



Analog Spotlight

MCP9600 – Highly Integrated Thermocouple Voltage to Temperature Converter

General Information

The MCP9600 is a fully integrated thermocouple Electromotive Force (EMF) to degree Celcius converter with Cold-Junction Compensation. The MCP9600 supports eight thermocouple types (K, J, T, N, S, E, B and R) and provides user-programmable registers, adding design flexibility for various temperature sensing applications. The registers allow user-selectable settings, such as low power modes for battery-powered applications, an adjustable digital filter for fast transient temperatures and four individually programmable temperature alert outputs that can be used to detect multiple temperature zones.

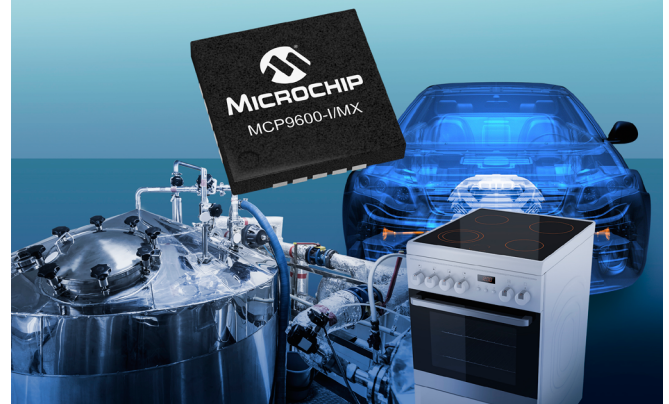
Features

- Thermocouple Voltage to °C Converter – Integrated Cold-Junction Compensation
- Supported Types (designated by NIST ITS-90): K, J, T, N, S, E, B and R
- +/- 1.5°C (Max.) Measurement Accuracy: +/-1°C (Max.) Cold-Junction, 0°C to +85°C
- Temperature Measurement Resolution: Hot and Cold Junctions: 0.0625°C (Typ.)
- Four Programmable Temperature Alert Outputs
- Programmable Digital Filter for Temperature
- Low Power: Shutdown Mode, Burst Mode, 1 to 128 Temperature Samples
- 2-Wire Interface: I²C Compatible, 100 kHz – Supports eight Devices per I²C Bus
- Operating Voltage Range: 2.7V to 5.5V
- Operating Current: 500 µA (Typ.)
- Shutdown Current: 2 µA (Typ.)
- Package: 20-Lead MQFN

Applications:

- Petrochemical Thermal Management
- Hand-Held Measurement Equipment
- Industrial Equipment
- Ovens
- Engine Thermal Monitor
- Temperature Detection Racks

Thermocouple Conditioning Integrated Circuit



Development Tools:

- MCP9600 Thermocouple EMF to Degree Celcius Converter Evaluation Board (ADM00665)



**MCP9600 Thermocouple IC Evaluation Board
(Part # ADM00665)**

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