SILICON MICROSTRUCTURES INCORPORATED

SM5430/SM5470
Low Cost Packaged Pressure Sensors

- ***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 (SO-16) configuration. All parts in these series are uncompensated high-performance die mounted in an injection-molded package designed for surface mounting.

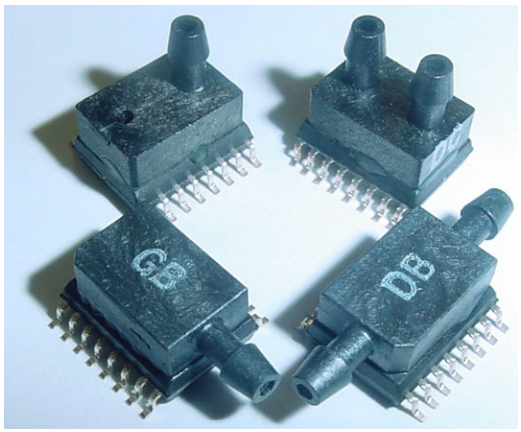
These packaged sensor die provide a way for OEM manufacturers to incorporate pressure sensors at costs close to raw die prices, without the need to handle, attach, or wire bond silicon sensor die.

Options include pressure range, absolute or gage configuration, and a choice of cap configurations. The result is a versatile product line suitable for a wide range or OEM applications.

The low-pressure series (model **SM5470**) incorporate Silicon Microstructures unique low-pressure die to achieve high performance in pressure ranges from 0.15 PSI full-scale to 3 PSI full-scale in gauge and differential configuration.

The model **SM5430** comes in gauge, differential, and absolute versions for pressure ranges from 5 PSI to 100 PSI.

Now Available in Tape and Reel



FEATURES

- Low pressure (from 0-0.15 to 0-100 PSI FS)
- Easy to Use
- Compact and Light-weight
- High-performance, Stable Silicon Chip and Package
- Easily Embedded in OEM Equipment
- High-volume, Low Cost

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

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CHARACTERISTICS FOR SM5430/SM5470 - *SPECIFICATIONS*
All parameters measure at 5V 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	
Offset **SM5470**	-75	-30	+25	mV	
Offset **SM5430**	-50	0	+50	mV	
TC Span	-15	-19	-24	%FS/100°C	1
TC Resistance	33	28	25	%/100°C	1
Bridge Impedance	2.7	3.3	4.0	kΩ	
Operating Temp	-40		85	°C	
Storage Temp	-55		125	°C	

SM5430 Standard Pressure Series

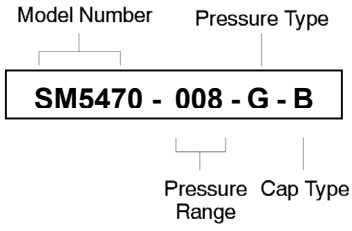
Span (FS Range), PSI (kPa)	Min.	Typ.	Max.	Units	Notes
5 (34)	75	100	125	mV	3
15 (103)	105	145	175	mV	3
30 (207)	115	165	195	mV	3
60 (414)	115	180	220	mV	3
100 (689)	115	200	250	mV	3
Linearity	-0.2	± 0.07	+0.2	%FS	4
TC Offset	-5	-1	+5	%FS/100°C	1
Burst Pressure	>5X			Rated FS Pressure	2

SM5470 Low Pressure Series Only

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

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. Measured at 5V, constant voltage excitation
4. Defined s 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%FS.

