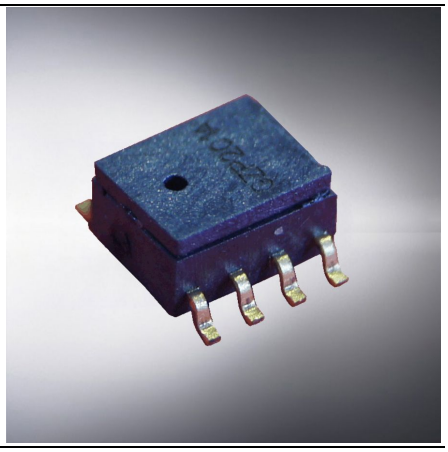
XGZP8 Pressure Sensor(SO8)

Features



- Ranges: 0～100kPa…1000kPa(0～15PSI…150PSI)
- MEMS Technology
- Absolute
- SMD package(SO8)
- For non-corrosive gas or dry air
- Working temp.: -10℃～+100℃(-14℉～+212℉)
- Easy to use and embed in OEM equipment

Application

■ For Small household appliances field, such as electric cooker,milk machine,purifier,coffee machine etc, medical instruments and device.

■ For Automotive electronics field, such as tire pressure gauge,MAP sensor etc.

■ For Other fields, such as massage appliance,air spring and air bed,animals blooding pressure equipment,gastrointestinal medical device etc.

Introduction

XGZP8 is a piezoresistive pressure sensor that was designed for extremely space sensitive application where the sensing element is to be integral to the OEM products. The core is a silicon piezoresistive pressure sensing die that is designed and fabricated by MEMS technology. The pressure sensing die is composed of a springy diaphragm and four resistors integrated in the diaphragm. Four piezo-resistors build up a Wheatstone bridge structure. When the springy diaphragm is pressured, Wheatstone bridge produces a linear voltage signal(mV) that is proportional to input pressure.

With standard SOP8 package, It is easy for users to install by surface mounting or welding.

With good repeatability, linearity, stability and sensibility, XGZP8 is very facile for users to calibrate output, thermal drift and make temperature compensation by using exterior operational amplifier or integrated circuit.

The pressure medium other than dry air or non-corrosive gas can't be used directly. It is highly prohibited to choke the side of pressure diaphragm during actual application.

Electronic Performance

- Power Supply: ≤10VDC or ≤2.0mADC
- Input Impedance : 4kΩ～6kΩ
- Output Impedance : 4kΩ～6kΩ
- Insulation Resistor: 100MΩ,100VDC
- Over Pressure: 1.5X Rated Pressure

Construction

- Sensing Die: Silicon
- Leading Wire: Gold Wire
- Package Housing: PPS
- Pin: Golden Plated Copper
- Net Weight: Approx.0.5g

Environment Condition

- Orientation: Deviate 90° from any direction, zero change ≤ 0.05%FS
- Shock: No change at 10gRMS, (20～2000)Hz condition
- Impact: 100g,11ms
- Medium Compatibility:

  Pressure side: air or gas compatible with silicone, silicone glue, epoxy glue or PPS

  Reference side: dry air and non-corrosive gas compatible with PPS, silicon and silicone glue or epoxy, gold, aluminum and silver.

