

Solid State Pressure Sensor

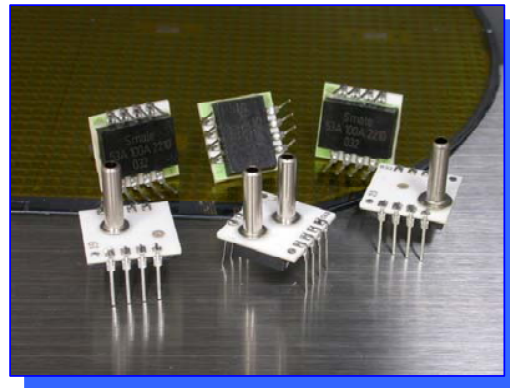
ANALOG
OUTPUT



CCD Series – Model 53A

FEATURES

- DIL/SMD Ceramic Package
- Calibrated Span and Offset
- Multi-order Temperature Compensation
- Ratiometric Analog Output
- 150 PSI maximum
- Customized Configuration Available



DESCRIPTION

The Series CCD 53A is a smart pressure sensor with calibrated and amplified output. The ceramic hybrid package performs excellent isolation to external stress during operation. 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.

The Series CCD 53A is available for pressure range from 0.15 psi to 150 psi. . Special configuration as low as 2.5 mbar is also applicable. Please contact factory for detail.

Ordering Information

Series CCD 53 Analog

53A L - XXX G - X 0 X X

Series

Supply Voltage

Blank = 4.75 to 5.25 V
L = 2.75 to 3.33 V

Type of Pressure

G: Gage (Port B only)
H: Gage (Dual Port)
A: Absolute (Port A only)
D: Differential (Dual Port)

Option

10: No special request
97: Compensated Temp 0~85 degC

Other options available upon request.

Pressure range

Medium Pressure

003 = 0 ~ 3 psi
005 = 0 ~ 5 psi
007 = 0 ~ 7 psi
015 = 0 ~ 15 psi
030 = 0 ~ 30 psi
050 = 0 ~ 50 psi
100 = 0 ~ 100 psi
150 = 0 ~ 150 psi

Low Pressure

L15 = 0 ~ 0.15 psi
L30 = 0 ~ 0.3 psi
L50 = 0 ~ 0.5 psi
L70 = 0 ~ 0.7 psi

Ultra-low Pressure

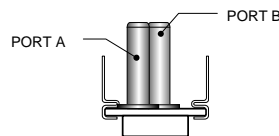
L03 = 0 ~ 2.5 mbar
L07 = 0 ~ 5 mbar

Notes:

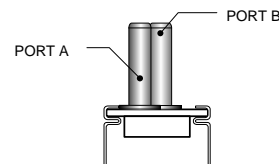
Custom ranges and units are available upon request. Please contact factory.

Leading Direction

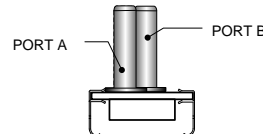
1= Leads same side as Port Metal



2= Leads opposite side as Port Metal



3= Leads for surface mount



1. Port B is used for positive differential
2. Port A is used for absolute
3. Port B is used for gage

Type of Output

0 = 1-wire P
1 = 1-wire P+T
2 = 0.5 to 4.5 V
3 = 0.2 to 4.8 V
4 = N/A
5 = 0 to 1 V
6 = 0.2 to 4.7 V
7 = N/A
8 = I²C
9 = SPI
S = Special

NOTES:

1. Custom output, pressure range and temperature compensated range are available.
2. Negative gage normally has offset (0.5V) at 0 psi and full scale output (4.5V). Reverse is also applicable.
3. Accuracy may vary on pressure range
4. Minimum absolute pressure that can be specified is 100 psia
5. Medium is available for clean air. For other medium please contact factory.

