APR5852 015A(10Kpa)

Piezoresistive Pressure Sensors

- Fully calibrated
- Amplified, calibrated and temperature compensated with high output span
- Excellent long-term stability
- Dual in-line package is easy to use
- Quick response and strong anti-interference ability
- Multi-order pressure and temperature nonlinear correction

Product description

APR5852(10Kpa) are temperature-compensated silicon piezoresistive pressure sensors, equipped with a dedicated ASIC chip and silicon microstructure pressure sensor chip, with pin-type connectors, and a dual-in-line package structure, which can be directly mounted on a standard PCB on the board for easy integration and replacement. The pressure value measured by
APR5852 series products will be output in the form of analog voltage after the conversion of the sensor and the amplification of the circuit. Has excellent accuracy and long-term stability. Each sensor has been strictly calibrated and tested before leaving the factory to ensure and meet the large-scale applications of customers.

Scope of application

APR5852(10Kpa) are widely used in consumer electronics, smart home appliances, medical, automotive, industrial automation, meteorology and other fields, such as airflow monitors, HVAC, ventilation equipment, medical equipment (ventilators, monitors), tire pressure gauges, Products such as wind speed and leak detection.

Figure 1. APR5852

1. Sensor performance

APR5852 - 1.5~ 1.5psi (- 10.3~10.3 kPa) range, the corresponding models are APR5852 015 A respectively. Table 1 shows the performance parameters of APR5852. All parameters in the table are measured at room temperature of 25 °C and powered by a 5 V DC constant voltage source.

Table 1. Performance parameter table

parameter	minimum	Typical value	maximum value	unit
Full scale output of negative pressure	-	0.5	-	V
Standard output at zero pressure	-	2.5	-	V
Full scale output for positive pressure	-	4.5	-	V
Response time	-	2	-	ms
Accuracy Error (APR5852 001A)	-2	-	2	%FS
Accuracy Error (APR5852 015A)	-1.5	-	1.5	%FS
Operating temperature	-40	25	+125	°C
storage temperature	-50	25	+135	°C
Supply voltage	4.75	5.0	5.25	V
Average operating current	-	-	5	mA
overvoltage	5X _	-	-	%FS

Remarks: There must be no substances that damage the sensor material in the use environment. The sensor material includes high borosilicate glass, silicon, alumina ceramics, RTV electronic silica gel, gold, aluminum and nickel, etc.

2. Dimensions

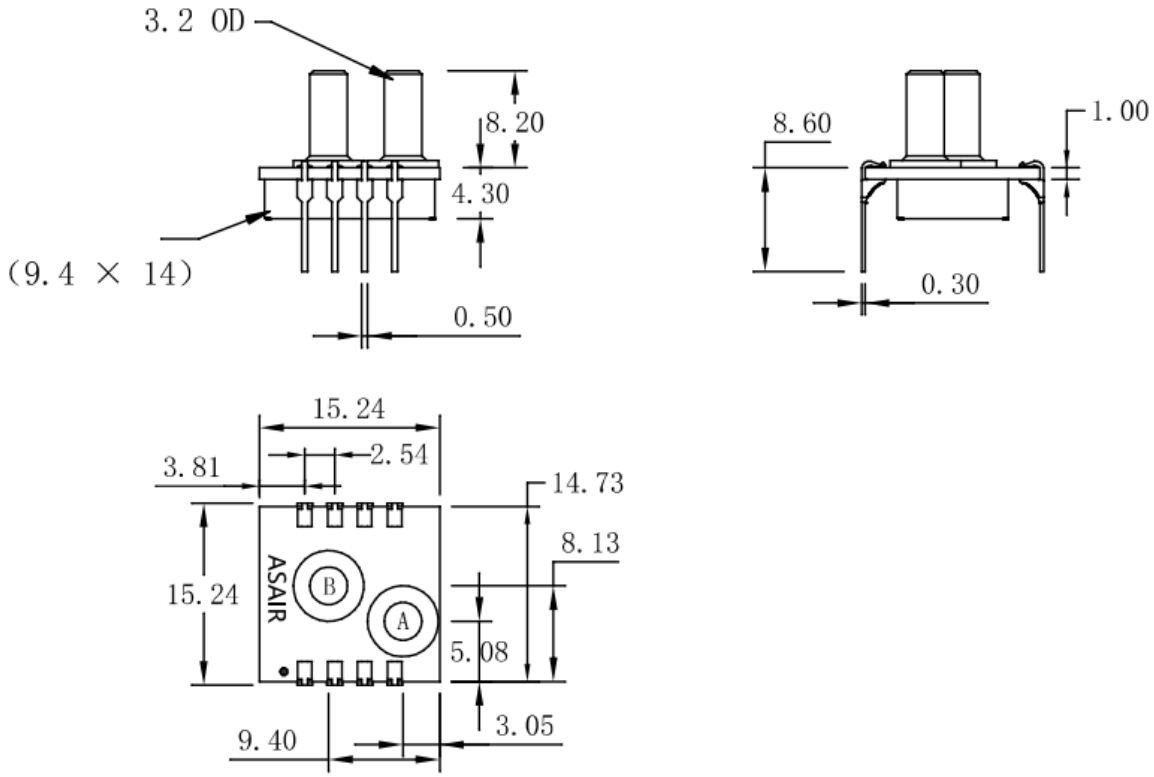


Figure 2. Dimensions of the external structure (unit: mm)

3. Way of connecting the trachea

APR5852 has two air pipes, namely A pipe and B pipe. As shown in Figure 2, the air connection pipe near the "ASAIR" Logo is the B pipe, and the other is the A pipe.

