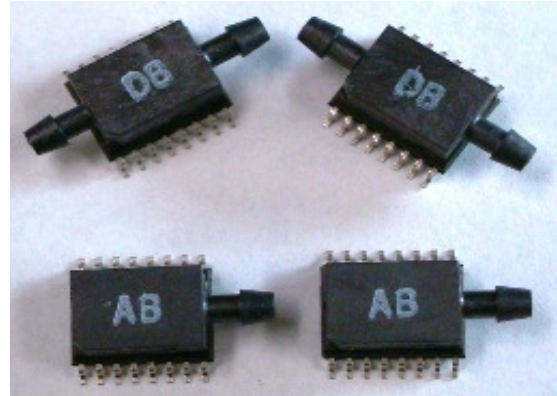
Silicon Microstructures provides its two most popular pressure sensor die in surface mount dual in-line package (SO16) configuration. All parts in these series are uncompensated high-performance die mounted in an injection-molded package designed for surface mounting.

These packaged sensor die provide a way for OEM manufacturers to incorporate pressure sensors at costs close to raw die prices, without the need to handle, attach or wire bond silicon sensor die.

Options include variety of pressure ranges, absolute or gauge pressure types, and a choice of cap configurations. The result is a versatile product line suitable for a wide range of applications.

The low-pressure series (model **SM5470**) incorporates Silicon Microstructure's unique low-pressure die to achieve high performance in pressure ranges from 0.15 PSI to 3.0 PSI full-scale in gauge and differential.

The model **SM5430** comes in gauge, differential, and absolute for pressure ranges from 5 PSI to 60 PSI full scale.



FEATURES

- Low pressure (from 0-0.15 to 0-60 PSI Full Scale)
- Easy to Use
- Compact and Light-weight
- High-performance, Stable Silicon Chip and Package
- Easily Embedded in OEM Equipment
- High-volume, Low Cost
- Available in Tape and Reel or IC Sticks

APPLICATIONS

- Altimeters
- Barometric Correction
- Tire Gauges
- Digital Pressure Gauges
- Environmental Monitoring
- Appliances
- Consumer and Sports
- HVAC
- Medical Instrumentation and Monitoring
- Pressure Differential and Flow Monitoring
- Hand-held Gauges

ABSOLUTE MAXIMUM RATING TABLE FOR SM5430/5470 SENSOR

All parameters measure at 5 V excitation at room temperature, unless otherwise specified.

All Models

Parameter	Min.	Typ.	Max.	Units	Notes	
Excitation Voltage	0	5.0	10.0	V		
Excitation Current	0	1.5	3.0	mA		
Zero Offset	SM5470 SM5430	-50 -50	-5 0	+50 +50	mV mV	
TC Span	-15	-19	-24	%FS/100°C	1, 4	
TC Resistance	33	28	25	%/100°C	1, 4	
Bridge Impedance	2.7	3.3	4.0	kΩ		
Operating Temp	-40		85	°C	4	
Storage Temp	-40		85	°C	4	

SM5430 Standard Pressure Series

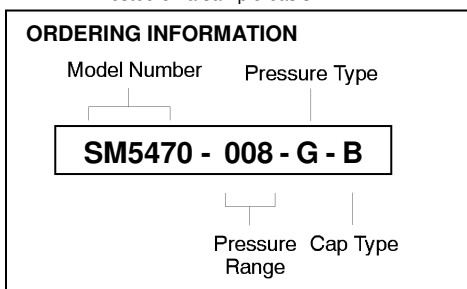
Span (FS Range), PSI (kPa)	Min.	Typ.	Max.	Units	Notes
5 (34)	75	100	125	mV	
15 (103)	105	145	175	mV	
30 (207)	115	165	195	mV	
60 (414)	115	180	220	mV	
Linearity	-0.2	±0.07	+0.2	%FS	3, 4
TC Offset	-5	-1	+5	%FS/100°C	1, 4
Burst Pressure	>5X			Rated FS Pressure	2, 4

