

LM96010

Hardware Monitor with Dual Thermal Diodes and SensorPath™ Bus

General Description

The LM96010 is part of a hardware monitor system, comprised of two parts the Super I/O (Master) and LM96010 (slave). The LM96010 will be controlled by the Master and report to the master temperature, and voltage measurements using the SensorPath $^{\rm TM}$ single-wire bus. The LM96010 measures the temperature of its own die as well as two external devices such as a processor thermal diode or a diode connected transistor. The LM96010 can resolve temperatures up to 140 °C and down to -55 °C. Using $\Sigma\Delta$ ADC it measures Vccp, +2.5V, +3.3V, +5V and +12V analog input voltages with internal scaling resistors.

Features

- SensorPath Interface
 - 2 hardware programmable addresses
- Voltage Monitoring
 - 9-bit ΣΔ ADC
 - Internal scaling resistors for all inputs
 - Monitors Vccp, +2.5 V, +3.3 V, +5 V and +12 V
- Temperature Sensing

- 2 remote diode temperature sensor zones
- Internal local temperature zone
- 0.5 °C resolution
- Measures temperatures up to 140 °C
- 14-lead TSSOP package

Key Specifications

■ Voltage Measurement Accuracy
 ±2 % (max)
 ±3 °C (max)

■ Temperature Range:

— LM96010 junction
 — Remote Temp Accuracy
 0 °C to +85 °C
 +25 °C to +100 °C

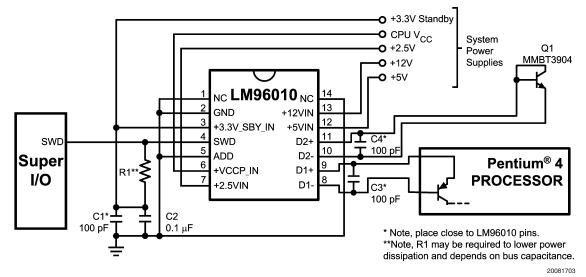
■ Power Supply Voltage +3.0 V to +3.6 V

■ Round-robin Conversion of All Channels 182 ms

Applications

 Microprocessor based equipment (Motherboards, Video Cards, Base-stations, Routers, ATMs, Point of Sale, ...)

Typical Application



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Block Diagram ADDRESS POINTER LM96010 SensorPath BUS REGISTER SWD SERIAL INTERFACE MANUFACTURER ID REGISTER **DEVICE NUMBER** ADD REVISION AND DEVICE **ID REGISTER** GND DEVICE CONTROL REGISTER **CAPABILITIES** (Power) FIXED REGISTER **DEVICE STATUS** REGISTER +3.3V SBY IN VOLTAGE CONTROL +VCCP IN **VOLTAGE** REGISTER +2.5VIN **CAPABILITIES** +5VIN VOI TAGE REGISTER +12VIN **INPUT** READOUT TTENUATORS REGISTER EXTERNAL D1+ DIODE SIGNAL D1-TEMPERATURE CONDITIONING D2+ CONTROL AND D2-REGISTER ANALOG TEMPERATURE **CAPABILITIES MULTIPLEXER** REGISTER **TEMPERATURE** DATA READOUT REGISTER ΣΔ ADC LOCAL TEMP CONVERSION RATE SENSOR REGISTER BANDGAP REFERENCE

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