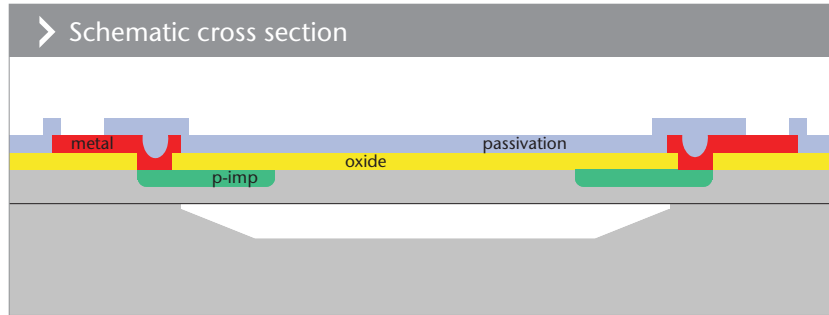


## ➤ Surface Micromachining Technology for Discrete Absolute Pressure Sensors

### XM-SP

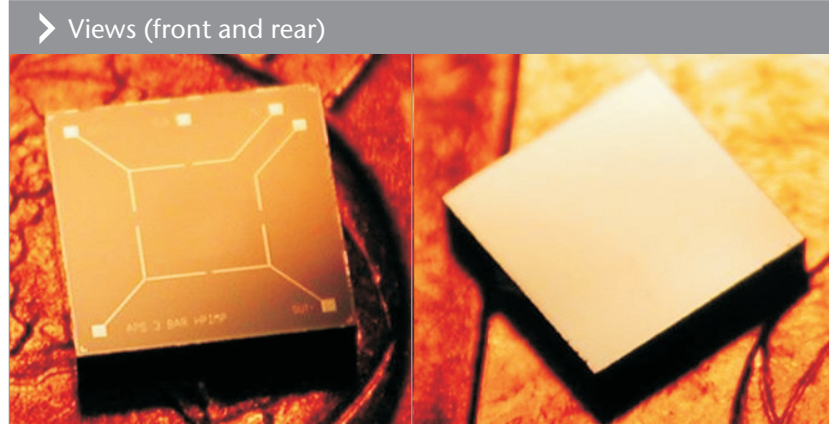
#### XM-SP Technology



#### ➤ Process

- Surface micromachining technology
- Membrane fabricated by wafer bonding and thinning
- Sealed cavity for vacuum reference
- Implanted piezoresistors

#### Absolute Pressure Sensor Dies



#### ➤ Features

- Absolute pressure sensors
- Pressure ranges 0...3 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 wafer or diced on tape
- Customer specific sensors available on request

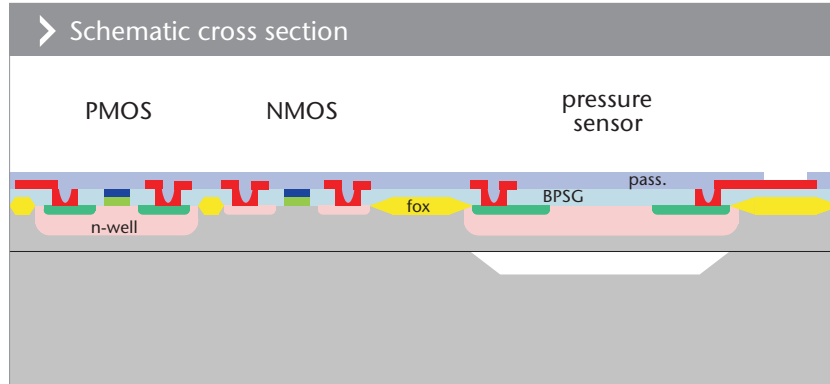
#### ➤ Typical characteristics

Parameter	APS-n	APS-aco	Unit
Sensitivity			
0 ... 3 bar	10	10	mV/V/bar
0 ... 6 bar	6.8	6.8	
0 ... 15 bar	2.3	2.3	
TC Sensitivity	-2100	-1900	ppm/°C
Offset	±5	±5	mV/V
TC Offset	±0.01	±0.01	%FSO/°C
Bridge Resistance	15	20	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

## > Surface Micromachining Technology for Integrated Absolute Pressure Sensors XM-SP

### MEMS Process Module for XC10 CMOS



### > Process

- MEMS process module for XC10 CMOS
- All other CMOS process modules available
- Fabricated by wafer bonding and thinning
- 2 additional mask layers

### Pressure Sensor IP Cores

> Typical characteristics

Parameter	APS-i	Unit
Sensitivity		
0 ... 3 bar	9.4	mV/V/bar
0 ... 6 bar	6.2	
0 ... 15 bar	2.2	
TC Sensitivity	-1600	ppm/°C
Offset	±5	mV/V
TC Offset	0.01	%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

- Absolute pressure sensors
- Sensor IP core for integration in CMOS layout
- Pressure ranges 0...0.3 bar to 0...15 bar
- Compact cell size
- Customer specific sensors on request



Marketing & Sales Headquarters

X-FAB Semiconductor Foundries AG  
 Haarbergstr. 67, 99097 Erfurt, Germany  
 Tel.: +49-361-427-6160  
 Fax: +49-361-427-6161  
 Email: Thomas.Hartung@xfab.com  
 Web: <http://www.xfab.com>

General Information  
 Technology/Design Support  
 Silicon Foundry Services

info@xfab.com  
 hotline@xfab.com  
 sifo@xfab.com