SENSYLINK Microelectronics

(CHT8325)
Low Power Digital Humidity
&Temperature Sensor

CHT8325 is a Digital Humidity and Temperature Sensor with$\pm$ 2.0%RH accuracy for humidity and $\pm$0.1°C accuracy for temperature. It is compatible with SMBus, I2C Interface. It is ideally used in HVAC, Refrigerator, environment monitor etc.

Low-Power Digital Humidity and Temperature Sensor

1 Description

CHT8325 is a digital humidity and temperature sensor with $\pm 2.0\%$RH(Typ.) accuracy for humidity and ± 0.1 ℃ (Typ.) accuracy for temperature. It provides high accuracy measurements over a wide supply range (1.62 V – 5.5 V), along with ultra-low power consumption. Humidity and Temperature data can be read out directly via digital interface by MCU, Bluetooth Chip or Soc chip.

The digital interface is compatible with SMBus and I2C protocol. Also, it supports communication with fast speed (up to 400kHz) and high speed (up to 1.0MHz) for I2C protocol.

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

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

Available Package: DFN2x2-4 package

2 Features

- Operation Voltage: 1.62V to 5.5V
- Average Operating Current: 1.0uA (Typ.)@ 3.3V, 1Con/s for Both temperature and humidity Conversion
- Standby Current: 0.4uA(Typ.)
- Temperature Accuracy with calibration:
    ± 0.1℃(Typ.), ± 0.3℃(Max.)from 20℃ to 50℃
    ± 0.2℃(Typ.), ± 0.4℃(Max.) from -40℃ to 125℃
- Humidity Accuracy with calibration:
    $\pm 1\%$RH(Max.) at 50%RH
    $\pm 2\%$RH(Max.) from 20%RH to 80%RH
- Digital Interface compatible with SMBus and I2C, support:
    Packet Error Checking feature to improve communication reliability and robustness
    Speed up to 1.0MHz
    SMBus General Call
- Supports One shot or continuous measurement
- NIST traceability
- Temperature Range: -40℃ to 125 ℃
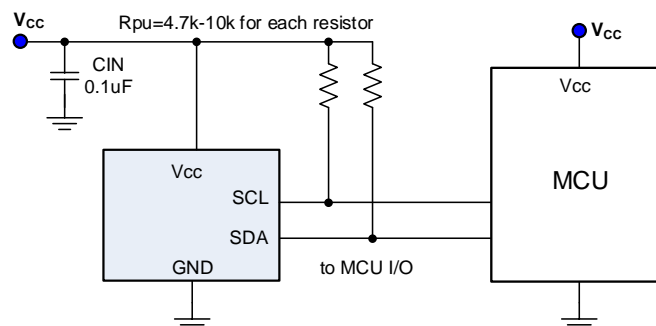- Humidity Range: 0%RH to 100%RH

3 Applications

- Smart HVAC System
- Washer & dryer
- Refrigerator & freezer
- Cold Chain asset tracking & data logger
- Environment Monitor
- Portable/Wearable Weather Monitor
- IP Camera

4 PIN Configurations (Top View)

DFN2x2-4(Package Code DN)
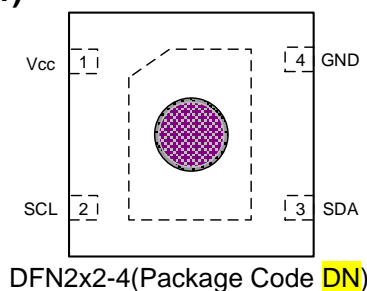
5 Typical Application