Characteristics

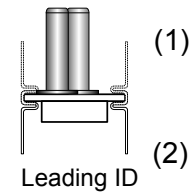
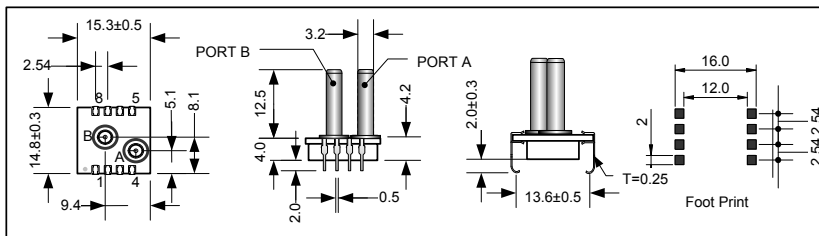
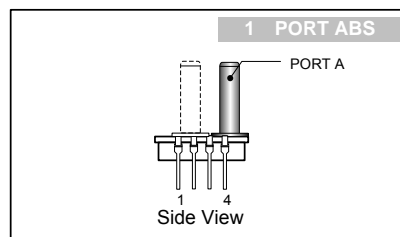
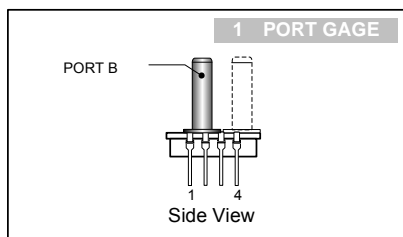
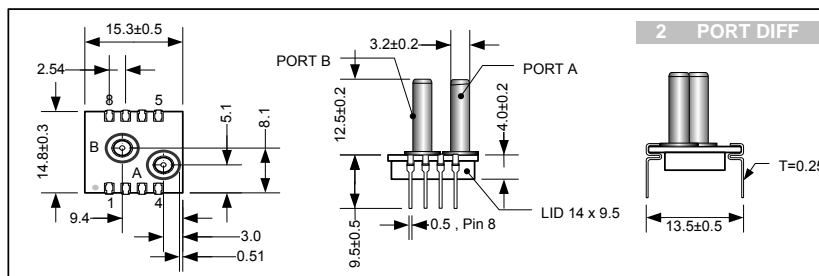
Unless otherwise specified, all parameters are measured at 3/5V, 25 °C and 60% RH

Parameters	Min	Typ	Max	Unit
Supply Voltage ¹	2.75		5.25	V
Supply Current ¹		2.5		mA
Pressure Range ²	3		150	PSI
Zero Output ⁴	0.428	0.50	0.572	V
Span Output ⁴		4.00		V
Accuracy ³			1.8	%FS
Linearity ³	-0.5		+0.5	%FS
Thermal Hysteresis ³	-0.15		+0.15	%FS
Response Time		1	2	ms
Over Pressure ⁵			3X	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.
- Smaller range and other units are also available for ordering
- Accuracy includes NOL, hysteresis, TCS and TCO over 0/50°C, BFSL definition
- For differential, offset = 2.50V, Span = ±2.00V
- Wetted material: PA, RTV, Epoxy, ceramic, Au, nickel and silicon
- Output is ratiometric to supply voltage
- Output load resistance to Vss or Vdd: 2.5KΩ (min), 10KΩ (typ)

Dimension



NOTE:

- Port B is used for positive differential
- Port A is used for absolute
- Port B is used for gage
- All dimensions are mm
- Recommended tubing 3.2 (OD) 1.8 (ID) Turning tube

Pin #	Description
1	N.C.
2	V _{SS}
3	OUT
4	V _{DD}
5~8	N.C.

