



# P14 FemtoCap-G\_5

## Capacitive Humidity Sensor

### Optimal for automotive and white good 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<sup>1)</sup>



1) For actual size, see dimensions

#### Technical Data

|                                                    |                                                                                                                                                                                                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dimensions (L x W x H in mm):                      | 4 x 2 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 (C <sub>30</sub> ):*                   | 180 pF ±50 pF (at 30 % RH and +23 °C)                                                                                                                                                                                       |
| Typical sensitivity (at C <sub>30</sub> = 180 pF): | 0.3 pF/% RH (15 % RH to 90 % RH)                                                                                                                                                                                            |
| 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 <sub>63</sub> :                    | < 3 s (50 % RH to 0 % RH at +23 °C)                                                                                                                                                                                         |
| Temperature dependence (typical):                  | $\Delta \% RH = (B1 \times \% RH + B2) \times T [^{\circ}C] + (B3 \times \% RH + B4)$<br>B1 = 0.0014 [1/ °C]                      B2 = 0.1325 [% RH/ °C]<br>B3 = -0.0317                                B4 = -3.0876 [% RH] |
| Measurement frequency:                             | 1 kHz to 100 kHz (recommended 10 kHz)                                                                                                                                                                                       |

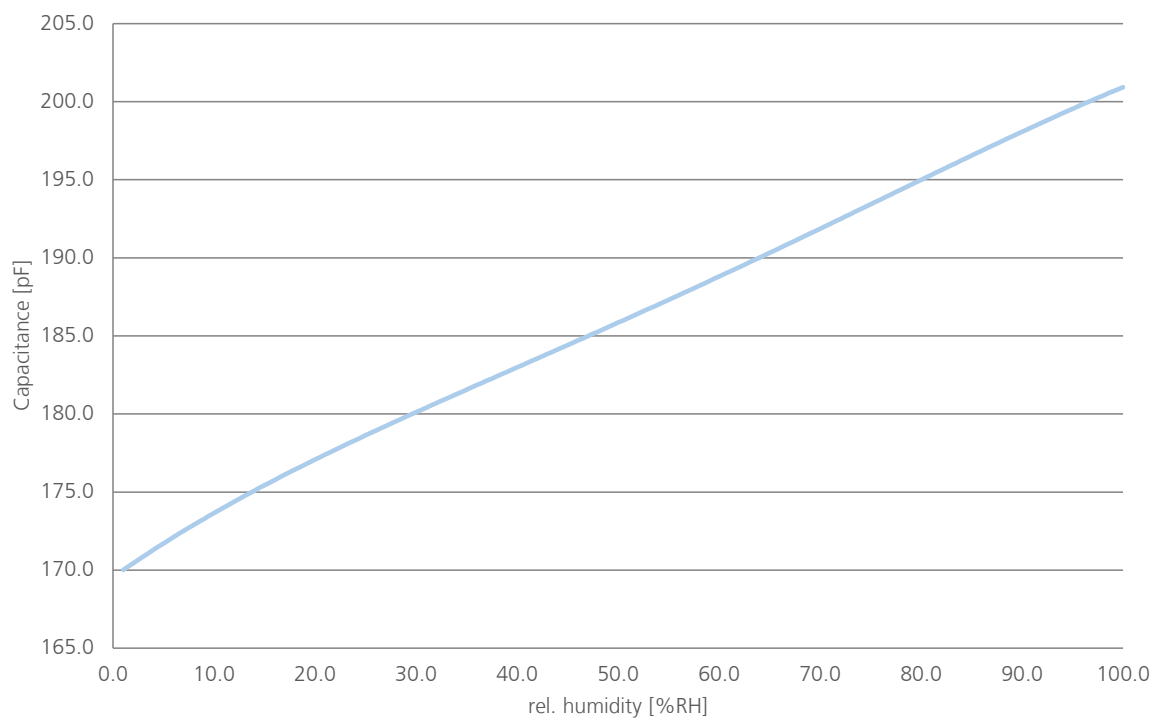


|                         |                                    |
|-------------------------|------------------------------------|
| Maximal supply voltage: | < 12 V <sub>pp</sub> AC            |
| Signal form:            | alternating signal without DC bias |
| Connections:            | SMD, automatic assembly compatible |
| Packaging:              | packed in a blister of 5 pcs       |

\* Customer-specific alternatives available

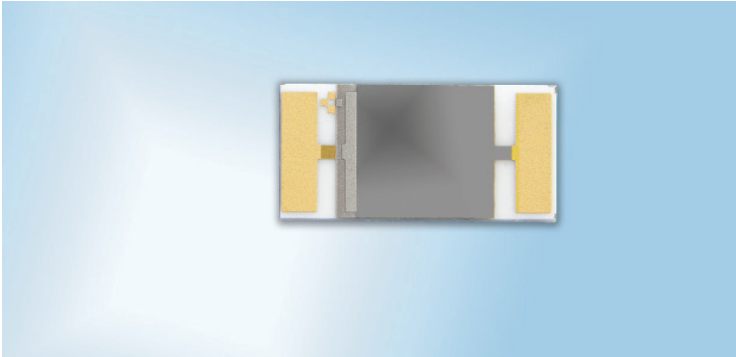
The calibration of the sensor must be done 5 days after soldering at the earliest.

## Characteristic Curve





Product Photo



Order Information - SMD

|                       |                                |
|-----------------------|--------------------------------|
|                       | P14 FemtoCap-G_5 (180pF ±50pF) |
| Order code            | 153416                         |
| Mouser Product number | 916-153416                     |