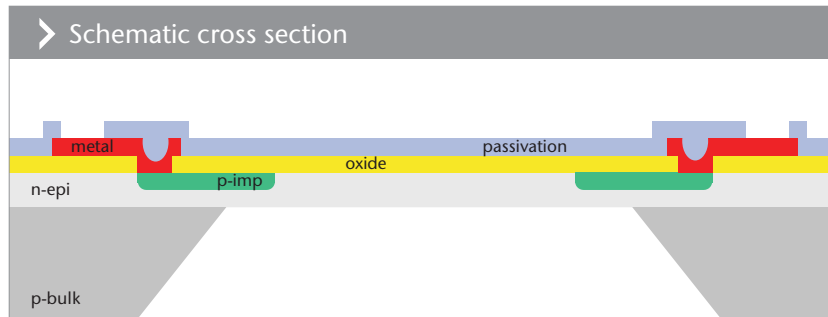


➤ Bulk Micromachining Technology for Discrete Relative Pressure Sensors XM-BP

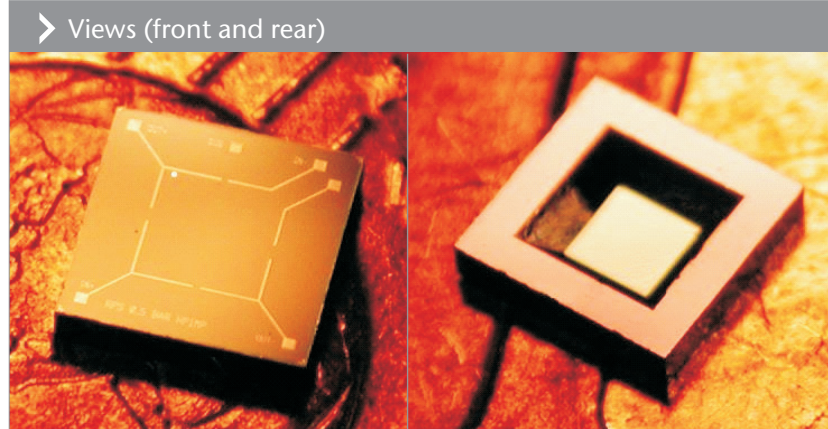
XM-BP Technology



➤ Process

- Bulk micromachining technology
- Implanted piezoresistors
- Diaphragm fabricated by anisotropic silicon etching
- Electrochemical etch stop for low tolerance of membrane thickness

Relative Pressure Sensor Dies



➤ Features

- Relative pressure sensors
- Pressure ranges
0...0.5 bar to 0...15 bar
- Compact die size
(2.6 x 2.6 x 0.6 mm)
- Optional implantation for analog compensation (Option "aco")
- Available as wafers or diced on tape
- Customer specific sensors available on request

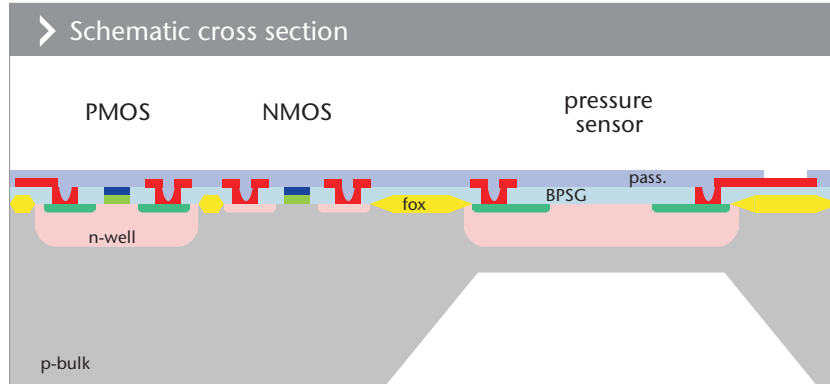
➤ Characteristics

Parameter	RPS-n	RPS-aco	Unit
Sensitivity			
0 ... 0.5 bar	59	65	mV/V/bar
0 ... 1 bar	24	26	
0 ... 6 bar	5.2	5.8	
0 ... 10 bar	3.0	3.5	
0 ... 15 bar	1.8	2.0	
TC Sensitivity	-2300	-2300	ppm/°C
Offset	±5	±5	mV/V
TC Offset	±0.01	±0.01	%FSO/°C
Bridge Resistance	15	22	kΩ
TC Resistance	700	3600	ppm/°C
Linearity Error	±0.3	±0.3	%FSO
Burst Pressure	5x	5x	FS
Temperature Range	-40 ... +125	-40 ... +125	°C

MEMS Process

➤ Bulk Micromachining Technology for Integrated Relative Pressure Sensors XM-BP

MEMS Process Module for XC10 CMOS



➤ Process

- MEMS process module for XC10 CMOS
- All other CMOS process modules available
- Diaphragms fabricated by anisotropic silicon etching
- Only one additional mask layer required

Pressure Sensor IP Cores

➤ Typical characteristics

Parameter	RPS-i	Unit
Sensitivity		
0 ... 0.5 bar	43	mV/V/bar
0 ... 1 bar	18	
0 ... 6 bar	3.9	
0 ... 10 bar	2.4	
0 ... 15 bar	1.3	
TC Sensitivity	-1600	ppm/°C
Offset	±5	mV/V
TC Offset	±0.02	%FSO/°C
Bridge Resistance	4	kΩ
TC Resistance	1300	ppm/°C
Linearity Error	±0.3	%FSO
Burst Pressure	5x	FS
Temperature Range	-40 ... +125	°C

➤ Features

- Relative pressure sensors
- Sensor IP core for integration in CMOS layout
- Pressure ranges 0...0.5 bar to 0...15 bar
- Compact cell size
- Customer specific sensor cells on request



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