4. Electrical connection and pinout

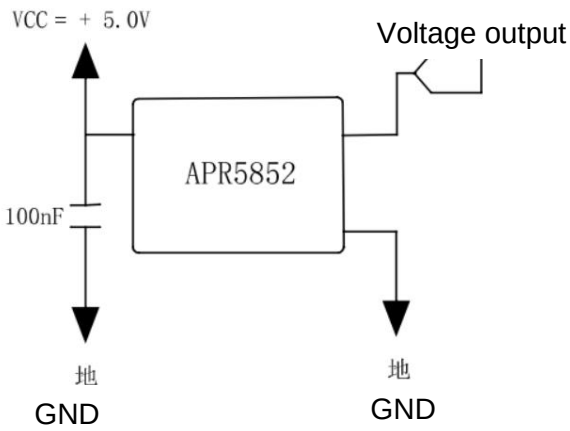
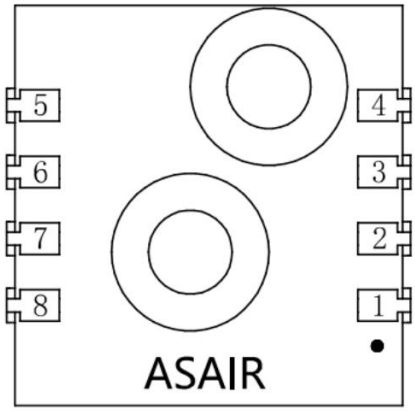


Figure 3. Electrical Connection Diagram



PIN	Description
1	NC
2	GND
3	NC
4	NC
5	NC
6	NC
7	VCC=+5.0V
8	Output (V)

Figure 4. Footprint

When in use, a 100nF filter capacitor must be connected between the ground (pin 2) and the power supply pin (pin 7).

5. Pressure output curve and calculation

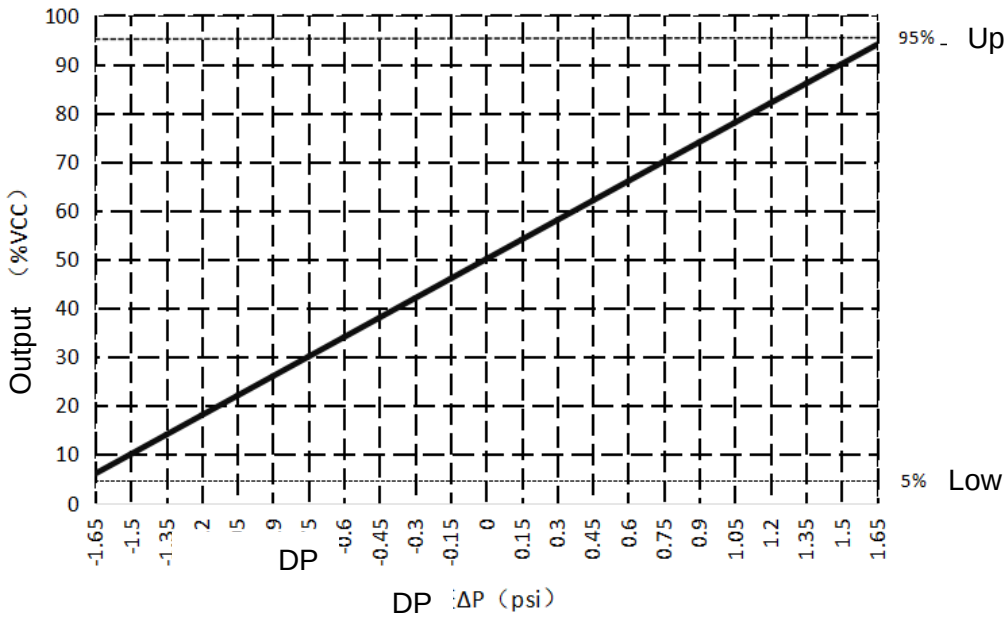


Figure 6. Output Curve of APR5852 015 A

- APR5852 015 A standard output voltage calculation

$$V_{OUT} = \frac{0.4 \times VCC}{1.5} \times (P_A - P_B) + 0.5 \times VCC$$

- APR5852 015 A standard pressure calculation

$$\Delta P = P_A - P_B = \frac{\frac{V_{OUT}}{VCC} - 0.5}{0.4} \times 1.5$$

Warning and Personal Injury

Do not use this product in safety protection devices or emergency stop equipment, or in any other application where personal injury may result from failure of this product, unless there is a specific purpose or authorization for use. Refer to the product data sheet and instructions before installing, handling, using or maintaining this product. Failure to follow the recommendations could result in death or serious personal injury. The company will not be liable for all compensation for personal injury and death arising therefrom, and exempts any claims that may arise from the company's managers and employees, as well as affiliated agents, distributors, etc., including: various costs, claims fees, attorney fees, etc.

Quality Assurance

Guangzhou Aosong Electronics Co., Ltd. provides the direct purchasers of its products with the quality assurance in the following table (calculated from the date of delivery), and the technical specifications are indicated in the product manual of Aosong Electronics. If the product is found to be defective during the warranty period, the company will provide free repair or replacement services.

Warranty Period Description

product category	Warranty period
APR5852 015A _	12 months

The company is only responsible for products that are defective when used in applications that meet the technical conditions of the product. The company does not make any guarantees that the product is used in special scenarios that are not recommended. The company also does not make any commitment to the reliability of the product applied to other non-company supporting products or circuits.

This manual is subject to change without notice.

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