NOTES:

- N.C. pins must be left floating
- A 0.1µf capacitor must be connected between V_{DD} and V_{SS}**
- Package : 12 pcs/tube

Characteristics

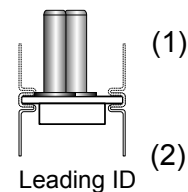
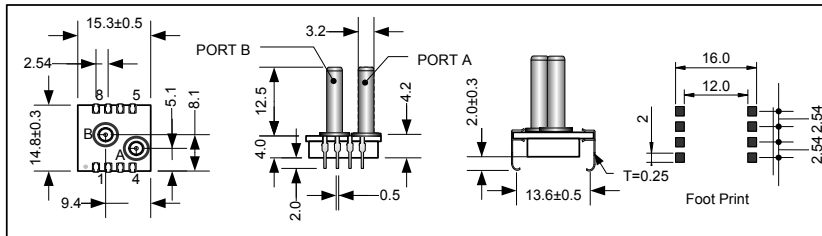
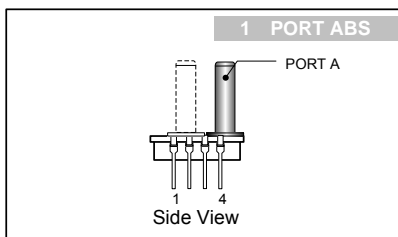
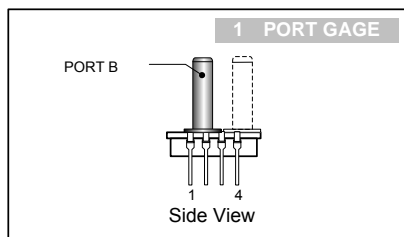
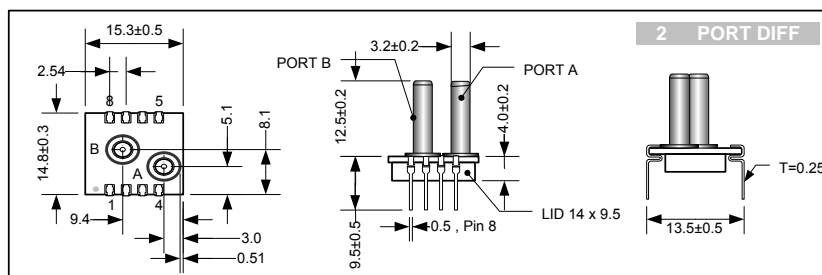
Unless otherwise specified, all parameters are measured at 3/5V, 25 °C and 60% RH

Parameters	Min	Typ	Max	Unit
Supply Voltage ¹	2.75		5.25	V
Supply Current ¹		2.5		mA
Pressure Range ²	0.15		3	PSI
Zero Output ⁴	0.412	0.50	0.588	V
Span Output ⁴		4.00		V
Accuracy ³			2.2	%FS
Linearity ³	-0.5		+0.5	%FS
Thermal Hysteresis ³	-0.15		+0.15	%FS
Response Time		1	2	ms
Over Pressure ⁵			3X	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.
- Smaller range and other units are also available for ordering
- Accuracy includes NOL, hysteresis, TCS and TCO over 0/50°C, BFSL definition
- For differential, offset = 2.50V, Span = ±2.00V
- Over-pressure will vary on different range
- Wetted material: PA, RTV, Epoxy, ceramic, Au, nickel and silicon
- Output is ratiometric to supply voltage
- Output load resistance to Vss or Vdd: 2.5KΩ (min), 10KΩ (typ)
- Zeroing at installation is required

Dimension



NOTE:

- Port B is used for positive differential
- Port A is used for absolute
- Port B is used for gage
- All dimensions are mm
- Recommended tubing 3.2 (OD) 1.8 (ID) Turning tube

Pin #	Description
1	N.C.
2	V _{SS}
3	OUT
4	V _{DD}
5~8	N.C.

