

ADVANCE INFORMATION

September 2003

LM96011

Hardware Monitor with Thermal Diode Input and SensorPath™ Bus

General Description

The LM96011 is part of a hardware monitor system, comprised of two parts the Super I/O (Master) and LM96011 (slave). The LM96011 will be controlled by the Master and report to the master temperature, and voltage measurements using a SensorPath single-wire bus. The LM96011 measures the temperature of its own die as well as an external device such as a processor thermal diode or a diode connected transistor. The LM96011 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 Bus 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
 - Remote diode temperature sensor zone

- 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)
 Temperature Sensor Accuracy ±3 °C (max)

■ Temperature Range:

LM96011 Junction Temperature
 Remote Tempemperature
 0 °C to +85 °C
 +25 °C to +125 °C

■ Power Supply Voltage +3.0 V to +3.6 V

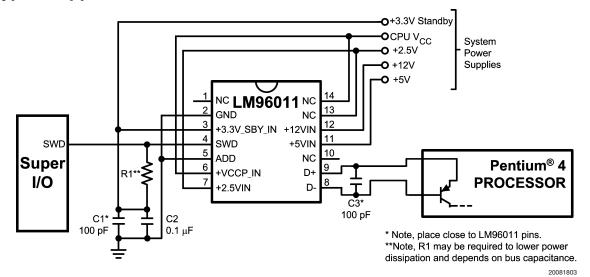
■ Average Power Supply Current 0.5 mA (typ)

Round-robin Conversion of All Channels 91ms to 1460 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 LM96011 SensorPath BUS REGISTER SWD SERIAL INTERFACE MANUFACTURER ID REGISTER **DEVICE NUMBER** ADD REVISION AND DEVICE ID REGISTER GND DEVICE CONTROL REGISTER **CAPABILITIES** (Power) IXED REGISTER **DEVICE STATUS** REGISTER +3.3V SBY IN VOLTAGE CONTROL +VCCP IN VOLTAGE REGISTER +2.5VIN **CAPABILITIES** +5VIN VOI TAGE REGISTER +12VIN **INPUT READOUT** ATTENUATORS REGISTER EXTERNAL **DIODE SIGNAL** TEMPERATURE CONDITIONING D+ CONTROL AND D-REGISTER ANALOG TEMPERATURE MULTIPLEXER **CAPABILITIES** REGISTER **TEMPERATURE** DATA READOUT REGISTER ΣΔ ADC LOCAL TEMP CONVERSION RATE SENSOR REGISTER BANDGAP REFERENCE

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