

Features and Benefits

- 0 -1.0 Bar Range
- Compact Design
- High Long Term Stability
- Low Cost

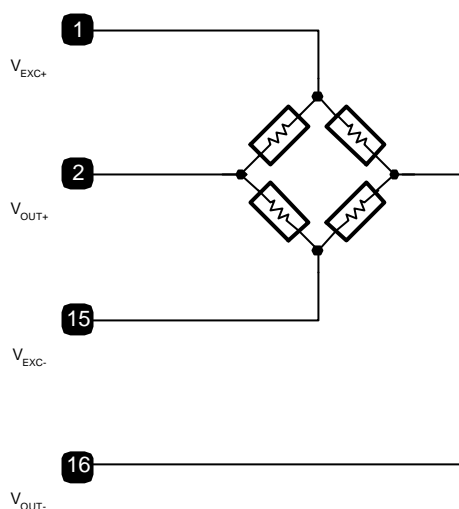
Applications

- Medical Instrumentation (Blood Pressure)
- Consumer Appliances
- Sports Equipment
- Pressure Difference and Flow monitoring

Ordering Information

| | | | |
|----------|--------------------|---------|-----------------------|
| Part No. | Temperature Suffix | Package | Temperature Range |
| MLX90210 | C | CA | -0C to 70C Commercial |
| MLX90210 | C | UD | -0C to 70C Commercial |

Functional Diagram



Description

The MLX90210 is a discrete micromachined pressure sensor IC suitable for pressure ranges between 0 to 1.0 Bar. The pressure medium must be dry and non-corrosive, such as air.

The 90210 is packaged in a plastic/ceramic package, (CA) or can be ordered as unpackaged die (UD)

The principal of the circuit is a piezoresistive bridge which is realized in silicon through a special micromachine process. As pressure is applied to the bridge, a differential voltage change is seen across the V_{OUT} pins, while a bias voltage is applied to the V_{EXC} pins.

The MLX90210 is a versatile pressure sensor solution which can be directly interfaced with other Melexis ICs such as the MLX90308, which provides amplification, signal conditioning as well as the bias current to supply the sensor itself.

MLX90210 Electrical Specifications

DC Operating Parameters $T_A = 25^\circ\text{C}$, $V_{DD} = 5\text{V}$ (note 3), Pressure = 1.0 Bar full scale.

| Parameter | | Min | Typ | Max | Units |
|---------------------------|-----------|-------|--------|-------|-----------------------|
| Excitation voltage | | 0 | 5 | 12 | V |
| Zero Pressure Offset | V_{OFF} | -30 | 0 | +30 | mV |
| Sensitivity | S | 14 | 22 | 30 | mV/V/bar |
| TC of the Sensitivity (1) | TC_S | -0.17 | -0.001 | -0.26 | $^\circ\text{C}^{-1}$ |
| Bridge Resistance | R_{BR} | 12 | 14 | 16 | kOhm |
| Burst pressure | | | | 2 | Bar |
| Operating Temp | | 0 | | 70 | $^\circ\text{C}$ |
| Storage Temp (2) | | -55 | | 150 | $^\circ\text{C}$ |

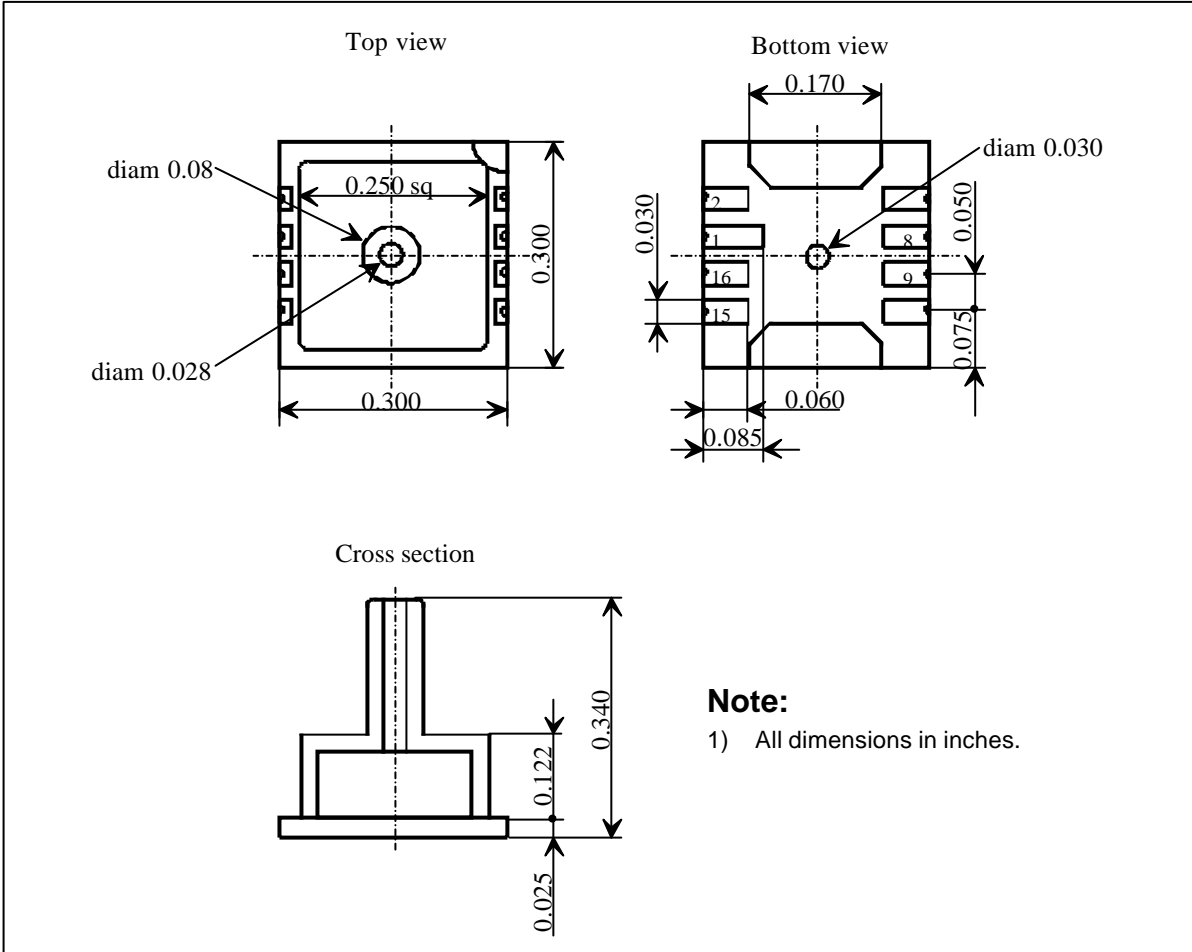
MLX90210 Mechanical Dimensions (4)

| | |
|----------------|-----------------|
| Membrane Size | 0.81mm X 0.81mm |
| Chip Thickness | 0.61mm |
| Chip Size | 1.90mm X 1.90mm |

Notes:

- 1) Temperature range refers to operation and deposit in an inert environment
- 2) Temperature range refers to operation and depos it in an inert environment
- 3) To prevent measurement errors, measure above 3V V_{DD} in impulse mode
- 4) Tolerance of 10% unless otherwise specified.

“CA” Package Dimensions



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