SM5470 Low Pressure Series Only

Span (FS Range), PSI (kPa)	Min.	Typ.	Max.	Units	Notes
0.15 (1.03)	25	50	85	mV	
0.30 (2.07)	25	50	85	mV	
0.80 (5.52)	25	50	85	mV	
1.50 (10.3)	25	50	85	mV	
3.00 (20.7)	25	50	85	mV	
Linearity	-0.3	±0.1	+0.3	%FS	3, 4
TC Offset	-12		+12	%FS/100°C	1, 4
Burst Pressure	15X			Rated FS Pressure	2, 4

Notes:

1. Measured from 0 to 70°C
2. Sensor die will survive pressure specified for all ranges. Maximum package pressure is 150 PSI.
3. Defined as best-fit straight line (BFSL); for 0.3 PSI full-scale, linearity is ±0.5%FS. For 0.15 PSI full-scale, linearity is ±2.5% Full-Scale.
4. Tested on a sample basis.



Pressure Type

- A: Absolute (except 5470)
- G: Gauge
- D: Differential

Available Cap Type

- B: Horizontal Barbed Port(s)

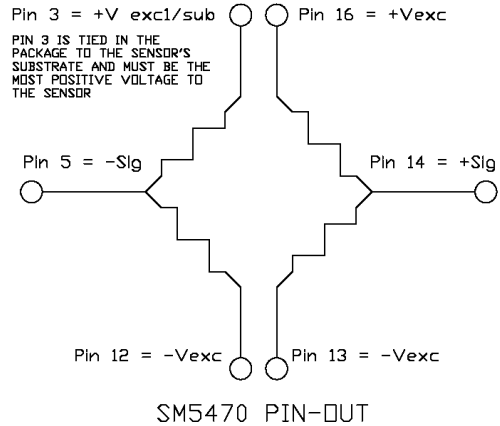
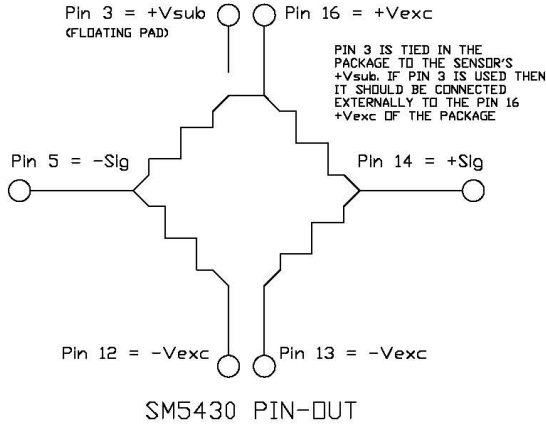
Std. Pressure Ranges

PSI	5430
5	005
15	015
30	030
60	060

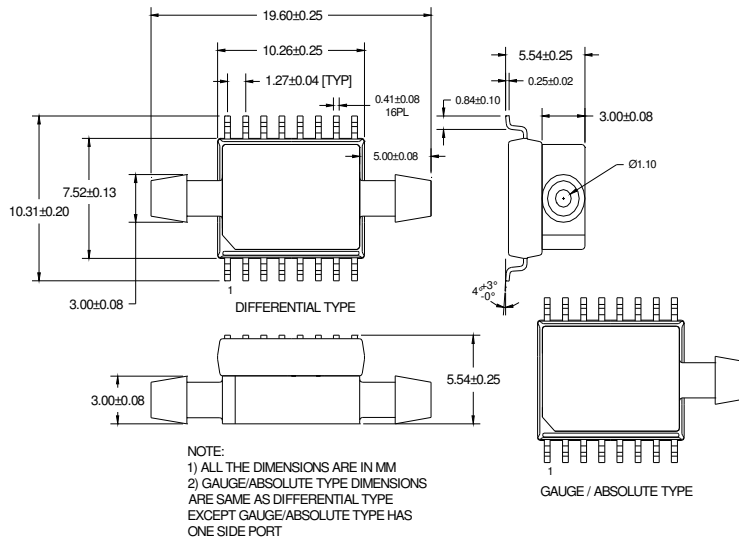
Low Pressure Ranges

PSI	5470
0.15	001
0.30	003
0.80	008
1.50	015
3.00	030

Pin Out -- SM5430/SM5470



B- Horizontal Barb Configuration



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