Figure 1 Typical Application of CHT8325

6 Pin Description

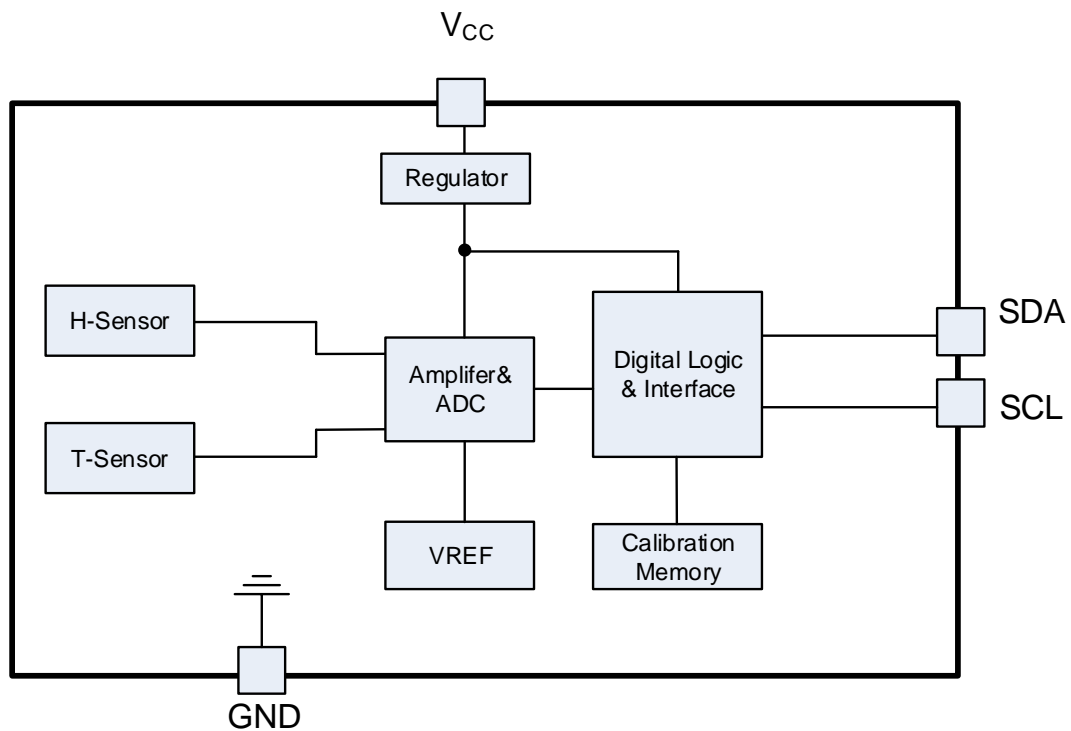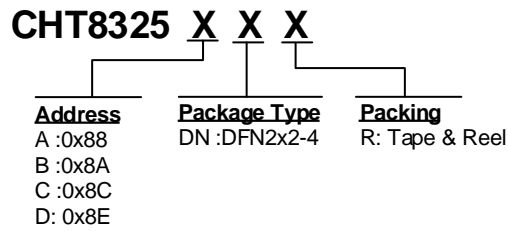| PIN No.	PIN Name	Description
1	Vcc	Power supply input pin, using 0.1uF low ESR ceramic capacitor to ground
2	SCL	Digital interface clock input pin, need a pull-up resistor to Vcc.
3	SDA	Digital interface data input or output pin, need a pull-up resistor to Vcc.
4	GND	Ground pin.
	Exposed Thermal PAD	Exposed thermal pad (bottom side).

7 Function Block

Figure 2 CHT8325 function block

8   Ordering Information

CHT8325 X X X

Address	**Package Type**	**Packing**
A :0x88	DN :DFN2x2-4	R: Tape & Reel
B :0x8A		
C :0x8C		
D: 0x8E		

Order PN	Address	Accuracy	Green[1]	Package	Marking ID[2]	Packing	MPQ	Operation Temperature
CHT8325ADNR	0x88	±0.1℃ ±2%RH	Halogen free	DFN2X2-4	HS YWXA	Tape & Reel	3,000	-40℃~+125℃
CHT8325BDNR	0x8A	±0.1℃ ±2%RH	Halogen free	DFN2X2-4	JR YWXA	Tape & Reel	3,000	-40℃~+125℃
CHT8325CDNR	0x8C	±0.1℃ ±2%RH	Halogen free	DFN2X2-4	JS YWXA	Tape & Reel	3,000	-40℃~+125℃
CHT8325DDNR	0x8E	±0.1℃ ±2%RH	Halogen free	DFN2X2-4	JT YWXA	Tape & Reel	3,000	-40℃~+125℃

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.

SENSYLINK Microelectronics Inc.

www.sensylink.com

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