Compact, 1.8 V Digital Humidity Sensor

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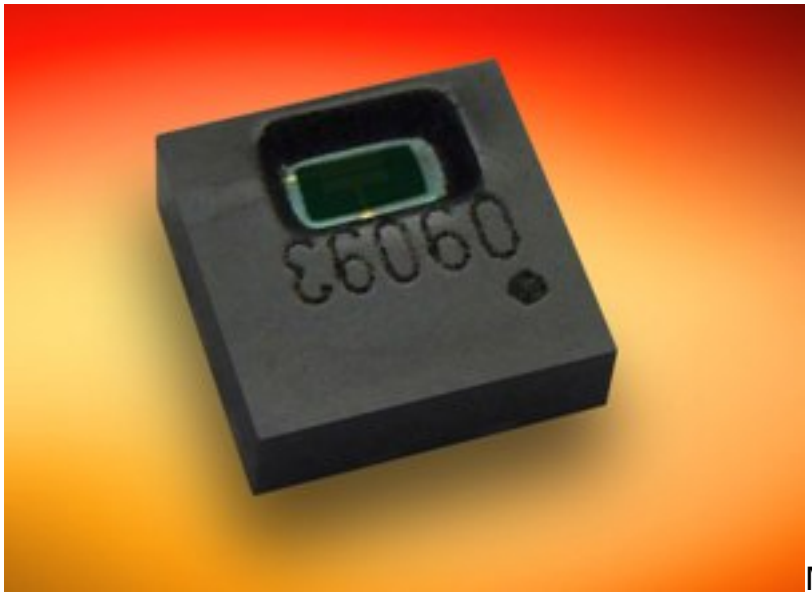

Measurement Specialties, a leading global manufacturer in sensor-based measuring of pressure/force, position, vibration, temperature, humidity and fluid properties, now offers the HTU21D, an ultra-compact, low power digital humidity/temperature sensor. The self-contained sensor interfaces directly with a micro-controller ensuring a better signal path as well as reducing costs, space requirements and power consumption.

The HTU21D, which requires only 1.8 V for operation, offers an adjustable resolution for humidity and temperature of 8/12-bit or 12/14-bit, depending on needed response time. Data transfer rates are as high as 400 kHz with a typical measurement accuracy of ±2% with a 0 to 100% relative humidity (RH) measuring range, and the sensor can withstand repeated condensation.

Measuring only 3 mm x 3 mm x 0.9 mm in a DFN (dual flat no leads) package, the HTU21D is ideal for a variety of demanding OEM applications found in the automotive, security, medical and home appliance industries. The typical draw of only 2.7 µW makes it useful in battery-powered equipment as well.

The new humidity sensor was designed for easy integration into high volume assembly lines to keep setup and manufacturing costs low. Each part, fully tested and calibrated, is interchangeable, requiring no calibration in standard conditions.

A unique laser-etched tracking code on each sensor, also included in the ASIC for ultimate traceability, helps maintain product quality through simplified part traceability. The HTU21D is also compatible with standard reflow assembly processes.

Designed for exceptional reliability, the sensor accurately measures temperature to 0.4°C across an extended range of -40°C to +125°C. Even after 150 hours of

condensation, the sensor needs only 10 seconds to recover and resume full operation.

The lead-free HTU21D comes standard with an I2C interface and is available in PWM and SDM packaging upon request. No external components are required and as little as 0.08 µA is consumed in sleep mode, with a power dissipation of up to 1.1 µAW. Long term drift is typically of ±5% RH per year.

Pricing for an HTU21D is $1.50 per unit in quantities of 100,000. Delivery time is dependent upon quantity ordered.

For more information, visit www.meas-spec.com [1].

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