

PRODUCT OVERVIEW

PRESSURE MEASUREMENT

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PB251 Sputtered Thin Film Metal Base Pressure Sensitive Chip



Characteristics

- ☆ Sputtered film tech. ensures long-term stability & reliability
- ☆ Wide working temp. range, low temp. drift, high precision
- ☆ Integrated structure, suitable for a variety of fluid media
- ☆ 17-4PH stainless steel material, corrosion resistant
- ☆ Small size: outer diameter of strain surface & at the step is 5mm & 7.5mm respectively, height is 5mm, weight 1g

Applications

- ☆ Electronic stability system (ESP)
- ☆ Electro-hydraulic braking system (EHB)
- ☆ Hydraulic Components
- ☆ Automation equipment
- ☆ Pressure measurement applications with high requirements for size miniaturization

Profiles

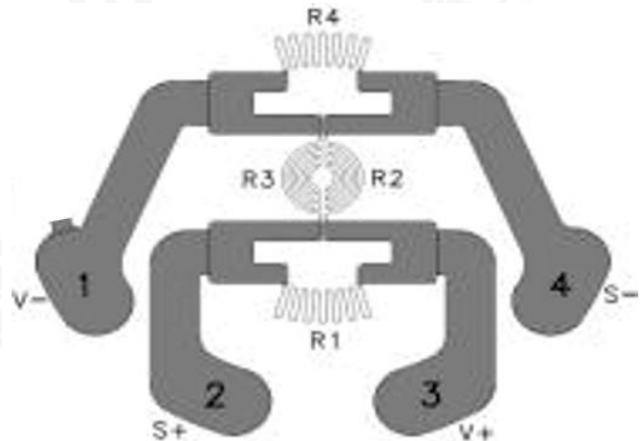
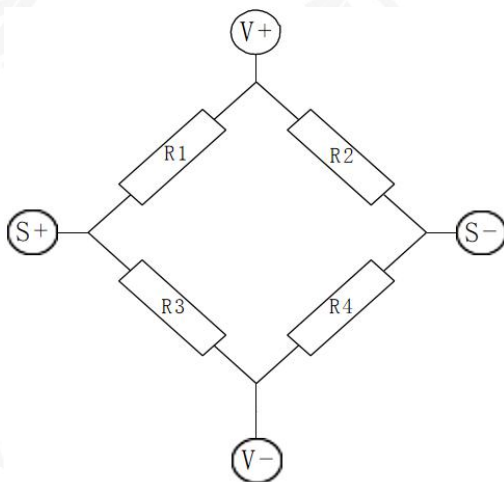
PB251 metal-based pressure-sensitive chip adopts MEMS technology, and the strain resistance is directly done on the 17-4 PH stainless steel substrate. Through the elastic deformation of the substrate, the chip outputs a mV voltage signal that is linearly related to the measured pressure, and realizes fast and accurate measurement.

This product is suitable for industries that require high sensor performance, reliability and stability, and where installation locations are limited. The chip outputs mV voltage signals, and customers can process the signals according to actual requirements.

Specifications

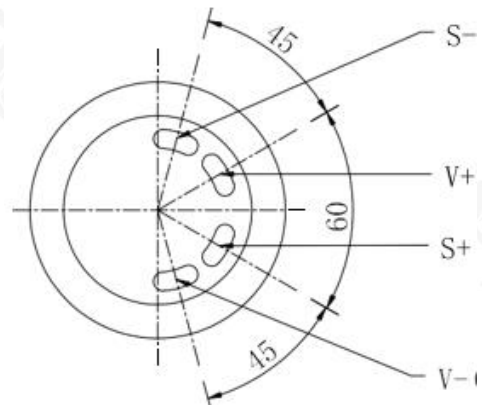
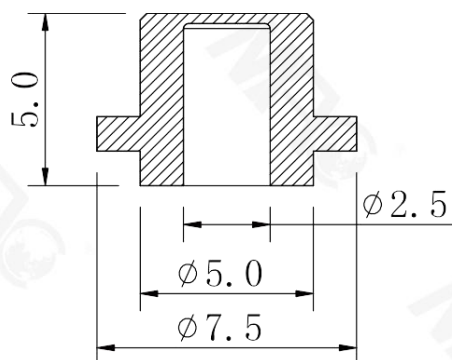
Parameter	PB251
Measuring range(MPa)	6MPa~250MPa
Measuring medium	Gases, liquids compatible with stainless steel
Pressure type	Gauge pressure, absolute pressure
Accuracy	$\pm 0.2\%F.S.$, $\pm 0.5\%F.S.$, $\pm 1\%F.S.$
Working temp.	-40°C ~ $+105^{\circ}\text{C}$ or by customized
Long-term stability	$\pm 0.1\%F.S./\text{year}$, $\pm 0.2\%F.S./\text{year}$
Nonlinear	$\pm 0.1\%F.S./\text{year}$, $\pm 0.15\%F.S./\text{year}$
Hysteresis	$\pm 0.1\%F.S.$
Repeatability	0.1%FS
Sensitivity	$1.5 \pm 0.20\text{mV/V}$, $1.7 \pm 0.20\text{mV/V}$
Burst pressure	1000%~2000%F.S (the max is $\leq 400\text{MPa}$)
Allowable overload	150%~200%F.S or by customized
Zero point temp. drift	$\pm 0.01\%F.S/^{\circ}\text{C}$
Full range temp. drift	$\pm 0.03\%F.S/^{\circ}\text{C}$
Response time	$\leq 0.1\text{ms}$
High reliability	Resistant to 10 million shocks, can be continuously pressurized
Insulation resistance	$\geq 1000\text{M}\Omega/500\text{VAC}$
Material	17-4PH
Dimensions	Strain surface outer diameter is 5mm The step outer diameter is 7.5mm Height is 5mm
Weight	1g

Circuit Principle and Pin Definition



Pin No.	1	2	3	4
Function Code	V-	S+	V+	S-
Function Definition	Power -	Signal +	Power +	Signal -

Dimensions and Wiring



Pressure Rating, Sensitivity and Pressure Resistance Range

Pressure (MPa)	Sensitivity (mV/V)	Nonlinearity ($\pm\%$ F.S)	Overload pressure (rated pressure)	Burst pressure (rated pressure)
6	1.7 ± 0.20	0.15	$\times 2$	$\times 20$
25	1.7 ± 0.20	0.15	$\times 2$	$\times 10$
40	1.7 ± 0.20	0.15	$\times 2$	$\times 10$
60	1.7 ± 0.20	0.15	$\times 2$	$\leq 400\text{MPa}$
100	1.5 ± 0.20	0.10	$\times 2$	$\leq 400\text{MPa}$
150	1.5 ± 0.20	0.10	$\times 1.5$	$\leq 400\text{MPa}$
180	1.5 ± 0.20	0.10	$\times 1.5$	$\leq 400\text{MPa}$
200	1.5 ± 0.20	0.10	$\times 1.5$	$\leq 400\text{MPa}$
250	1.5 ± 0.20	0.10	$\times 1.5$	$\leq 400\text{MPa}$

Order Information

<div><div>PB251 (Model)</div><div>Item</div></div>	D	066	11
Accuracy	D=0.2%F.S E=0.5%F.S F=1%F.S		
Pressure Measurement	066=6MPa 256=25MPa 406=40MPa 606=60MPa 107=100MPa 157=150MPa 187=180MPa 207=200MPa 257=250MPa		
Temperature range	11= 0~85℃ 22= -10℃~105℃ 33= -25℃~125℃ 43= -40℃~125℃ 55= -55℃~150℃		