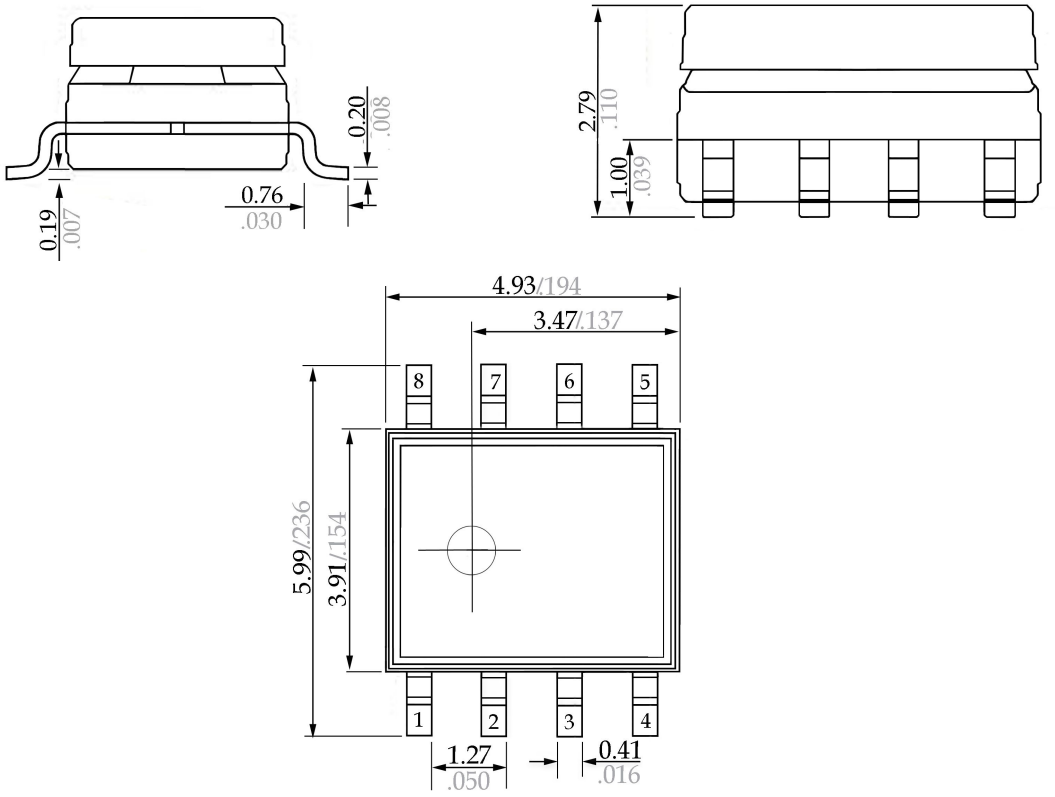
Basic Condition

- Medium: Gas(Clean,dry air and Non-corrosive gases)
- Medium Temp: (25±1)℃/(77±1.8)℉
- Environment Temp.: (25±1)℃/(77±1.8)℉
- Shock: 0.1g (1m/s2) Max
- Humidity: (50%±10%) RH
- Power Supply: (5±0.005) VDC

Specifications

Specifications	Min.	Typ.	Max	Unit
Range	100,350,700,1000,1600			kPa
Range	15,52.5,105,150,241			PSI
Range	1,3.5,7,10,1600			Bar
Ambient Temp.	-10/14		+100/212	℃/℉
Storage Temp.	-40/-40		+125/257	℃/℉
Bridge Resistance	4	5	6	kΩ
Zero Output	-30		+30	mV
FS Output	50	100	150	mV
Temp. Coefficient of Resistance	2400	2800	3200	ppm/℃
TSO(Temp. Coefficient of Offset)	-0.2		0.2	%FS/℃
TCS(Temp. Coefficient of Span)	-0.25	-0.21	-0.17	%FS/℃
Non-linearity	-0.3		0.3	%FS
Hysteresis	-0.3		0.3	%FS
Repeatability	-0.3		0.3	%FS
Annual Drift	-1.0		1.0	%FS
Note: Unless otherwise specified,measurements were taken on base of above testing condition.				

Dimension (Unit:mm/Inch)



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Electric Connection

Pin	1	2	3	4	5	6	7	8
Definition	N/C	Vo-	N/C	GND	N/C	Vo+	N/C	Vs+

Symbol	Vs+	GND	Vo+	Vo-
Definition	Power +	Power -	Output +	Output -

Order Guide

XGZP8	Piezo-resistive Pressure Sensor			
	Code	Range		
	101	0～100kPa		
	351	0～350kPa		
	701	0～700kPa		
	102	0～1000kPa		
	162	0～1600kPa		
		Code		
		S	SOP	
			Code	Pressure Type
			A	Absolute
XGZP8	201	S	A	the whole spec.

Notes:

■ **Mounting**

Adopting land on the PC board for ensuring the sensor is securely fixed.

■ **Soldering**

Due to its small size, the thermal capacity of the pressure sensor is low.Therefore, take steps to minimize the effects of external heat.

Damage and changes to characteristics may occur due to heat deformation.

