

深 圳 市 深 新 晖 电 子 有 限 公 司

SHEN ZHEN SHENXINHUI ELECTRONICS CO., LTD.

SXHN-423

规
格
书

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名称	湿敏电阻	 SHENZHEN SHENXINHUI ELECTRONICS CO., LTD. 深圳市深新晖电子有限公司	发行日期	2011.11.08
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1. Scope of application

These specifications are applicable to the humidity sensor “ SXHN-423 ”.

2. Spec. name & Type

SX HN – 423

(1) (2) (3)

(1) Company Name

(2) South Korea

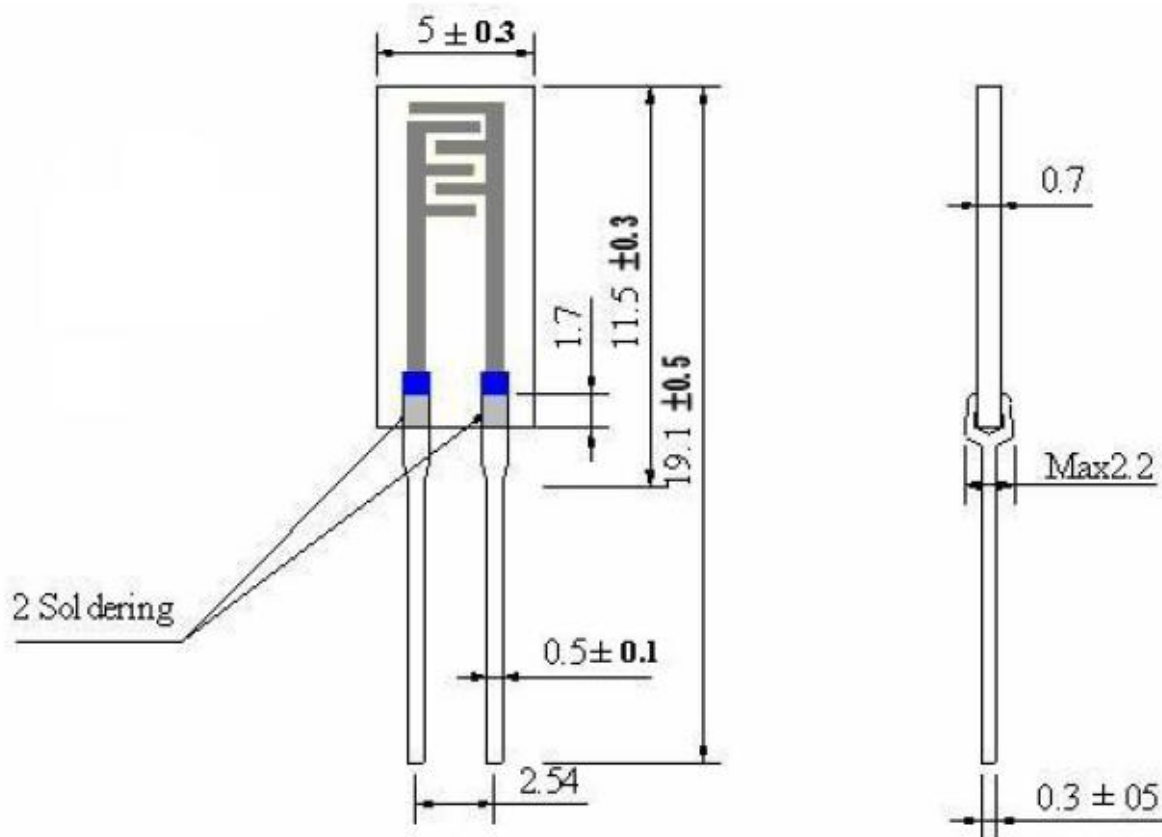
(3) 23KΩ.

