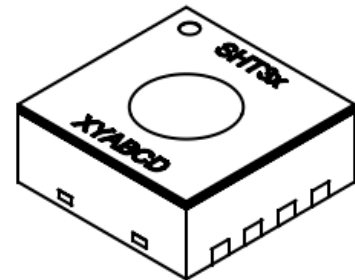


Datasheet Membrane Option

For SHT3x Humidity and Temperature Sensors

- Protects the sensor from water and dust, the membrane is classified according to IP68.
- Allows for sensor use under harsh environmental conditions.
- Withstands multiple standard reflow cycles.
- Lasts over total sensor lifetime.
- Delivered in T&R Packaging.
- On-package membrane patent protected¹.



Product Summary

The SHT3x membrane is a polyimide foil, dedicated to protect the sensor opening from water and dust according to IP68. It will thus allow for sensor use under harsh environmental conditions, where spray water and

high exposure to dust is challenging for accurate sensor performance. Due to the minimum enclosed air volume, the response time of the RH signal is the same as the value achieved by the uncovered sensor.

Datasheet: Intention of Use

This datasheet is meant to provide all relevant specifications for the additional membrane option of the RH&T-sensors of type SHT3x. All SHT3x products coming with the membrane option are listed in Table 1,

together with their respective order number. **Further information about sensor performance, communication protocols etc. is to be found in the respective main datasheets.**

1 General information

The SHT3x membrane is an optional PI foil, directly attached to the top surface of the sensor. The IP68 membrane completely covers the sensor opening and thus acts as a reliable shield against pollution from spray water and dust. The whole package withstands multiple reflow cycles.

Although the membrane provides water and dust protection according to IP68, it does not in general prevent contamination with volatile chemicals. Detailed handling and storage instructions in the document “SHTxx handling instructions” also apply to sensors with the membrane option.

2 Specifications of the Membrane

The PI membrane has a nominal thickness of 40 µm. It is designed to provide high filtration performance for particles of 200 nm size.

Due to the small dead volume between sensor surface and membrane layer and the high permeability of the membrane, the response time of the RH sensor stays within the specification of the sensor without membrane.

¹ US 7741950

3 Technical Drawing

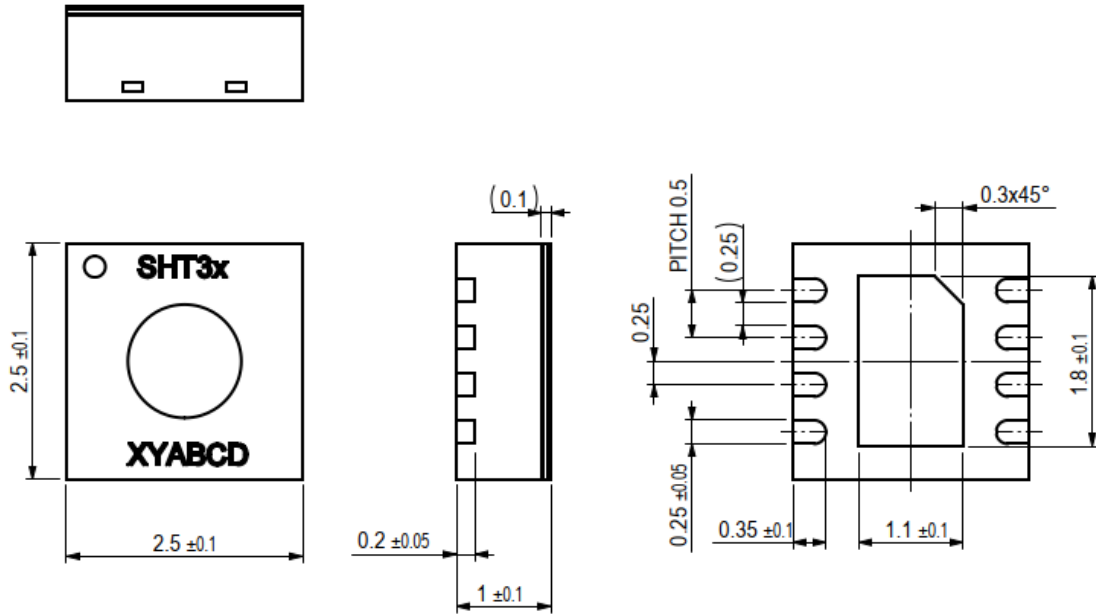


Figure 1 Dimensional drawing of SHT3x membrane sensor package.

