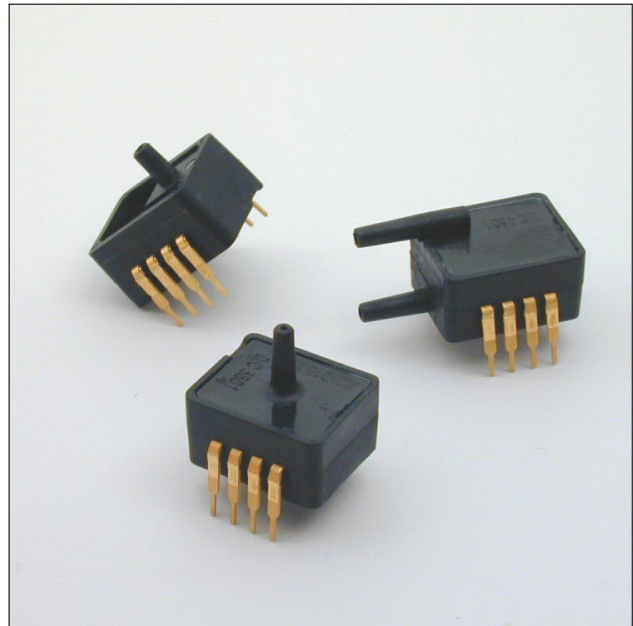


# BSDX Series

## Signal conditioned high precision pressure transducers

### FEATURES

- 0...25 mbar to 0...5 bar,  
0...±10 mbar to 0...±1 bar,  
barometric range 800...1100 mbar
- Absolute, gage or differential pressure
- 0.5 to 4.5 V ratiometric output
- Precision ASIC conditioning
- Temperature compensated
- Total accuracy ±0.5 to ±1.0 %FSS



### SPECIFICATIONS

#### Maximum ratings

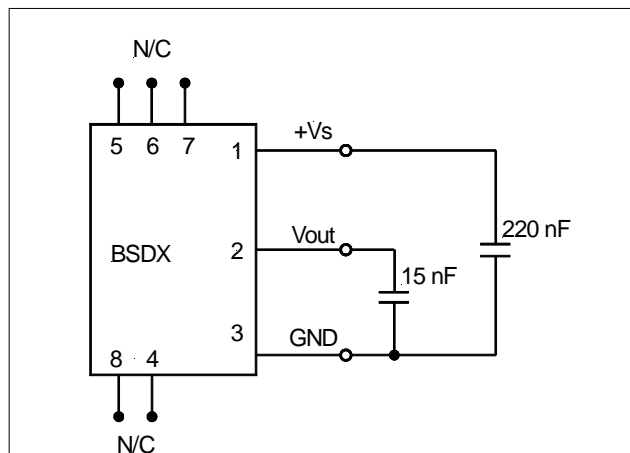
Supply voltage $V_s$	4.75 V to 5.25 V <sub>DC</sub> max. 6.50 V <sub>DC</sub>
Output current	
Sink	2 mA
Source	2 mA
Lead temperature (2 - 4 sec.)	250°C
Temperature ranges	
Compensated	0 to +85 °C
Operating	-20 to +105 °C
Storage	-40 to +125 °C
Vibration	10 g at 20 - 2000 Hz
Shock	100 g for 11 ms

**Caution!** The sensor is not reverse polarity protected.

Incorrect applications of excitation voltage or ground to the wrong pin can cause electrical failure.

Application of supply voltage above the maximum can cause electrical failure.

### ELECTRICAL CONNECTION



**Note:** Capacitor 220 nF required between +Vs and GND and 15 nF between Vout and GND.

It is important to place the capacitors as close to the pins as possible!

Pins 4, 5, 6, 7 and 8 are internal device connections and should not be connected for any reason!

