1. Product Features

- Measurement range: 0 to 700kPa(pressure rangecustomizable)
- LGA-8 package
- Suitable for measuring non-corrosive gases
- 5.0V power supply
- Ratio voltage output: 0.5 – 4.5V (output range customizable)

2. Application Fields

- Medical products such as electronic blood pressure monitors, ventilators, oxygen concentrators, patient monitors, and nebulizers.
- Negative pressure measurement, pressure instruments, pneumatic switches, and other fields
- Massagers, massage chairs, air mattresses and other sports and fitness equipment
- Vacuum packaging machines, vacuum blenders, vacuum breaker machines, vacuum food storage containers, vacuum pumps, and other vacuum negative pressure applications.
- Home appliances such as washing machines, beer dispensers, vacuum cleaners, water purifiers, and water heaters.

3. Overview

The WF185E series pressure sensors are packaged in an LGA-8 form factor and integrate a high-precision pressure sensor, ADC, DAC, and DSP chip. They perform digital and temperature compensation on the analog output of the pressure sensor, generating a calibrated and temperature-compensated analog voltage signal via the DAC.

The WF185E series pressure sensors offer high accuracy and ease of use, and are widely used in medical electronics, automotive electronics, home appliances, and consumer products.

4. Performance Specifications

Power Supply: 5VDC Reference temperature: 25℃

Table 1. Performance Metrics

Performance	Data	Unit
Output signal	0.5 ~ 4.5 @5V	V
Accuracy*	±1	% Full Span
Zero-point temperature drift	±0.03	FS/℃
Full-scale temperature drift	±0.03	FS/℃
Overload pressure	4×	Rated
Burst pressure	5×	
Compensation temperature	0 ~ 45	℃
Operating temperature	-40 ~ 125	℃
Storage temperature	-40 ~ 150	℃

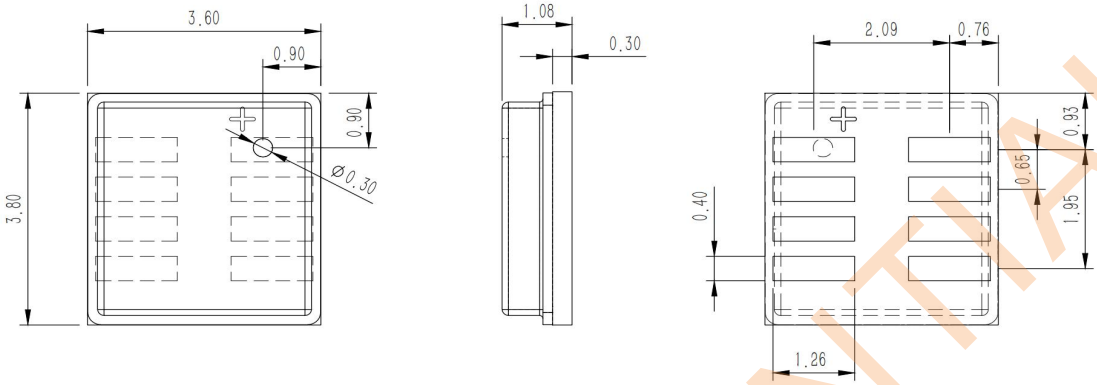
*Accuracy is the output error relative to full-scale.

5. Electrical Characteristics

Table 2. Electrical Characteristics

Parameters	Min	Typ	Maxi	Unit	Remarks
Supply voltage	3	5V		V	The supply voltage will affect the output voltage.
Operating current at 25°C		1600		Ua	
Filter capacitor		1		nF	Connect between SO and GND.
PSRR		60		dB	
Output current load			5	mA	
Common-mode signal rejection ratio	80	110		dB	
Short-circuit current limitation	15	20	25	mA	
Maximum clamping voltage	3/4		1	VDD	
Lower limit clamping voltage	0		1/4	VDD	

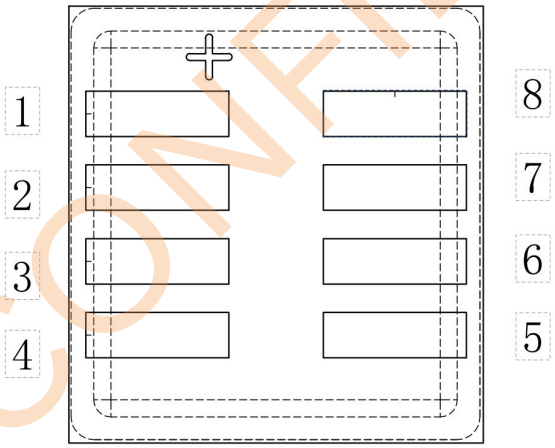
6. External dimensions (unit: mm, tolerance +/- 0.2 mm)



Top view ((bottom pins are not visible))

Bottom view

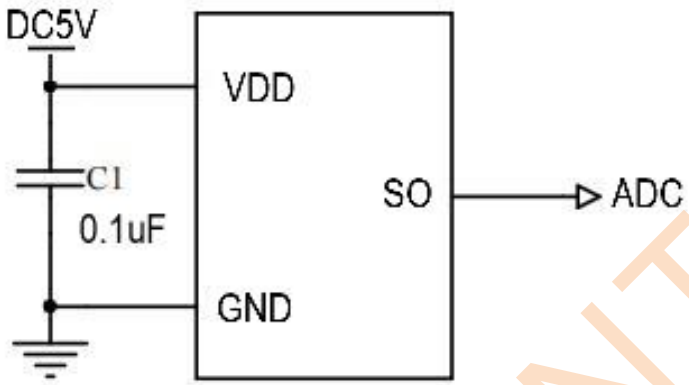
7. Pin Definition



Bottom view

Table 3. Pin Definitions

Number	1	2	3	4	5	6	7	8
Definition	GND	NC(VPP)	SO	NC	NC	NC	GND	VDD



Typical application circuit

Note: !

1. The pin numbers of this product differ from the general definition. Please confirm the electrical definitions before assembly.

2. Do not have any electrical connections on the NC pin, otherwise it may cause product malfunction.

3. Perform anti-static protection during soldering.

4. Overload voltage (6Vdc) may burn out the circuit chip.

5. Please add a 0.1uf capacitor between VDD and GND, placing the capacitor close to the sensor.

6. This product does not have reverse connection protection. Please pay attention to the power supply polarity during assembly.

8. Output voltage-pressure conversion

Pressure (kPa) = (Voltage - 0.5 V) / 0.0057 (with a 5 V supply)