



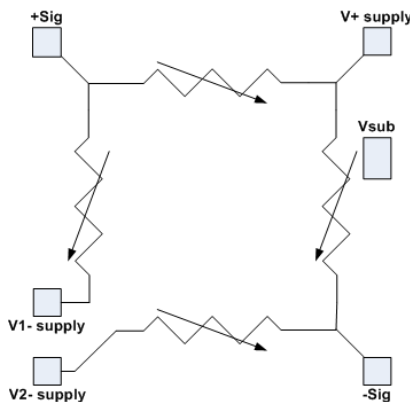
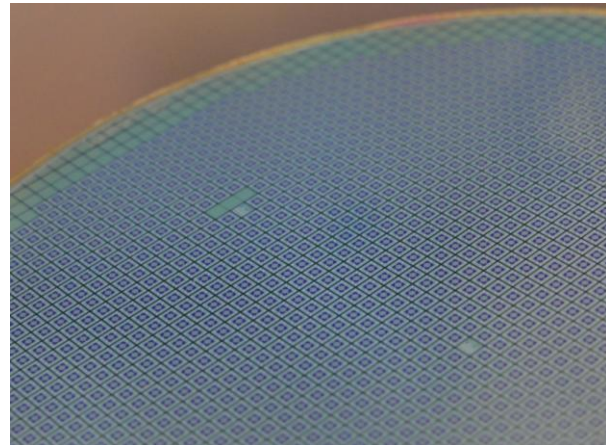
Acuity Series AC3030 20 to 100 mbar Low Pressure Sensor Die

Acuity Incorporated
Fremont, California
USA 94539

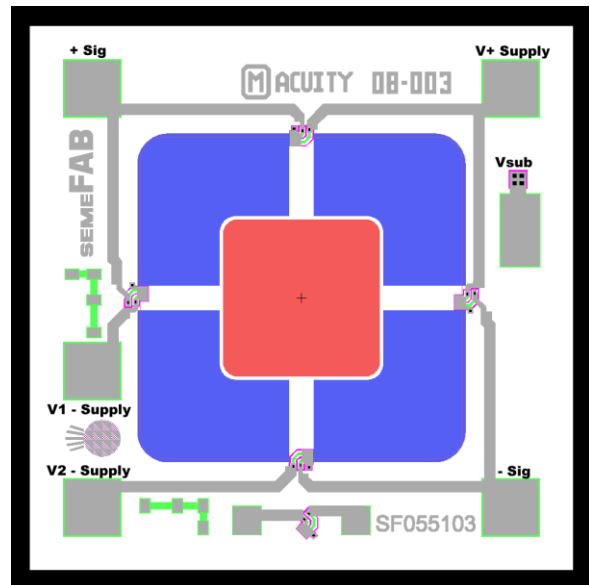
The AC3030 series pressure die is a new generation of low-pressure die. It has been designed to replace existing low-pressure die with a much smaller foot-print, and improved zero-stability, reduced g-sensitivity and reduced sensitivity to humidity.

Based on the same basic structure and sensing element as the lower pressure AC3050 series, the AC3030 is a small (1.6 mm square) die that is optimized for 20 mbar to 100 mbar full-scale. It can be driven to higher pressures with good performance, or further amplified for lower pressure sensitivity. In addition to these standard pressure ranges, the die is available for higher full-scale ranges on a special order basis.

Suitable for a wide range of packages, it is particularly designed for low-pressure differential sensing in such applications as medical ventilation and respiration, HVAC, air-flow, and a variety of industrial pressure and flow applications.



Equivalent Circuit Diagram



**Pin-out of Acuity AC3030
Low-Pressure Die**

+ Sig increases and -Sig decreases
when pressure is applied to the top of the die



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Specification	Acuity Low Pressure Sensor - AC3030					Note
		Min	Nominal	Max	Unit	
Mechanical						
Stepping size	X	1.599	1.600	1.601	mm	
	Y	1.599	1.600	1.601	mm	
Unconstrained wafer thickness	Z	0.401	0.406	0.411	mm	
Electrical						
Resistance						
Bridge resistance - 3.5k		3.30	3.70	4.20	kohms	1
TCR		2400	2800	3100	ppm/degree C	2
Resistance Ratiometricity		-1.0	0.1	1.0	%	3
Offset						
Offset - No Pressure		-100.0	0.0	25.0	mV	1
Offset Ratiometricity		-0.2	0	0.2	mV/V	3
TCO		-20	2	20	microV/V/degree C	2
Leakage						
Current Leakage - individual		0.1	2.5	20	nA	4
Sensitivity						
Span		30	55	82	mV	5
TCS		-2200	-1900	-1600	ppm/degree C	2
Pressure Nonlinearity		-0.75	0.15	0.75	%	6
Pressure Nonlinearity - F/B		-1.25	0.15	1.25	%	7
Mechanical Pressure						
Full Scale Pressure Ranges		20, 50, and 100			mBar	8
Overpressure - Burst		>15X			FS Pressure	
Overpressure - Proof		>5X			FS Pressure	

Note

- 1 Measured at 5.0 volts
- 2 Measured at +25 and +75 °C, normalized by reading at 25 °C
- 3 Measured at -2.5 and 5.0 Volts, normalized by reading at 5.0 volts
- 4 Measured from VSub substrate contact to any Resistor Pad at 10 V
- 5 Full scale output at 5 Volt drive and rated pressure
- 6 1/2 TBNL (Terminal Base Nonlinearity at 0, 50%, and 100% FS)
- 7 Ratio of sensitivity with +FS and - FS pressures applied
- 8 For custom pressure ranges, consult Acuity.

Ordering Information:

AC3030-XXX

where XXX =020 for 20 mBar,
 =050 for 50 mBar, and
 =100 for 100 mBar

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