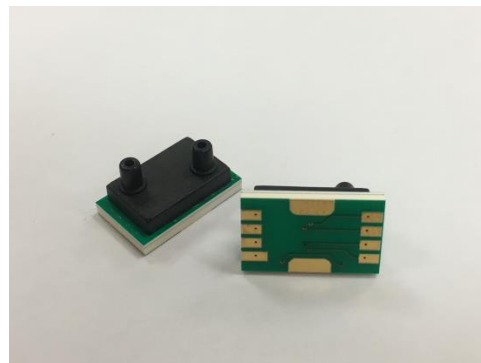


# Solid State Pressure Sensor

52-Series – Model 52A/D

## FEATURES

- Compact SMD Package
- Calibrated Span and Offset
- Multi-order Temperature Compensation
- Digital or Analog Output
- 2 mbar to 7 bar
- Optional Configuration Upon Request



## DESCRIPTION

The Series 52 is a smart pressure sensor with calibrated digital output or analog output. Digital compensation of sensor offset, sensitivity, temperature drift and nonlinearity is accomplished in factory via an internal DSP running a correction algorithm with calibration coefficients stored in on-chip EEPROM.

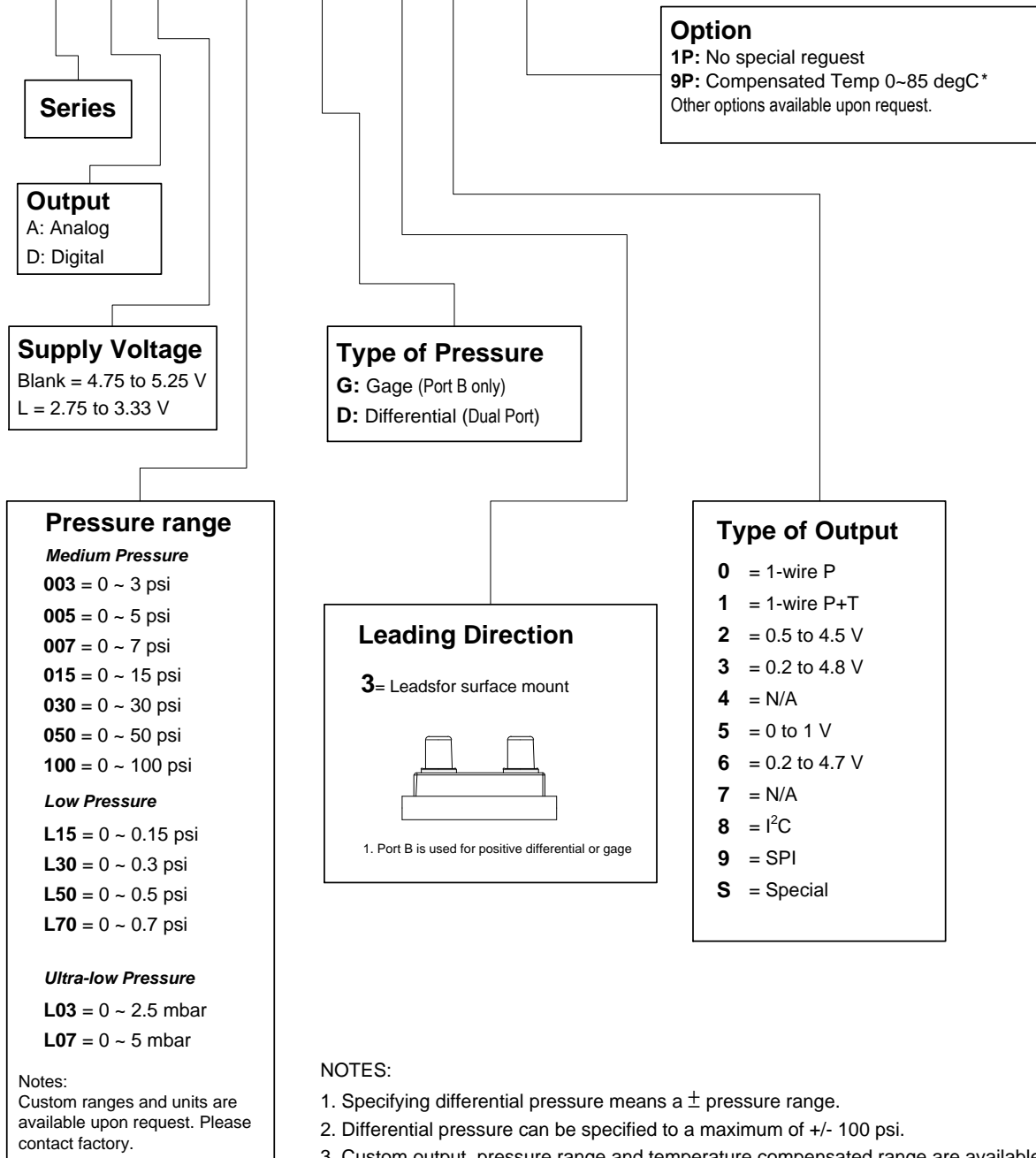
A variety of output configuration, including resolution, sampling rate, output interface are available to provide simple and ready-to-use solution for a wide range of application. It can be operated in supply voltage of 2.7 to 5.0 V. The package is suitable for manifold mount.

