MD-PS002 Pressure sensor core

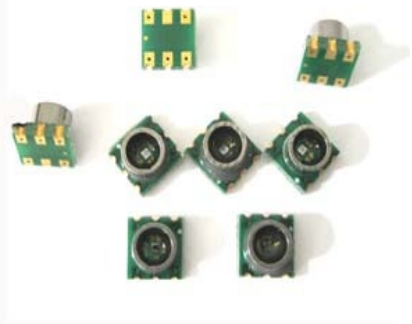
- Solid-state components, three-dimensional integrated MEMS process manufacturing, high reliability.
- Stress-free design and manufacturing, strict self-compensation concentration control, good stability.
- Piezoresistive sensing technology, silicon/silicon bonded chip.
- **Low cost, small size.**
- All chips will be shipped from the factory after being inspected by electronic probes and visual inspections, ensuring 100% availability.

Skill

Techniqu

special

point



The MD-PS002 pressure sensor core is a secondary package based on the MD-PS001 pressure sensor chip, which is more convenient for customers to install, and the surface of the sensor is protected by a coating to ensure the performance of the sensor. It is more convenient to be used in air compressors, automotive electronics and other fields that require high cost performance for sensors.

Applications

- Steam — Car: TPMS, tire pressure, diagnostic instrument, air pump, steam engine and suspension mechanism control, absolute pressure sensor.
- Work — Industry: air pressure control, cable leak detection, portable pressure gauges, pressure switches and controllers.
- Consumer products: handheld tire pressure gauge, altimeter and barometric pressure gauge.
- Medical — Treatment: patient monitoring and diagnostic equipment, sphygmomanometers.
- Section — Research: Miniature absolute pressure sensor and general absolute pressure sensor for aerodynamics.

technical parameter

	Minimum	Typical value	Max	unit	Remark
Pressure characteristics					
Pressure range	100KPa 15PSI	200KPa 30PSI	350KPa 50 PSI	700K Pa 100P SI	1700KPa 250PSI 3500K 500PSI
greatest pressure		2 times			
Breaking pressure		4 times			
Electrical performance					
Excitation voltage	3	5.0	12	V	
Excitation current		1	3	mA	
input resistance	4	5	6	KΩ	
Output impedance	4	5	6	KΩ	
Output range					
(FS range) 150KPa	60	80	100	mV	
700KPa	70	100	150	mV	
1700KPa	80	120	180	mV	
Zero output	-25	0	25	mV	
Performance					
Full temperature coefficient	-0.24	-0.19	-0.15	%FS/	Constant voltage power supply
Zero temperature coefficient	-0.07		0.07	%FS/℃	
Temperature Coefficient of Resistance	0.24	0.27	0.33	% /℃	
Linearity	-0.25	0.15	+ 0.25	%FS	
Hysteresis and repeatability		±0.10		%FSO	
Long-term stability		±0.20		%FSO	
Operating temperature	-40		+ 125	℃	
storage temperature	-55		+ 150	℃	

Pressure Sensor

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MIND
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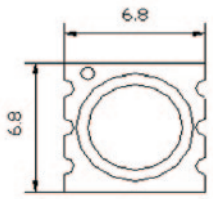
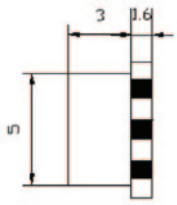
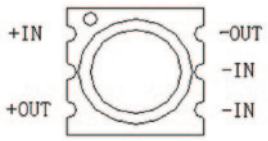
Chip structure

