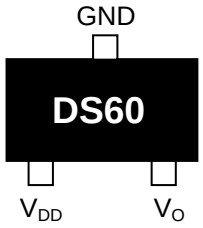
# DS60
# Analog Temperature Sensor

www.maxim-ic.com

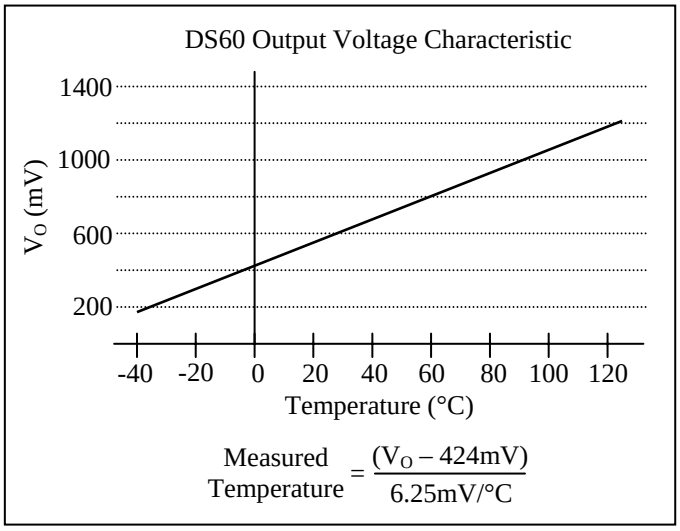
## FEATURES

- Factory Calibrated for +6.25mV/°C Sensitivity with 424mV DC Offset at 0°C
- ±2.0°C Accuracy Over 0°C to +85°C Range
- Measurement Range of -40°C to +125°C
- Ultra-Low Supply Current (125µA max)
- Tiny SOT-23-3 Package
- Wide Power Supply Range (+2.7V ≤ $V_{DD}$ ≤ +5.5V)
- Functionally-Compatible with LM60
- Applications Include Monitoring Battery Packs, Disk Drives, Printers, or any Space- or Power-Constrained Thermally Sensitive Systems.

## PIN ASSIGNMENT




SOT-23-3
(DS60R)




Package mechanical drawings can be found at:
http://www.maxim-ic.com/TechSupport/DallasPackInfo.htm

## PIN DESCRIPTION

$V_{DD}$ - Power Supply Voltage
$V_O$ - Sensor Output
GND - Ground

## ORDERING INFORMATION

| Ordering Number | Description |
|---|---|
| DS60R/T&R | SOT-23-3: 3,000 piece Tape & Reel |
| DS60R-U | SOT-23-3 |
| DS60R+T&R | Lead-Free SOT-23-3: 3000 piece Tape & Reel |
| DS60R+U | Lead-Free SOT-23-3 |

## DESCRIPTION

The DS60 analog temperature sensor measures its own temperature and provides these measurements to the user in the form of an output voltage ($V_O$) that is proportional to degrees centigrade. The output voltage characteristic is factory-calibrated for a typical sensitivity of +6.25mV/°C and a DC offset of +424mV at 0°C. Its operating temperature range is -40°C to +125°C, corresponding to an output voltage range of +174mV to +1205mV. The DS60 has ±2.0°C accuracy over a 0°C to +85°C temperature range and over the full +2.7V to +5.5V power supply range. Its accuracy is within ±3.0°C over the operating temperature range and full supply range. Because the output voltage is positive for the entire temperature range, there is no need for a negative power supply.

The DS60's tiny size, low-current operation, and wide supply range make it ideal for use in battery-powered applications. To further reduce power dissipation, the DS60 can be powered by any logic gate

output that is capable of sourcing 125µA, which allows the DS60 to be switched to a zero power standby state when the gate is forced to a logic 0.

## ABSOLUTE MAXIMUM RATINGS*

| | |
|---|---|
| Voltage on $V_{DD}$ | GND -0.3V to +6.5V |
| Output Current | 5.0mA |
| Operating Temperature Range | -40°C to +125°C |
| Storage Temperature Range | -55°C to +150°C |
| ESD Susceptibility (Human Body Model) | 2kV |
| Soldering Temperature | 215°C for 60s (Vapor Phase) |
| 220°C for 15s (IR) | |

* *These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operation sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods of time may affect reliability.*

The Dallas Semiconductor DS60 is built to the highest quality standards and manufactured for long-term reliability. All Dallas Semiconductor devices are made using the same quality materials and manufacturing methods. However, the DS60 is not exposed to environmental stresses, such as burn-in, that some industrial applications require.

## DC ELECTRICAL CHARACTERISTICS (-40°C to +125°C; 2.7V ≤ $V_{DD}$ ≤ 5.5V)

| PARAMETER | SYMBOL | CONDITION | MIN | TYP | MAX | UNITS | NOTES |
|---|---|---|---|---|---|---|---|
| Supply Voltage | $V_{DD}$ | | 2.7 | | 5.5 | V | 1 |
| Supply Current | $I_{DD}$ | | | 80 | 125 | µA | 2 |
| Measurement Error | $T_{ERR}$ | 0°C ≤ $T_A$ ≤ 85°C | | | ±2 | °C | 2 |
| | | -40°C ≤ $T_A$ ≤ 125°C | | | ±3 | | |
| $V_O$ DC Offset | | T = 0°C | | 424 | | mV | 1, 2 |
| Sensor Gain | ΔV/ΔT | | 6.0 | 6.25 | 6.5 | mV/°C | 2 |
| Nonlinearity | | | | | ±0.8 | °C | 2, 3 |
| Power Supply Regulation | | 2.7V ≤ $V_{DD}$ ≤ 3.3V | | | ±2.0 | mV/V | |
| | | 3.0V ≤ $V_{DD}$ ≤ 5.5V | | | ±0.25 | mV/V | |
| Sensor Drift | | | | ±0.25 | | °C | 4 |
| Output Impedance | | | | | 800 | Ω | |

## NOTES:

1) All voltages are referenced to ground unless otherwise specified.
2) Specified for $V_O$ sourcing 1.0µA (max).
3) Nonlinearity is the maximum deviation from an ideal linear slope.
4) Typical drift following three consecutive passes through a vapor phase process.

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http://moschip.ru/get-element

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В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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