ORDERING INFORMATION



Pressure Type
A: Absolute (except 5470)
G: Gauge
D: Differential

Available Cap Type
B: Horizontal Barbed port(s)
C: Vertical Barbed port(s)

Std. Pressure Ranges

PSI	5430
5	005
15	015
30	030
60	060
100	100

Low Pressure Ranges

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

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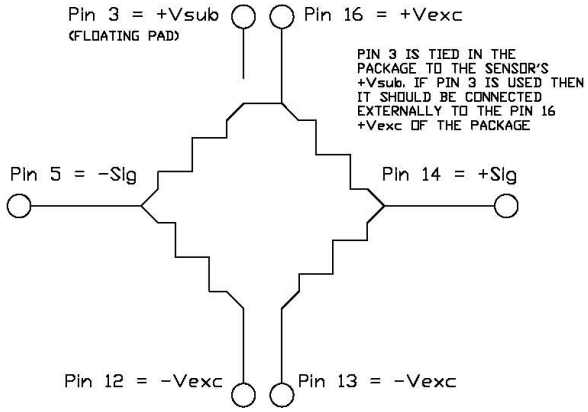
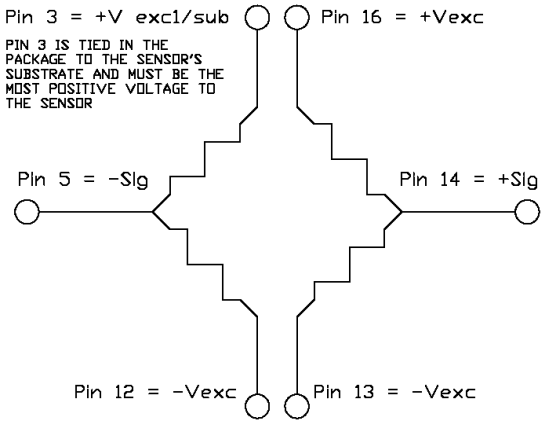
Pin Out -- SM5430/SM5470



SM5430 PIN-OUT



SM5470 PIN-OUT

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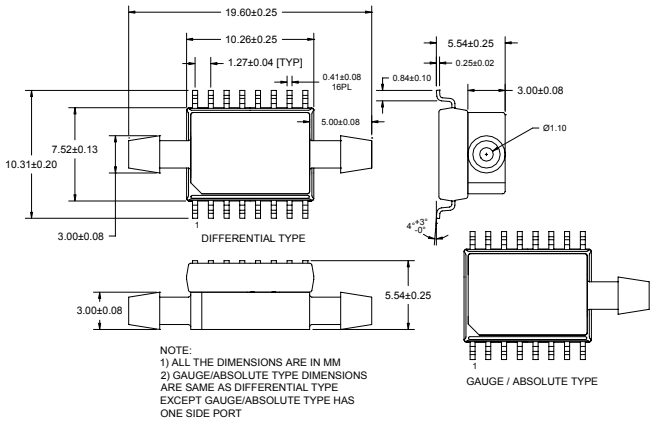
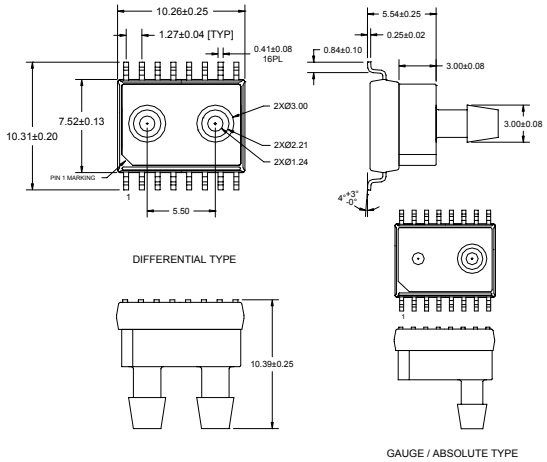
B- Horizontal Barb Configuration



NOTE:
1) ALL THE DIMENSIONS ARE IN MM
2) GAUGE/ABSOLUTE TYPE DIMENSIONS ARE SAME AS DIFFERENTIAL TYPE EXCEPT GAUGE/ABSOLUTE TYPE HAS ONE SIDE PORT

C- Vertical Barb Configuration



NOTE:
1) ALL THE DIMENSIONS ARE IN MM
2) GAUGE/ABSOLUTE TYPE DIMENSIONS ARE SAME AS DIFFERENTIAL TYPE EXCEPT GAUGE/ ABSOLUTE TYPE HAS ONE VERTICAL PORT

Dimensions (in millimeters) -- SM5430/SM5470

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