SENSYLINK Microelectronics

(CT1711)

S-Wire Digital Temperature Sensor

CT1711 is a Low Cost Digital Temperature Sensor with ±0.1°C accuracy over 30°C to 45°C with S-Wire Interface.

It is ideally used in Human Body Temperature Measurement.

±0.1°C Accuracy Digital Temperature Sensor with S-Wire Interface

Description

CT1711is a low cost digital temperature sensor with ±0.1°C(Max.) accuracy over 30°C to 45°C Temperature data can be read out directly via S-Wire interface by MCU.

It includes a high precision band-gap circuit, a 17-bit analog to digital converter that can offer 0.00390625°C resolution, a calibration unit with non-volatile memory and a digital interface block.

The chip is calibrated with±0.1 °C(Max.) accuracy over 30°C to 45°C range in factory before shipment to customers.

Metal Can package is specially designed to improve heat conduction performance from skin to sensor in human body measurement application.

Available Package: MCLGA3x3-4 package

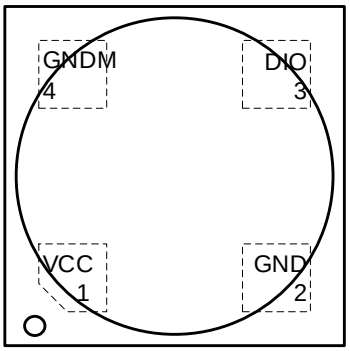
Features

- Operation Voltage: 1.8V to 5.5V
- Operating Current: 36uA(Typ.)during Temperature Conversion;
- Average Current Consumption: 4.5uA(Typ.) with reading once temperature per second
- Standby Current: 10nA(Typ.), 30nA(Max.<50 °C)
- Temperature Conversion time:120ms(Typ.)
- Temperature Accuracy:±0.1°C(Max.) from 30°C to 45°C
- 17 bit ADC with 0.00390625°C resolution
- S-Wire Digital Interface (single-wire lite version)
- Compatible with ISO10993.5/10 (testing)
- Temperature Range: -50°C to 150°C

Applications

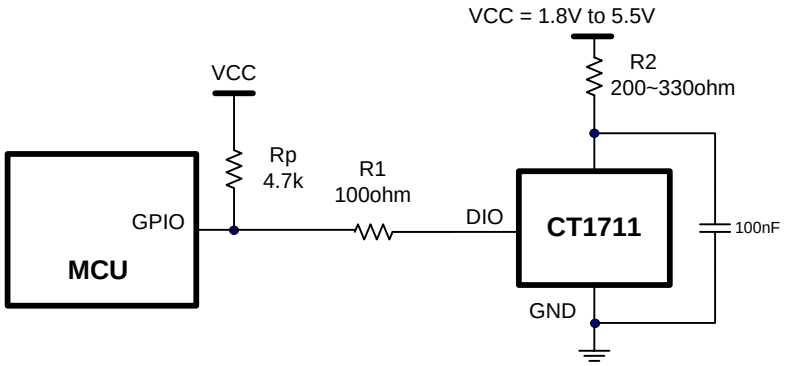
- General Temperature Monitor
- Human Body Temperature Monitor

PIN Configurations (Top View)



MCLGA3x3-4(package code MC)

Typical Application



There is very necessary to use a 200 ~ 330 ohm resistor between the power supply and the VCC Pin of the chip (R2) in most applications, esp. for human body temperature measurement. Also it is better to use a 100

Figure 1. Typical Application of CT1711

Pin Description

PIN No.	PIN Name	Description
1	VCC	Power supply input pin, it should connect a 100nF to 1.0uF ceramic cap to ground.
2	GND	Ground pin.
3	DIO	Digital interface data input and output pin, Generally it needs a pull-up resistor (4.7k) to VCC in most applications.
4	GNDM	Metal CAN ground pin, short to GND pin in application.

