MIS-3500 series
Integrated Pressure Sensor

■ Features

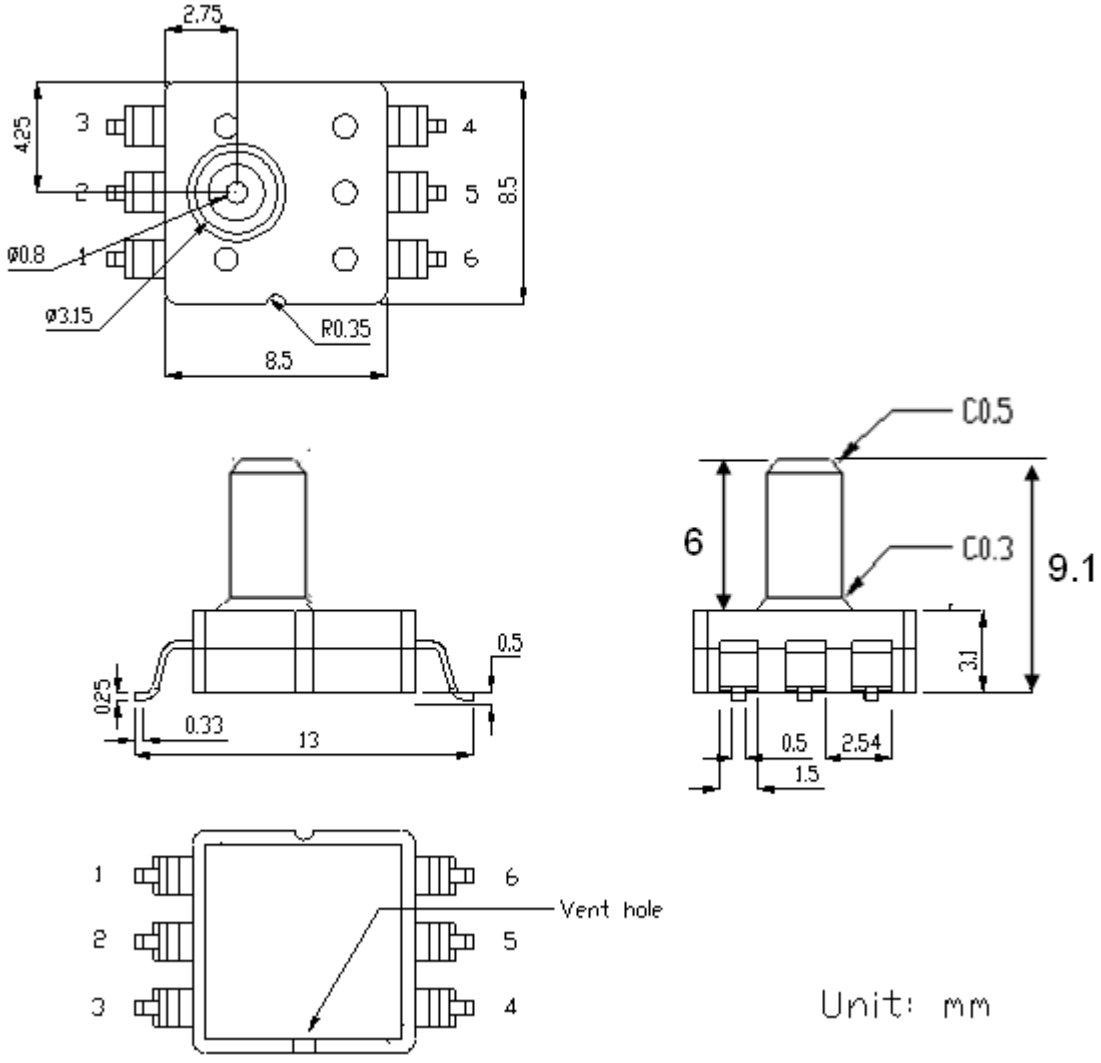
- □ Factory calibrated and temperature compensated
- □ ±1.3%FS accuracy（20 to 60℃）
- □ 3V or 5V rail to rail ratiometric analog output
- □ Gauge pressure or vacuum type
- □ Pressure range: 1, 5.8, 15, 30, 150 psi & -1000mbar

■ Applications

- □ Industry control
- □ Medical instrumentation
- □ Pressure switch
- □ Hospital bed
- □ Pump control

The MIS-3500 is a intelligent pressure sensor which consist of a MEMS piezoresistive pressure sensor and a CMOS sensor interface IC. The interface IC enables easy and precise calibration of resistive bridge sensors via EEPROM. It correct digitally offset、gain and both temperature coefficients. All devices were factory calibrated and temperature compensated. Using MIS-3500 series is easy to get rid of bothersome calibrations and temperature compensations. The MIS-3500 can provide 3V or 5V rail-to-rail ratiometric analog output.