NOTES:

- N.C. pins must be left floating
A 0.1µf capacitor must be connected between V_{DD} and V_{SS}
 Package : 12 pcs/tube

Characteristics

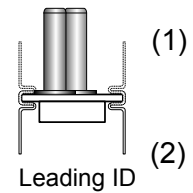
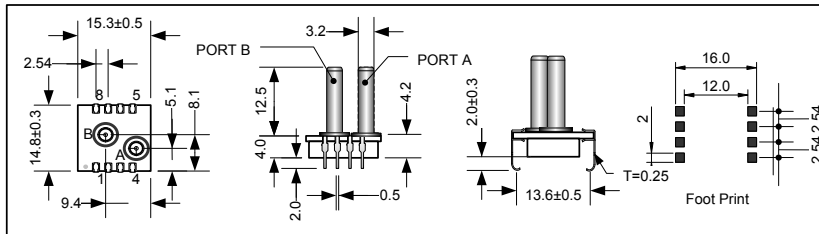
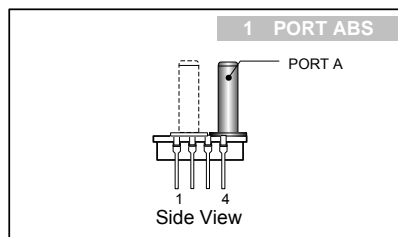
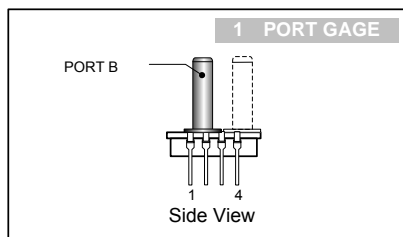
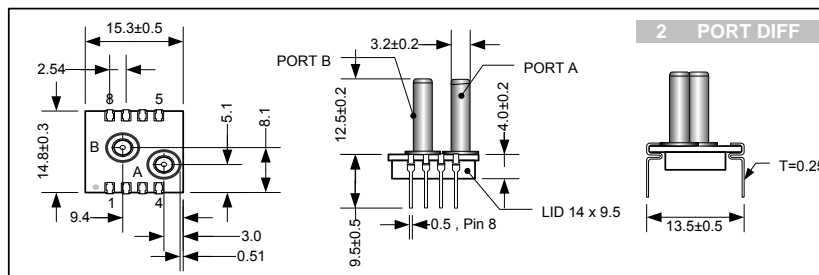
Unless otherwise specified, all parameters are measured at 3/5V, 25 °C and 60% RH

Parameters	Min	Typ	Max	Unit
Supply Voltage ¹	2.75		5.25	V
Supply Current ¹		2.5		mA
Pressure Range ²	2.5		10	mbar
Zero Output ⁴	0.32	0.50	0.68	V
Span Output ⁴		4.00		V
Accuracy ³			4.5	%FS
Linearity ³	-1.5		+1.5	%FS
Thermal Hysteresis ³	-0.3		+0.3	%FS
Response Time		1	2	ms
Over Pressure ⁵	5X			Rated Pressure
Burst Pressure ⁵	15X			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.
- Smaller range and other units are also available for ordering
- Accuracy includes NOL, hysteresis, TCS and TCO over 0/50°C, BFSL definition
- For differential, offset = 2.50V, Span = ±2.00V
- Over-pressure will vary on different range
- Wetted material: PA, RTV, Epoxy, ceramic, Au, nickel and silicon
- Output is ratiometric to supply voltage
- Output load resistance to Vss or Vdd: 2.5KΩ (min), 10KΩ (typ)
- Zeroing at installation is required

Dimension



NOTE:

- Port B is used for positive differential
- Port A is used for absolute
- Port B is used for gage
- All dimensions are mm
- Recommended tubing 3.2 (OD) 1.8 (ID) Turning tube

Pin #	Description
1	N.C.
2	V _{SS}
3	OUT
4	V _{DD}
5~8	N.C.

