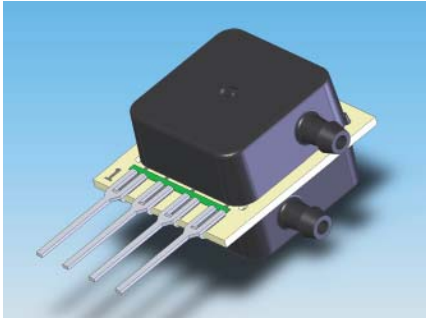


MINIATURE BASIC HIGH PRESSURE SENSORS

Offset Compensated
Pressure Sensors



Features

- 0 to 5 PSI to 0 to 15 PSI Pressure Ranges
- 0.5 % linearity
- Offset Compensated

Applications

- Medical Instrumentation
- Environmental Controls

General Description

The Miniature BASIC High Pressure Sensors are comprised of a silicon micromachined silicon sensor in a low cost pc board mountable package. This device is intended for the user seeking a low cost sensor where the user will provide compensation. These offset compensated sensors give an accurate and stable output over a wide temperature range. This series is intended for use with non-corrosive, non-ionic working fluids such as air, dry gases and the like. The output of the device is ratiometric to the supply voltage and operation from any D.C. supply voltage up to +6V is acceptable.

Pressure Sensor Characteristics Maximum Ratings

Supply Voltage VS	6 Vdc
Common-mode pressure	50 psig
Lead Temperature (soldering 2-4 sec.)	270°C

Environmental Specifications

Temperature Ranges	
Operating	-25 to 85° C
Storage	-40 to 125° C
Humidity Limits	0 to 95% RH (non condensing)

Standard Pressure Ranges

Part Number	Device Type	Operating Pressure	Proof Pressure	Burst Pressure	Package Identifier
5 PSI-D1B-BASIC	Differential	±5 PSID	15 PSI	30 PSI	B1BS
5 PSI-D2B-BASIC	Differential	±5 PSID	15 PSI	30 PSI	B2BS
5 PSI-GB-BASIC	Gage	0 to 5 PSIG	15 PSI	30 PSI	BGBS
15 PSI-D1B-BASIC	Differential	±15 PSID	45 PSI	60 PSI	B1BS
15 PSI-D2B-BASIC	Differential	±15 PSID	45 PSI	60 PSI	B2BS
15 PSI-GB-BASIC	Gage	0 to 15 PSIG	45 PSI	60 PSI	BGBS
15 PSI-AB-BASIC	Absolute	0 to 15 PSIA	45 PSI	60 PSI	BGBS

Approvals

MKT	DATE	MFG	DATE	ENG	DATE	QA	DATE
<input type="checkbox"/> As Is <input type="checkbox"/> With Change		<input type="checkbox"/> As Is <input type="checkbox"/> With Change		<input type="checkbox"/> As Is <input type="checkbox"/> With Change		<input type="checkbox"/> As Is <input type="checkbox"/> With Change	

ALL SENSORS

DS-0288 Rev A

Performance Characteristics for 5 PSI-DxB-BASIC or 5 PSI-GB-BASIC

Parameter, note 1	Minimum	Nominal	Maximum	Units
Output Span, @ 5 PSIG, note 4	50	75	100	mV
Offset Voltage @ zero differential pressure	--	--	±10	mV
Offset Temperature Shift (0°C-70°C), note 2	--	±2.0	--	uV/V/°C
Offset Long Term Drift (one year)	--	±80	--	uV
Linearity, hysteresis error, note 3	--	0.1	±0.5	%fs
Response Time	--	100	--	us
Temperature Effect on Resistance (0°C-70°C), note 2	--	2600	--	ppm/°C
Temperature Effect on Span (0°C-70°C), note 2	--	-2000	--	ppm/°C
Input Resistance	--	3.3	--	Kohm
Output Resistance	--	3.3	--	Kohm

Performance Characteristics for 15 PSI-DxB-BASIC or 15 PSI-GB-BASIC

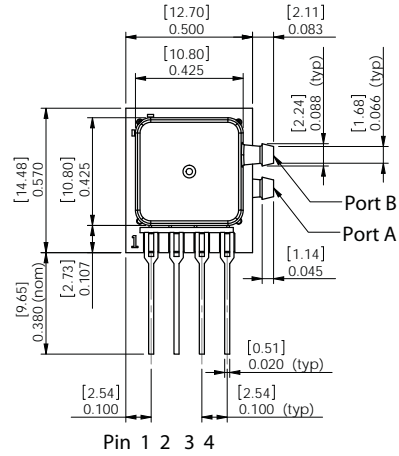
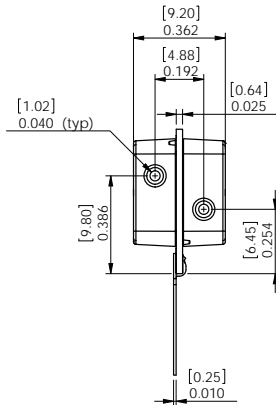
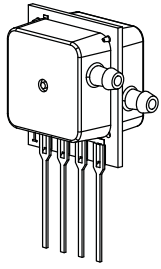
Parameter, note 1	Minimum	Nominal	Maximum	Units
Output Span, @ 15 PSIG, note 4	85	125	165	mV
Offset Voltage @ zero differential pressure	--	--	±10	mV
Offset Temperature Shift (0°C-70°C), note 2	--	±2.0	--	uV/V/°C
Offset Long Term Drift (one year)	--	±80	--	uV
Linearity, hysteresis error, note 3	--	0.1	±0.5	%fs
Response Time	--	100	--	us
Temperature Effect on Resistance (0°C-70°C), note 2	--	2600	--	ppm/°C
Temperature Effect on Span (0°C-70°C), note 2	--	-2000	--	ppm/°C
Input Resistance	--	3.3	--	Kohm
Output Resistance	--	3.3	--	Kohm