3. Electrical characteristics

3-1. Rated voltage	: AC 1V (50Hz ~ 1kHz) (Max. peak value, sine wave)
3-2. Rated power	: AC 0.26mW (Max. peak value, sine wave)
3-3. Operating temperature range	: 0 ~ 60℃
3-4. Operating humidity range	: 20 ~ 90%RH
3-5. Storage temperature range	: -30 ~ 85℃
3-6. Storage humidity range	: Less than 95%RH
3-7. Standard characteristic	: 23 KΩ (at 25℃, 60%RH, 1kHz)
3-8. Humidity Accuracy	: ± 3%RH

4. Dimension

Unit: mm



5. Mechanical characteristics

5-1. Resistance to soldering heat

The Humidity Sensor should be kept its original appearance and electrical characteristics after soldered for 3 seconds at $260 \pm 5^\circ\text{C}$.

5-2. Strength of terminations(tensile)

Lead terminal shall be secured by the body after it shall be pulled with the specified force of 500g for 10 seconds in the axial direction of lead terminal.

5-3. Shock resistance

No abnormal in the appearance and electrical characteristics after naturally drop down 3 times at random onto a hard wooden plate from the height of 75cm.

5-4. Vibration resistance

Not to be abnormal in the appearance and electrical characteristics after have been vibration-tested for 2 hours each in the directions of X-Y-Z, at the frequency of 10~55Hz, and amplitude of 1.5mm(10-55-10).

6. Reliability

6-1. Humidity resistance

Leave for 1000 hours in the environment of 40℃ and 90%RH or less.

Then, further leave for 60 minutes under the normal temperature and humidity.

After that, the value is changed within $\pm 5\%$ RH from the initial value.

6-2. Humidity cycle

One cycle shall be to leave for 30 minutes under 25℃, 30%RH continue to leave for 30 minutes while raising to 90%RH, leave for 30 minutes under 90% and further leave for 30 minutes while lowering to 30%RH. Repeat such 300 cycles.

Then, leave for 60 minutes under the normal temperature and humidity.

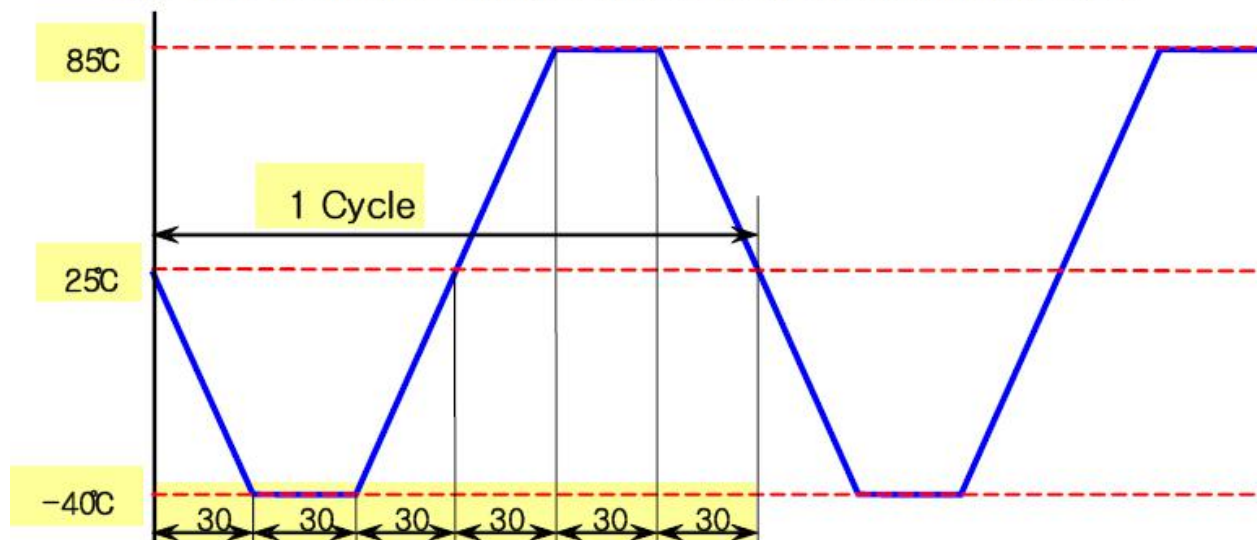
After that, the value is changed within $\pm 5\%$ RH from the initial value.