4 Shipping Package

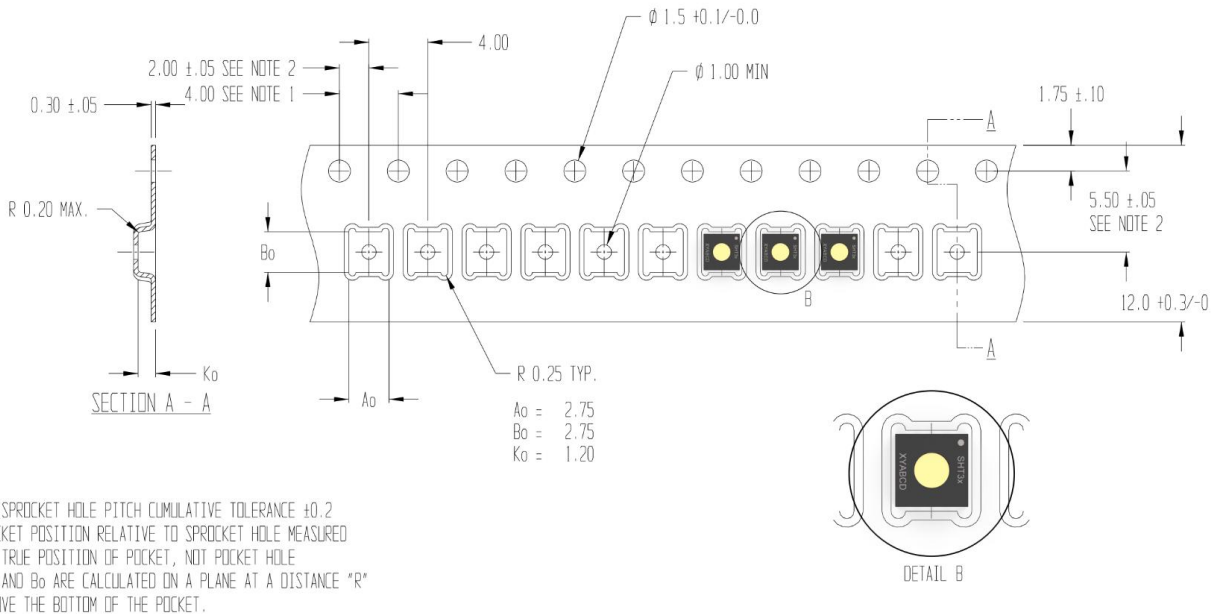


Figure 2 Technical drawing of the packaging tape with sensor orientation in tape. Header tape is to the right and trailer tape to the left on this drawing. Dimensions are given in millimeters.

5 Quality

5.1 Material Contents

The device is fully RoHS and WEEE compliant, e.g. free of Pb, Cd, and Hg.

Manufacturer Part Number	Quantity	Orderable Part Number
SHT30-DIS-F2.5kS	2500	3.001.479
SHT31-DIS-F2.5kS	2500	3.001.480
SHT31-DIS-F10kS	10000	3.001.481
SHT35-DIS-F2.5kS	2500	3.001.482

6 Ordering Information

Different SHT3x output versions can be ordered in tape and reel packaging as given in Table 1. The reels are delivered in sealed antistatic ESD bags.

Table 1 SHT3x membrane ordering options.

Revision History

Date	Version	Page(s)	Changes
February 2016	0.1	all	Initial release
October 2016	1		Updated membrane dimensions Membrane specifications introduced
January 2017	2	2	Updated shipping package
August 2019	3	1	Included "Protected by exclusive license for several patents"
October 2024	4	1	Updated Patent citation and status
March 2025	4.1	1	Updated product summary
February 2026	4.2	3	"Name" changed to "Manufacture Part Number", "Order Number" changed to "Orderable Part Number" in Table 1
April 2026	5	all	Updated a render membrane image and a technical drawing of the membrane PTFE membrane changed to polyimide, IP67 changed to IP68 Updated orderable article options in Table 1
July 2026	6	1 - 2	Updated dimensional drawings

Important Notices

Warning, Personal Injury

Do not use this product as safety or emergency stop devices or in any other application where failure of the product could result in personal injury (including death). Do not use this product for applications other than its intended and authorized use. Before installing, handling, using or servicing this product, please consult the data sheet and application notes. Failure to comply with these instructions could result in death or serious injury.

If the Buyer purchases or uses SENSIRION products for any unintended or unauthorized application, Buyer shall defend, indemnify and hold harmless SENSIRION and its officers, employees, subsidiaries, affiliates and distributors against all claims, costs, damages and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if SENSIRION is allegedly negligent with respect to the design or the manufacture of the product.

ESD Precautions

The inherent design of this component causes it to be sensitive to electrostatic discharge (ESD). To prevent ESD-induced damage and/or degradation, take customary and statutory ESD precautions when handling this product. See application note "ESD, Latchup and EMC" for more information.

Warranty

SENSIRION solely warrants to the original purchaser of this product for a period of 12 months (one year) from the date of delivery that this product is of the quality, material and workmanship defined in SENSIRION's published specifications of the product. Within such period, if proven to be defective, SENSIRION shall as sole and exclusive remedy, in SENSIRION's discretion, repair this product or send a replacement product, free of charge to the Buyer, provided that:

- notice in writing describing the defects shall be given to SENSIRION within fourteen (14) days after their appearance;
- such defects shall be found, to SENSIRION's reasonable satisfaction, to have arisen from SENSIRION's faulty material or workmanship;
- the defective product shall be returned to SENSIRION's factory at the Buyer's expense; and
- the warranty period for any repaired or replaced product shall be limited to the unexpired portion of the original period.

The Buyer shall at its own expense arrange for any dismantling and reassembly that is necessary to repair or replace the defective product. This warranty does not apply to any product which has not been installed or used within the specifications recommended by SENSIRION. EXCEPT FOR THE WARRANTIES EXPRESSLY SET FORTH HEREIN, SENSIRION MAKES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT. ANY AND ALL WARRANTIES, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED AND DECLINED.

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SENSIRION reserves the right, without further notice, (i) to change the product specifications and/or the information in this document and (ii) to improve reliability, functions and design of this product.

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