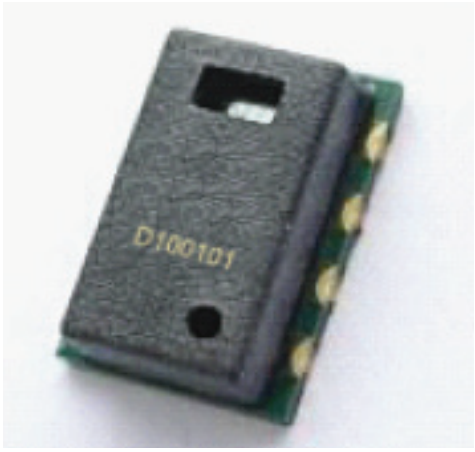
GE
Measurement & Control

ChipCap 2™

A Fully Calibrated Humidity and Temperature Sensor



Features

- Fully Calibrated & Temperature Compensated
- Digital or Analog Output with Alarm Function
- Precision & Accuracy (±2%RH, ±0.3°C, 14 bit)
- Free Operating Voltage (min 2.7V to max 5.5V)
- Low Current Consumption
- SMD Package for Automated Assembly
- Reliable in Harsh Environments

Applications

- Energy Saving HVAC Control —Air Conditioning, Refrigeration, Indoor Air Quality, Vent Fans, Home Appliances, Humi/Dehumidifiers
- Process Control & Instrumentation—Medical Instruments, Handheld Devices, Weather Stations, Food Processing, Printers, RFIDs
- Automobile & Transportation—Cabin Climate Control, Defogging Control Condensing Preventive Device
- Medical — Nebulizers, Oxygen air, CPAP/Sleep Apnea devices
- OEM assemblies available

ChipCap 2 offers the most advanced and cost effective humidity and temperature sensing solution for virtually any type of application.

A capacitive polymer sensor chip and a CMOS integrated circuit with EEPROM are integrated into one embedded system in a reflow solderable SMD package.

Individually calibrated and tested, ChipCap 2 performs at ±2% from 20% to 80% RH (±3% over entire humidity range), and is simple and ready to use without further calibration or temperature compensation.

ChipCap 2 provides linear output signals in various interfaces to customer requirements:

- I²C interface
- PDM convertible to analog signal
- Alarm function for preset control at min/max humidity

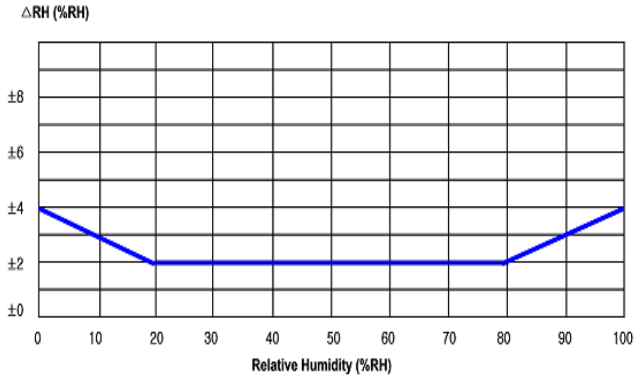
Sensor Performance

Relative Humidity (RH%)

Resolution	14 bit (0.01%RH)
Accuracy[1]	±2.0 %RH (20~80%RH)[2]
Repeatability	±0.2 %RH
Hysteresis	±2.0 %RH
Linearity	<2.0 %RH
Response time[3]	7.0 sec (τ 63%)
Temp Coefficient	Max 0.13 %RH/°C (at 10~60°C, 10~90%RH)
Operating Range	0 ~ 100 %RH (Non-Condensing)
Long Term Drift	<0.5 %RH/yr (Normal condition)

1. Custom Accuracy Tolerance Available
2. Accuracies measured at 25°C, 5.0V.
3. Measured at 25°C, 1m/sec airflow for achieving 63% of step from 33%RH to 90%RH

Typical %RH Accuracy



Electrical Specifications

Supply Voltage
min 2.7V to max 5.5V

Supply Current (IDD)
750 µA (typical)

Sleep Current (Isleep)
0.6 µA (typical)

Environmental

Operating Temperature Range
- 40 to 125°C

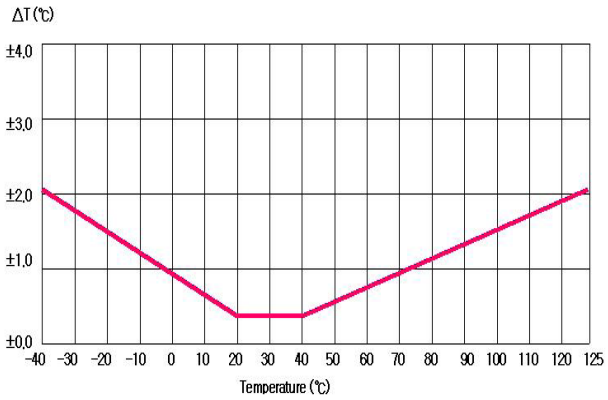
Operating RH Range
0 to 100 % RH (non-condensing)

Temperature (°C)