6-3. Temperature cycle

One cycle shall be to leave for 30 minutes under -40℃. Continue to leave for 60 minutes while raising the temperature to 85℃, leave for 30 minutes under 85℃ and further leave for 60 minutes while lowering the temperature to -40℃. Repeat such 100 cycles.

Then, leave for 60 minutes under the normal temperature and humidity.

After that, the value is changed within $\pm 5\%RH$ from the initial value.



6-4. Cooling resistance

Leave for 1000 hours in the environment of -40°C . Then, further leave for 60 minutes under the normal temperature and humidity. After that, the value is changed within $\pm 5\%RH$ from the initial value.

6-5. Heating resistance

Leave for 1000 hours in the environment of 85°C and 30%RH or less. Then, further leave for 60 minutes under the normal temperature and humidity. After that, the value is changed within $\pm 5\%RH$ from the initial value.

7. Remarks on using

7-1. Positively do not impress DC to the humidity sensor.

7-2. Avoid dew and drench.

7-3. Use in relatively clean air, take full care of using the atmosphere of below gas.

1) Salt.

2) Non-Organic gas...Sulfide dioxide, chlorine, ammonium.

3) organic gas...Alchole, glycols, aldehydes, etc.

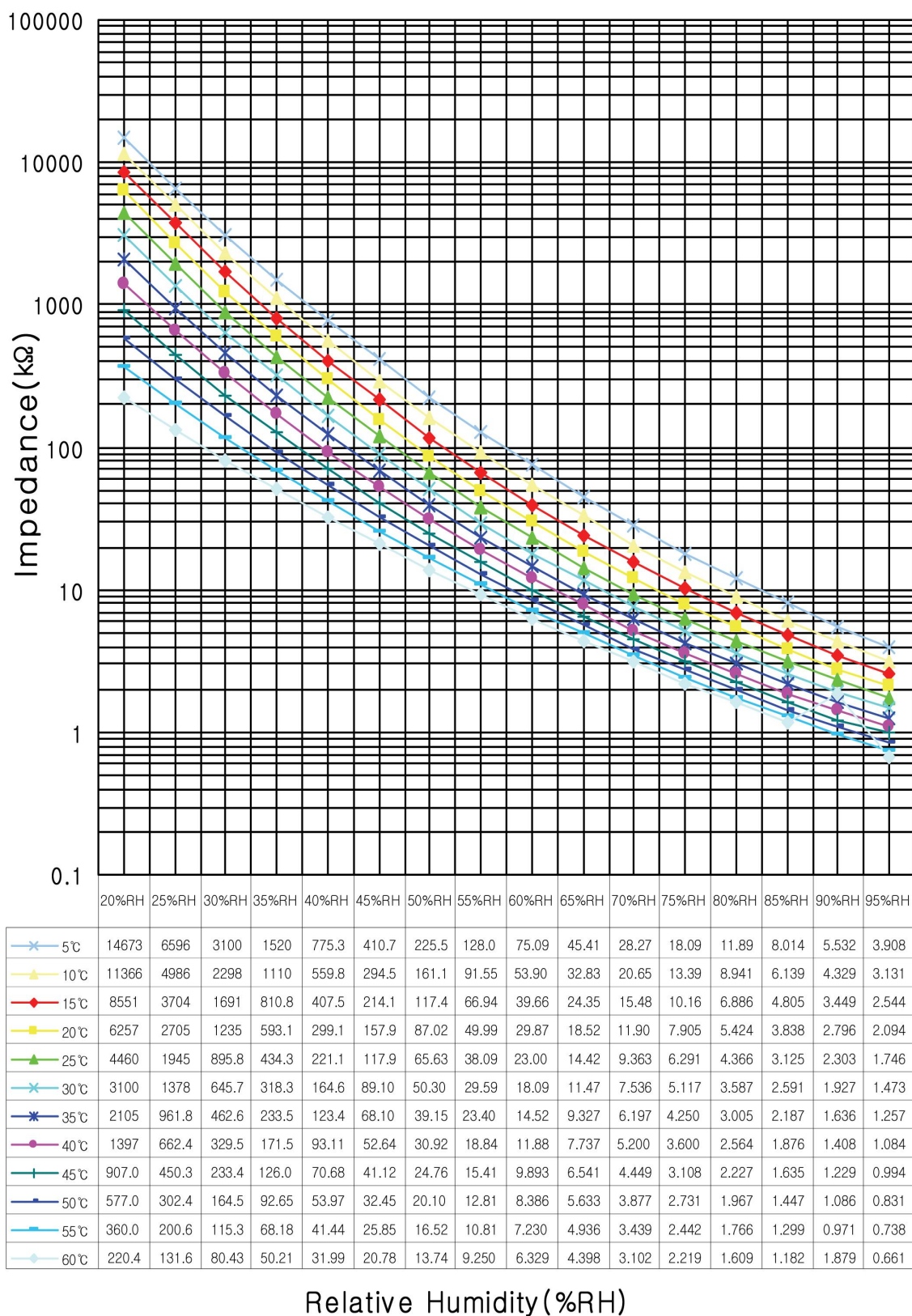
4) Soldering for 3 seconds at temperature($260^{\circ}\text{C} \pm 5^{\circ}\text{C}$), protect the sensor film from flux/fume and high temperature during process.

