Humidity Sensor

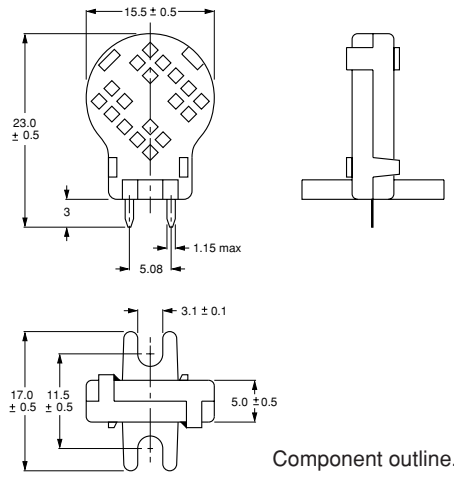
QUICK REFERENCE DATA

PARAMETER	VALUE	UNIT
Humidity range (RH)	10 to 90	%
Capacitance at +25 °C; 43% RH; 100 kHz	122 ±15%	PF
Tan δ at +25 °C; 100 kHz; 43% RH	≤0.035	
Sensitivity between 12 and 75% RH	0.4 ±0.05	PF/%RH
Frequency	1 to 1000	kHz
Temperature dependence	0.1	%RH/K
Response time in minutes (to 90% of indicated RH change at +25 °C, in circulating air):		
between 10 and 43% RH	<3	
between 43 and 90% RH	<5	
Hysteresis (for RH excursion of 10 to 90 to 10%)	≈3	%
Maximum AC or DC voltage	15	V
Storage humidity range (RH)	0 to 100	%
Ambient temperature range:		
operating	0 to +85	°C
storage	–25 to +85	°C
Drop test:		
height of free fall	1	M
Mass	≈1.3	G

Note

Unless otherwise stated, measurements are in accordance with *"IEC publication 60539"*.
Stability is in accordance with *"CECC 43000"* and *"IEC 60068-2"*.

DIMENSIONS in millimeters



Component outline.

APPLICATIONS

- Humidity measurements in electronic hygrometers for domestic use
- Self-regulating air humidifiers, etc.

DESCRIPTION

This capacitive atmospheric humidity sensor consists of a non-conductive foil, which is covered on both sides with a layer of gold. The dielectric constant of the foil changes as a function of the relative humidity of the ambient atmosphere and, accordingly, the capacitance value of the sensor is a measure for relative humidity. The foil is clamped between contact springs and assembled in a plastic housing. It is provided with two connecting pins which fit printed-circuit boards with a grid pitch of 2.54 mm, provision is also made for fastening with 3 mm bolts. The characteristics are not affected by incidental water condensation on the sensor foil. It should not be exposed to either acetone or chlorine vapours.

MOUNTING

The device can be soldered directly on to a printed-circuit board or fastened with 3 mm bolts.

SOLDERING

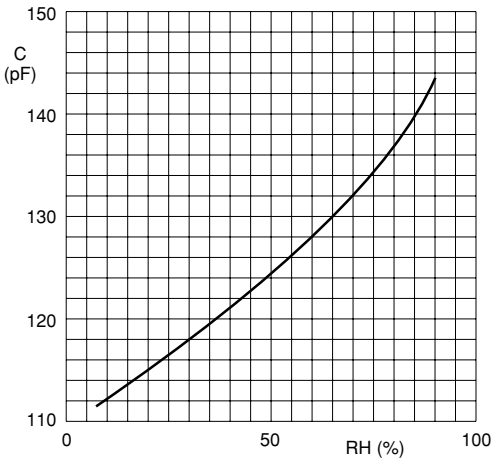
Solderability: ≤240 °C; ≤4 s.

Resistance to heat: ≤240 °C; ≤4 s.

ROBUSTNESS OF TERMINATIONS

Tensile strength: 10 N.

ELECTRICAL CHARACTERISTICS



Typical capacitance as a function of relative humidity.