



TSYS01 PERIPHERAL MODULE

Digital Temperature Sensor

General Description

The TSYS01 peripheral module provides the necessary hardware to interface the TSYS01 digital temperature sensor to any system that utilizes Xplained pro compatible expansion ports configurable for I²C communication. The TSYS01 sensor is a self-contained temperature sensor that is fully calibrated during manufacture. The sensor can operate from 2.2V to 3.6V. The TSYS01 has a low power stand-by mode for power-sensitive applications.

Specifications

- Measures temperature from -40°C to 125°C
- I²C communication
- Fully calibrated
- Fast response time
- Very low power consumption

Features

- 20-pin Xplained pro compatible connector
- I²C interface
- Xplained Pro hardware identification chip
- Atmel Studio 6 Project available for download
- µC C code available for download
- 24/16 bit resolution for temperature
- Parameters stored on chip

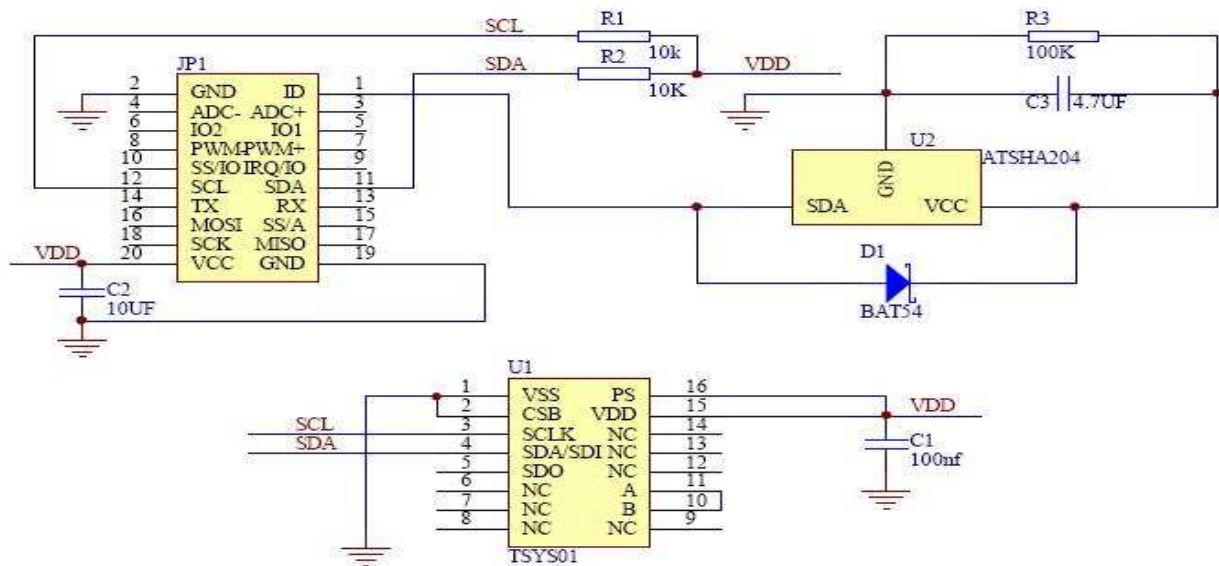
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Performance

- -5°C to 50°C accuracy: 0.1°C
- -40°C to 125°C accuracy: 0.5°C
- Very low power consumption
- Operates from 2.2V to 3.6V
- Time constant –4 second typical in air
- Fast conversion time – 8.22 mS typical

Schematic



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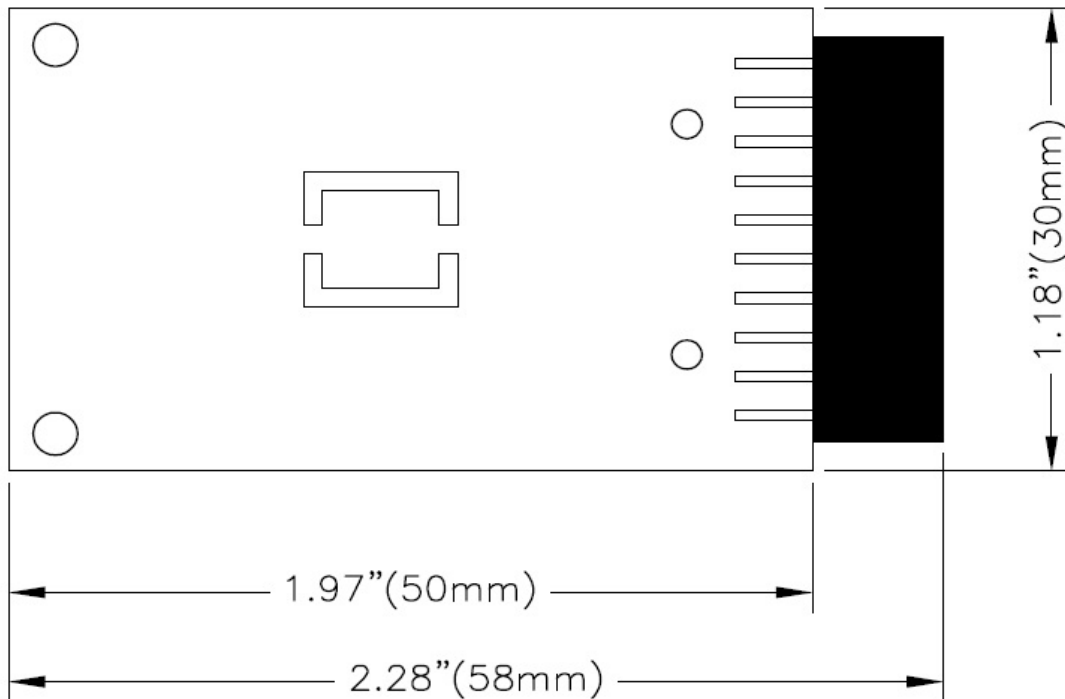
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Connector Pin Assignments (1²C Communications)

System Plug (Table 1)

Connector JP1					
Pin No.	Signal	Description	Pin No.	Signal	Description
1	ID	Address	11	SDA	I2C Serial Data
2	GND	Ground	12	SCL	I2C Serial Clock
3	N/C	Not Connected	13	N/C	Not Connected
4	N/C	Not Connected	14	N/C	Not Connected
5	N/C	Not Connected	15	N/C	Not Connected
6	N/C	Not Connected	16	N/C	Not Connected
7	N/C	Not Connected	17	N/C	Not Connected
8	N/C	Not Connected	18	N/C	Not Connected
9	N/C	Not Connected	19	GND	Ground
10	N/C	Not Connected	20	Vdd	Power Supply

Dimensions(mm)



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Detailed Description

I²C Interface

The peripheral module can interface to the host being plugged directly into an Xplained Pro extension port (configured for I2C) through connector JP1

External Control Signals

The IC operates as an I²C slave using the standard 2 wire I²C connection scheme. The IC is controlled either by the host (through the Xplained pro connector). In cases where one or more of the SCL and SDA signals are driven from an external source, resistors R1, R2 provide pull-up. However, this also increases the apparent load to the external driving source. If the external source is incapable of driving these loads, they should be removed.

Reference Material

- Detailed information regarding operation of the IC:
[TSYS01 Datasheet](#)
- Detailed information regarding SAMD2x Driver:
[TSYS01 SAMD2x Driver](#)
- Complete software sensor evaluation kit for Xplained Pro:
[TSYS01 SAMD2x Software](#)

Ordering Information

Description	Part Number
TSYS01 PERIPHERAL MODULE	DPP201A000

te.com/en/products/sensors.html

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PRODUCT SHEET

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