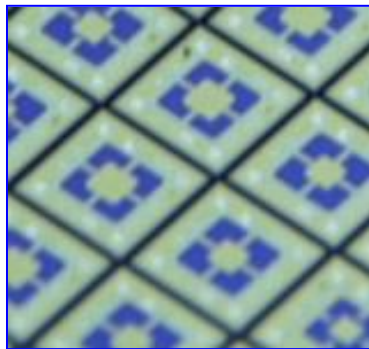




Over 150 million die shipped per year

# SF055103-50

## Low Pressure Sensor Die FS 50mbar



The SF055103-50 die is a new generation of low-pressure die particularly suited for low-pressure differential sensing.

This innovative design can be driven to higher pressures with good linearity performance, or further amplified for lower pressure sensitivity.

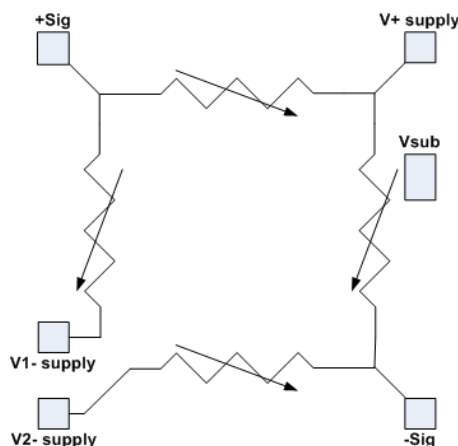
In addition to the 50mbar full-scale pressure range, the SF055103 product range is available in other full-scale ranges on a special order basis.

### Features:

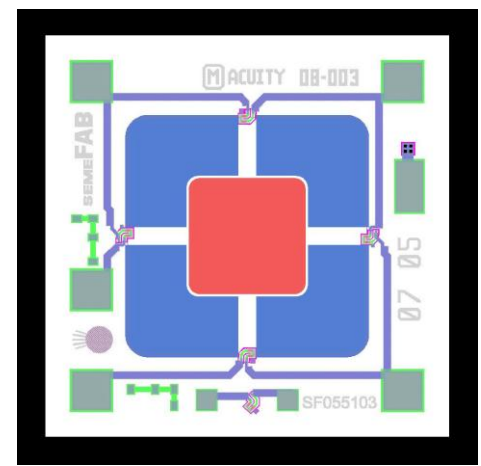
- Small Footprint (1.6mm x 1.6mm)
- 50mbar Full Scale
- Improved Zero Stability
- Reduced g-Sensitivity
- Reduced Sensitivity to Humidity
- Excellent Linearity

### Applications:

- Medical Ventilation & Respiration
- HVAC & Air Flow Control
- Industrial Pressure & Flow Control



**Equivalent Circuit Diagram**



**Pin-out of Semefab Low Pressure Die**



SF055103-50

Low Pressure Sensor Die  
FS 50mbar

ELECTRICAL CHARACTERISTICS:

Specification	Low Pressure Sensor SF055103					Note
		Min	Nominal	Max	Unit	
<b>Mechanical</b>						
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	
<b>Electrical</b>						
<b>Resistance</b>						
Bridge resistance - 3.5k		3.3	3.7	4.2	kohms	1
TCR		2400	2800	3100	ppm/degreeC	2
Resistance Ratiometricity		-1.0	0.1	1.0	%	3
<b>Offset</b>						
Offset - no pressure		-100	0	25	mV	1
Offset ratiometricity		-0.2	0	0.2	mV/V	3
TCO		-20	2	20	microV/V/degreeC	2
<b>Leakage</b>						
Leakage current - individual		0.1	2.5	20	nA	4
<b>Sensitivity</b>						
Sensitivity		30	55	82	mV	5
TCS		-2000	-1700	-1400	ppm/degreeC	2
Pressure nonlinearity		-0.7	0.1	0.7	%	6
Pressure nonlinearity - F/B		-1.0	0.1	1.0	%	7
<b>Mechanical Pressure</b>						
Full Scale Pressure Ranges			50		mBar	8
Overpressure		>10X			FS Pressure	9
		>5X			FS Pressure	10

Note

- 1 Measured at 5 volts
- 2 Measured at +5V and -2.5V drive, normalized by volt drive
- 3 Measured at 2.5 and 5.0 volts
- 4 Measured from N+ substrate contact to any Resistor Pad at 9V
- 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 with Semefab
- 9 Will not break through after 100 cycles of 0 to 10xFS in 1 sec
- 10 Will not break through after >1 million cycles of 0 to 5xFS in 1 sec