



P14-FemtoCap

Capacitive Humidity Sensor

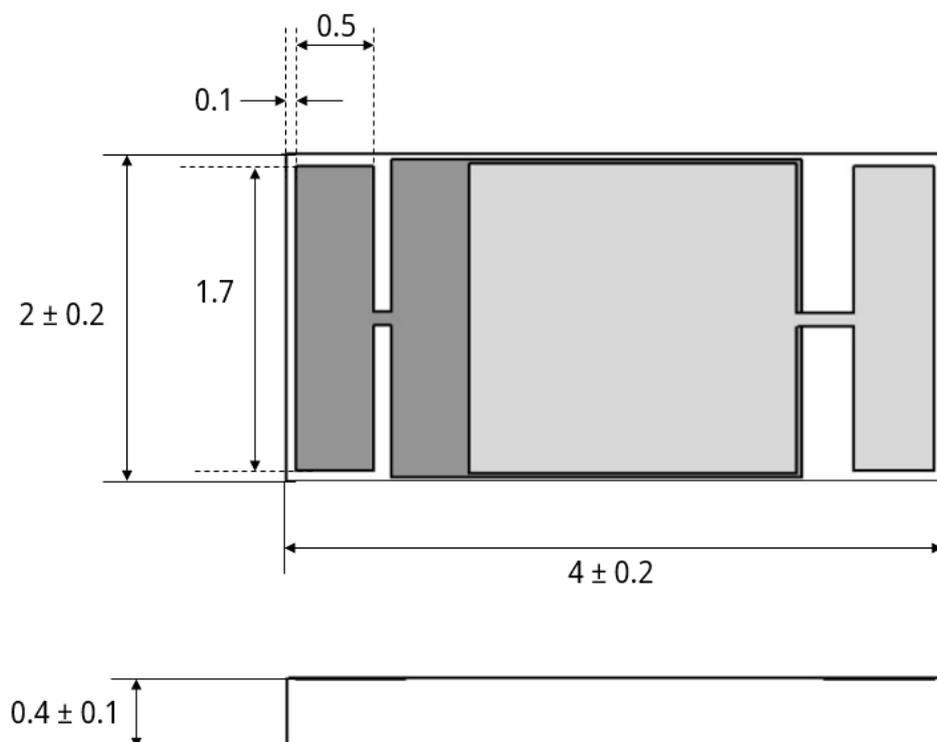
Optimal for various humidity applications

Benefits & characteristics

- High chemical resistance
- Wide temperature range
- Resistance to condensation
- Fast recovery time
- Very low drift
- Excellent price/performance ratio
- Solderable and bondable (fully automated assembly)
- Customer-specific sensor available upon request



Illustration





Technical data



Dimensions (L x W x H in mm): 4.0 x 2.0 x 0.4

Operating humidity range 0 % RH to 100 % RH (maximal dew point +85 °C)



Operating temperature range: -50 °C to +150 °C



Capacitance (C30):* 180 pF ±50 pF (at 30 % RH and +23 °C)

Typical sensitivity (at C30 = 180 pF): 0.3 pF/% RH (15 % RH to 90 % RH)



Operating humidity range: 0 % RH to 100 % RH (maximal dew point +85 °C)

Loss factor: < 0.01 (at +23 °C, at 10 kHz, at 90 % RH)



Linearity error: < 1.5 % RH
(15 % RH to 90 % RH at +23 °C after one point calibration)



Hysteresis: < 1.5 % RH

Response time t_{63} : < 3 s (50 % RH to 0 % RH at +23 °C)

Temperature dependence (typical):
 $\Delta \% RH = (B1 \times \% RH + B2) \times T [^\circ C] + (B3 \times \% RH + B4)$
B1 = 0.0014 [1/ °C] B2 = 0.1325 [% RH/ °C]
B3 = -0.0317 B4 = -3.0876 [% RH]

Measurement frequency range: 1 kHz to 100 kHz (recommended 10 kHz)

