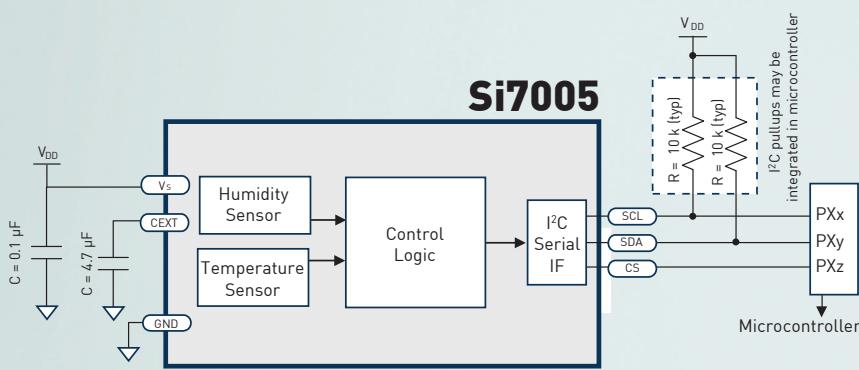




## Humidity and Temperature Sensors

[www.silabs.com/humidity-sensor](http://www.silabs.com/humidity-sensor)DIGITAL 1<sup>2</sup>C HUMIDITY AND TEMPERATURE SENSORS

The Si7005 is a digital relative humidity and temperature sensor. This monolithic CMOS IC integrates temperature and humidity sensor elements, an analog-to-digital converter, signal processing, calibration data, and an I<sup>2</sup>C host interface. The patented use of industry-standard, low-K polymeric dielectrics for sensing humidity enables the construction of a low-power, monolithic CMOS sensor IC with low drift and hysteresis and excellent long term stability. Both the temperature and humidity sensors are factory-calibrated and the calibration data is stored in the on-chip non-volatile memory. This ensures that the sensors are fully interchangeable, with no recalibration or software changes required. The Si7005 is packaged in a 4 mm x 4 mm QFN package and is reflow solderable.



## FEATURES

- Relative Humidity Sensor:
  - $\pm 4.5\%$  RH (maximum @ 20–80% RH)
- Temperature Sensor:
  - $\pm 0.5^\circ\text{C}$  accuracy (typical)
  - $\pm 1^\circ\text{C}$  accuracy (maximum @ 0 to  $70^\circ\text{C}$ )
  - 0 to 100% RH operating range
  - -40 to +85 °C (-GM)
  - 0 to +70 °C operating range (-FM)
- Wide operating voltage range (2.1 to 3.6 V)
- Low Power Consumption: 240  $\mu\text{A}$  during RH conversion
- I<sup>2</sup>C host interface
- Integrated on-chip heater
- 4 mm x 4 mm QFN package
- Excellent long term stability
- Factory calibrated
- Optional factory-installed filter/cover
  - Low-profile
  - Protection during reflow
- Excludes liquids and particulates (hydrophobic/oleophobic)

## APPLICATIONS

- Industrial HVAC/R
- Thermostats/humidistats
- Respiratory therapy
- White goods
- Micro-environments/data centers
- Automotive climate control and de-fogging
- Asset and goods tracking

## LOWEST POWER INTEGRATED RH SENSOR



## Humidity and Temperature Sensors

[www.silabs.com/humidity-sensor](http://www.silabs.com/humidity-sensor)

### Si7005 Development Tools

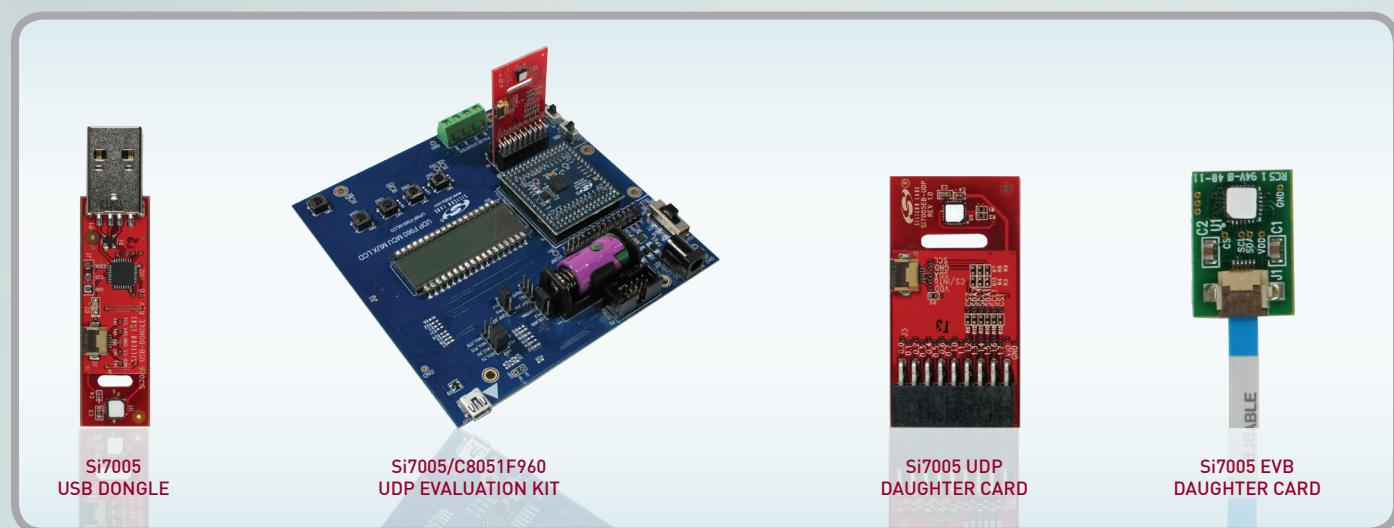
The Si7005 is supported by a suite of hardware and software development tools that facilitate testing/characterization, prototyping and software development.

