NEW

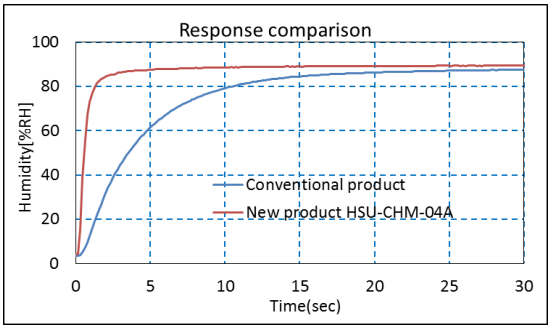
Capacitive humidity sensor

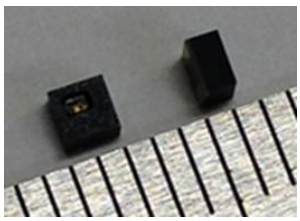
High reliability

Fastest in the world

■Characteristic

- ・High long-term reliability
- ・Achieves ultra-fast response(1 τ : 1s)
- ・Supports a wide range of driving voltages (1.62 to 5.5V)





Surface mount type
2×2×1.25mm

Connector mounting type is also available.

■Product Specifications

1) Absolute maximum ratings

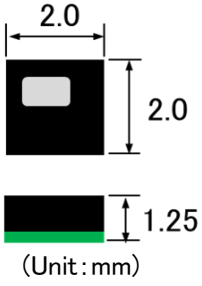
Item	Rated value	Unit	Remarks
Storage temperature range	−50～125	℃	
Driving voltage	−0.3～7.0	V	

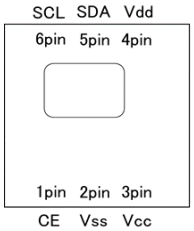
2) Rated Value

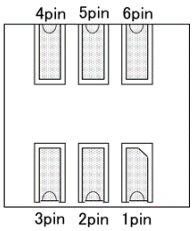
Item		Rated value	Unit	Remarks
Driving voltage		1.62～5.5	V	
Current consumption		10	μ A	Once per second / average current during measurement(※1)
Humidity	Range of measurement	0～100	%RH	
	Resolution	0.1	%RH	10bit data
	Humidity accuracy	±3	%RH	25℃/20～80%RH
Temperature	Range of measurement	−30～100	℃	
	Resolution	0.1	℃	11bit data
	Temperature accuracy	±0.4	℃	5～60℃

(※1)When controlled by CE (chip enable terminal)

3) External dimensions







No.	Terminal name	Function
1	CE	Chip enable pin
2	Vss	Power terminal(−)
3	Vcc	Power terminal(+)
4	Vdd	Internal constant voltage output terminal
5	SDA	Data input / output terminal for I2C-BUS
6	SCL	

■Main application

Classification	Application
Air conditioner, refrigerator, etc. Civilian products	Energy saving measures
Medical equipment	CPAP device (continuous positive airway pressure) Ventilator
In-vehicle	Cloudy detection Energy saving measures

Utilizing high-speed response, it is most suitable for use in the left field.

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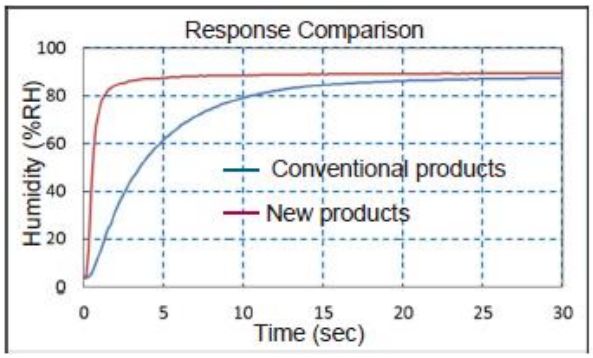
Capacitive humidity sensor

High reliability **Fastest in the world**

Model No.HSU-CHU-42A-HC

■Features

- ・High long-term reliability
- ・Achieves ultra-fast response(1 τ : 1s)
- ・Supports a wide range of driving voltages (1.62 to 5.5V)



Utilizing high-speed response,
it is ideal for use in the fields shown below.

Classification	Application
General consumer products such as air conditioners and refrigerators	Energy saving measures
Medical equipment	CPAP device (continuous positive airway pressure) Ventilator
In-vehicle	Fogging detection Energy saving measures

■Specifications

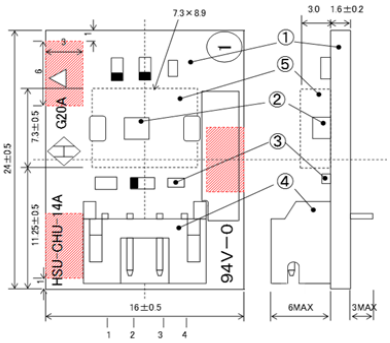
1) Absolute Maximum Ratings

Item	Specification	Unit	Remarks
Storage temperature range	−25～85	℃	
Drive voltage	−0.3～7.0	V	

2) Electrical Characteristics

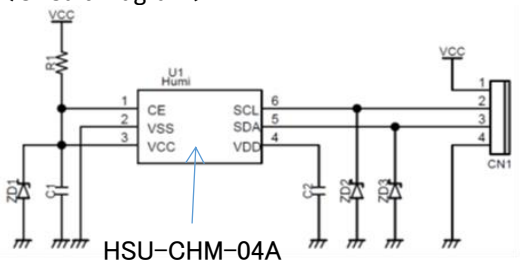
Item		Specification	Unit	Remarks
Drive voltage		1.62～5.5	V	
Current consumption		300	μ A	
Humidity	Operating range	0～100	%RH	
	Output form	Digital output		I2C communication
	Resolution	0.1	%RH	10bit data
	Humidity accuracy	±3	%RH	25℃/20～80%RH
		±5	%RH	5～45℃/0～100%RH
Temperature	Operating range	−20～85	℃	
	Output form	Digital output		I2C communication
	Resolution	0.1	℃	11bit data
	Temperature accuracy	±0.4	℃	5～60℃

3) Dimensions



Area without pattern(Silk notation is possible)

Parts No.	Name	Specification
①	Printed Circuit	CEM-3 / 1.6±0.2mmt
②	Humidity & Temperature Sensor	Capacitive Type Humidity Sensor (HSU-CHM-04A)
③	Mounted Parts	Chip Capacitor / Chip Resistor / Diode
④	Connector	S4B-PH-K-S , Manufactured by JST , 2mm pitch
⑤	Cover case	PBT
−	Humi Seal	AR BROWN 1B51NS or 1B51NSLU

No.	Symbol	Name
1	Vcc	Power Terminal
2	SCL	I2C Clock
3	SDA	I2C Data
4	Vss	Ground Terminal

＜CirCuit Diagram＞