

DALLAS

SEMICONDUCTOR

DS1724

Programmable Analog/ Digital Thermometer

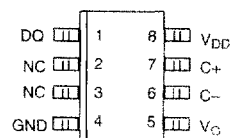
FEATURES

- Temperature measurements require no external components
- Digital output temperatures measure from -55°C to $+125^{\circ}\text{C}$. Fahrenheit equivalent is -67°F to $+257^{\circ}\text{F}$
- Temperature is read as a 9-bit digital value (0.5°C increments)
- Analog voltage output is available for temperatures from -25°C to $+100^{\circ}\text{C}$. Fahrenheit equivalent is -13°F to $+212^{\circ}\text{F}$
- Temperature is read as a 10-bit analog voltage (5 mV increments) defined by a user-programmable EEPROM look-up-table
- Voltage output measures +1.280V to +6.395V
- Converts temperature to digital word and analog voltage in 1 second (max)
- Digital data is read/written via a 1-Wire™ serial interface
- Applications include temperature-compensated crystal oscillators for test equipment and radio systems
- 8-pin SOIC (xxx-mil) package

DESCRIPTION

The DS1724 Programmable Analog/Digital Thermometer provides a direct-to-digital temperature reading with no external components required. Furthermore, a user-programmable EEPROM look-up-table (LUT) defines an analog voltage output based on the measured temperature. Digital data is written/read over a simple 1-Wire interface, minimizing required board traces.

PIN ASSIGNMENT



DS1724S 8-PIN SOIC (xxx MIL)

PIN DESCRIPTION

| | | |
|-----------------|---|---------------------------------|
| DQ | - | Digital Data In/Out |
| V _{DD} | - | 2.7V – 5.5V Power Supply |
| GND | - | Ground |
| V _O | - | Analog Voltage Out |
| C+ | - | Positive Polarity of Filter Cap |
| C- | - | Negative Polarity of Filter Cap |
| NC | - | No Connect |

Applications for the DS1724 include temperature-compensated crystal oscillators (TCXOs) in test and radio equipment. The presence of an analog and digital interface allow the user to compensate for temperature-dependent shifts in frequency in nearly real time.

The small outline surface mount package allows the DS1724 to be in close proximity to the crystal, while consuming a minimal amount of board space.