The Series including Model 52, which are available for pressure range from 2 mbar to 7 bar. Custom range and calibration are available. Please contact us for detail.

# Ordering Information

## Series 52

**52 A L - XXX D - X X X X**



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## Characteristics

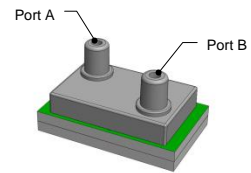
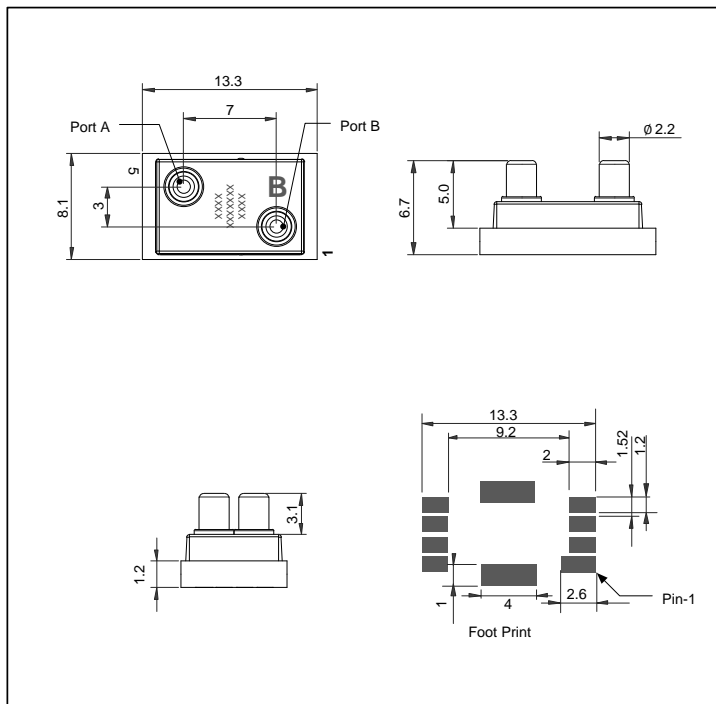
Unless otherwise specified, all parameters are measured at 3/5V, 25 °C and 60% RH