Use a non-corrosive resin type of flux.

Since the pressure sensor is exposed to the atmosphere, do not allow flux to enter inside.

▼ Manual soldering

⊙Set the soldering tip from 260 to 300°C (30W), and solder for no more than 5 seconds.

⊙Please note that output may change if the pressure is applied on the terminals when the soldering.

⊙Thoroughly clean the soldering iron.

▼ SMD soldering

⊙Please keep the SMD solder bath temperature no higher than 260°C/500°F.

When soldering, heat should be applied no longer than five seconds.
⊙When mounting onto a PCB of low thermal capacity, please avoid SMD soldering as this may cause heat deformity.
▼ Solder reworking
⊙Finish reworking in one operation.
⊙For reworking of the solder bridge, use a soldering iron with a flat tip. Please do not add more flux when reworking.
⊙Please use a soldering iron that is below the temperature given in the specifications in order to maintain the correct temperature at the tip of the soldering iron.
⊙Too much force on the terminals will cause deformation and loss in effectiveness of the solder. Therefore, please avoid dropping and careless handling of the product.
⊙Please control warping of the PCB within 0.05 mm of the sensor width.
⊙When cut folding the PCB after mounting the sensor, take measures to prevent stress to the soldered parts.
⊙The sensor terminals are designed to be exposed, so contact of the terminals with metal shards and the like will cause output errors. Therefore, please be careful and prevent things such as metal shards and hands from contacting the terminals.
⊙To prevent degradation of the PCB insulation after soldering, please be careful not to get chemicals on the sensor when coating.
⊙Please consult us regarding the use of lead-free solder.

■ **Cleaning**
▼ Since the pressure sensor chip is exposed to the atmosphere, do not allow cleaning fluid to enter inside.
▼ Avoid ultrasonic cleaning since this may cause breaks or disconnections in the wiring.

■ **Environment**
▼Please avoid using or storing the pressure sensor chip in a place exposed to corrosive gases (such as the gases given off by organic solvents, sulfurous acid gas, hydrogen sulfides, etc.) which will adversely affect the performance of the pressure sensor chip.
▼Since this pressure sensor chip does not have a water-proof construction, please do not use the sensor in a location where it may be sprayed with water, etc.
▼Avoid using the pressure sensors chip in an environment where condensation may form. Furthermore, its output may fluctuate if any moisture adhering to it freezes.
▼The pressure sensor chip is constructed in such a way that its output will fluctuate when it is exposed to light. Especially when pressure is to be applied by means of a transparent tube, take steps to prevent the pressure sensor chip from being exposed to light.
▼Avoid using the pressure sensor chip where it will be susceptible to ultrasonic or other high-frequency vibration.

■ **Quality check under actual loading conditions**
To assure reliability, check the sensor under actual loading conditions. Avoid any situation that may adversely affect its performance.

■ Other handling precautions

▼That using the wrong pressure range or mounting method may result in accidents.

▼The only direct pressure medium you can use is dry air. The use of other media, in particular, corrosive gases (organic solvent based gases, sulfurous acid based gases, and hydrogen sulfide based gases, etc.) and media that contains moisture or foreign substances will cause malfunction and damage. Please do not use them.

▼The pressure sensor chip is positioned inside the pressure inlet. Never poke wires or other foreign matter through the pressure inlet since they may damage the chip or block the inlet. Avoid use when the atmospheric pressure inlet is blocked.

▼Use an operating pressure which is within the rated pressure range. Using a pressure beyond this range may cause damage.

▼Since static charge can damage the pressure sensor chip, bear in mind the following handling precautions.

⊙When storing the pressure sensor chips, use a conductive material to short the pins or wrap the entire chip in aluminum foil. Plastic containers should not be used to store or transport the chips since they readily become charged.

⊙ When using the pressure sensor chips, all the charged articles on the bench surface and the work personnel should be grounded so that any ambient static will be safely discharged.

▼Based on the pressure involved, give due consideration to the securing of the pressure sensor DIP type and to the securing and selection of the inlet tube.

Any more question,please contact CFSensor(Email:Sales@CFSensor.com)

The listed specifications and dimensions are subject to change without prior notice.