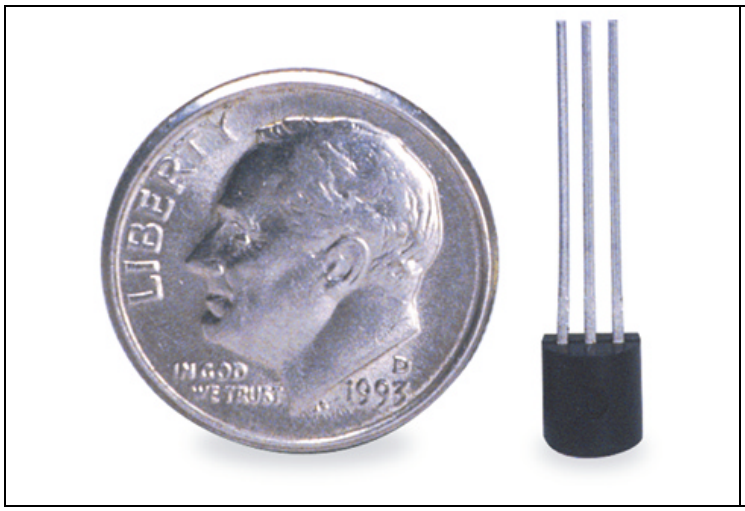
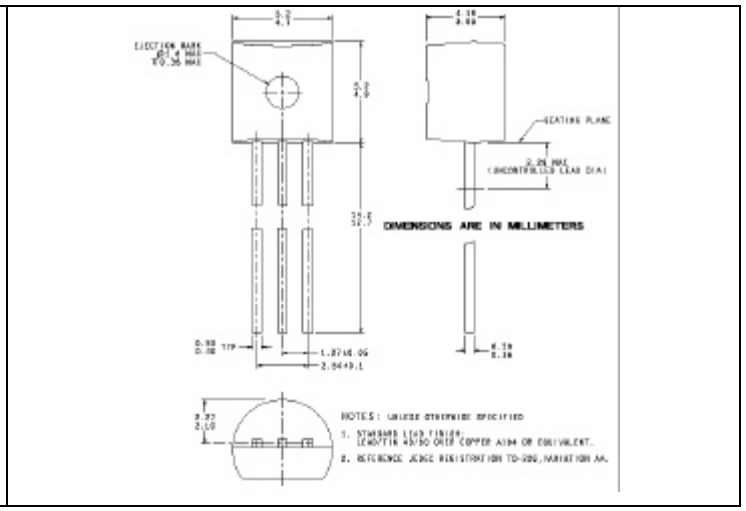
#1523 Temperature Sensing IC Chip





Features

- Calibrated directly in degrees Fahrenheit
- Linear +10.0 mV/°F scale factor
- 1.0°F accuracy guaranteed (at +77°F)
- Rated for full -50° to +300°F range
- Suitable for remote applications
- Low cost due to wafer-level trimming
- Operates from 5 to 30 volts
- Less than 90 µA current drain
- Low self-heating, 0.18°F in still air
- Nonlinearity only ±0.5°F typical
- Low-impedance output, 0.4Ohm for 1 mA load

General Description

The 1523 Temperature Sensing IC Chip is a precision integrated-circuit temperature sensor, whose output voltage is linearly proportional to the Fahrenheit temperature. The 1523 Temperature Sensing IC Chip thus has an advantage over linear temperature sensors calibrated in degrees Kelvin, as the user is not required to subtract a large constant voltage from its output to obtain convenient Fahrenheit scaling. It does not require any external calibration or trimming to provide typical accuracies of ±½°F at room temperature and ±1½°F over a full -50 to +300°F temperature range. Low cost is assured by trimming and calibration at the wafer level. The 1523's low output impedance, linear output, and precise inherent calibration make interfacing to readout or control circuitry especially easy. It can be used with single power supplies or with plus and minus supplies. As it draws only 75 µA from its supply, it has very low self-heating, less than 0.2°F in still air. The 1523 is rated to operate over a -50° to +300°F temperature range. The 1523 is contained in a plastic TO-92 transistor package.

Parametric Table	
Operating Temperature Range	+32 to +212 Deg F,-40 to +230 Deg F
Sensor Gain (Tmin to Tmax)	10 mV/Deg F
Supply Voltage Range	+5V to +30V
Quiesent Current (mA)	.1590,.1420
Min. Accuracy	-4 Deg F,-3 Deg F
Max. Accuracy	+4 Deg F,+3 Deg F
Temp. Resolution	Analog Output

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