



# Handling guidelines for humidity sensors

## P14 SMD and P14 Femtocap

### Packaging

Type:	Delivery packaging:
P14 SMD	Tray (448 pieces)
P14 Femtocap	Tray (400 pieces)

The sensors in the trays are covered with a dummy tray. Therefore, please consider careful handling while opening the trays. The active sensor area is face down.

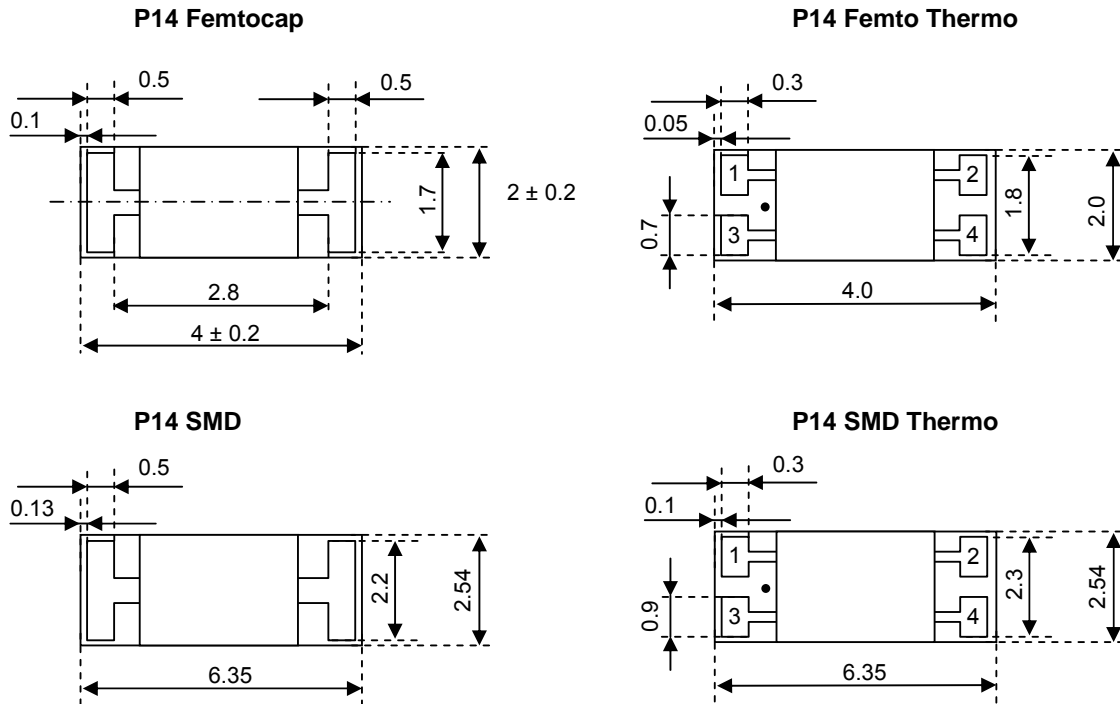
### Storage

The sensors must be stored in the original trays only.

Storage temperature  $-10^{\circ}\text{C} \dots +50^{\circ}\text{C}$  /  $14 \dots 122^{\circ}\text{F}$  (temperature range of trays)

### Layout geometry

The following information is in mm.



Please consider the position and size of the SMD soldering pads to be similar to the rectangular part outside of the connecting pads.



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### Sensor handling

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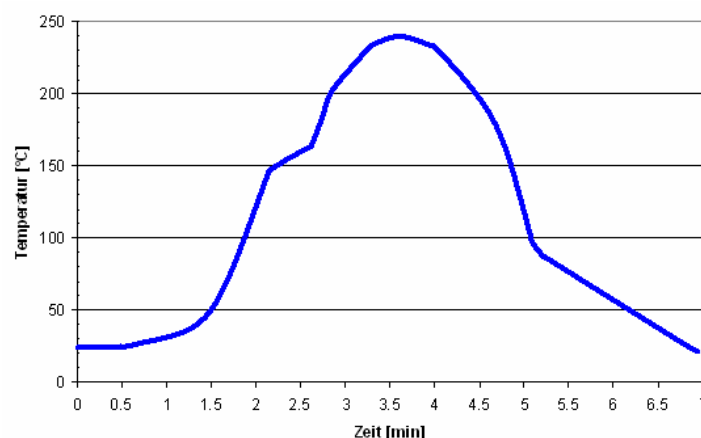
- The sensing area must not be touched, damaged or scratched. While soldering, no flux or solder must touch the sensing area.
- The sensor must not be exposed to mechanical stress, e.g. bending or touching with sharp-edged objects.
- Transporting of the sensor is only possible using a suction tool at its backside, contact pads or outer run.

### Soldering profile

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- The soldering profile depends upon the applied soldering paste and the reflow oven. The profiles are to be requested from the solder paste manufacturer.
- Unless otherwise identified in the documents of the manufacturer, it is generally considered to not exceed a time of 1 to 2 minutes, with a maximum temperature allowed of **240°C**.
- The sensor element may not be calibrated directly after soldering because the soldering temperature can affect the calibration. Therefore, a five day period after the soldering process is recommended before element calibration.
- Recommended solder paste: SAC305 (96.5Sn / 3.0Ag / 0.5Cu)  
Supplier: Indium Corporation

### Typical Reflow-temperature soldering-profile (lead free):



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## Soldering by hand

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- Up to **320°C** briefly, and only in the soldering pad areas.

## Cleaning of the sensor

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- The sensor can be cleaned in Isopropanol at 23°C only; followed by drying.
- It is possible to clean the sensor with oil-free and filtered clean air, e.g. removing dust particles.

## Patent advices

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- For precautionary reasons, IST AG Switzerland denies any liability of patent infringement caused by the application of patented circuit board designs and board layouts of third parties.
- Note: the use of PCB sealing methods for humidity-sensitive PCB materials surrounding the humidity sensor is patented by third parties.
- Further third party patents include the improvement of thermal conductivity between a humidity sensor and an adjacent temperature sensor.
- The infringement of these and similar layout-based patents must be avoided by design specific means, including but not limited to the selection of appropriate PCB materials and/or sufficient convection in the sensor area. Another method would be the hermetic separation of the sensor area from the rest of the PCB area through housing-specific means.



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