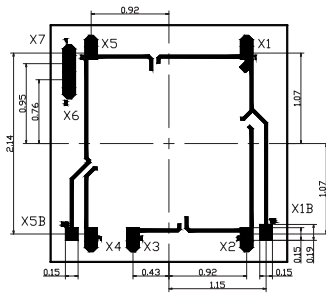
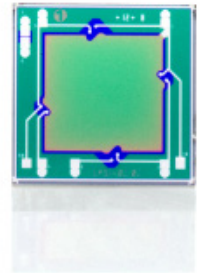


M-Layout
Die size: 2.15 x 2.15 mm



L-Layout
Die size: 2.75 x 2.75 mm



Overview

The Industrial Line STARe is a piezoresistive silicon pressure sensor dies line with pressure-proportional output signal. The dies have side layouts as well as round layouts with electrical shield. Our optimised designs and technologies allow highest accuracy measurements of absolute, gauge or differential pressure for required applications. Central features of our STARe Technology (Sensor Technology

for Advanced Resistors) are the highest stabilities, lowest temperature hysteresis and extremely high overpressure. Customised solutions are also possible.

Applications

- Industrial controls
- Automotive applications
- Home appliances
- Medical instrumentations

Features

- For current and voltage supply
- Cost efficient
- High sensitivity, reliability and stability
- Additional on-chip diode
- Pressure ranges
L-Layout: 0..10 kPa to 0..35 kPa
M-Layout: 0..100 kPa to 0..60 MPa

Order No.



- 1 **Product Code**
Industrial Line STARe
- 2 **Outside Dimension**
L: 2.75 X 2.75 mm (10kPa...35kPa)
M: 2.15 X 2.15 mm (100kPa...60MPa)
- 3 **Pressure Range [Pa]**
10k0: 10 kPa = 100 mbar
60M0: 60 MPa = 600 bar
- 4 **Type (X)**
A: Absolute
G: Gauge (Glass)
- 5 **Thickness Back Plate**
YY: Back Plate Thickness in 100 µm

Common Characteristics

Type	Pressure range	Parameter	min.	typ.	max.	Unit
IL20L-10k0-GXX	10 kPa	Span voltage	30	60	120	mV@5V
IL20L-35k0-A/GXX	35 kPa	Span voltage	40	100	160	mV@5V
IL20M-100k-A/GXX	100 kPa	Span voltage	60	100	140	mV@5V
IL20M-250k-A/GXX	250 kPa	Span voltage	60	100	140	mV@5V
IL20M-500k-A/GXX	500 kPa	Span voltage	60	100	140	mV@5V
IL20M-01M0-A/GXX	1,0 MPa	Span voltage	60	100	140	mV@5V
IL20M-03M0-A/GXX	3,0 MPa	Span voltage	60	100	140	mV@5V
IL20M-10M0-A/GXX	10,0 MPa	Span voltage	200	250	300	mV@5V
IL20M-40M0-AXX	40,0 MPa	Span voltage	230	290	350	mV@5V
IL20M-60M0-AXX	60,0 MPa	Span voltage	100	110	120	mV@5V

IL21 (with secondary passivation) are also available on request. Gauge types can also be used for differential measurements.

Certificate

ISO/TS 16949



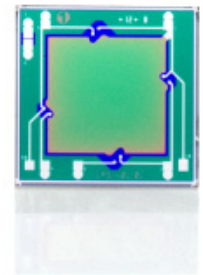
Contact

First Sensor AG
Peter-Behrens-Str. 15
12459 Berlin
Germany
T +49 30 639923-810
F +49 30 639923-866
contact@first-sensor.com

Electrical Characteristics (measured at 5 V supply and 25°C, unless otherwise specified)

