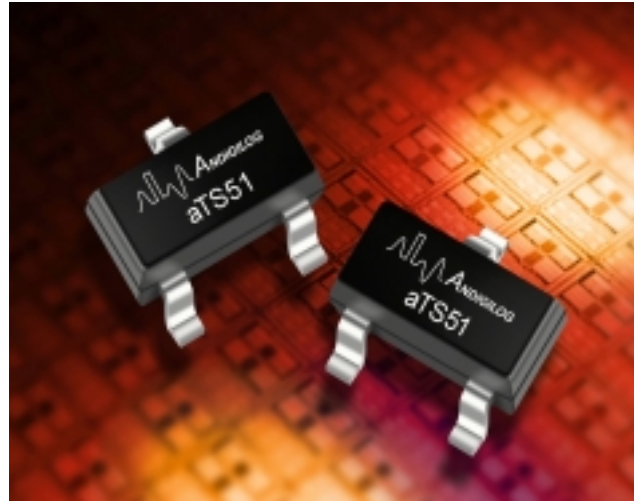


General Description

The aTS51 is a high-precision CMOS temperature sensor that provides a cost-effective solution for applications requiring high-accuracy low-power temperature monitoring. The aTS51 is ideally suited for applications requiring high drive current. The aTS51 output voltage ramp is extremely linear and has a positive slope of 10mV/°C. With a supply voltage of 2.7V to 6V, the aTS51 is accurate to ±1°C over a temperature range of -40°C to 125°C and has a typical room temperature accuracy of ±0.5°C. Reducing the supply voltage to 2.7V does not change the negative and positive temperature extremes. As well, the aTS51 does not require external calibration. Calibration of each device is performed at the factory.



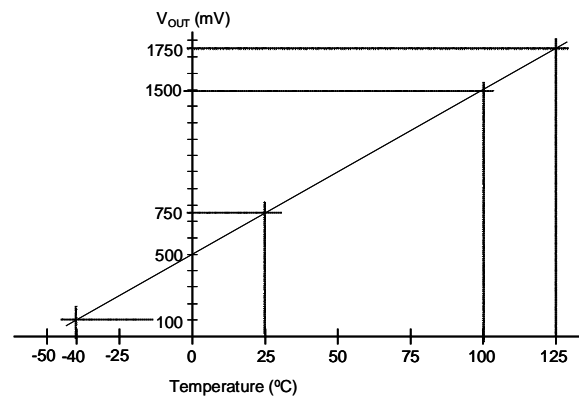
Features

- Precision Calibrated to ±1°C at 25°C
- Low Output Impedance for 1mA Load
- Temperature Range: -40°C to 125°C
- Extremely Linear Output Ramp: 10mV/°C
- Output Ramp is Calibrated to Degrees Celsius
- Low Operating Current: ≤ 130µA
- Low Self Heating: 0.2°C Typical in Still Air
- Operating Voltage Range: +2.7V to +6V
- Uses a Single Positive Supply
- Non-linearity: ≤ 0.8°C
- Low Profile SOT-23 Package

Applications

- Mobile Communications
- Computers and Peripherals
- Battery Management
- FAX Machines/Printers/Copiers
- Portable Medical Instruments
- HVAC, Power Supply Modules
- Disk Drives
- Automotive Control Circuits

Output Voltage vs Temperature



$$\text{Temp (}^\circ\text{C)} = (V_{\text{out}} - 500\text{mV}) / 10\text{mV/}^\circ\text{C}$$

Product Highlights

- Accurate to +/- 1°C – At the typical temperature range (25°C) the aTS51 is the most accurate temperature sensor in its class.
- High Output Drive – The low impedance capability of the aTS51 enables the aTS51 to drive other components within embedded applications.
- Linear and Positive Output Ramp – The aTS51 provides a simple 10mV/°C output ramp with an offset of 500mV at 0°C making for a straightforward translation of voltage to temperature.

Note: The information in this document is provided as a product overview only and is not intended to be used for design purposes. For complete technical information, please refer to the product data sheet. The information in this document is subject to change without notice.