

GX451 Remote and Local Temperature Sensor with η -Factor and Offset Correction, Series-Resistance Cancellation, and Programmable Digital Filter

1 Features

- Temperature measurement range :
Local, remote channel: **-55°C~150°C**
- Local typical accuracy: **$\pm 0.25^{\circ}\text{C}$**
- Remote typical accuracy: **$\pm 1.0^{\circ}\text{C}$**
- Local, remote resolution: **0.0625°C (12 Bits)**
- Package: **DFN-8 / WSON-8**
- Supply voltage: **1.7 V ~ 5.5 V**
- Low quiescent current:
Normal operation: **27 μA (0.0625Hz)**
165 μA (16Hz)
Shutdown mode: **3 μA**
- Digital output: **SMBus, I²C** compatibility
- Device function
 - **Series-resistance cancellation**
 - **η -factor and offset correction**
 - **Programmable digital filter**
 - **Remote and local temperature sensor**

2 Applications

- Processor and FPGA temperature monitoring
- Smart phones and tablets
- Servers, desktops and laptops
- Telecom equipment and SANs

3 Description

The GX451 is a high-accuracy, low-power remote temperature sensor with a build-in local temperature measurement channel. The typical remote temperature sensors are NPN, PNP or diodes that are integrated in the microprocessor or FPGA to be measured. The temperature is represented as a 12-bit digital output for both local and remote sensors, giving a resolution of 0.0625°C . The GX451 also features extended temperature measurement mode for $-55^{\circ}\text{C} \sim 150^{\circ}\text{C}$ range. The GX451 supports SMBus communication protocol.

The GX451 features series resistance cancellation, programmable nonideality factor (η -factor), temperature offset, programmable digital filter to provide a remote temperature monitoring solution with improved accuracy and noise immunity.

Device Information

PART NUMBER	PACKAGE	BODY SIZE (NOM)
GX451D	DFN-8 / WSON-8	2.00 mm × 2.00 mm

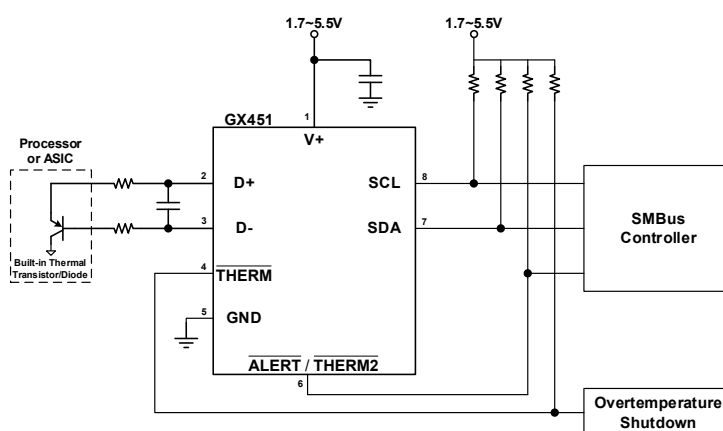


Figure 1. GX451 Application Diagram

9 Order Information

Order PN	Device	Package	SPQ	Remark
GX451D-T&R	GX451D	DFN-8 / WSON-8	4000	Tape and Reel