

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 60 PSI.



FEATURES

- Low pressure (from 0-0.15 to 0-60 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
- Available in Tape and Reel

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

40SP5012.00



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CHARACTERISTICS FOR SM5430/SM5470 - SPECIFICATIONS

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

All Models

Parameter		Min.	Тур.	Max.	Units	Notes
Excitation Voltage		0	5.0	10.0	V	
Excitation Current		0	1.5	3.0	mA	
Zero Offset	SM5470	-75	-30	+25	mV	
	SM5430	-50	0	+50	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.	Тур.	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	<u>+</u> 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
ONE 170 Laws Draw on the Oracle					

SM5470 Low Pressure Series Only

Span (FS Range), PSI (kPa)	Min.	Тур.	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	<u>+</u> 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

Sensor die will survive pressure specified for all ranges. Maximum package pressure is 150 PSI.
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%FS.

4. Tested on a sample basis.





G: Gauge

D: Differential

Available Cap Type B: Horizontal Barbed Port(s)

Std.	. Pressure Ranges	Lov	Low Pressure Ranges		
PSI	5430	PSI	5470		
5	005	0.15	001		
15	015	0.30	003		
30	030	0.80	008		
60	060	1.50	015		
		3.00	030		

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Pin Out -- SM5430/SM5470









B- Horizontal Barb Configuration



Dimensions [mm] - SM5430/SM5470



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