Parameter	min.	typ.	max.	Unit
Bridge resistance	2,800	3,300	3,800	Ω
Offset voltage	-25	0	+25	mV
p-range: 10 kPa	-35	0	+35	
Temperature coefficient of bridge resistance ¹	+0.24	+0.26	+0.31	% /K
Temperature coefficient of offset ¹	10 kPa	0.00	+0.15	%F.S.S./K
	35 kPa	0.00	+0.07	
	100 kPa ... 60 MPa	-0.05	±0.02	
Temperature coefficient of span ¹	-0.21	-0.19	-0.17	%F.S.S./K
	p-range: 10 kPa	-0.23	-0.21	
Temperature coefficient of U _{diode} ¹	-2.30	-2.15	-2.00	mV/K
Temperature hysteresis ^{1A}		<0.10		±%F.S.S.
Pressure hysteresis		<0.10		±%F.S.S.
Long-term Stability		<0.10		±%F.S.S./year
Linearity error ^{2,3}		<0.30	0.50	±%F.S.S.
	p-range: higher than 10 MPa		<0.50	

1) Measured from 25°C to 85°C; 1A) Measured from 25°C to 125°C;
 2) End point straight line setting; 3) Pressure applied onto the front side of the die



Order No.

IL20 X - XXXX - X YY				
1	2	3	4	5

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Maximum Ratings

Type	Over Pressure (100kPa)		Burst Pressure (100kPa)	
	FS min.	RS min.	FS min.	RS min.
IL20L-10k0-GXX	6	3	>6	>3
IL20L-35k0-A/GXX	10	5	>10	>5
IL20M-100k-A/GXX	20	10	>20	>10
IL20M-250k-A/GXX	40	20	>40	>20
IL20M-500k-A/GXX	50	25	>50	>25
IL20M-01M0-A/GXX	60	30	>60	>30
IL20M-03M0-A/GXX	150	75	>150	>75
IL20M-10M0-A/GXX	200	75	>200	>75
IL20M-40M0-AXX	800	-	>800	-
IL20M-60M0-AXX	1200	-	>1200	-

FS: Front side; RS: Rear side

Parameter	Limit Values			Unit
	min.	typ.	max.	
Operating temperature range (Higher temperature on demand)	-40		+150	°C
Storage temperature range	-50		150	°C
Supply voltage		5	12	V

Certificate

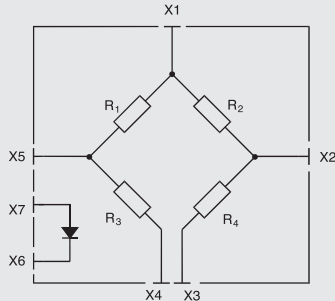
ISO/TS 16949



Contact

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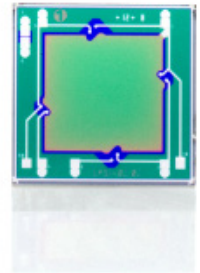
Bondpad Configuration



Bondpad No.	Connection
X1/X1B	+V _{Supply}
X2	+V _{Out}
X3	-V _{Supply}
X4	-V _{Supply}
X5/X5B	-V _{Out}
X6	-I _{Diode}
X7	+I _{Diode}

(pressure applied to the front side)

Substrate and cathode of diode have the same electrical potential. To avoid bias effects, diode and bridge cannot be used simultaneously.



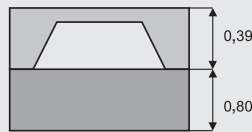
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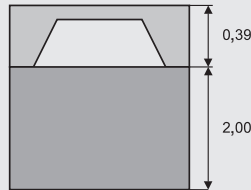
Technical Options

Absolute Types

IL20X-XXXX-A08

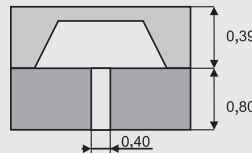


IL20X-XXXX-A20



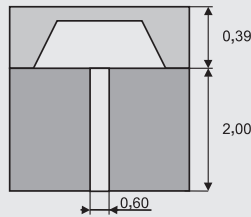
Gauge Types

IL20X-XXXX-G08



0,4mm (M Layout)
0,5mm (L Layout)

IL20X-XXXX-G20



Dimensions in mm

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Disclaimer

All informations are only for product description without any legal binding. For further improvement of technical details, they are subject to change.