■ Outline Dimensions



■ Specifications

Parameter	Min	Typ	Max	Units	Notes
Absolute Maximum Ratings					
Supply Voltage	-0.3		6.0	V	
Maximum Overpressure			2X	Rated pressure	
Storage Temperature Range	-50		125	°C	
Operating Temperature Range	-40		85	°C	
Operating humidity	15		85	% RH	No condensation
Media Compatibility	Clean, dry air & non-corrosive gases				
Recommended Operating Conditions					
Pressure Range	1、5.8、15、30 Psi & -1000mbar				
Supply Voltage MIS-3500 series MIS-3503 series	 4.75 2.7	 5 3	 5.25 3.3	 V	
Supply Current	0.25		2	mAdc	
Power ON Rise Time			100	ms	
Offset voltage（0 to 85℃） MIS-3500 series MIS-3503 series	 0.16 0.096	 0.25 0.15	 0.34 0.204	 V	 rail to rail output
Full scale output（0 to 85℃） MIS-3500 series MIS-3503 series	 4.66 2.796	 4.75 2.85	 4.84 2.904	 V	 rail to rail output
Full scale span（0 to 85℃） MIS-3500 series MIS-3503 series	 4.32 2.592	 4.5 2.7	 4.68 2.808	 V	 rail to rail output
Accuracy 20 to 60℃ 0~20 & 60~85℃	 -1.3 -2		 1.3 2	 %FS	
Sensitivity 1psi (5V/3V) 5.8psi (5V/3V) 15psi (5V/3V) 30 psi (5V/3V) 150 psi (5V/3V) -1000mbar (5V/3V)		 4.5 / 2.7 0.776 / 0.466 0.3 / 0.18 0.15 / 0.09 0.03 / 0.018 4.5e-3 / 2.7e-3	 V/Psi V/Psi V/Psi V/Psi V/mbar		
Response time		1		ms	
Warm-up time		20		ms	
Offset stability			±0.25	%FS	
External Capacitance between Vdd and Gnd	100	220	470	nF	
Output load Capacitance		10	15	nF	

Notes：

1. Unless otherwise specified, measurements were taken with a supply voltage of 5 Vdc at a temperature of 25±3℃ and humidity ranging from 25% ～85% .

Metrodyne Microsystem Corp. reserves the right to make changes to the product specification in this publication.

■ Ordering Information

Part No.	Pressure type	Pressure range	Supply voltage	Note
MIS-3500-001G	Gauge	1 PSI	5V	
MIS-3500-006G	Gauge	5.8 PSI	5V	
MIS-3500-015G	Gauge	15 PSI	5V	
MIS-3500-030G	Gauge	30 PSI	5V	
MIS-3500-150G	Gauge	150 PSI	5V	
MIS-3500-015V	Vacuum	-1000mbar	5V	Vacuum
MIS-3503-001G	Gauge	1 PSI	3V	
MIS-3503-006G	Gauge	5.8 PSI	3V	
MIS-3503-015G	Gauge	15 PSI	3V	
MIS-3503-030G	Gauge	30 PSI	3V	
MIS-3503-150G	Gauge	150 PSI	3V	
MIS-3503-015V	Vacuum	-1000mbar	3V	Vacuum

■ Transfer Function

For MIS-3500 series : $P = \frac{(V_{out} - V_{off})}{4.5} \times P_{range}$

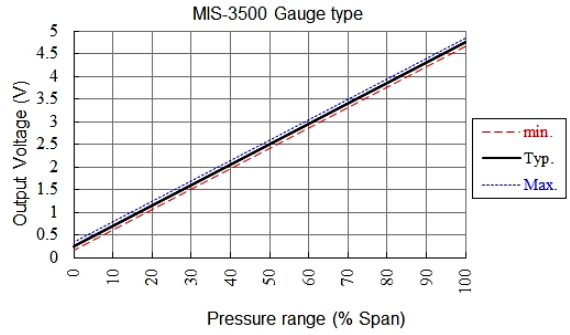
For MIS-3503 series : $P = \frac{(V_{out} - V_{off})}{2.7} \times P_{range}$

