**Shenzhen Southern Tech Sensing Technology Co., Ltd.**

# TKJP040A2Serial digital pressure sensor chip

**1,Product Description:**

This product is a new high-sensitivity digital output pressure measurement chip, gauge pressure type,40KPaRange; Pressure measurement uses diffused

silicon pressure chip sensor, which isICThe signal is amplified, temperature compensated in the entire temperature range, and then output.

Product images



**2、Application areas:**

Airbeds, air cushions, gas tanks, and other container pressure measurements,

Water level, liquid level measurement (1The pressure at a depth of meters is approximately equal to10KPa) **3, High**

**cost performance of the product:**

a, high precision diffused silicon pressureICSensor Chip b, Stable and

reliable temperature measurement and compensation algorithm

c, integrated signal acquisition, processing, and output of digital signals

d, Temperature compensation and calibration have been completed, which is convenient for customers to directly

assemble and use e, good after-sales service, providing full technical guidance and assistance

## 4. Specifications:

Working voltage----------------- 2.6V-4.5V      Sensitivity---------------------------10Pa

Pressure range ----------- 0~40KPa      Response time------------------------------30ms

Output range ----------- 1000~5000number      Maximum pressure----------------------100KPa

Pressure measurement accuracy ----------- 1% FS      Temperature compensation measurement accuracy-------------------1 %

Working environment temperature ------------- -40~+85℃      FS Working current---------------------------≤3Ma

## 5. Wiring method:

VDD(2.6V-4.3VPower supply, recommended byMCUofIOport to control the power

supply) GND(land)

SO (Communication pin, connectMCUofRX) VS (

One by one104Capacitor to ground)



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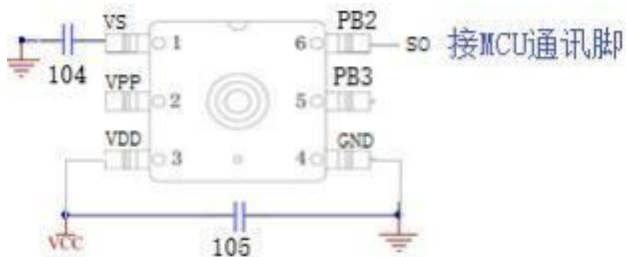
**6. Signal output: digital output      (UART serial line output)**

