

Fully Calibrated Temperature Sensor IC

General description

The integrated circuit MA188C is a fully integrated, tested and calibrated digital low power temperature sensor with a typical temperature measurement accuracy of $\pm 0.3^{\circ}\text{C}$. It offers digital SPI or I²C interface and battery end-of-life (EOL) detection. The MA188C is available in 3x3mm QFN16 package.

Applications

- § Temperature monitoring of temperature sensitive goods
- § Human body temperature monitoring
- § Environmental temperature monitoring and HVAC
- § Power-Supply temperature monitoring
- § Computer peripheral thermal protection
- § Notebook computers
- § Cell phones
- § Battery management
- § Thermostat controls

Typical application

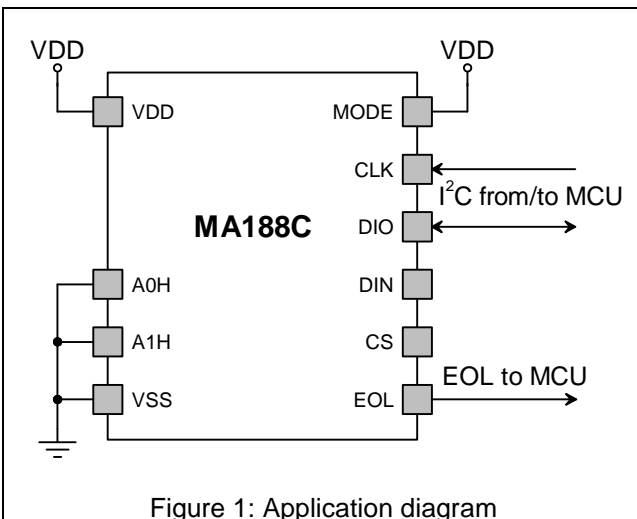


Figure 1: Application diagram

Features

- § Digital output: I²C serial 2-wire or SPI serial 4-wire
- § Up to 4 sensors can be addressed over the same serial bus (4 sub-addresses)
- § Temperature measuring range : -40°C to $+110^{\circ}\text{C}$
- § Accuracy: typically $\pm 0.3^{\circ}\text{C}$ from 10°C to $+50^{\circ}\text{C}$
- § Resolution: 0.05°C
- § Ultra-low current consumption in sleep mode: 25nA
- § Quiescent current in active state : 25 μA
- § Supply range: 2.5V to 3.5V
- § Battery EOL detection: threshold level selectable between 2.65V and 2.85V in steps of 50mV (5 levels)
- § Digital output pin for EOL detection
- § Available in 3x3mm QFN16 package

Pinout

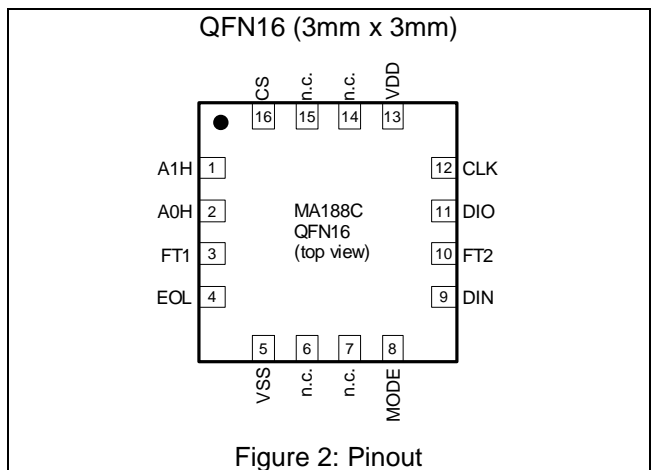


Figure 2: Pinout

Ordering information

Type	Package	Article No.
MA188C	QFN16 3x3mm	9160279

Table 1: Ordering information

MA188C

- More applications and devices require a temperature reference
- Ultra low current consumption and low peak current consumption make the MA188C ideal for use in the “Wearables”, “Internet of Things” (IoT), or “Smart Home” markets, particularly for use with printed batteries
- The MA188C offers a choice of I²C or SPI serial interfaces enabling communication with most microcontrollers
- The MA188C has an “End of life” detection for battery applications
- The MA188C is a cost effective solution for many applications
- The MA188C is available in an easy to manufacture small standard 3x3mm QFN16 package

Request the datasheet at info@microdul.com or call +41 44 455 35 11 for more information.