# BSDX Series

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### PRESSURE RANGES SPECIFICATIONS

( $V_s = 5.0 V_{DC}$ ,  $T_A = 25^\circ C$ )

Part number	Pressure range		Burst pressure <sup>1</sup>		Sensitivity (typ.)	
BSDX0811BARO	800 to 1100	mbar(a)	2	bar (a)	13.3	V/bar
BSDX1000A2R	0 to 1	bar (a)	2		4.0	
BSDX2000A2R	0 to 2		4		2	
BSDX5000A2R	0 to 5		10		0.8	
BSDX0025D4R	0 to 25		mbar (g,d)	0.2	bar (g,d)	
BSDX0050G2R / D4R	0 to 50	0.35		80		
BSDX0100G2R / D4R	0 to 100	0.35		40		
BSDX0250G2R / D4R	0 to 250	1		16		
BSDX0500G2R / D4R	0 to 500	bar (g,d)	1	bar (g,d)	8	
BSDX1000G2R / D4R	0 to 1		2		4	
BSDX2000G2R / D4R	0 to 2		4		2	
BSDX5000G2R / D4R	0 to 5		10		0.8	
BSDX0010D4D	0 to $\pm 10$	mbar (d)	0.2	bar (d)	200	
BSDX0025D4D	0 to $\pm 25$		0.2		80	
BSDX0050D4D	0 to $\pm 50$		0.35		40	
BSDX0100D4D	0 to $\pm 100$		0.35		20	
BSDX0250D4D	0 to $\pm 250$		1		8	
BSDX0500D4D	0 to $\pm 500$		1		4	
BSDX1000D4D	0 to $\pm 1$	bar(d)	2		2	

#### Specification notes:

1. If maximum burst pressure is exceeded, even momentarily, the package may leak or burst, or the pressure sensing die may fracture.
2. Full Scale Span (FSS) is the algebraic difference between the output signal for the highest and lowest specified pressure. Span is ratiometric to the supply voltage.
3. Total accuracy is the combined error from offset and span calibration, linearity, pressure hysteresis, and temperature effects. Linearity is the measured deviation based on a straight line.  
Hysteresis is the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure. Calibration errors include the deviation of offset and full scale from nominal values.
4. Delay time between sampling and signal change at the output.
5. The smallest change in the output voltage, given any change in pressure.

# BSDX Series

## Signal conditioned high precision pressure transducers

### PERFORMANCE CHARACTERISTICS

0.5 to 4.5 ratiometric output ( $V_S = 5.0 V_{DC}$ ,  $T_A = 25^\circ C$ )

#### All BSDX...R and BSDX0811BARO

Characteristics		Min.	Typ.	Max.	Units
Offset at lowest specified pressure	BSDX0025... BSDX0050... BSDX0811BARO	0.46	0.50	0.54	V
	all others	0.48	0.50	0.52	
Full scale span (FSS) <sup>2</sup>			4.00		
Full scale output	BSDX0025... BSDX0050... BSDX0811BARO	4.46	4.50	4.54	
	all others	4.48	4.50	4.52	
Total accuracy (0 to 85°C) <sup>3</sup>	BSDX0025... BSDX0050... BSDX0811BARO			±1.0	%FSS
	all others			±0.5	
Sample rate		100			Hz
Response delay <sup>4</sup>		2.73		14.11	ms
Quantization step <sup>5</sup>	BSDX0811BARO		5		mV
	all others		2		
Current consumption			6		mA