Parameters	Min	Typ	Max	Unit
Supply Voltage <sup>1</sup>	2.75		5.25	V
Operating Current		2.5		mA
Pressure Range <sup>2</sup>	3		100	PSI
Output - Zero <sup>3</sup>	0.412	0.50	0.588	V
Output Span <sup>3</sup>		4.00		V
Accuracy(25°C)		0.5		%FS
Accuracy(0/50°C) <sup>4</sup>		1.5		%FS
Accuracy(-5/55°C) <sup>4</sup>		2.5		%FS
Linearity	-0.5		+0.5	%FS
Thermal Hysteresis	-0.15		+0.15	%FS
Over Pressure <sup>5</sup>			3X	Rated Pressure
Burst Pressure <sup>5</sup>			6X	Rated Pressure
Temp - Compensating	0		+50	°C
Temp - Operating	-20		+85	°C
Temp - Storage	-40		+125	°C

**NOTES:**

- 1. Supply 3V or 5V must be ordered separately.
- 2. The maximum pressure applicable to Port P1/P2 would be different, that should be evaluated individually.
- 3. Output is ratiometric to supply.
- 4. Incl. NOL, hysteresis, TCS and TCO over 0/50°C, BFSL definition
- 5. Manifold mount with compression; O.P. is 10 bar max., B.P. is 10 bar, 7 sec, 0/50 deg C
- 6. Wetted material contains polyimide, silicon, Au, BT & epoxy

## Dimension



**NOTE:**

- 1. Port B is used for positive differential or gage
- 2. All dimensions are mm
- 3. Soldering of lead pins: 250 °C for 5 sec max.

Pin #	Description
1~4	N.C
5	OUT
6	N.C.
7	VDD
8	GND

**Common Pressure (C.P.):**

The maximum pressure which is applied simultaneously to both ports  
 CP = 10 bar, pressure range greater than 1 bar  
 CP = 6 bar, pressure range less than 1 bar

## Characteristics

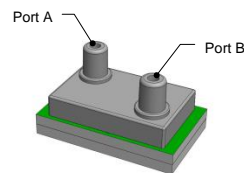
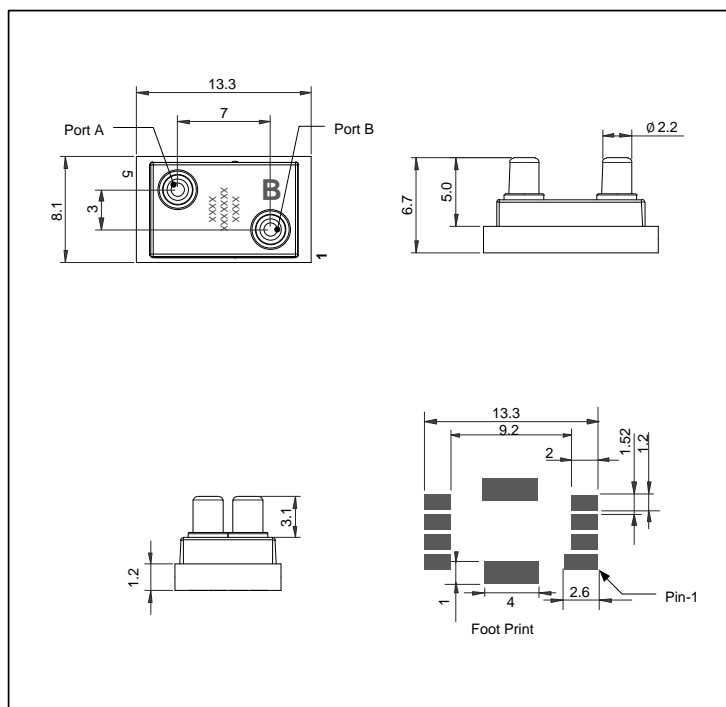
Unless otherwise specified, all parameters are measured at 25 °C and 60% RH