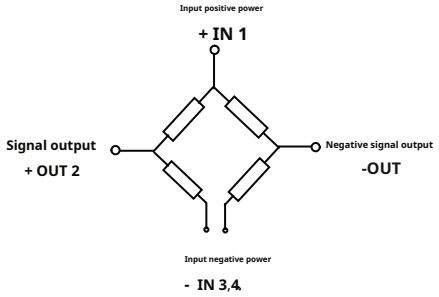


Top view



Side view



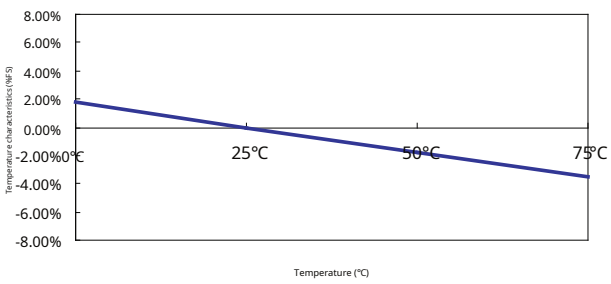


Pin	definition
1	Input positive power +IN
2	Output signal +OUT
3.4	Input negative power-IN
5	Output signal negative -OUT

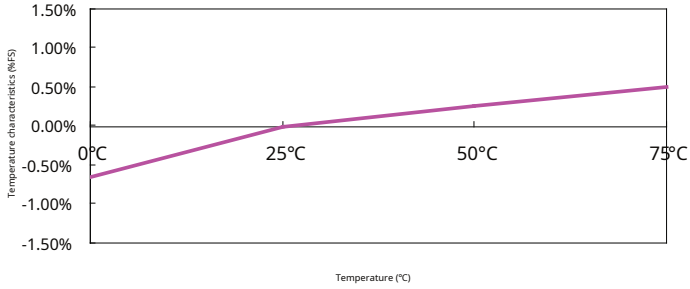
Characteristic curve

Test current: 1.5mA Atmospheric pressure: 101.03Kpa Humidity: 55%RH

1. Zero temperature characteristic curve



2. Sensitivity temperature characteristic curve



Product Selection Guide

MD-PS002-010A

model	Range
010A	(Absolute pressure 150KPa)
020A	(Absolute pressure 200KPa)
035A	(Absolute pressure 350KPa)
070A	(Absolute pressure 700KPa)
170A	(Absolute pressure 1700KPa)
350A	(Absolute pressure 3500KPa)

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MD-PS series product selection navigation

Absolute pressure bare silicon wafer series

model	Range
MD-PS001-010A	Absolute pressure 150KPa
020A	Absolute pressure 200KPa
035A	Absolute pressure 350KPa
070A	Absolute pressure 700KPa
170A	Absolute pressure 1700KPa
350A	Absolute pressure 3500KPa

Absolute pressure packaging film series

model	Range
MD-PS002-010A	Absolute pressure 150KPa
070A	Absolute pressure 700KPa

DIP package structure series (gauge pressure)

model	instruction
MD-PSG010-40KPa	The air nozzle is in the same direction as the pin
MD-PSG010R-40KPa	The air nozzle and the pin are reversed
MD-PSG010S-40KPa	SMD pin
MD-PSG010D-100KPa	DIP package structure
MD-PSG070D-700KPa	DIP package structure

Gauge pressure package film series

model	Range
MD-PS003-0035G	Gauge pressure 35KPa
010G	Gauge pressure 100KPa
100G	Gauge pressure 1MPa
160G	Gauge pressure 1.6MPa

High temperature diffusion silicon chip series

model	Range
MD-PSG001-010S	SOI high temperature chip 100KPa
020S	SOI high temperature chip 200KPa
100S	SOI high temperature chip 1MPa
200S	SOI high temperature chip 2MPa
400S	SOI high temperature chip 4MPa

Gauge Pressure Bare Silicon Wafer Series

model	Range
MD-PSG001-004G	Gauge pressure 40KPa
010G	Gauge pressure 100KPa
070G	Gauge pressure 700KPa

NOTE:

1. Unless otherwise specified, MD-PS001 series chip parameters are measured at 25°C and 1mA power supply.
2. When used in the range of 0-70℃, the performance of the product is better than the above technical parameters.
3. The performance of the chip used in gold wire bonding is better than that of aluminum wire bonding, and it is recommended to use the gold wire bonding process.
4. This series of chips can only be used to measure clean gases.
5. Each chip has passed electronic probe and visual inspection before leaving the factory to ensure that the factory products are 100% usable.
6. All chips are placed in a special plastic protective box for transportation. The package contains the date of manufacture, the number of specific models, and the range. The minimum package is 2000 chips.

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