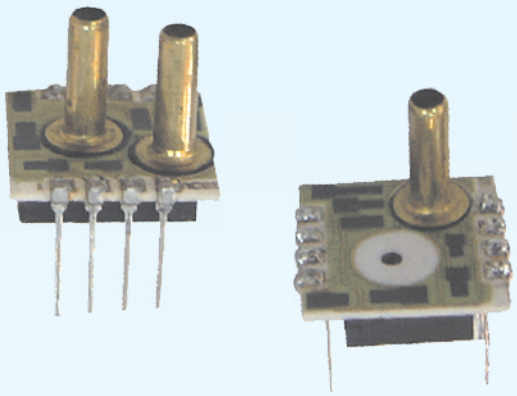
Model 115S
DIP Mounting Pressure Sensors for PCB Applications

Model 115S sensors are pressure sensors with a dual-in-line package (DIP) configuration. The key component of 115S is the piezoresistive silicon pressure sensor die, which is manufactured using MEMS technology. A Wheatstone bridge circuit is formed by using ion implantation technology. 115S pressure sensors are temperature compensated by integrating compensation resistors in the sensor package. Various pin-tube configuration are available for different applications.

115S pressure sensors can be used to measure differential (D, gauge pressure (G) and absolute (A) pressure. The measuring pressure ranges of 115S span from 25 mbar to 7 bar. The nonlinearity of 115S is down to 0.1 %fs (fs = full scale). These sensors are current excited. The output signal is unconditioned mV signal.

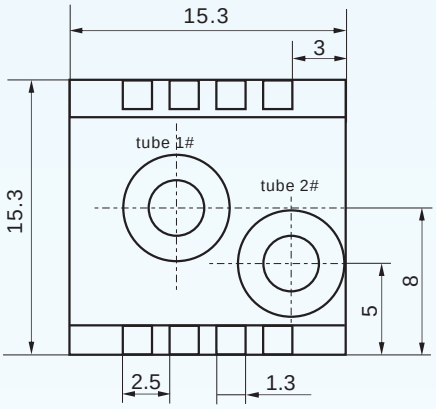
115S pressure sensors are designed for printed circuit board (PCB) mounting applications which requiring components of small size, lightweight and low cost.

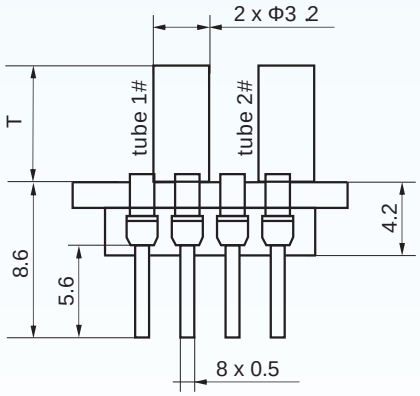


Features:

- pressure ranges: 0~0.025, ..., 0~7 bar
- pressure types: absolute, gauge and differential
- full scale output: > 75 mV
- non-linearity: down to 0.1 %fs
- operating temperature: -40 ~ +125°C
- temperature compensated over 0 ~ 60 °C
- construction: dual-in-line package for PCB mounting
- applications: ventilation, air flow monitors, leak detection, process control, industrial automation

Dimensions:





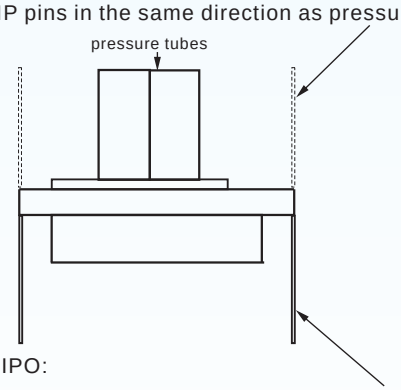
tube vs. pressure type:

pressure type	tube 1#	tube 2#
D (diff.)	High	Low
A (abs.)	N.A	√
G.(gauge)	√	N.A

tube length & codes:

code	T (mm)
L	12
S	8
N	0 (no tube)