8. Impedance vs %RH

UNIT : kΩ at 1 kHz

$\frac{\text{°C}}{\text{\%RH}}$	5℃	10℃	15℃	20℃	25℃	30℃	35℃	40℃	45℃	50℃	55℃	60℃
20%RH	14673	11366	8551	6257	4460	3100	2105	1397	907.0	577	360.0	220.4
25%RH	6596	4986	3704	2705	1945	1378	961.8	662.4	450.3	302.4	200.6	131.6
30%RH	3100	2298	1691	1235	895.8	645.7	462.6	329.5	233.4	164.5	115.3	80.43
35%RH	1520	1110	810.8	593.1	434.3	318.3	233.5	171.5	126.0	92.65	68.18	50.21
40%RH	775.3	559.8	407.5	299.1	221.1	164.6	123.4	93.11	70.68	53.97	41.44	31.99
45%RH	410.7	294.5	214.1	157.9	117.9	89.1	68.10	52.64	41.12	32.45	25.85	20.78
50%RH	225.5	161.1	117.4	87.02	65.63	50.30	39.15	30.92	24.76	20.1	16.52	13.74
55%RH	128.0	91.55	66.94	49.99	38.09	29.59	23.40	18.84	15.41	12.81	10.81	9.250
60%RH	75.09	53.90	39.66	29.87	23.00	18.09	14.52	11.88	9.893	8.386	7.23	6.329
65%RH	45.41	32.83	24.35	18.52	14.42	11.47	9.327	7.737	6.541	5.633	4.936	4.398
70%RH	28.27	20.65	15.48	11.90	9.363	7.536	6.197	5.200	4.449	3.877	3.439	3.102
75%RH	18.09	13.39	10.16	7.905	6.291	5.117	4.25	3.600	3.108	2.731	2.442	2.219
80%RH	11.89	8.941	6.886	5.424	4.366	3.587	3.005	2.564	2.227	1.967	1.766	1.609
85%RH	8.014	6.139	4.805	3.838	3.125	2.591	2.187	1.876	1.635	1.447	1.299	1.182
90%RH	5.532	4.329	3.449	2.796	2.303	1.927	1.636	1.408	1.229	1.086	0.971	1.879
95%RH	3.908	3.131	2.544	2.094	1.746	1.473	1.257	1.084	0.994	0.831	0.738	0.661

9. Typical Characteristics (Humidity Curve)



10. Typical Characteristics (Humidity Response time)

