## Vishay BCcomponents



# **Humidity Sensor**







AUION DEFENDENCE DATA		
QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Humidity range (RH)	10 to 90	%
Capacitance at + 25 °C; 43 % RH; 100 kHz	122 ± 15 %	pF
Tan $\delta$ 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
Weight	≈ 1.3	g

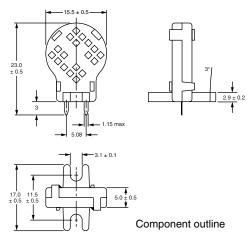
#### Note

Unless otherwise stated, measurements are in accordance with "IEC publication 60539"

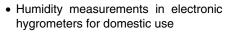
Component is 100 % lead (Pb)-free

Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC Stability is in accordance with "CECC 43000" and "IEC 60068-2"

#### **DIMENSIONS** in millimeters



#### **APPLICATIONS**





· 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.

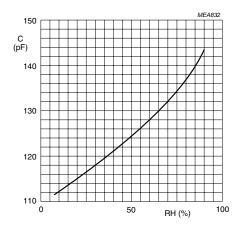
#### **SOLDERING**

Solderability:  $\leq$  240 °C;  $\leq$  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

Revision: 24-Jun-09

For technical questions, contact: nlr@vishay.com Document Number: 29001



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