BAROMETRIC PRESSURE SENSOR DIE

80 to 120 kPa (11.6 to 17.4 psi)

Features

- **Absolute pressure sensor die for barometric pressure measurements**
- **High reliability and low drift over lifetime**
- **High media compatibility**
- **Backside media access**
- **Wide temperature operating range**
- **Single side bond pad access**

Description

The SW415-B uncompensated piezoresistive pressure sensor die is bulk micromachined and designed for affordable and reliable barometric pressure measurements in a broad range of industrial applications and designs.

SW415-B has excellent media compatibility due to the patented triple stack sensor design with buried backside piezoresistive elements. With the backside media access, the piezo resistors will not come in direct contact with the measurement media. The design improves stability and sensor lifetime compared to many traditional sensor designs.

The design and performance of SW415-B makes it ideal for high accuracy measurements, also in harsh environments. The long term stability is outstanding and has been proven in applications during a period of more than 10 years.

The sensor die can be connected to passive compensation and/or signal conditioning as required for a given application.

All sensor die products are 100% electrically tested and visually inspected.

SW415-B is delivered as bare dies in waffle packs, as single wafers, or in wafer lots.

SW415-B
SW415-BW

GENERAL CONDITIONS

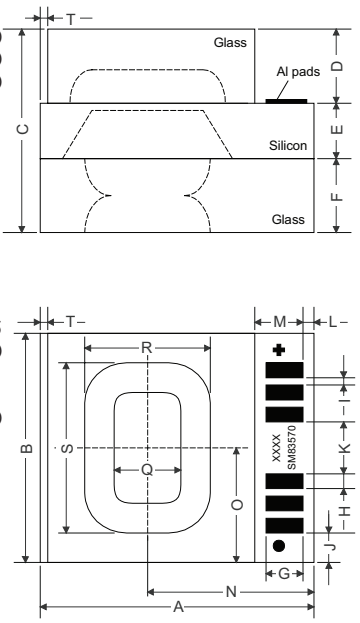
Parameter	Min	Typ	Max	Unit	Comments
Operating supply voltage		5.0		V	
Operating temperature	-40		125	°C	
Operating pressure	80		120	kPa	Absolute pressure
Overload pressure	600			kPa	
Breakdown voltage		14		V	At I=5.0µA
Leakage current		0.2		nA	At Vdd=4.0V

FUNCTIONAL CHARACTERISTICS (@25°C,5V)

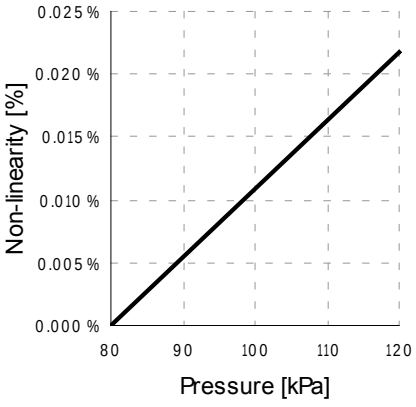
Parameter	Typ	Unit
Bridge resistor		
Bridge resistance	12	kΩ
Temp.coeff. bridge resistor (1st order)	1.5	10^{-3}/°C
Temp.coeff. bridge resistor (2nd order)	8.2	10^{-6}/°C^2
Common mode voltage	0.5*Vdd	V
Sensitivity		
Sensitivity	128	µV/VkPa
Temp.coeff. sensitivity drift (1st order)	-2.0	10^{-3}/°C
Non linearity	See separate chart	%FSO
Zero point		
Zero point	-5.1/7.2	mV/V
Temp.coeff. zero point drift (1st order)	±94	µV/V°C

MECHANICAL DIMENSIONS (in µm)

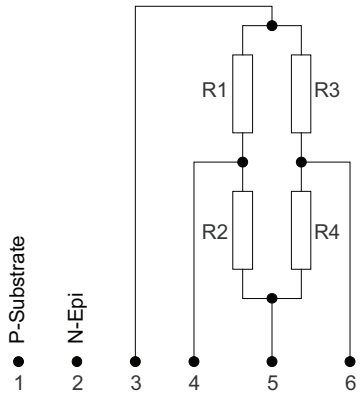
DIM	Typ
A	1980
B	2480
C	1450
D	525
E	400
F	525
G	198
H	118
I	82
J	280
K	580
L	90
M	450
N	1145
O	1240
Q	500
R	800
S	1300
T	90



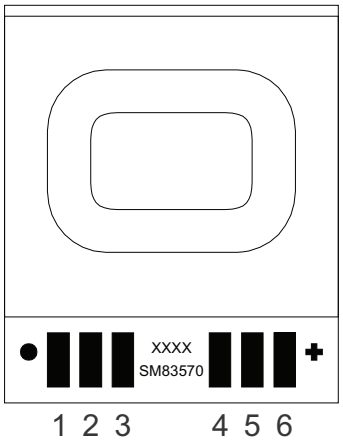
NON-LINEARITY



ELECTRICAL CIRCUIT DIAGRAM



ELECTRICAL CONTACTS



ORDERING INFORMATION

Description	Model
10 or 100 dies in waffle packs	SW415-B
Diced wafers on tape	SW415-BW

Edition June 2009

CONTACT INFORMATION
Sensonor Technologies AS
Phone: +47 3303 5000 - Fax: +47 3303 5005
sales@sensonor.no www.sensonor.com