

MEMS Solid State Pressure Sensor

Description

The HSG Series of Pressure Sensor employed the technique of MEMS (Micro Electromachine System). They can be widely used in Automobile Industry, Altimeter, Weather Station, Pneumatic Control, Sphygmomanometer, Industrial Autocontrol, and etc. The Pressure Range: 5psi~300psi. They can be designed for customers' special requirements, and packaged into several styles to expand their capabilities and span ranges.

Features

- Solid state, high reliability
- Exchangeable
- Miniature size
- Favorable pricing
- Easily embedded in OEM Equipment
- Extensive span range
- Silicon/Grass Bonding wafer, high stability

Application

- For high resolution absolute sensor systems
- Engine control
- Tyre pressure test
- Barometers, Altimeters, Variometers, Sphygmomanometer

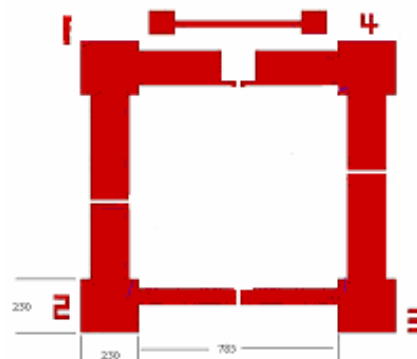
Block Diagram

1. Best fit straight line.
2. Coefficients are typical values between -10°C and 40°C.

Pad NO.	Connection
1	Vout—
2	GND
3	Vout+
4	VCC

Wafer Size: 1.5mm*1.5mm*0.9mm

Schematic and Wire Bond Diagram



Electronic Characteristics

Test Environment: Supply Voltage 5VDC, Ambient Temperature 25°C

Items	Min	Type	Max	Units	
Excitation Voltage	0	5.0	10.0	Volts	
Excitation Current	0	1.5	3.0	mA	
Full Scale Span	6 psi	70	100	130	mV
	15 psi	70	100	130	mV
	100 psi	60	90	120	mV
	150 psi	70	100	130	mV
	300 psi	90	120	150	mV
Zero Offset	-30	0	30	mV	
Temp. Coefficient of Zero Offset	-0.2	0	+0.2	%FS/100°C	
Temp. Coefficient of Span	-0.2	0	+0.2	%FS/100°C	
Linearity	-0.3		+0.3	%F.S	
Bridge Impedance	2.5	3.0	3.5	K Ω	
Pressure Overload			2×	Full Scale Span	
Operating Temp.	-40		125	°C	
Storage Temp.	-40		125	°C	

Notes:

1. Hope mainly produce the sensor pressure range: 15psi, 100psi, 300psi
2. Maximum difference in offset after one thermal cycle from -40°C to +125°C.
3. Hope also provide the other pressure range sensor, please contact with Hope Microelectronics

Full Scale Pressure

kPa	bar	mbar	PSI	atm	mmHg	mmH ₂ O	kg/cm ²
41	0.41	410	6	0.4	310	4220	0.42
100	1	1000	15	0.99	750	10207	1
700	7	7000	100	6.9	5250	71451	7.1
1033	10	10000	150	10	7755	105510	10
2067	20	20000	300	20	15510	211020	21

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