#### All BSDX...D4D

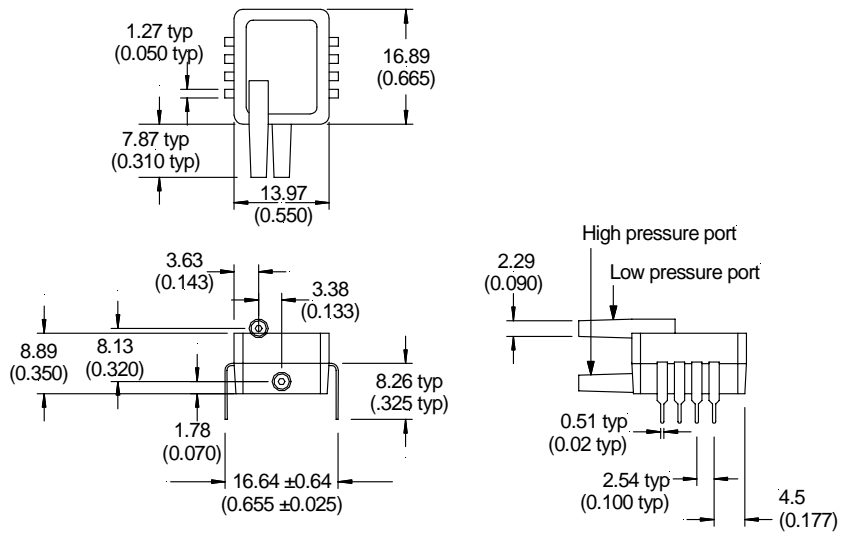
Characteristics		Min.	Typ.	Max.	Units
Zero pressure offset	BSDX0010... BSDX0025... BSDX0050...	2.46	2.50	2.54	V
	all others	2.48	2.50	2.52	
Full scale span (FSS) <sup>2</sup>			4.00		
Output	at max. specified pressure	BSDX0010... BSDX0025... BSDX0050...	4.46	4.50	
		all others	4.48	4.50	4.52
	at min. specified pressure	BSDX0010... BSDX0025... BSDX0050...	0.46	0.50	0.54
		all others	0.48	0.50	0.52
Total accuracy (0 to 85°C) <sup>3</sup>	BSDX0010... BSDX0025... BSDX0050...			±1.0	%FSS
	all others			±0.5	
Sample rate		100			Hz
Response delay <sup>4</sup>		2.73		14.11	ms
Quantization step <sup>5</sup>			2		mV
Current consumption			6		mA

# BSDX Series

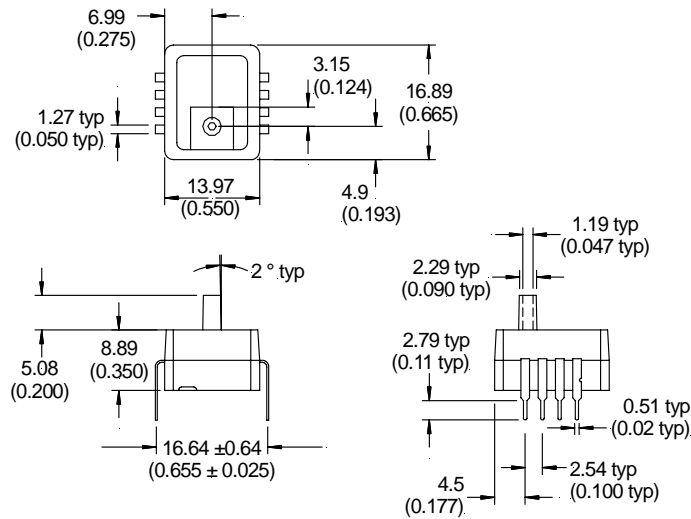
## Signal conditioned high precision pressure transducers

### PHYSICAL DIMENSIONS

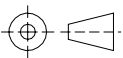
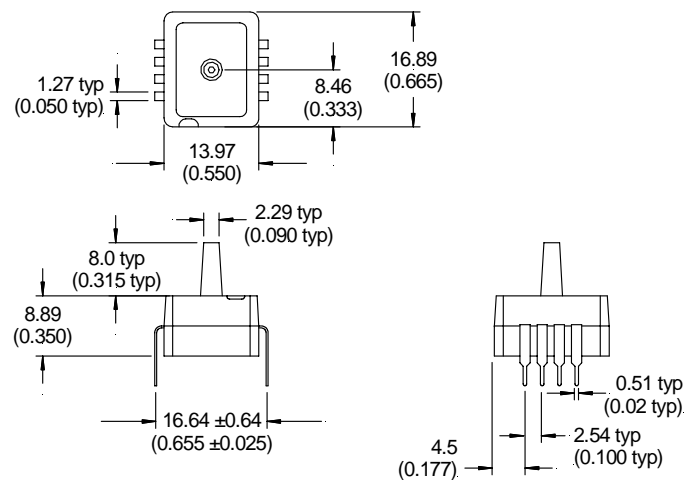
#### D4 package