Maximal supply voltage: < 12 V_{pp} AC

Signal form: alternating signal without DC bias

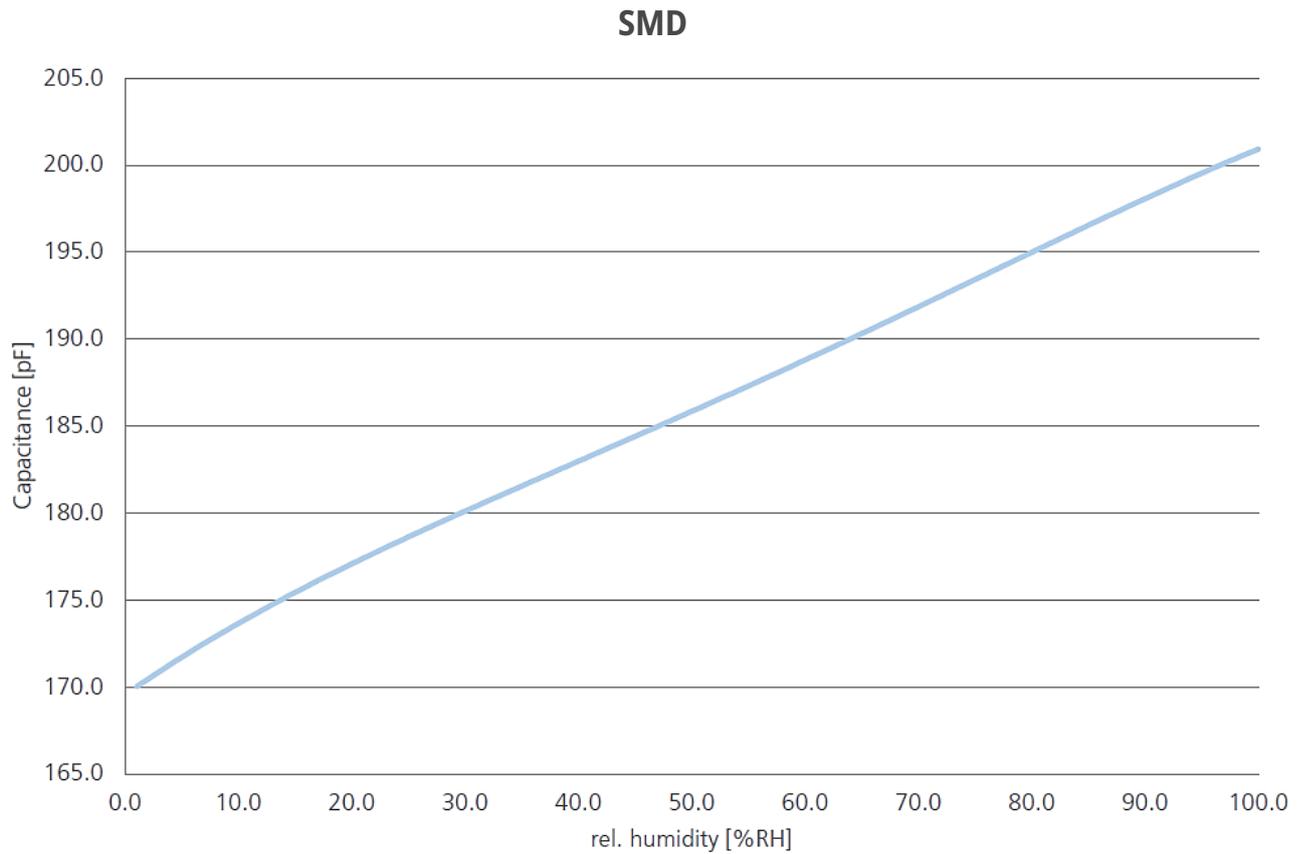
Connections: * SMD, automatic assembly compatible

[*Customer-specific alternatives available](#)

The calibration of the sensor must be done 5 days after soldering at the earliest



Characteristic Curve



Order information

| Order code | Product name (secondary reference) | Special |
|------------|------------------------------------|---------|
| 103563 | P14 FemtoCap-G (180 pF ± 50 pF) | |

Related documents

| Document | File name |
|-----------------------------------|-----------|
| Application note Humidity sensors | AH_E |



Innovative Sensor Technology IST AG • Stegrütistrasse 14 • 9642 Ebnat-Kappel • Switzerland
 +41 71 992 01 00 • info@ist-ag.com • www.ist-ag.com

All mechanical dimensions are valid at 25 °C ambient temperature, if not differently indicated • All data except the mechanical dimensions only have information purposes and are not to be understood as assured characteristics • Technical changes or product specifications without previous announcement reserved • The information on this data sheet was examined carefully and will be accepted as correct; No liability in case of mistakes • Load with extreme values during a longer period can affect the reliability • The material contained herein may not be reproduced, adapted, merged, translated, stored, or used without the prior written consent of the copyright owner • All rights reserved.