Parameters	Min	Typ	Max	Unit
Supply Voltage <sup>1</sup>	2.75		5.25	V
Operating Current		2.5		mA
Pressure Range <sup>2</sup>	0.15		3	PSI
Zero <sup>3</sup>	0.412	0.50	0.588	V
Span <sup>3</sup>		4.00		V
Accuracy(25°C)		0.5		%FS
Accuracy(0/50°C) <sup>4</sup>		1.5		%FS
Accuracy(-5/55°C)		2.5		%FS
Linearity	-0.5		+0.5	%FS
Thermal Hysteresis	-0.15		+0.15	%FS
Over Pressure <sup>5</sup>	10X			Rated Pressure
Burst Pressure <sup>5</sup>	20X			Rated Pressure
Temp - Compensating	0		+50	°C
Temp - Operating	-20		+85	°C
Temp - Storage	-40		+125	°C

**NOTES:**

- Supply 3V or 5V must be ordered separately.
- Lower range is applicable upon request.
- Output is ratiometric to supply.
- Incl. NOL, hysteresis, TCS & TCO, BFSL. 2.5%FS for pressure <= 0.3 psi.
- For pressure > 1 psi, O.P is 3X, B.P. is 6X
- Power Supply Decoupling from Pin VDD to Pin VSS: 100 nF
- Wetted material contains polyimide, silicon, Au, pyrex, epoxy & BT

## Dimension



**NOTE:**

- Port B is used for positive differential or gage
  - All dimensions are mm
  - Soldering of lead pins: 250 °C for 5 sec max.
  - Common Pressure (C.P.) = 3 bar
- The maximum pressure which is applied simultaneously to both ports

Pin #	Description
1~4	N.C
5	OUT
6	N.C.
7	VDD
8	GND

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## Characteristics

Unless otherwise specified, all parameters are measured at 25 °C and 60% RH

Preliminary

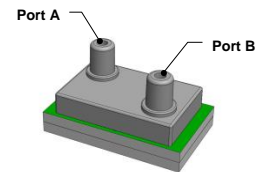
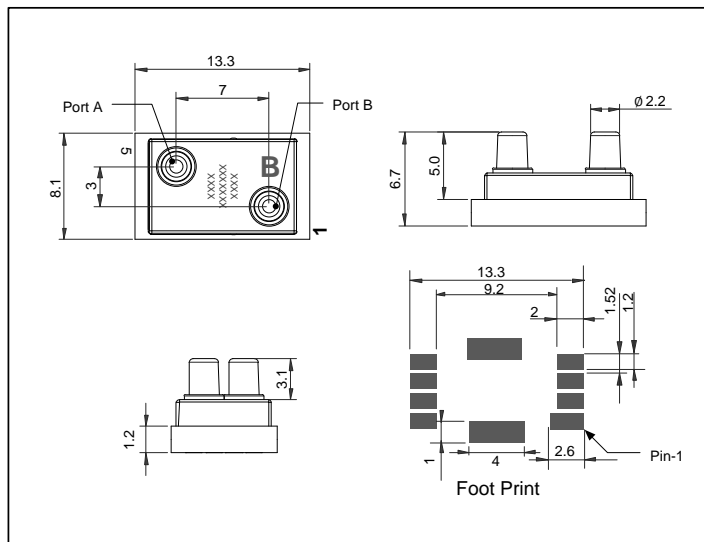
Parameters	Min	Typ	Max	Unit
Excitation <sup>1</sup>	2.75		5.25	
Pressure range	3		100	psi
Resolution			16	Bit
Zero Output (0 psi) <sup>2</sup>		0		Dec
Full Scale Output (diff)	-25600		25600	Dec
Accuracy(25°C)		0.5		%FS, +1LSB
Accuracy(0/50°C) <sup>3</sup>		1.5		%FS, +1LSB
Accuracy(-5/55°C)		2.5		%FS, +1LSB
Update Rate		1		kHz
Over Pressure <sup>4</sup>			3X	Rated Pressure
Over Pressure <sup>4</sup>			6X	Rated Pressure
Temp - Compensating	0		50	°C
Temp - Operating	-20		+80	°C
Temp - Storage	-40		+125	°C

### NOTES:

- Supply 3V or 5V must be ordered separately.
- For gage pressure, zero is -25600
- Incl. NOL, hysteresis, TCS & TCO, 0/50°C; 2.5%FS for pressure <+0.3 psi
- Manifold mount with compression; O.P. is 10 bar max., B.P. is 10 bar, 7 sec, 0/50 deg C

- Minimum pull-up on SDA and SCL is 1KΩ
- Wetted material contains polyimide, silicon, Au, pyrex, epoxy & BT
- The factory setting for I2C slave address is 0x6C Default
- Zeroing at installation is suggested.

