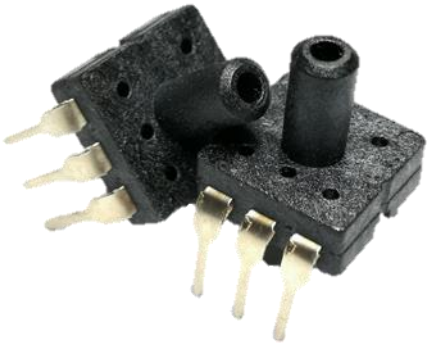
PPS35 Series



- Back Side Die for Harsh Environment
- Temperature Measurement
- -40°C - 105°C Operating Temperature
- Compact Size – 6 Pin DIP
- ± 0.5% Linearity FS
- Analog 14 Bit Digital Output – SPI/I2C
- Pressure Range: 5-300 PSI
- Resolution: .1 %
- Accuracy: ± .5 % (+.75% with DO) (includes-Hysteresis, NL, TC)

DESCRIPTION

The PPS35 is an amplified digitally compensated pressure sensor in a compact 6-pin package. This state of the art MEMS based pressure sensor was designed for applications where size and cost are important but where the media is harsh.

The PPS35 series utilizes MEMS piezo-resistive sensors and a 14-bit sigma delta ADC ASIC. It provides pressure of the media with a response time down to 5 ms. Isolation from the media with a SS cap enables long term stability of the sensor in various liquid media.

Please contact the factory for Custom design availability.

APPLICATIONS

- Weather Station
- Small Water Pumps
- Sports Watches
- Aviation
- Industrial Applications

Maximum Environmental Ratings

Operating Temperature ……..... -40°C to 105°C
Storage Temperature Range ……..-40°C to 110°C
Proof pressure ……..... 2 x full scale pressure
Burst pressure ……..... 2.5x full scale pressure

Application Information

Package

The PPS35 is housed in an 6 PIN Nylon package. The Nylon cover allows for .120" tubing to seal the sensor.

Stability

The silicon MEMS pressure sensor has a SiO2 base and is mounted to a nylon base with RTV and is sealed with a plastic cover. The special die attach material helps reduce the mechanical stress which results in greater stability over time and temperature.

Additional stability is gained from factory stabilization of all sensors.

Media

The pressure port is tolerant to most media including but not limited to air, gas, and most non-corrosive media.

Wetted parts

The wetted surfaces are SiO2, Nylon, and Pyrex.

Pressure port

The PPS35 has a long cylindrical port with an engineered RTV to protect against water ingress.

Application Examples

Dive Watch

Satellite Balloon

Skydiving

PPS35 Operational Characteristics

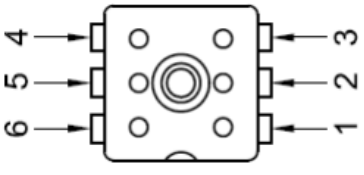
V_+ = 5V, V_- = 0V, Temperature = 25°C

PARAMETER	SYMBOL	Min	Typ	Max	UNITS
Supply Voltage	V_{DD}	4.5	5	5.5	V
Operating Temperature	T_S	-40		105	ºC
Supply Current (Note 1)	I_{DD}	2	3	5	mA
Analog Output	V	.5		4.5	V
Digital Output			I2C/SPI		Counts
Accuracy					
Total Error Band		-1.5		1.5	%Full Scan
Non-Linearity (Note 2)		-0.5		0.5	%Full Scan
Temperature Error		-1		1	PPM/ºC
Response Time	t_R	4	5	10	ms
Analog-to-Digital					
Resolution			14 Bit		Full Scale
Temperature Resolution			0.1		ºC
I2C & SPI Interface					
Input Low Level	V_{in_low}	0		.2	Vdd%
Input High Level	V_{in_high}	.8		1	Vdd%
Output Low Level	V_{o_low}			.1	Vdd%
Capacitor (Vdd – GND)	CL			4.7	uF
Pull-Up Resistor	R_{I2C_PU}	1K			Ω

Notes: 1) Measured at zero pressure. 2) Defined as best straight line 3) Measured from 0-50C. +-.75% with Digital Output option.