#### G2 package



#### A2 package



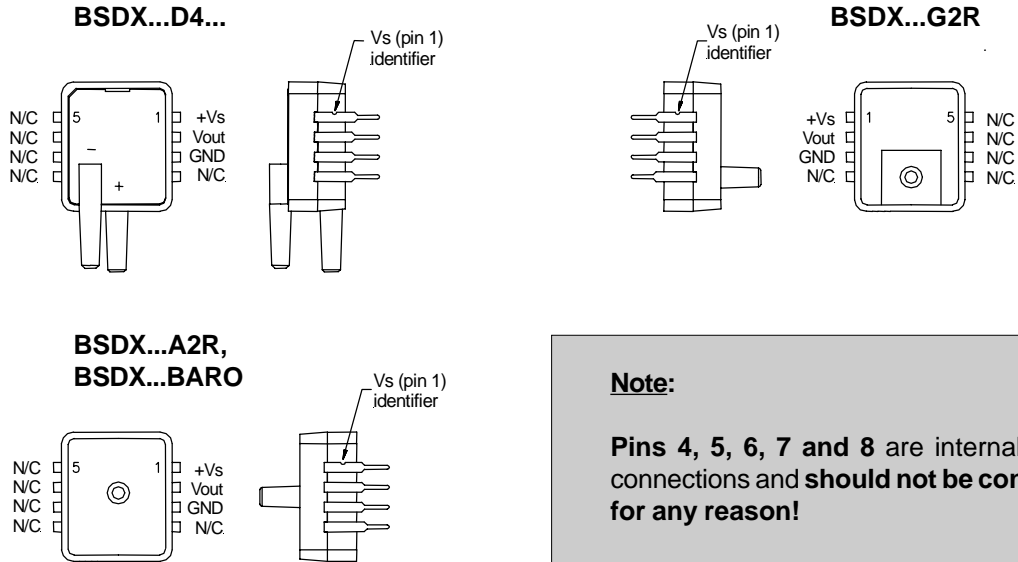
third angle projection

dimensions in mm (inches)

# BSDX Series

## Signal conditioned high precision pressure transducers

### ELECTRICAL CONNECTIONS



### ORDERING INFORMATION

Pressure range	Absolute	Gage	Differential/Gage
0 to 25 mbar		-	BSDX0025D4R
0 to 50 mbar		BSDX0050G2R	BSDX0050D4R
0 to 100 mbar		BSDX0100G2R	BSDX0100D4R
0 to 250 mbar		BSDX0250G2R	BSDX0250D4R
0 to 500 mbar		BSDX0500G2R	BSDX0500D4R
800 to 1100 mbar	BSDX0811BARO	-	-
0 to 1 bar	BSDX1000A2R	BSDX1000G2R	BSDX1000D4R
0 to 2 bar	BSDX2000A2R	BSDX2000G2R	BSDX2000D4R
0 to 5 bar	BSDX5000A2R	BSDX5000G2R	BSDX5000D4R
0 to ±10 mbar			BSDX0010D4D
0 to ±25 mbar			BSDX0025D4D
0 to ±50 mbar			BSDX0050D4D
0 to ±100 mbar			BSDX0100D4D
0 to ±250 mbar			BSDX0250D4D
0 to ±500 mbar			BSDX0500D4D
0 to ±1 bar			BSDX1000D4D

**Other pressure ranges or calibrations are available on request**

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