NOTES:

- N.C. pins must be left floating
- A 0.1µf capacitor must be connected between V_{DD} and V_{SS}
- Package : 12 pcs/tube

Characteristics

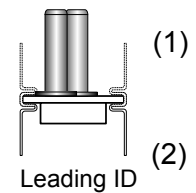
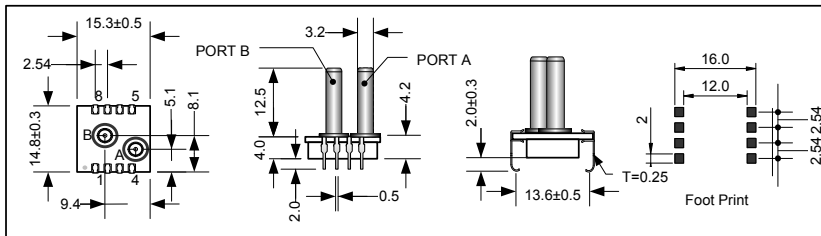
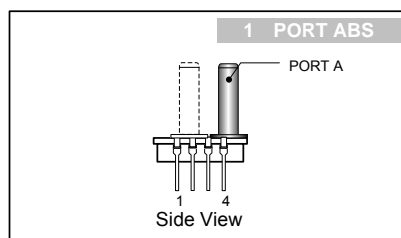
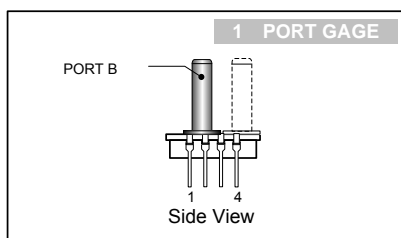
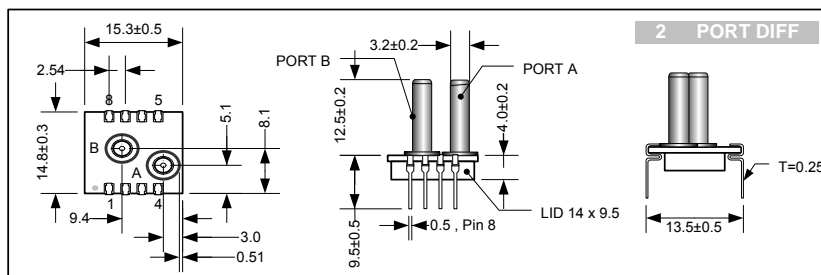
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Parameters	Min	Typ	Max	Unit
Supply Voltage ¹	2.75		5.25	V
Supply Current ¹		2.5		mA
Pressure Range ²	3		150	PSI
Zero Output ⁴	0.428	0.50	0.572	V
Span Output ⁴		4.00		V
Accuracy ³			1.8	%FS
Linearity ³	-0.5		+0.5	%FS
Thermal Hysteresis ³	-0.15		+0.15	%FS
Response Time		1	2	ms
Over Pressure ⁵			3X	Rated Pressure
Temp - Compensating	0		+85	°C
Temp - Operating	-20		+85	°C
Temp - Storage	-40		+125	°C

NOTES:

- Supply 3V or 5V must be ordered separately.
- Smaller range and other units are also available for ordering
- Accuracy includes NOL, hysteresis, TCS and TCO over 0/50°C, BFSL definition
- For differential, offset = 2.50V, Span = ±2.00V
- Wetted material: PA, RTV, Epoxy, ceramic, Au, nickel and silicon
- Output is ratiometric to supply voltage
- Output load resistance to Vss or Vdd: 2.5KΩ (min), 10KΩ (typ)

Dimension



NOTE:

- Port B is used for positive differential
- Port A is used for absolute
- Port B is used for gage
- All dimensions are mm
- Recommended tubing 3.2 (OD) 1.8 (ID) Turning tube

Pin #	Description
1	N.C.
2	V _{SS}
3	OUT
4	V _{DD}
5~8	N.C.

NOTES:

- N.C. pins must be left floating
- A 0.1µf capacitor must be connected between V_{DD} and V_{SS}
- Package : 12 pcs/tube

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