Resolution	14 bit (0.01°C)
Accuracy[1]	±0.3°C
Repeatability	±0.1°C
Response time[2]	5.0 sec (τ 63%)
Operating range	- 40 to 125°C
Long term drift	<0.05°C/yr (Normal condition)

1. Accuracies measured at 25°C, 5.0V
2. Min 5.0 sec, Max 20 sec

Typical Temperature Accuracy



Absolute Maximum Rating

Parameter	Min	Max
Supply Voltage (VDD)	-0.3V	6.0V
Storage Temp (T_{strg})	-50°C	150°C
Junction Temp (T_j)	-55°C	150°C

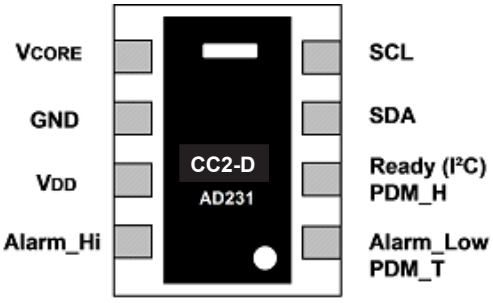
Soldering Information

Standard or IR Solder Reflow
Tp: 260°C, tp: 40 sec. (qualify Pb free profile)

Note: After soldering reconditioning will be required. Details for this process can be found in the ChipCap2 application note (916-127).

Package Contents
Capacitive polymer RH Sensor,
PTA (Proportional to Absolute) Temperature sensor integrated ASIC chip in LCC (Leadless Chip Carrier) package, SMD, RoHS compliant

Pin Connection

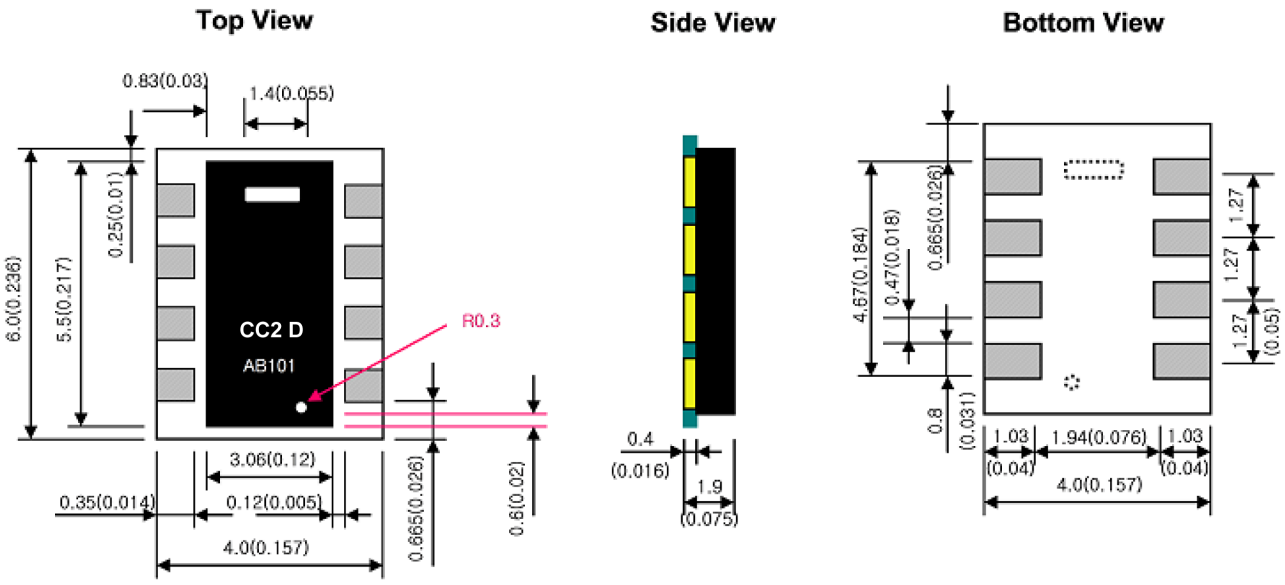


Ordering Information

GE part no.	Description
CC2A25	ChipCap2, analog, 2%, 5v
CC2A23	ChipCap2, analog, 2%, 3.3v
CC2D23S	ChipCap2, digital, sleep mode, 2%, 3.3v
CC2D25S	ChipCap2, digital , sleep mode, 2%, 5v
CC2D23	ChipCap2, digital, 2%, 3.3v
CC2D25	ChipCap2, digital, 2%, 5v
CC2D35	ChipCap2, digital, 3%, 5v
CC2A33	ChipCap2, analog, 3%, 3.3v
CC2D33S	ChipCap2, digital, sleep mode, 3%, 3.3v
CC2D35S	ChipCap2, digital , sleep mode, 3%, 5v
CC2D33	ChipCap2, digital, 3%, 3.3v
CC2A35	ChipCap2, analog, 3%, 5v

Packaging Tape and Reel

Dimensions (units: mm (inch))





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920-558A

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CC2A23 CC2D23S CC2D35 CC2A25 CC2D33 CC2D23 CC2A35 CC2D25 CC2D35S CC2A33 CC2D33S CC2D25S