DIPS:
DIP pins in the same direction as pressure tube



DIPO:
DIP pins in the opposite direction as pressure tube

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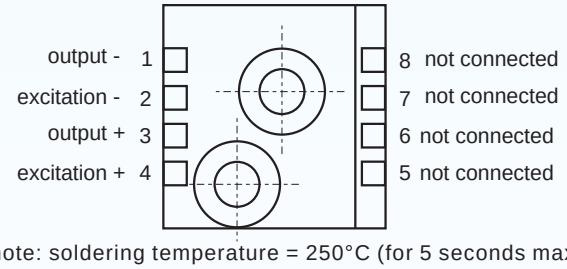
Technical data:

parameters		units	specifications
pressure media	tube #1		gases compatible with wetted parts materials
	tube #2		non-corrosive dry gases
pressure ranges and types		bar, G & D	0 ~ 0.025, ~ 0.07, ~ 0.14, ~ 0.35, ~ 1, ~ 2, ~ 3.5, ~ 7
		bar, A	0 ~ 1, ~ 2, ~ 3.5, ~ 7
overload pressure*		%fs	300, but not over 14 bar
full scale output (FSO)**		mV	> 75
zero offset		mV	± 2
excitation		mA	1.5, max. 2.0
nonlinearity (NL)***		%fs	± 0.5 (for 0.025 and 0.07 bar sensors), ± 0.25 (for 0.14 and 0.34 bar sensors)
			± 0.1 (for other ranges)
hysteresis		%fs	± 0.1
response time (10% - 90%)		ms	1
noise in output (10 Hz to 1 kHz)		µVp-p	1
input resistance		kΩ	4.2 ± 1.8
output resistance		kΩ	4.2 ± 1.8
insulation resistance		MΩ	50 @ 50 Vdc
load resistance		MΩ	2
storage temperature range		°C	-50 ~ +150
operating temperature range		°C	-40 ~ +125
compensated temperature range		°C	0 ~ 60
temperature coefficient-SPAN^, $		%fs	± 0.5
temperature coefficient-ZERO^, #		%fs	± 0.5
thermal hysteresis-ZERO^		%fs	± 0.1
thermal coefficient-resistance^, &		%/°C	0.2
process interface (pressure tube)			long tube (length = 12 mm, standard), short tube (length = 8 mm), no tube
electrical interface			DIP pins in the opposite direction as the pressure tube (standard),
			DIP pins in the same direction as the pressure tube
wetted parts materials			pyrex, ceramic, silicon, RTV, epoxy and stainless steel
net weight		g	~ 3

The listed specifications and dimensions are subject to change without prior notice.
Reference of test conditions: excitation = 1.5 mA, T = 25 °C, humidity = 40 %RH.
*: 0.35 bar for 0.025 bar and 0.07 bar sensors, 1.4 bar for 0.14 bar and 0.35 bar sensors.
**: > 25 mV for 0.025 bar sensor, > 50 mV for 0.07 bar sensor, > 30 mV for 0.14 and 0.35 bar sensors.
***: NL is calculated using "best fit straight line".
^: Measured over the compensated temperature range (0~60 °C), reference temperature = 25°C.
$: ± 1.0 %fs for 0.025 bar and 0.07 bar sensors, ± 0.75 %fs for 0.14 and 0.35 bar sensors.
#: ± 1.25 %fs for 0.025 bar and 0.07 bar sensors, ± 0.75 %fs for 0.14 and 0.35 bar sensors.
&: 0.22 %fs/°C for 0.025 bar and 0.07 bar sensors.

Electrical connection:



note: soldering temperature = 250°C (for 5 seconds maximum)

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Ordering code:

example: 115S - 007 - D - L - DIPS - Cxxxx

model
115S

pressure ranges & available pressure types
002 = 25 mbar, G, D
007 = 70 mbar, G, D
014 = 140 mbar, G, D
035 = 350 mbar, G, D
1 = 1 bar, G, D, A
2 = 2 bar, G, D, A
3.5 = 3.5 bar, G, D, A
7 = 7 bar, G, D, A

pressure types
D = differential pressure
G = gauge pressure
A = absolute pressure

process interface
L: long pressure tube, length = 12 mm
S: short pressure tube, length = 8 mm
N: no pressure tube

electrical interface
DIPS: DIP pins in the same direction as pressure tube
DIPO: DIP pins in opposite direction as pressure tube

Cxxxx: This is a customized code given by the customer who can use this code to indicate his desired/wished specifications of the sensor to be ordered on his order sheet. The code starts with a "C" and is followed by 4 digits, the customer can use the 4 digits to indicate the month and date when he requests this customized specifications. The sales team of BCM will confirm this customized specifications when sending BCM's <<Order Confirmation>>.

ordering code explanation: 115S - 007 - D - L - DIPS

Model 115S pressure sensor for gauge pressure measurement in 0~70 mbar range. This sensor is constructed with a long pressure tube of 12 mm, the DIP pins are arranged in the same direction as the pressure tube. No customized requests.

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