

3 Channel (2-Remote and 1-Local), High Accuracy Temperature Sensor

1 Features

- Temperature range: $-55^{\circ}\text{C} \sim +150^{\circ}\text{C}$
- Typical accuracy: $\pm 0.5^{\circ}\text{C}$
- High resolution: $0.0625^{\circ}\text{C} / 16\text{bits}$
- Conversion time per channel: 16ms
- Digital output:
 - SMBus, I²C interface compatibility
- Supply voltage range: $2.7\text{V} \sim 5.5\text{V}$
- Low quiescent current: (3.3V, 27°C)
 - Average current: $16\mu\text{A}$ (0.0625Hz) /
 - $45\mu\text{A}$ (1Hz) / $90\mu\text{A}$ (4Hz)
- Local Channel: $180\mu\text{A}$
- Remote Channel: $380\mu\text{A}$
- Shutdown current: $0.4\mu\text{A}$
- Series Resistance Cancellation, Automatic Beta Compensation, η -Factor Correction
- Package Information:

Part Number	Package	Body Size (mm ²)
GXTR3022U	MSOP(10)	3.00 × 3.00
GXTR3022D	DFN(10)	0.70 × 0.90

2 Applications

- MCU, GPU, FPGA, DSP, CPU
- Servers, Desktops, and Notebooks
- Industrial and Medical Equipment

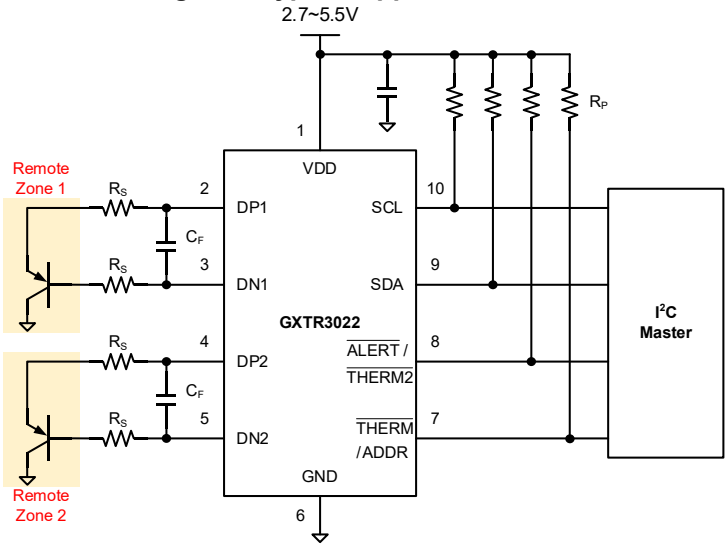
3 Description

GXTR3022 is a high-precision, low-power digital temperature sensor compatible with SMBus and I²C interfaces. Up to two remote diode-connected temperature zones can be monitored simultaneously in addition to the local temperature. GXTR3022 features series resistance cancellation, programmable η factor correction, β value detection and automatic compensation, and programmable temperature thresholds, providing a reliable temperature monitoring solution with high accuracy and low power consumption.

GXTR3022 is especially suitable for temperature measurement using remote transistors (NPN / PNP Type) in servers and processors integrated in advanced processes. GXTR3022 supports automatic compensation of transistor-connected PNP ($0.09 < \beta < 21.36$) to achieve high-precision temperature measurement.

The typical accuracy of GXTR3022's local and remote channel is $\pm 0.5^{\circ}\text{C}$. GXTR3022 provide a measurement resolution of 0.0625°C and a measurement range of $-55^{\circ}\text{C} \sim 150^{\circ}\text{C}$. GXTR3022 are available in $3.0\text{mm} \times 3.0\text{mm}$, 10 pin MSOP and $3\text{mm} \times 3\text{mm}$, 10 pin DFN packages.

Figure 1 Typical Application Schematics



10 Ordering Information

Order Number	Chip Model	Package	SPQ	Note
GXTR3022AU-T&R	GXTR3022AU	MSOP-10	3000	Tape & Reel
GXTR3022BU-T&R	GXTR3022BU	MSOP-10	3000	Tape & Reel
GXTR3022CU-T&R	GXTR3022CU	MSOP-10	3000	Tape & Reel