

## Application Note

### 1 General product description

The integrated circuit MS1088D is a fully integrated, tested and calibrated digital low power temperature sensor with a typical temperature measurement accuracy of ±0.3°C. It offers digital SPI or I<sup>2</sup>C interface and battery end-of-life (EOL) detection. The MS1088D is available in quad flat no leads package (QFN).

The [Datasheet](#) is available on the Microdul Home Page.

### 2 Evaluation board

The MS1088D evaluation board is available on request. The board is configured for I<sup>2</sup>C communication.

Figure 1 shows how a temperature measurement is started.

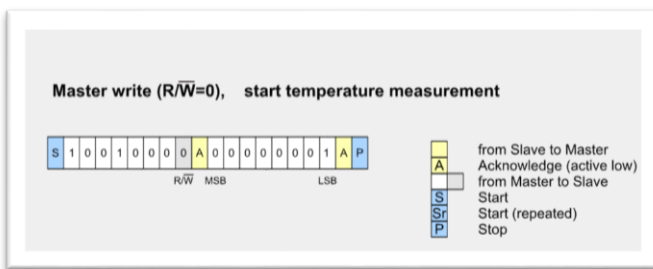


Figure 1: Start measurement

Within 50ms the temperature measurement is done and the value can be read back via I<sup>2</sup>C, see Figure 2

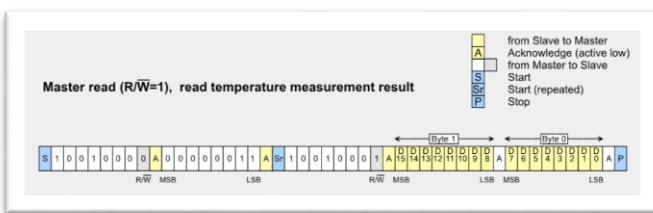


Figure 2: Read temperature value

The temperature is calculated according to the following formula.

$$T (^{\circ}C) = \frac{D[15:4]}{20} - 80$$

The schematic of the evaluation board is shown in Figure 3. The MS1088D signals are available on the connector. The pinning is given in Table 1.

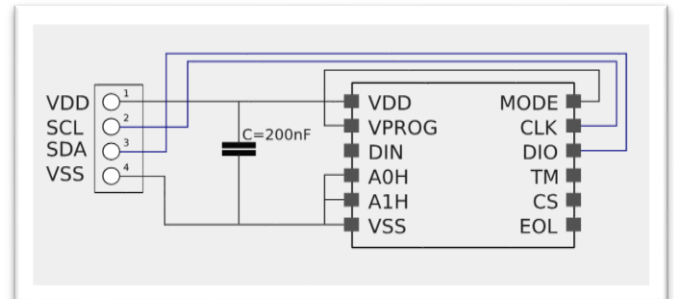


Figure 3: Evaluation board schematic

Table 1: Connector pinning

Pin	
1	VDD
2	SCL
3	SDA
4	GND(VSS)

Figure 4 shows the top view of the assembled evaluation board.

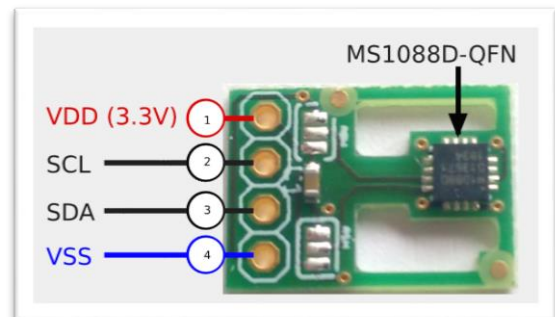


Figure 4: Assembled evaluation board (top view)

### 3 ESD

Inputs and outputs are protected against electrostatic discharge during normal operation. However to be totally safe, it is advisable to undertake precautions appropriate to handling MOS devices in all process steps.

### 4 Disclaimer

Whilst every effort is taken to make sure that the information contained in this document is correct, Microdul AG accepts no liability whatsoever for the accuracy or completeness of the information given. Microdul AG reserves the right to change or correct information without prior notice as necessary.