Function Block

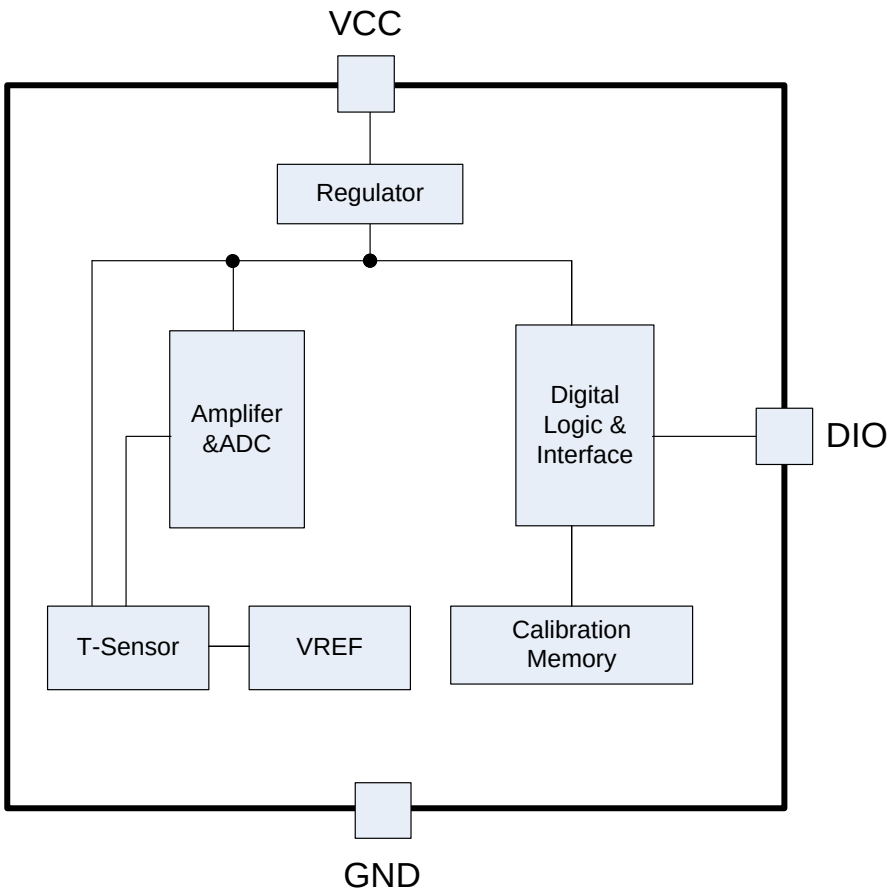
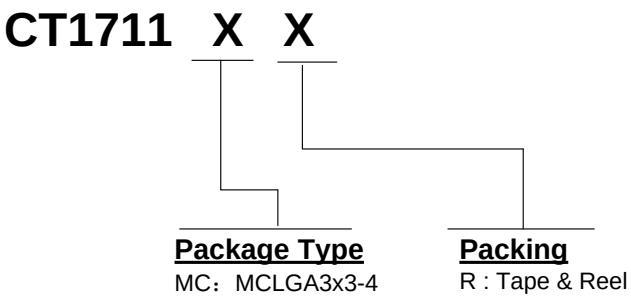


Figure 2. CT1711 function block

Ordering Information



Order PN	Accuracy	Green[1]	Package	Marking ID[2]	Packing	MPQ	Operation Temperature
CT1711MCR	±0.1°C	Halogen free	MCLGA3x3-4	1711 YWWAXX	Tape&Reel	4,000	-50°C~+150°C

Notes

1. Based on ROHS Y2012 spec, Halogen free covers lead free. So most package types Sensylink offers only states halogen free, instead of lead free.

2. Marking ID includes 2 rows of characters. In general, the 1st row of characters are part number, and the 2nd row of characters are date code plus production information.

1) *Generally, date code is represented by 3 numbers. The number stands for year and work week information. e.g. 501stands for the first work week of year 2015;621 stands for the 21st work week of year 2016.*
2) *Right after the date code information, the next 2-3 numbers or letters are specified to stands for supplier or production location information.*
3) *For very small outline package, there's 4 digits to stands for product information and date code, first 2 digits represent product code, and the other 2 digits stands for work week*

SENSYLINK Microelectronics Inc.

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