

GXTR3124 Multi-Address Local & Remote Digital Temperature Sensor

1 Features

- Multi-channel temperature measurement: **1 local channel & 2 remote channels**
- Temperature range: **-55°C ~ +150°C (local & remote channels)**
- Temperature measurement accuracy:
 - Local channel: **$\pm 0.5^{\circ}\text{C}$ (-40 °C ~ +125 °C)**
 - Remote channel: **$\pm 1^{\circ}\text{C}$ (-40 °C ~ +125 °C)**
- Package form: **10-Pin MSOP**
- Package size: **3.00 mm × 3.00 mm**
- Supply voltage: **2.7 V ~ 5.5V**
- Low quiescent current (@3.3V, 27 °C)
 - Local channel: **230 μA**
 - Remote mode: **630 μA**
 - Shutdown mode: **2 μA**
- Resolution: **16 bits, 0.00390625°C**
- Digital output: **compatible with SMBus, I²C interface**
- Remote diode: features **series resistance cancellation, η factor correction, β value detection and automatic compensation, open and short circuit detection** and other functions

2 Applications

- Servers, processors, FPGAs
- Desktop and laptop computers
- Storage Area Network (SAN)
- General temperature measurement:
 - industrial control
 - test equipment
 - medical equipment

3 Description

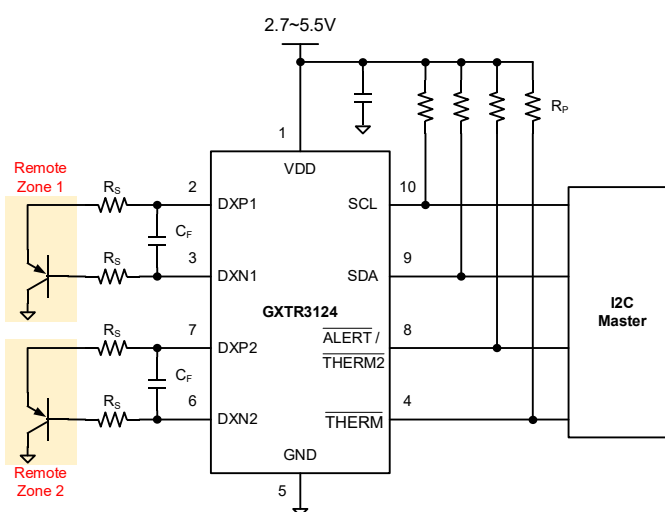
The GXTR3124 are high-precision and low-power digital temperature sensors compatible with SMBus and I2C interfaces. The devices can simultaneously monitor the remote temperature of the area where up to 2

remote temperature probes are located besides the local temperature of the chip. The series have functions such as series resistance elimination, programmable η factor correction, β value detection and automatic compensation, and programmable temperature thresholds, providing a high-precision, low-power reliable temperature monitoring solution.

The GXTR3124 are particularly suitable for temperature measurement using remote transistors (NPN / PNP Type) integrated in servers and processors under advanced processes. The series support compensation for PNP connected in transistor form with $0.09 < \beta < 21.36$ to achieve high-precision temperature measurement.

The GXTR3124 have a typical temperature measurement accuracy of $\pm 0.5^{\circ}\text{C}$ for local channels and $\pm 1^{\circ}\text{C}$ for remote channels respectively. The series feature a temperature measurement resolution of 0.00390625°C and a temperature measurement range of -55 ~ +150°C. The power supply voltage range of the GXTR3124 is 2.7 ~ 5.5 V. The series provide a 3mm × 3mm 10 Pin MSOP package for integration into various systems.

Figure1 Typical Application of GXTR3124



9 Ordering Information

Order Number	Chip Model	Package Information	Standard Packing Quantity	Note
GXTR3124AU-T&R	GXTR3124AU	MSOP-10 (3*3)	4000	Tape & Reel
GXTR3124BU-T&R	GXTR3124BU	MSOP-10 (3*3)	4000	Tape & Reel
GXTR3124CU-T&R	GXTR3124CU	MSOP-10 (3*3)	4000	Tape & Reel
GXTR3124DU-T&R	GXTR3124DU	MSOP-10 (3*3)	4000	Tape & Reel

Note: The first letter after GXTR3124 indicates the difference in the IIC slave address (see [Section 6.2.2](#) for details), and U indicates that the package is 10Pin-MSOP.