



P14 - TR

Capacitive Humidity Sensor

Product

This sensor has significantly reduced batch tolerances regarding offset capacitance. For most applications, this dramatically cuts down design-in time of embedding electronics, as compensation circuitry and layout becomes simpler, smaller and more robust. Beyond that, linearization and offset compensation regularly can be achieved at better resolution and thus higher accuracy.



Key to success was application of IST's proprietary heavy duty polymer P14 with its high quality (highly linear behavior, inert against several chemical vapors and agents, virtually drift free) in conjunction with the precise laser trimming procedure. Within most applications this gives you direct interchangeability and further linearization efforts are not necessary.

Its miniature size adds to these features and paves the way for this sensor being used not only within precision test and measurement applications but also within highly impacted industrial environments. There the functionality of these sensors has to remain stable over years, as the mounting space is often difficult to access and/or production downtime can not be afforded. In applications where accuracies of 5% are sufficient, you do not even have to calibrate.

Advantages

- Ultra slim dimensions
- Excellent long term stability
- Minimal external circuitry
- Excellent linearity
- Outstanding sensitivity
- Chemical robustness
- Wave or reflow soldering
- Dewing resistant – fast recovering time after dewing, also at very high dewpoint temperatures
- Replaceable
- RoHs conform

Technical Data

	Wired	SMD
		
Humidity Operating Range:	0 ... 100% relative humidity	0 ... 100% relative humidity
Operating Temperature Range:	-50 ... +150°C	-50 ... +150°C
Capacitance (at 23°C and 30% RH):	120 pF ± 1,0 pF	180 pF ± 1,0 pF
Sensitivity (15 ... 90% RH):	0,20 pF / % RH	0,30 pF / % RH



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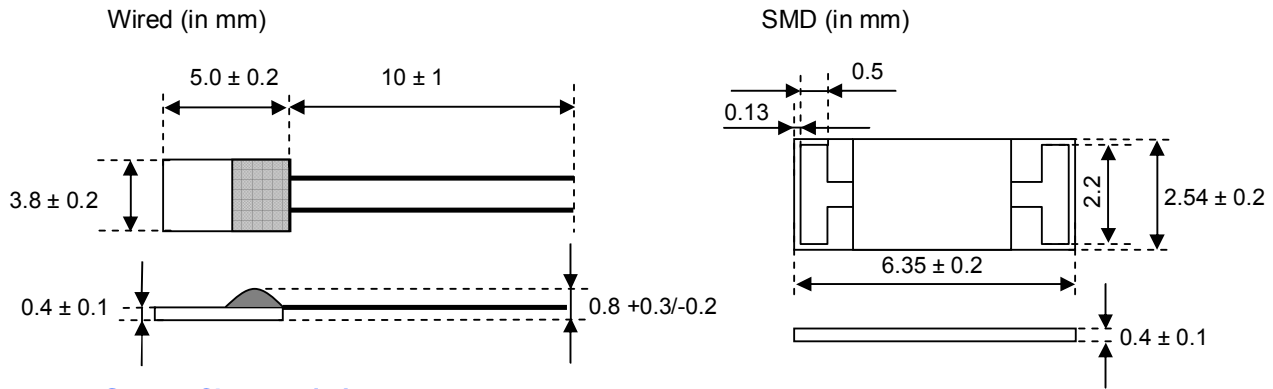
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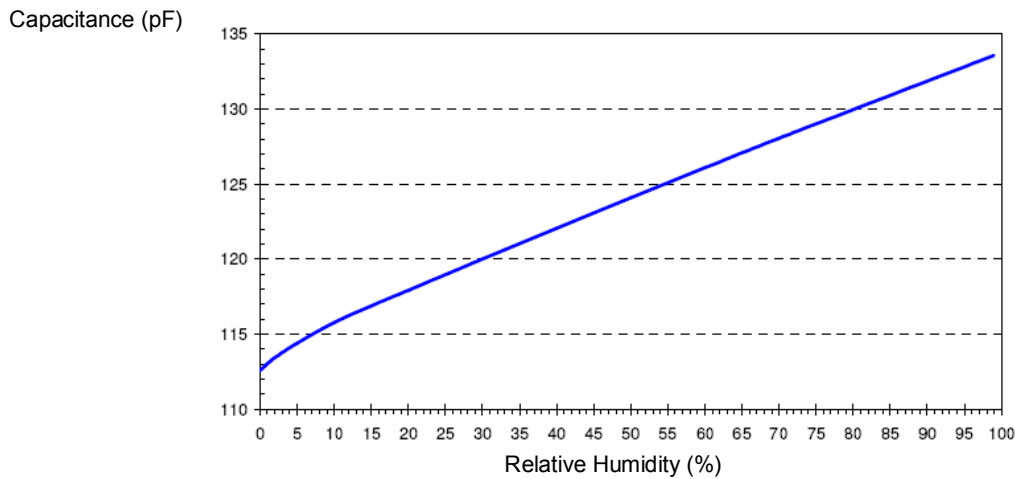
Technical Data

	Wired	SMD
Loss Factor (at 23°C, at 10 kHz, at 90% RH.):	< 0,01	< 0,01
Nonlinearity:	< 1,5% RH (15 ... 90% RH at 23°C, after one point calibration) < 5% RH uncalibrated	< 1,5% RH (15 ... 90% RH at 23°C, after one point calibration) < 5% RH uncalibrated
Response Time T ₆₃ :	< 7 s (50% RH → 0% RH) at 23°C	< 7 s (50% RH → 0% RH) at 23°C
Frequency Range:	1 ... 100 kHz (recommend 10 KHz)	1 ... 100 kHz (recommend 10 KHz)
Maximum Operating Voltage:	< 12 Vpp AC	< 12 Vpp AC
Signal Form:	alternating signal without DC bias	alternating signal without DC bias
Connectors:	Wires or customer specific	SMD

Construction Sizes



Sensor Characteristic



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