



LOW COST, ONE WIRE DIGITAL THERMOMETER WITH SHUTDOWN

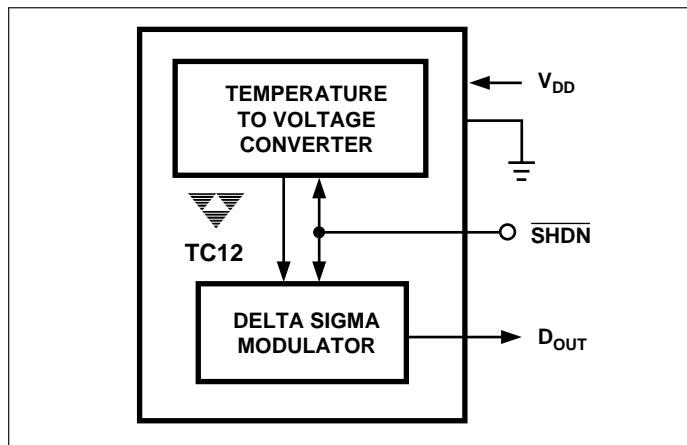
FEATURES

- Single Wire Interface to Host Microcontroller
- High Precision $\pm 1^{\circ}\text{C}$ Accuracy (Typical)
- Wide Measurement Range $- 40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$
- No External Components Required
- Complimentary (TC12C) or Open Drain Outputs (TC12N)
- Low Voltage Operation 2.7V to 5.5V
- Small Package SOT-23A-5
- Low Cost
- Shutdown Input

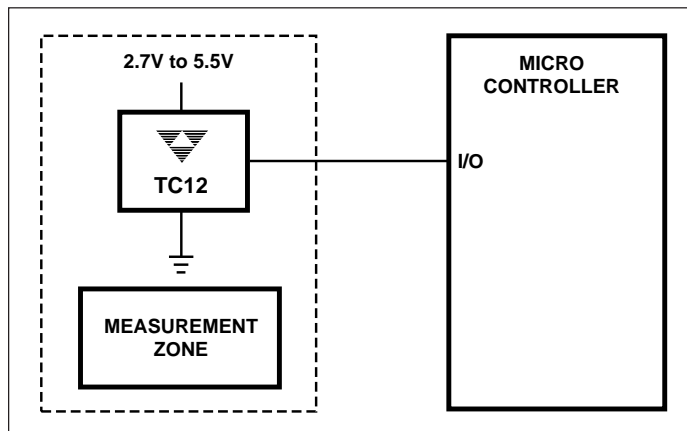
APPLICATIONS

- Notebook Computers
- File Servers
- Desktop Computers

FUNCTIONAL BLOCK DIAGRAM



TYPICAL APPLICATION



GENERAL DESCRIPTION

The TC12 is a monolithic temperature sensor that outputs a pulse waveform whose duty cycle varies in direct proportion to measured temperature. This output format is easily converted to binary data using logic or the counter/timer circuit on-board the system microcontroller. Typical accuracy is $\pm 1^{\circ}\text{C}$ over the rated measurement range of $- 40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$. It operates from supply voltages as low as 2.7V.

Unlike voltage output temperature sensors, the digital output of the TC12 offers superior immunity to system noise and does not require an A/D converter. Unlike two wire serial temperature sensors, the TC12 communicates over a single wire, and without complex serial protocol overhead.

ORDERING INFORMATION

| Part No. | Package | Temp. Range | Output Config. |
|--|------------|--|----------------|
| TC12CVCT | SOT-23A-5* | $- 40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ | Complimentary |
| TC12NVCT | SOT-23A-5* | $- 40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ | Open Drain |
| <i>TC625EV Evaluation Kit for the TC12 and TC625</i> | | | |

NOTE: *SOT-23A-5 is equivalent to EIAJ (SC-74).

PIN CONFIGURATION