7,**Chip pins and size**

管脚定义



缺口
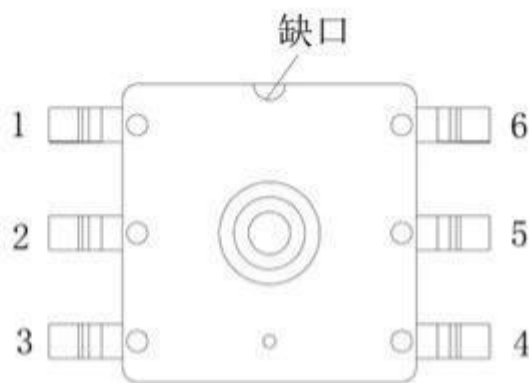
图 3.1 俯视图

表 3.1 脚位定义

| 脚位编号 | 脚位定义 |
|---|---|
| 1 | VS |
| 2 | VPP |
| 3 | **VDD** |
| 4 | **GND** |
| 5 | NC |
| 6 | SO |
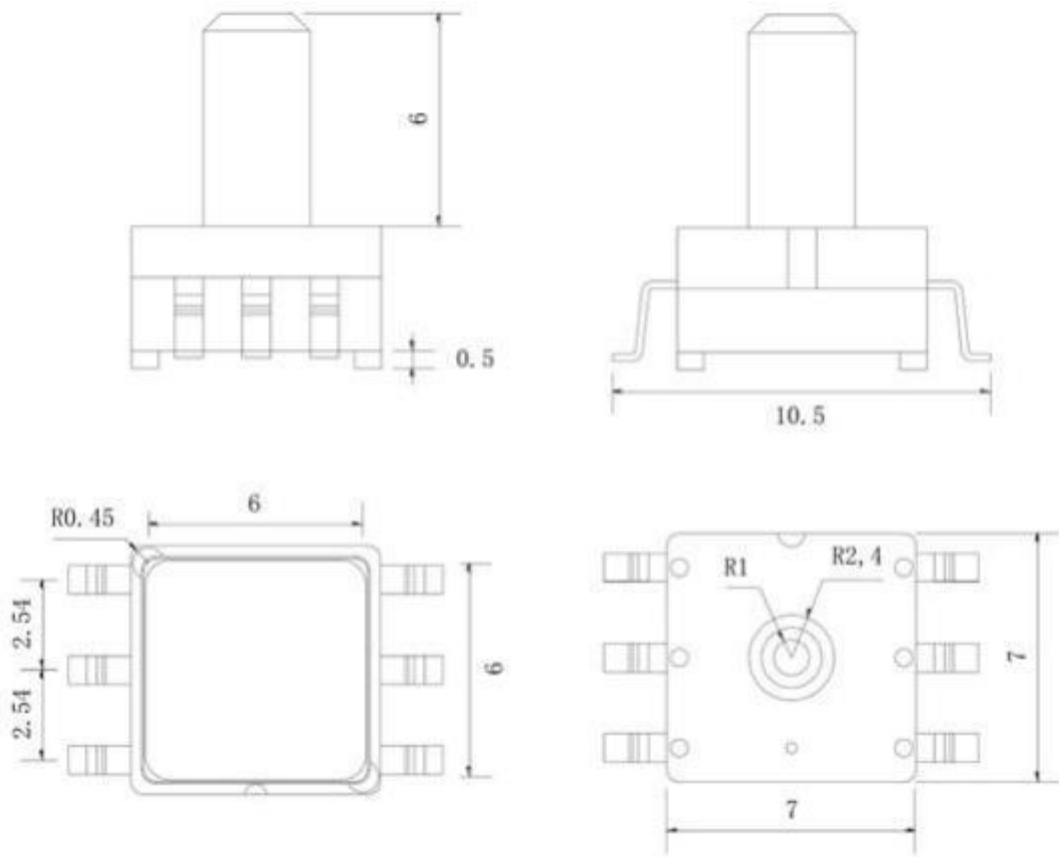
**8.** Digital pressure sensor serial port communication rules

8.1 Serial port settings

| Baud rate | Start position | Data bits | Stop bits | Check digit |
|-----------|----------------|-----------|-----------|-------------|
| 9600 | 1 | 8 | 1 | none |

8.2 Serial communication format

MCU serial port sends data: Not required, saves a connection line

Sensor serial port sending (MCU serial port receiving) format:

| Pressure high byte | Pressure low byte | Check code |
|--------------------|-------------------|------------|
| 1byte | 1byte | 1byte |

Check code = (pressure high byte + pressure low byte) If there is an overflow, keep the lower 8 bits of data

8.3 Frequency of transmission:

The sensor sends a measurement value (3 bytes) via the serial port every 50mS or so.

8.4Pressure data description:

The default zero point (no pressure) output value is 1000, and the output value after pressurization of 10KPa is 2000. However, due to the sensor assembly, the zero point value may deviate. For example, for a certain product, the output may be 950 without pressure after power-on, and 1950 after 10KPa. Therefore, it is recommended that the software be reset to zero at the factory, and a BUF for the zero point FLASH is reserved. If the sensor communication is normal after the initial power-on, the sensor output value is written to the zero FLASH. In the future, the data read back minus the saved zero point value is used as the actual pressure, and 1 number corresponds to 0.01KPa.

## 9.Customization

Our company's pressure products are all independently developed and designed to meet customers' customized needs for expanding IO ports. Pressure range and output can be modified according to customer requirements

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