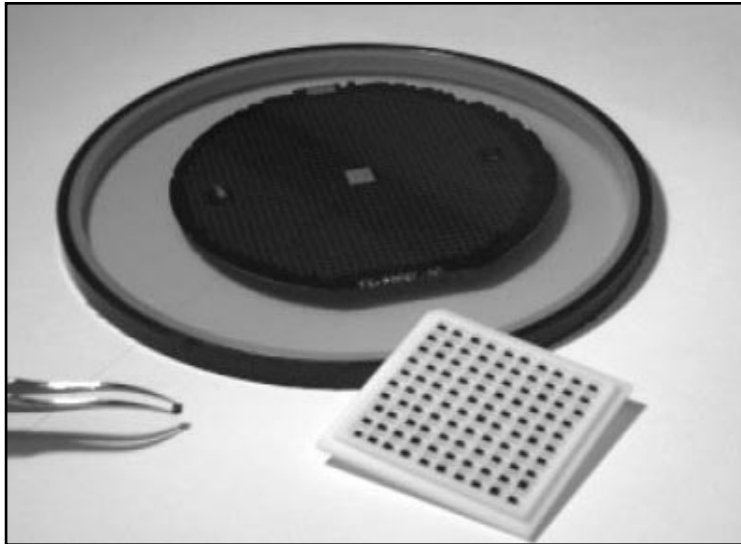


Description

Silicon Microstructures' Model SM-5105 piezoresistive, silicon medical pressure die has been designed and tested for use in products that need to meet or exceed AAMI specifications. The device is optimized for use in the high volume, disposable blood pressure industry, and is also suitable for a wide variety of applications that require low cost, low impedance pressure die.

SMI's medical pressure die is offered with several custom features in order to provide maximum flexibility. Optional custom metal patterns allow for direct die replacement on existing substrates. In addition, impedance ranges can be tailored to match specific customer requirements.



Features

- Optimized and tested for use in products that need to meet AAMI specifications.
- Optional metal patterns for direct replacement on most substrates.
- Customized impedance ranges.
- Virtually unlimited capacity.
- Very low cost.
- High quality devices manufactured at the best sources worldwide.
- Shipped fully probed and diced on wafer dicing tape, or to customer specification.

Characteristics

Parameter	Min	Typ	Max	Units
Die Configuration	—	—	—	—
Stepping Size	—	2.25 x 2.25	—	mm
Diced Size	1.9 x 1.9	2.0 x 2.0	2.15 x 2.15	mm
Output Pads	—	—	5.0	—
Impedance ¹	310	330	370	Ω
Sensitivity	15	30	52	$\mu\text{V/V/mmHg}$
Offset	-3.75	—	3.75	mV/V
Temperature	—	—	—	—
TCZ ²	-0.3	—	0.3	mmHg/ $^{\circ}\text{C}$
TCR ³	11.0	16	20	%/ 100°C
TCS ³	-6.3	-12.5	-15.5	%/ 100°C
TCSi ⁴	0.0	4.5	9	%/ 100°C
Non Linearity ⁵	—	—	1.7	%
Output Symmetry ⁶	-2.0	—	+2.0	%
Overpressure	125	—	—	PSI

Notes

- 1) Impedance range can be customized to meet specific customer requirements.
- 2) Maximum TCZ when fully compensated, assuming proper die down.
- 3) Measured from 25 to 40°C.
- 4) Approximately TCR + TCS. Measured from 25 to 40°C.
- 5) Total linearity error at 300 mmHg based on a straight line projection from 0 to 100 mmHg.
- 6) Symmetry is defined as the difference in output voltage at the positive output terminal when compared to 1/2 the drive voltage.

Ordering Information

Please contact Silicon Microstructures for samples and ordering information.

Figure 1: Standard Wire Bond Pad Layout

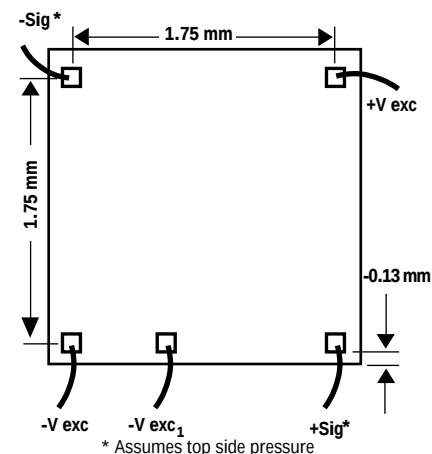


Figure 2: Typical Medical Die Dimensions

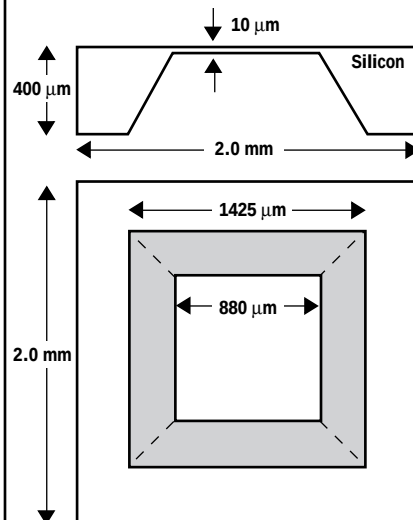
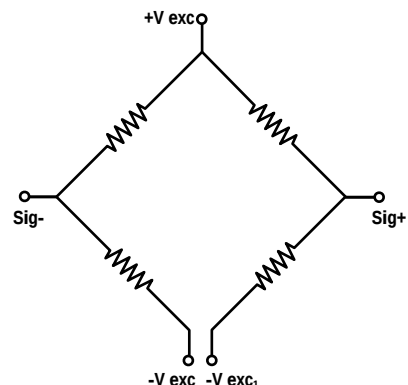


Figure 3: Schematic



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Additional Products

- Accelerometers
- OEM Pressure Transducers
- Custom Designed Products
- Low Range Pressure Sensors