Electrical Pin Configuration

Output	Pin1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6
I2C*	GND	INT/SS	VDD	SCL	SDA	TEST
Ratio**	GND	TEST	GND	VDD	SO	VDD

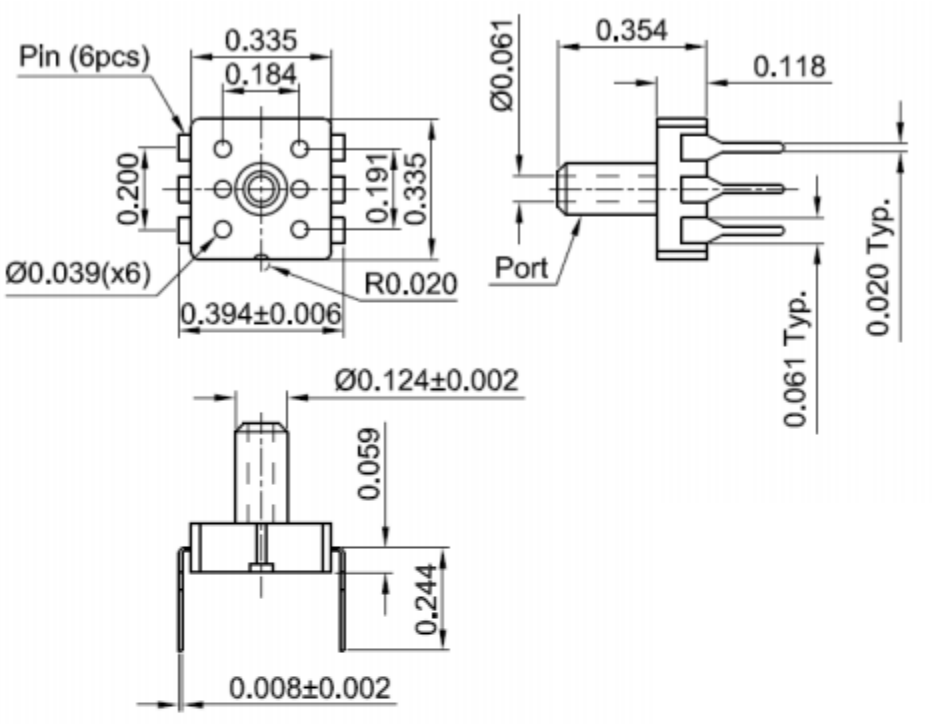


Top View

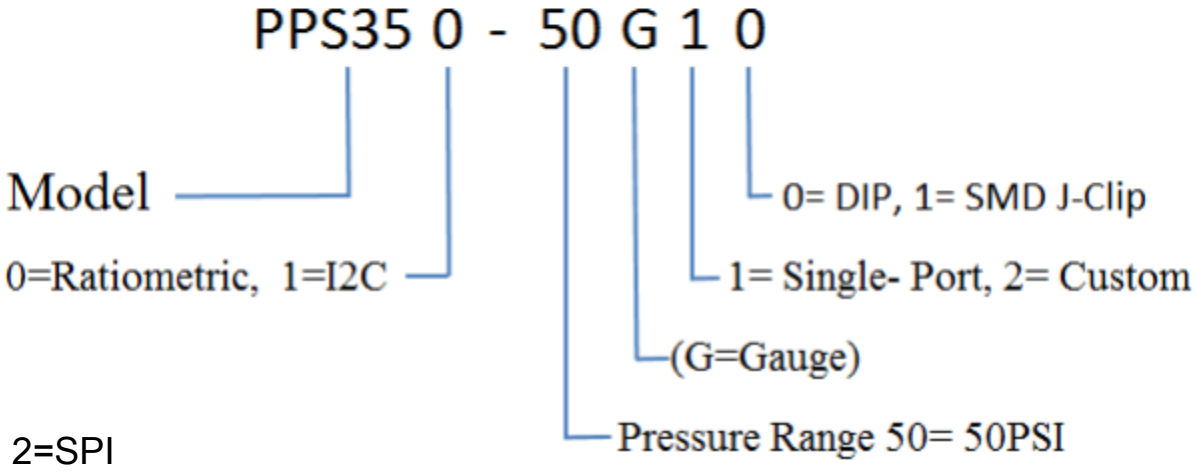
* 1. Pin 6 is for test purpose only. Do not connect to any circuit.
** 1. Pin 2 is for test purpose only. Do not connect to any circuit.
2. All GNDs internal connected. All VDDs internal connected.

Mechanical Dimensions Inches [mm]

Surface Mount DIP Package



Part Number Configuration



Ph: (480) 462-1810 sales@PhoenixSensors.com