

GXT110 High-Precision Digital Temperature Sensor Optimized for Human Body Temperature Measurement

1 Features

- Optimized for human body temperature measurement
- Accuracy: $\pm 0.1^{\circ}\text{C}$ ($+30^{\circ}\text{C}$ to $+45^{\circ}\text{C}$)
- Supply range: 1.6V ~ 5.5V
- Operating temperature: -55°C ~ $+150^{\circ}\text{C}$
- Active current: 40 μA
- Standby current: 0.5 μA
- Resolution: 16bits (0.0078125 $^{\circ}\text{C}$)
- Interface: S-Bus

2 Applications

- Medical thermometer
- Wearable temperature monitoring
- High-precision temperature probe

3 Description

GXT110 is a high-precision digital temperature sensor optimized for human body temperature

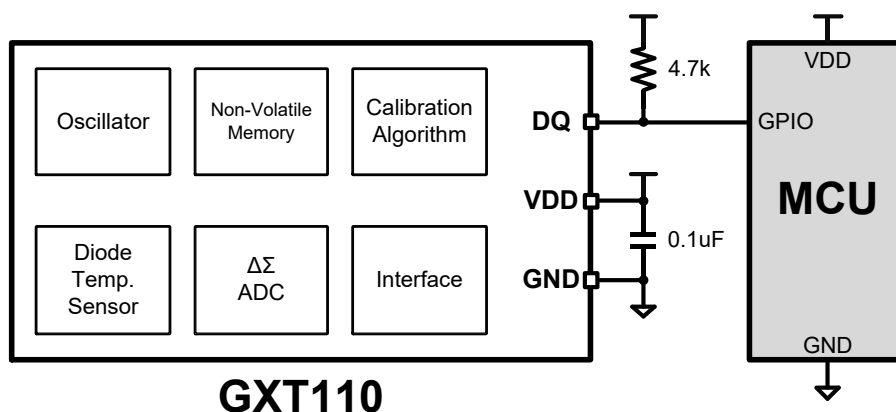
measurement. It can achieve 16-bit (0.0078125 $^{\circ}\text{C}$) temperature output without any external temperature sensing unit, and has a temperature measurement error of less than $\pm 0.1^{\circ}\text{C}$ in the range of 30 $^{\circ}\text{C}$ ~45 $^{\circ}\text{C}$.

GXT110 supports two packaging forms: WLCSP-4 and MCLGA-4. The former is extremely small and suitable for applications with extremely limited space; the latter can conduct heat rapidly and is designed for measuring the surface temperature of human skin.

GXT110 supports single-line communication and can mount up to 16 slaves, requiring only a single signal line to obtain temperature output.

Chip Packaging Information

Product Number	Packaging Information	Chip Packaging Area (NOM)
GXT110W	WLCSP (4)	0.75 mm × 0.75 mm
GXT110T	MCLGA (4)	3.00 mm × 3.00 mm
GXT110D	DFN (6)	2.00 mm × 2.00 mm
GXT110S	TO-92S (3)	4.00 mm × 3.00 mm



9 Ordering Information

Order Number	Product Number	Packaging Information	Standard Packing Quantity	Note
GXT110Tx-Tr	GXT110Tx	MCLGA (4)	490	tray
GXT110Wx-T&R	GXT110Wx	WLCSP (4)	3000	Tape
GXT110Dx-T&R	GXT110Dx	DFN (6)	4000	Tape
GXT110Sx-Bu	GXT110Sx	TO-92S (3)	2000	Bulk Pack

The x in the order number and product model represents the slave address, ranging from 0 to F.

10 Revision History

Version Number	Date	Modified Content	Changed Pages
V1.0	2023-1	The first edition	-
V1.1	2023-2	Pre-production version	-
V1.2	2023-3	Updated the description of the communication interface	4~10
V1.3	2023-4	Added DFN-6 package	1
V2.0	2023-8	Added packaging and ordering information	11 ~17
V2.1	2023-8	Corrected the expression error of packaging information	2, 12 ~ 13
V2.2	2025-6	Updated the package picture of MCLGA-4	2, 15