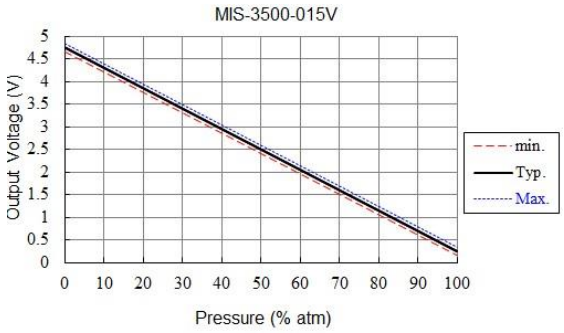
P : pressure value

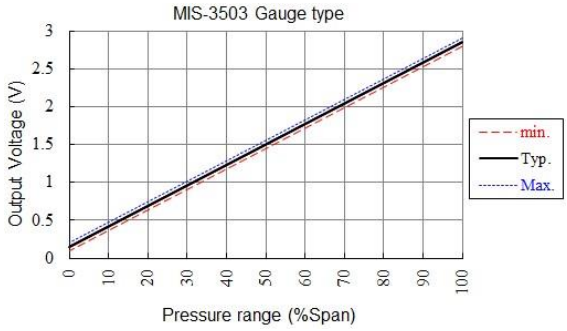
V_{off} : Offset voltage, the output voltage of sensor without pressure applying

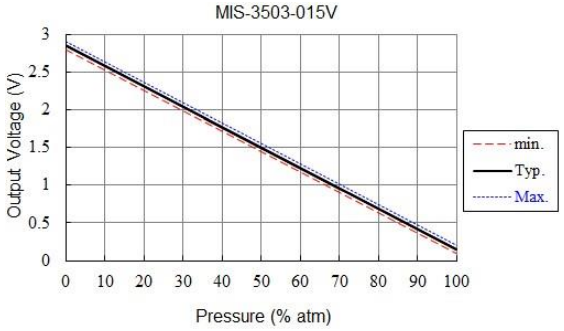
V_{out} : The output voltage of sensor when pressure applied

P_{range} : Pressure range of sensor

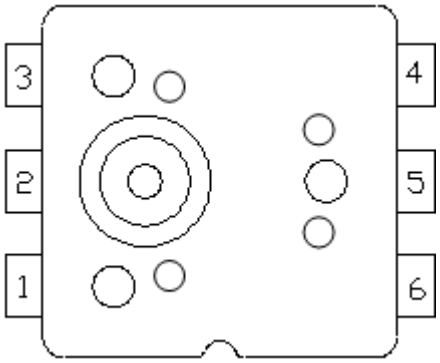






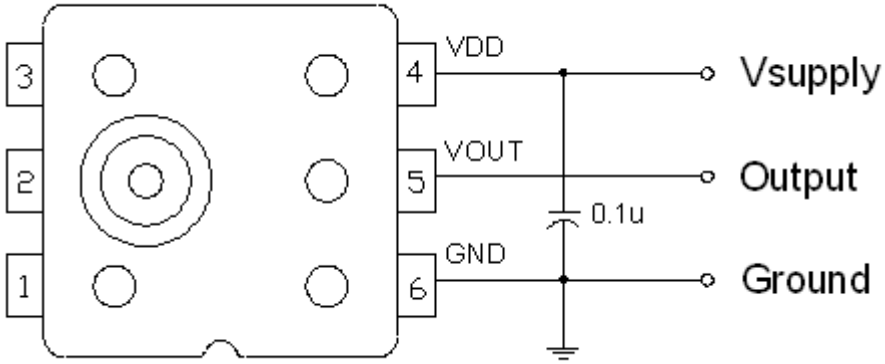


■ Pin Configuration

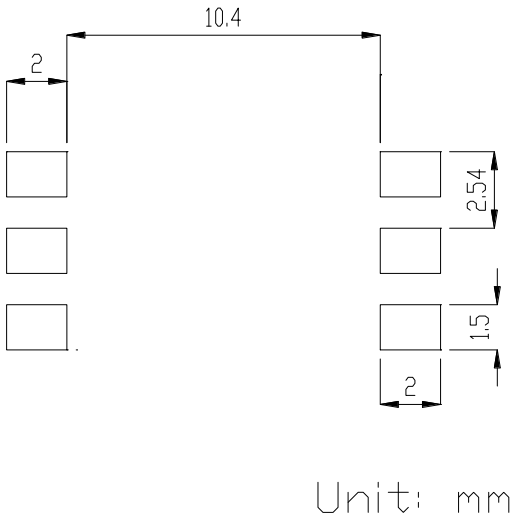


Pin No.	Name	Description
1	NC	No connection
2	NC	No connection
3	NC	No connection
4	VDD	Supply voltage
5	VOUT	Voltage output
6	GND	Ground supply

■ Application Circuit Examples



■ **Recommended Footprint**



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