

Three Remote Temperature Sensors and One PWM Mode Fan Controllers with SMBus Serial Interface

Features

- Measures Three Remote Temperatures
- Adjustable Offset for Each Sensor via SMBus
- Accuracy: $\pm 1^{\circ}\text{C}$ (+ 60°C to + 100°C)
 $\pm 3^{\circ}\text{C}$ (- 10°C to + 120°C)
- +4.5V to +5.5V Supply Range
- Programmable Hardware Thermal Shutdown for Sensor 2 and Programmable Software Thermal Shutdown for Sensor 1,3.
- SMBus 2-Wire Serial Interface with Writing Protection Function.
- Alert Signal for Diode Fault, Fan Fail, and Fan Out of Control
- Supports SMBus Alert Response
- PWM Mode Speed Control
- Closed Loop Speed Control and programmable 8 Bits Open Loop PWM Duty cycle Control for FAN
- Wide Speed Control Range for FAN, Accuracy within 2%, when SET_CNT1 > 50
- Internal Current- limit and Over-temperature Protection for the Fan
- SSOP-16 & TQFN4X4-24 Package

Applications

- Desktop and Notebook
- Central Office Computers
- Telecom Equipment
- Smart Battery Packs
- Industrial Controls
- LAN Servers

General Description

The G7951 contains 3 precise digital thermometers, one fan controllers, hardware and software thermal shutdown.

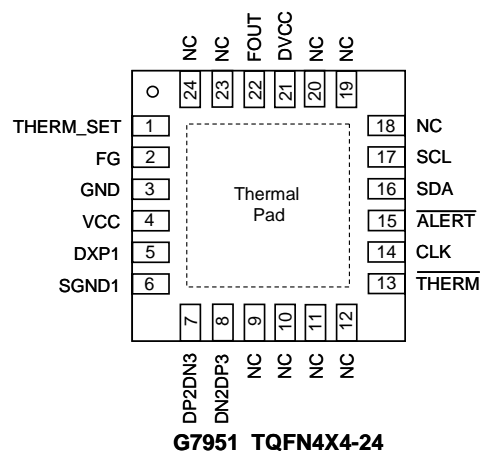
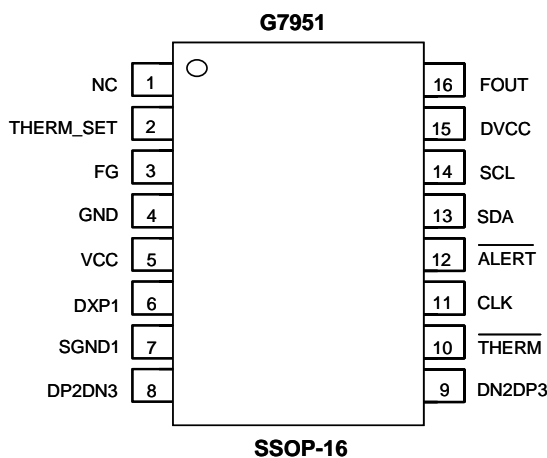
The thermometers report the temperature of 3 remote sensors. The remote sensors are diode-connected transistors typically a low-cost, easily mounted 2N3904 NPN type or the diode built-in in CPU. Remote accuracy is $\pm 1^{\circ}\text{C}$ for multiple transistor manufacturer. The G7951 also support offset adjust function via SMBus to fix the error due to different CPU diode or parasitic resistors.

The 2-wire serial interface accepts standard System Management Bus (SMBus™) Write Byte, Read Byte, Send Byte, and Receive Byte commands. G7951 SMBus address is 7ah for write and 7bh for read. And supports writing protection function by command 20h to prevent error behavior of μP .

G7951 contains one PWM mode fan controllers. FAN controller performs closed-loop and open-loop control. G7951 determines the current fan speed based on the FG inputs and an externally supplied 32.768kHz clock. G7951 also provide ALERT for fan fail and out of control event.

The G7951 provides hardware and software thermal shutdown. The hardware thermal shutdown is for the sensor 2. The trigger point is set external resistors. The trigger points of software thermal shutdown are set via SMBus. If thermal shutdown event occurs, THERM pin outputs low.

Pin Configuration



Note: Recommend connecting the Thermal Pad to the Ground for excellent power dissipation.

SMBus™ is a trademark of Intel Corp.



Ordering Information

ORDER NUMBER	MARKING	TEMP. RANGE	PACKAGE (Green)
G7951S11U	G7951	-55°C to +125°C	SSOP-16
G7951R51U	7951	-55°C to +125°C	TQFN4X4-24

Note:S1:SSOP-16 R5: TQFN4X4-24

1: Bonding Code

U: Tape & Reel