The **Si7005USB-DONGLE** Evaluation kit comes with everything developers need to demonstrate and evaluate the Si7005. The board plugs into a PC via a USB socket. It has a connector for adding the Si7005USB-EVB.

The optional **Si7005-EVB** is a small daughter card that permits evaluation of the Si7005 at the end of a flex cable. It is a useful add-on to the Si7005USB-DONGLE (it plugs right in) if the user wants to put a sensor in a temperature/humidity chamber or a product prototype.

The **Si7005EVB-UDP** is a small daughter card that permits evaluation of the Si7005 in conjunction with certain Unified Development Platform (UDP) components such as the C8051F960 Ultra-Low Power Microcontroller Development Kit. It plugs directly into UDP MCU cards for fast prototyping and software development. In addition to an on-board Si7005, there is a connector for adding an Si7005-EVB via its flex cable, allowing the user to place the Si7005 in a temperature/humidity chamber or a product prototype.

The **Si7005EVB-UDP-F960** Development Kit combines the C8051F960 Ultra-Low Power Microcontroller Development Kit and the Si7005EVB-UDP daughter card with data logger demonstration code. It is a complete package designed to support hardware and software development using the Si7005 and Silicon Lab's ultra-low power MCUs. It ships with example software that implements a portable, battery-powered data logger/asset tracker.



### Digital I<sup>2</sup>C Humidity and Temperature Sensors

| PART NUMBER   | DESCRIPTION                                                                                                                             | TYP ACCURACY |     | TEMPERATURE RANGE | FILTER COVER | PACKAGE FORMAT | PACKAGE |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------|-----|-------------------|--------------|----------------|---------|
|               |                                                                                                                                         | TEMP.        | RH  |                   |              |                |         |
| Si7005-B-FM   | Compact digital relative humidity (RH) and temperature sensor IC, commercial grade                                                      | ±0.5 °C      | ±3% | 0 to 70 °C        |              | Tube           | QFN24   |
| Si7005-B-FM1  | Compact digital relative humidity (RH) and temperature sensor IC, commercial grade with pre-installed protective cover                  | ±0.5 °C      | ±3% | 0 to 70 °C        | •            | Tray           | QFN24   |
| Si7005-B-FM1R | Compact digital relative humidity (RH) and temperature sensor IC, commercial grade with pre-installed protective cover on tape and reel | ±0.5 °C      | ±3% | 0 to 70 °C        | •            | Tape-and-Reel  | QFN24   |
| Si7005-FMR    | Compact digital relative humidity (RH) and temperature sensor IC, commercial grade on tape and reel                                     | ±0.5 °C      | ±3% | 0 to 70 °C        |              | Tape-and-Reel  | QFN24   |
| Si7005-B-GM   | Compact digital relative humidity (RH) and temperature sensor IC, industrial grade                                                      | ±0.5 °C      | ±3% | -40 to 85 °C      |              | Tube           | QFN24   |
| Si7005-B-GM1  | Compact digital relative humidity (RH) and temperature sensor IC, industrial grade with pre-installed protective cover                  | ±0.5 °C      | ±3% | -40 to 85 °C      | •            | Tray           | QFN24   |
| Si7005-B-GM1R | Compact digital relative humidity (RH) and temperature sensor IC, industrial grade with pre-installed protective cover on tape and reel | ±0.5 °C      | ±3% | -40 to 85 °C      | •            | Tape-and-Reel  | QFN24   |
| Si7005-GMR    | Compact digital relative humidity (RH) and temperature sensor IC, industrial grade on tape and reel                                     | ±0.5 °C      | ±3% | -40 to 85 °C      |              | Tape-and-Reel  | QFN24   |

ООО "ЛайфЭлектроникс"

"LifeElectronics" LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибуторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибуторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помочь разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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