Product Overview

ADM1023: System Temperature Sensor, ACPI-Compliant, High Accuracy

For complete documentation, see the data sheet.

The ADM1023 is a 2-channel digital thermometer and under- and overtemperature alarm for use in personal computers and other systems requiring thermal monitoring and management. Optimized for the Pentium® III, the higher accuracy allows systems designers to safely reduce temperature guard banding and increase system performance. The device can measure the temperature of a microprocessor using a diode-connected PNP transistor, which may be provided on-chip with the Pentium III or similar processors; or it can be a low-cost, discrete NPN/PNP device such as the 2N3904/2N3906. A novel measurement technique cancels out the absolute value of the transistor's base emitter voltage so that no calibration is required. The second measurement channel measures the output of an on-chip temperature sensor to monitor the temperature of the device and its environment.

Features

- On-chip and remote temperature sensing
- Offset registers for system calibration
- 1°C accuracy and resolution on local channel
- 0.125°C resolution/1°C accuracy on remote channel
- Programmable over/under temperature limits
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- 2-wire SMBus serial interface
- 200 µA max operating current (0.25 conversions/second)
- 1 µA standby current
- 3 V to 5.5 V supply

  For more features, see the data sheet

Applications

- Thermal Management

End Products

- Notebook and Desktop Computers
- Servers
- Game Consoles
- RFID Readers

Part Electrical Specifications

Product	Pricing ($/Unit)	Compliance	Status	Sensor Type	Data Transmission Standard	I_{CC} Max (mA)	V_{CC} Min (V)	V_{CC} Max (V)	T Min (°C)	T Max (°C)	Temperature Error (°C)	Package Type
ADM1023ARQZ-REEL	4.3332	Pb-free Halide free	Active	Local & Remote	SMBus	0.2	3	5.5	0	120	±1	QSOP-16

For more information please contact your local sales support at www.onsemi.com.

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