Performance Characteristics for 15 PSI-AB-BASIC

Parameter, note 1	Minimum	Nominal	Maximum	Units
Output Span, @ 15 PSIA, note 4	170	235	300	mV
Offset Voltage @ zero absolute pressure	--	--	±25	mV
Offset Temperature Shift (0°C-70°C), note 2	--	±2.0	--	uV/V/°C
Offset Long Term Drift (one year)	--	±80	--	uV
Linearity, hysteresis error, note 3	--	0.1	±0.5	%fs
Response Time	--	100	--	us
Temperature Effect on Resistance (0°C-70°C), note 2	--	2600	--	ppm/°C
Temperature Effect on Span (0°C-70°C), note 2	--	-2000	--	ppm/°C
Input Resistance	--	3.3	--	Kohm
Output Resistance	--	3.3	--	Kohm

Package Drawings

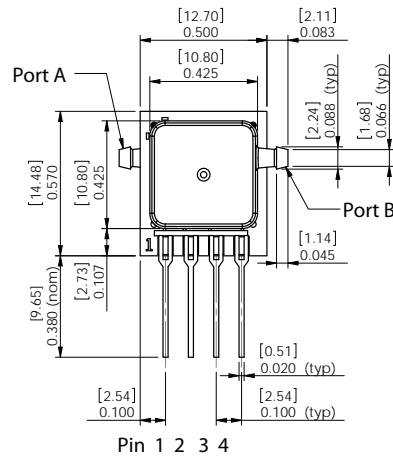
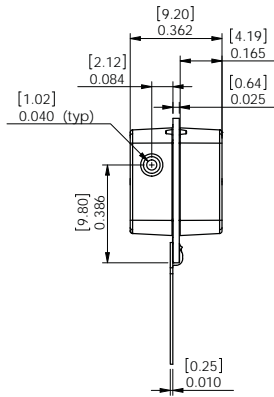
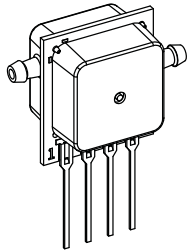
B1BS



NOTES
1) Dimensions are in inches [mm]

Pinout
1) Gnd
2) -Out
3) Vs
4) +Out

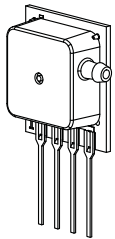
B2BS



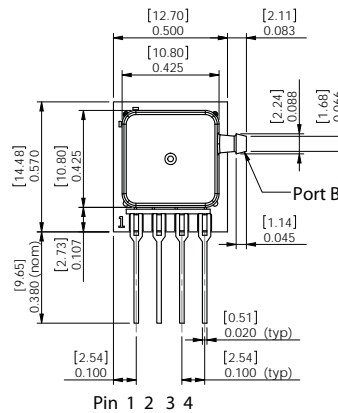
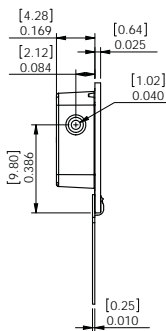
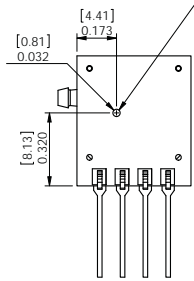
NOTES
1) Dimensions are in inches [mm]

Pinout
1) Gnd
2) -Out
3) Vs
4) +Out

BGBS



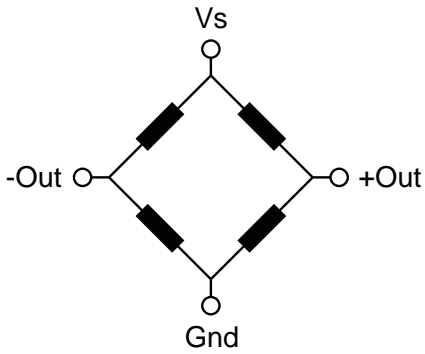
Absolute devices
are without port hole.



NOTES
1) Dimensions are in inches [mm]

Pinout
1) Gnd
2) -Out
3) Vs
4) +Out

Equivalent Circuit



Specification Notes

NOTE 1: ALL PARAMETERS ARE MEASURED AT 4.5 VOLT EXCITATION AND ROOM TEMPERATURE UNLESS OTHERWISE SPECIFIED. PRESSURE MEASUREMENTS ARE WITH POSITIVE PRESSURE APPLIED TO PORT B (THE ONLY PORT FOR THE SINGLE PORT CONFIGURATION).

NOTE 2: SHIFT IS RELATIVE TO 25°C.

NOTE 3: MEASURED AT ONE-HALF FULL SCALE RATED PRESSURE USING BEST STRAIGHT LINE CURVE FIT.

NOTE 4: THE SPAN IS THE ALGEBRAIC DIFFERENCE BETWEEN FULL SCALE OUTPUT VOLTAGE AND THE OFFSET VOLTAGE.

Pressure Response: for any pressure applied the response time to get to 90% of pressure applied is typically less than 100 useconds.

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