## Dimension



### NOTE:

- Port B is used for positive differential or gage
- All dimensions are mm
- Soldering of lead pins: 250 °C for 5 sec max.
- N.C. pins must be left floating

Pin #	Description
1	SDA
2	SCL
3	EOC
4	N.C
5	OUT
6	N.C.
7	VDD
8	GND

### Common Pressure (C.P.):

The maximum pressure which is applied simultaneously to both ports

CP = 10 bar, pressure range greater than 1 bar

CP = 6 bar, pressure range less than 1 bar

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## Characteristics

Unless otherwise specified, all parameters are measured at 25 °C and 60% RH

Preliminary

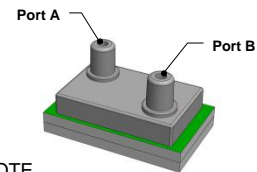
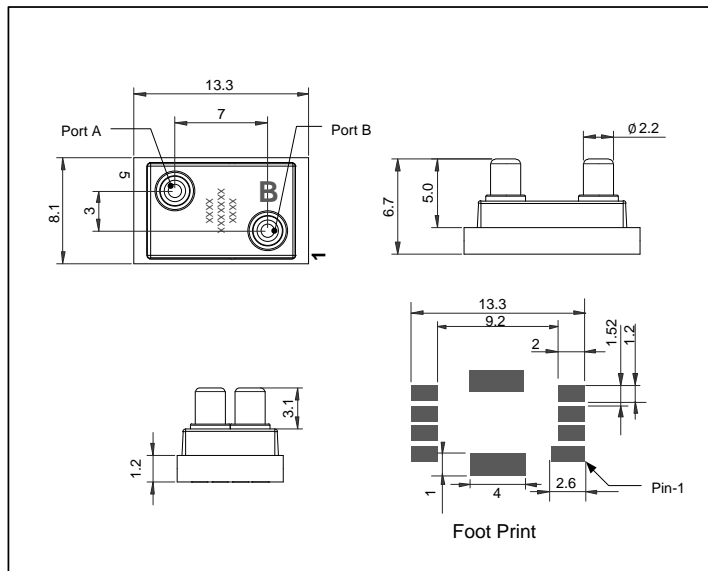
Parameters	Min	Typ	Max	Unit
Excitation <sup>1</sup>	2.75		5.25	
Pressure range	0.15		3	psi
Resolution			16	Bit
Output - Zero <sup>2</sup>		0		Dec
Output - Full Scale	-25600		+25600	Dec
Accuracy(25°C)		0.5		%FS, +1LSB
Accuracy(0/50°C) <sup>3</sup>		1.5		%FS, +1LSB
Accuracy(-5/55°C)		2.5		%FS, +1LSB
Update Rate		1		kHz
Over Pressure <sup>4</sup>	10X			Rated Pressure
Burst Pressure <sup>4</sup>	20X			Rated Pressure
Temp - Compensating	0		50	°C
Temp - Operating	-20		+80	°C
Temp - Storage	-40		+125	°C

### NOTES:

- Supply 3V or 5V must be ordered separately.
- For gage pressure, zero is -25600
- Incl. NOL, hysteresis, TCS & TCO, 0/50°C; 2.5%FS for pressure <+0.3 psi
- For pressure > 1 psi, O.P is 3X, B.P. is 6X

- Minimum pull-up on SDA and SCL is 1KΩ
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- The factory setting for I2C slave address is **0x6C** Default
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## Dimension



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