

MBX-RPS6-01

Integrated Relative Pressure Sensor Die With Rejistor-based On-Chip Analog Conditioning Capability

GENERAL DESCRIPTION

The MBX-RPS series piezoresistive transducer is a monolithic silicon pressure sensor designed to sense relative air pressure for a wide range of applications. This transducer combines patented Rejistor technology with CMOS circuitry to provide a pressure sensor die with analog-only compensation and conditioning electronics.

FEATURES

- 1% maximum error (compensated) over 0°C to 85 °C
- Electronics to fully compensate (Offset, TC-Offset, Span, TC-Span)
- Rejistor-based analog-only on-chip signal conditioning
- Temperature compensation over -40°C to 125 °C
- Enables compensation after packaging/assembly
- Enables compensation during final test

TABLE 1: PRELIMINARY SPECIFICATION FOR RELATIVE PRESSURE DIE WITH ON-CHIP ANALOG CONDITIONING CAPABILITY

Characteristics	Specification
Pressure type:	Relative (RPS)
Pressure range:	6-bar*
Excitation voltage:	5V +/-0.5VDC
Current consumption:	less than 4mA (No load)
Minimum output load resistance:	5kOhm (less than 1 mA output drive current)
Nominal output voltage:	0.5V (at -6-bar); 2.5V (at 0-pressure); 4.5V (at +6-bar)
Nominal full-scale voltage span:	2V
Type of output voltage:	Ratiometric to Excitation voltage
Accuracy:	+/-1% in temperature range 0C to +85C +/-2% in temperature range -50 to +125C
ESD protection:	2000V HBM
Bandwidth:	1kHz
Minimum bondpad dimensions:	90um x 90um
Minimum bondpad pitch:	150um
Functional pins:	3 (Supply, GND, Output)
Heater pins:	8 (Heater-GND is shared with main Functional GND)
Total pins:	11 (Functional and Heater)

*Other full-scale relative pressure ranges are available.