

SENSYLINK Microelectronics Inc.

(CHT1305)

Digital Humidity & Temperature Sensor

CHT1305 is a Digital Humidity and Temperature Sensor with $\pm 3.0\%RH$ Accuracy for humidity and $\pm 0.5^{\circ}C$ Accuracy for temperature. Single-Wire Digital interface is permitted to connect multi chips to one line. It is ideally used in HVAC, Portable/Wearable Weather Monitor and Grain Moisture Monitor etc.

Digital Humidity and Temperature Sensor with Single-Wire Interface

1. Description

CHT1305 is a digital humidity and temperature sensor with $\pm 3.0\%RH(\text{Max.})$ accuracy for humidity and $\pm 0.5^\circ\text{C}(\text{Max.})$ accuracy for temperature. Humidity and Temperature data can be read out directly via Single-Wire digital interface by MCU, Bluetooth Chip or SoC chip.

CHT1305 supports Single-Wire digital interface which is compatible with 1-Wire Interface. It permits multi slave devices communication with one host via DIO pin.

Each chip is specially calibrated for in factory before shipment to customers. There is no need for re-calibration anymore.

It includes a high precision band-gap circuit, a 13-bit analog to digital converter, a calibration unit with non-volatile memory, and a digital interface block.

The chip supports normal power supply mode (forcing power at VCC pin), also support parasitic power supply mode (powered by DIO pin, VCC pin short to GND pin).

Available Package: DFN3x3-6 package

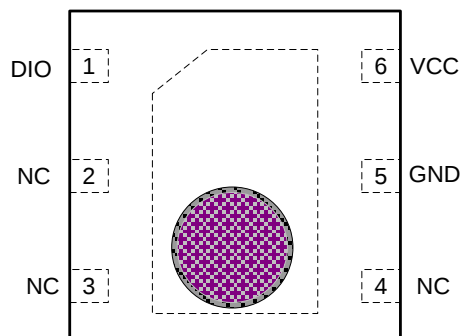
2. Features

- Operation Voltage: 2.2V to 5.5V
- Operating Current for measurement: Temperature, 35uA (Typ.) Humidity, 25uA (Typ.)
- Average Current: 1.8uA (Typ.) at one time temperature & humidity measurement per second.
- Standby Current: 0.2uA (Typ.), 1.0uA (Max.)
- Temperature Accuracy: $\pm 0.5^\circ\text{C}$ (Max.) from 0°C to 50°C
- Humidity Accuracy: $\pm 3.0\%RH(\text{Max.})$ at 50%RH
- 13 bit ADC for Temperature and Humidity
- 640-bit EEPROM Available
- Support Parasitic Power Supply Mode
- Temperature Range: -40°C to 125°C
- Humidity Range: 0%RH to 100%RH
- Protection Cover is available

3. Applications

- Smart HVAC System
- Grain Moisture Monitor
- Portable/Wearable Weather Monitor

4. PIN Configurations (Top View)



DFN3x3-6 (Package Code DN)

5. Typical Application

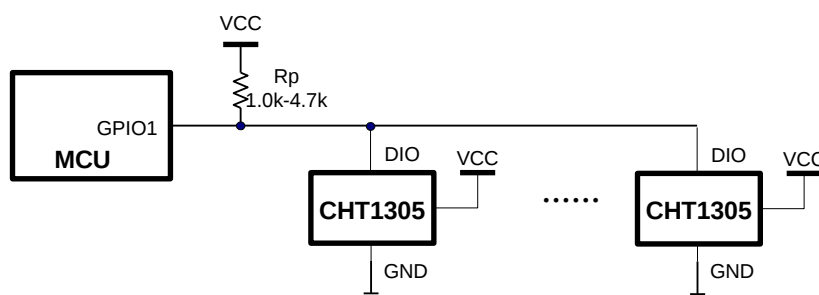


Figure 1. Typical Application of CHT1305

Digital Humidity and Temperature Sensor with Single-Wire Interface

6. Pin Description

PIN No.	PIN Name	Description
1	DIO	Digital interface data input and output pin, generally it needs a pull-up resistor to Vcc in most applications, between 1.0k and 3.3k.
2,3,4	NC	No Connection.
5	GND	Ground pin.
6	VCC	Power supply input pin, using 0.1uF low ESR ceramic capacitor to ground

7. Function Block

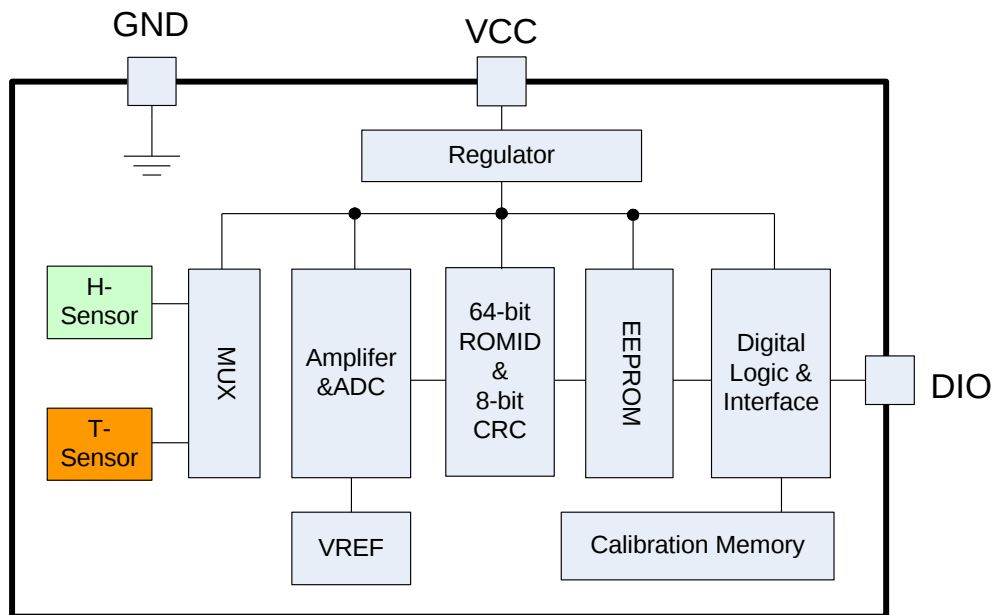


Figure 2. CHT1305 function block

Digital Humidity and Temperature Sensor with Single-Wire Interface
8. Ordering Information

CHT1305 X X - X

Package Type

DN : DFN3x3-6

Packing

R: Tape & Reel

Protection

C : with Cover

Blank : without Cover

Order PN	Accuracy	Green ¹	Package	Marking ID ²	Packing	MPQ	Operation Temperature	Protection Cover
CHT1305DNR	±0.5℃ ±3%RH	Halogen free	DFN3x3-6	1305 YWWAXX	Tape & Reel	3,000	-40℃~+125℃	No
CHT1305DNR-C	±0.5℃ ±3%RH	Halogen free	DFN3x3-6	1305 YWWAXX	Tape & Reel	3,000	-40℃~+125℃	Yes

Notes

1. Sensylink can meet RoHS 2.0/REACH requirement. 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.



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