

GXTS02S High-precision and Low-power Digital Temperature Sensor with I²C Communication

1 Features

- Temperature accuracy within $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$: $\leq 0.5^{\circ}\text{C}$
- Package: WLCSP (1.38mm × 1.81mm)
- Power supply voltage: 2.2 V ~ 5.5 V
- Low power consumption
Normal operation: $\leq 1.5 \mu\text{A}$ (1Hz)
Shutdown mode : $\leq 100 \text{ nA}$
- Resolution: 16 Bits
- Temperature conversion time 1.5ms
- Digital output: I²C interface

2 Applications

- Human skin temperature measurement
- Power supply temperature monitoring
- Thermal protection for computer peripherals
- Laptop
- Battery management
- Office machines
- Constant temperature control
- Electromechanical equipment temperature
- General temperature measurement:
 - Industrial control
 - Test equipment
 - Medical equipment
- Portable, battery-powered applications

3 Description

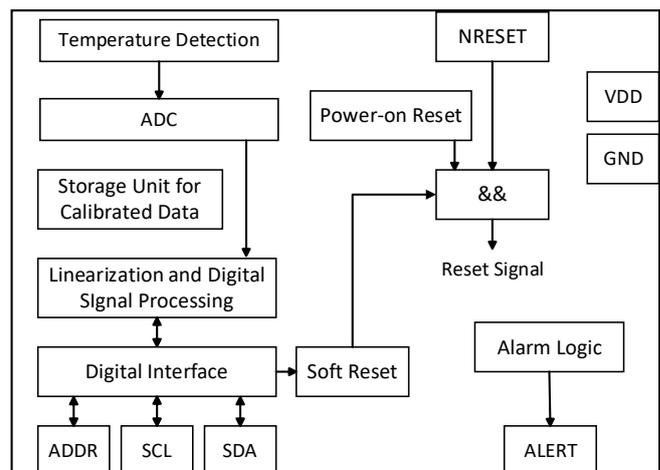
GXTS02S is a high-precision and low-power digital temperature sensor that can replace NTC/PTC thermistors. The 16-bit ADC integrated inside the chip has a resolution as low as 0.00267°C . GXTS02S can provide a temperature accuracy of $\leq 0.5^{\circ}\text{C}$ across the full temperature range and has good temperature linearity. The accuracy can reach $\pm 0.1^{\circ}\text{C}$ in the human body temperature range of 30-42 degrees.

GXTS02S adopts 1.38mm×1.81mm WLCSP package and standard I²C interface with two user-configurable addresses. The rated operating voltage range of GXTS02S is 2.2V~5.5V, and the average power consumption is as low as 1.5uA (when the temperature measurement frequency is 1Hz).

Chip Packaging Information

Product	Packaging	Chip Packaging Area
GXTS02S	WLCSP (8)	1.38mm × 1.81mm

Figure 1 GXTS02S System Block Diagram



8 Ordering Information

Ordering Number	Chip Model	Package	SPQ	Note
GXTS02S -T&R	GXTS02S	WLCSP8	3000	Tape & Reel