

INO

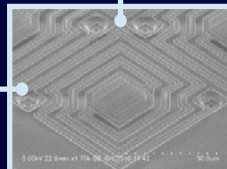
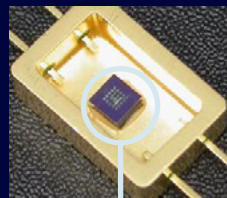
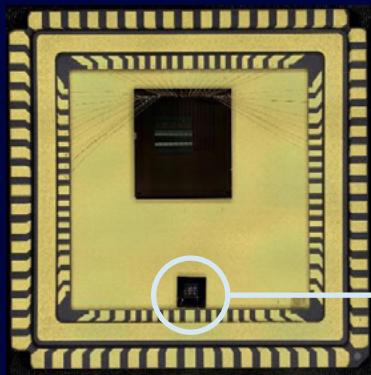
MEMS-PIRANI

PRESSURE MICROSENSOR AND CONTROL
SOFTWARE WITH IMPROVED READING UNIT

The INO MEMS-Pirani sensor uses a technology derived from the advanced INO uncooled microbolometer developed for IR imaging. INO's patented measurement method is embedded in a commercially available software. Our improved reading unit includes the software and a Voltage Bias source, all in an integrated design.

FEATURES AND BENEFITS

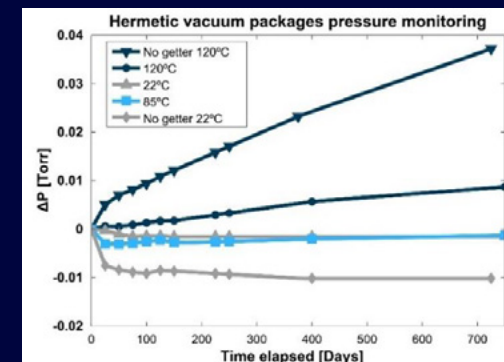
- Extended measuring range from 1×10^{-3} Torr to 1 atm
- Ultra-compact design: easy integration in packages
- Low ambient temperature sensitivity
- User-friendly software for direct pressure measurement
- Quick hermeticity test



KEY APPLICATIONS

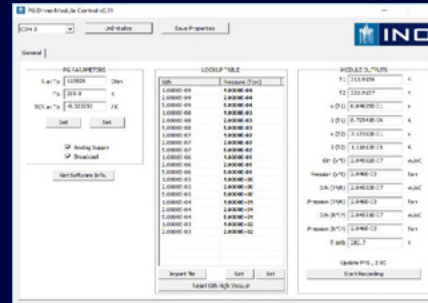
The MEMS-Pirani has proven an invaluable tool in vacuum packaging process development and performance assessment. This internal cavity pressure measurement over time is a non-destructive method with leak rate detection limit lower than conventional helium tests.

- Pressure monitoring in hermetic vacuum packages
- Reliability testing and accelerated life testing
- General vacuum control
- Vacuum pressure measurement in semiconductor and coating industries



SOFTWARE AND READING UNIT

- Reading speed: 0.25 to >2 seconds
- Repeatability: 1.06×10^{-11} (0.5 sec)
- Repeatability: 0.56×10^{-11} (1.0 sec)
- Autonomous, plug and play, logarithmic analog output
- 250 cc size (COTS, could be 160 cc with current PCB)
- Simple USB connection to computer or +5V supply



SPECIFICATIONS*

SENSOR TYPE

MEMS-Pirani

MEASUREMENT RANGE

$<1 \times 10^{-3}$ Torr to 1 atm

ACCURACY (typical)

$\pm 5\%$ of reading from 3 mTorr to 10 mTorr
 $\pm 2\%$ of reading from 10 mTorr to 760 Torr (10 mTorr to 10 Torr, TRL-06 unit)

REPEATABILITY (typical)

$\pm 2 \times 10^{-4}$ Torr or $\pm 1.5\%$ of reading from 1 mTorr to 760 Torr

CALIBRATION STABILITY WITH TEMPERATURE

$\pm 5 \times 10^{-5}$ Torr/ $^{\circ}\text{C}$ or $\pm 0.7\%/^{\circ}\text{C}$ from 5 mTorr to 40 Torr (5 mTorr to 10 Torr, TRL06 unit)

BAKEOUT TEMPERATURE

300 $^{\circ}\text{C}$ (572 $^{\circ}\text{F}$) maximum

RESPONSE TIME

< 100 ms

CHIP SIZE (typical)

< 2 mm x 2 mm

*All calibrations were made using air as a calibration gas.
 Note: All specifications are subject to change without notice

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