

LM85

System Hardware Monitor with Integrated Fan Control

General Description

The LM85 hardware monitor has a two wire digital interface compatible with SMBus 2.0. Using an 8-bit $\Sigma\Delta$ ADC the LM85 measures:

- the temperature of two remote diode connected transistors as well as its own die temperature
- V_{CCP} , 2.5V, 3.3VSBY, 5.0V, and 12V supplies using scaling resistors.

To set fan speed, the LM85 has three PWM outputs that are each controlled by one or more temperature zone(s). The LM85 includes a digital filter that can be invoked to smooth temperature readings for the control of fan speed. The LM85 has four tachometer inputs to measure fan speed. Limit and status registers for all measured values are included.

For a complete datasheet or additional information on this device please send an email to the hardware.monitor.team@nsc.com. Include a detailed description your application, your full name, title, company, address, and telephone number.

Features

- Monitors V_{CCP} , 2.5V, 3.3VSBY, 5.0V, and 12V motherboard/processor supplies
- Monitors 2 remote thermal diodes
- Programmable autonomous fan control based on temperature readings
- Noise filtering of temperature reading for fan control

- 1.0°C digital temperature sensor resolution
- 3 PWM fan speed control outputs
- 4 fan tachometer inputs
- Monitors 5 VID control lines
- 24-pin QSOP package
- XOR-tree test mode
- SMBus 2.0 compliant 2-wire serial digital interface
- 8-bit $\Sigma\Delta$ ADC

Key Specifications

- | | |
|--------------------------------|---|
| ■ Temperature Sensor Accuracy | $\pm 3^\circ\text{C}$ (max) |
| ■ Voltage Measurement Accuracy | $\pm 2\%$ FS (max) |
| ■ Resolution | 8-bits, 1°C |
| ■ Temperature Range | |
| – LM85 Operational | 0°C to $+85^\circ\text{C}$ |
| – Remote Temp Accuracy | $+60^\circ\text{C}$ to $+100^\circ\text{C}$ |
| ■ Power Supply Voltage | $+3.0\text{V}$ to $+3.6\text{V}$ |
| ■ Power Supply Current | 1.6 mA |

Applications

- Desktop PC
- Microprocessor based equipment
(e.g. Base-stations, Routers, ATMs, Point of Sales)

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