深圳市源建传感科技有限公司
SHENZHEN YJ SENSOR TECHNOLOGY CO.,LTD

SPECIFICATIONS
（Humidity sensor SJL31SY）

Resistance Type of Humidity Sensor

Shenzhen YJ Sensor Technology Co., Ltd.
Address: East of 3rd Floor,15# Building, Majialong Industrial Zone, Nanshan District, Shenzhen, Guangdong, China
Tel： (+86)755-2658-8758 Fax: (+86)755-2674-7274
Mobile：(+86)15013668479
Contact Person:Mr. Ni
Email：15013668479@139.com

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1. Applications

This specifications is applied to relative humidity sensor Type SJL31SY.

Guaranteed impedance 31kΩ at 25℃,60%RH

2. Ratings & electronic characteristics

Supply voltage	Less than AC5.0V AC1.0V is recommended.
Test wave shape	Sine or square wave shape. With frequency 500~2,000Hz 1kHz is recommended.
Power consumption	Less than 2mW
Humidity range	20－95%RH(in operation) 10－95%RH(in storage)
Temperature range	0－50℃(in operation) -20－70℃(in storage)
Hysteresis	<2%RH
Response time	moisture absorption time <15S moisture doffing time <20S
Stability	<2%RH Per year
Interchangable characteristics	(-3%RH~3%RH)
Water tolerent	<3%RH accuracy variation when dipping into water for 30minute, widely used in dewing occasions.
Typical humidity sensor Characteristics	See following table 1

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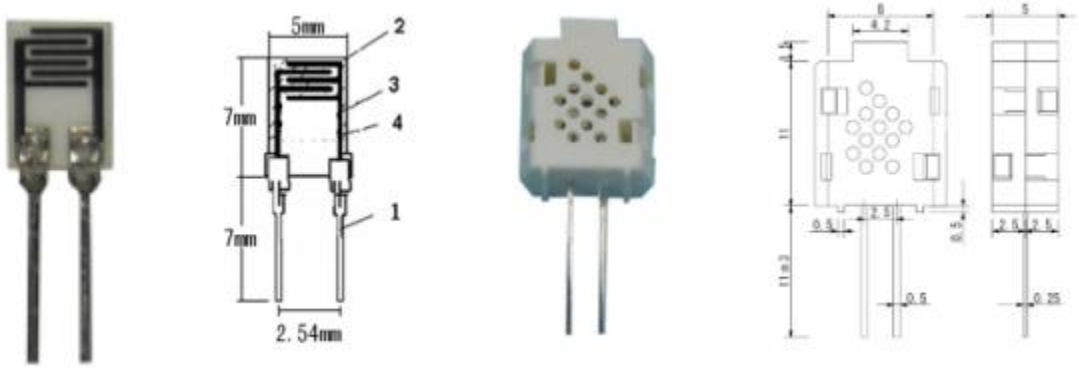
3. Outline Dimensions (Unit:mm)



1-Leads to the foot 2-Ceramic substrate 3-Interdigital electrodes 4-Feeling wet film

Description: Small substrate (5 × 7mm pin spacing: 2.54mm)

4. Typical humidity sensor Characteristics(table 1)

	0℃	5℃	10℃	15℃	20℃	25℃	30℃	35℃	40℃	45℃	50℃	55℃	60℃
20%RH				10M	6.7 M	5.0 M	3.9 M	3.0 M	2.4 M	1.75 M	1.45 M	1.15 M	970K
25%RH		10 M	7.0 M	5.0 M	3.4 M	2.6 M	1.9 M	1.5 M	1.1 M	880K	700K	560K	450K
30%RH	6.4 M	4.6 M	3.2 M	2.3 M	1.75 M	1.3 M	970K	740K	570K	420K	340K	270K	215K
35%RH	2.9 M	2.1 M	1.5 M	1.1 M	850K	630K	460K	380K	280K	210K	170K	150K	130K
40%RH	1.4 M	1.0 M	750K	540K	420K	310K	235K	190K	140K	110K	88K	70K	57K
45%RH	700K	500 K	380 K	280 K	210 K	160 K	125 K	100 K	78 K	64 K	50 K	41 K	34 K
50%RH	370 K	260 K	200 K	150 K	115 K	87 K	69 K	56 K	45 K	38 K	31 K	25 K	21 K
55%RH	190 K	140 K	110 K	84 K	64 K	49 K	39 K	33 K	27 K	24 K	19.5 K	17 K	14 K
60%RH	105 K	80 K	62 K	50 K	39 K	31 K	25 K	20 K	17.5 K	15 K	13 K	11 K	9.4 K
65%RH	62 K	48 K	37 K	30 K	24 K	19.5 K	16 K	13 K	11.5 K	10 K	8.6 K	7.6 K	6.8 K
70%RH	38 K	30 K	24 K	19 K	15.5 K	13 K	10.5 K	9.0 K	8.0 K	7.0 K	6.0 K	5.4 K	4.8 K
75%RH	23 K	18 K	15 K	12 K	10 K	8.4 K	7.2 K	6.2 K	5.6 K	4.9 K	4.2 K	3.8 K	3.4 K
80%RH	15.5 K	12.0 K	10.0 K	8.0 K	7.0 K	5.7 K	5.0 K	4.3 K	3.9 K	3.4 K	3.0 K	2.7 K	2.5 K
85%RH	10.5 K	8.2 K	6.8 K	5.5 K	4.8 K	4.0 K	3.5 K	3.1 K	2.8 K	2.4 K	2.1 K	1.9 K	1.8 K
90%RH	7.1 K	5.3 K	4.7 K	4.0 K	3.3 K	2.8 K	2.5 K	2.2 K	2.0 K	1.8 K	1.55 K	1.4 K	1.3 K

5. Packing

(1) 100PCS of sensor are placed in a tray

(2) 20sheets to be packed in a small carton box(SIZE:L190*W150*H55mm)
(2,000PCS of sensor in a unit box)

(3) 16 small boxes to be packed in larager box(SIZE:L340*W390*H240mm)
(32,000PCS of sensor in a lager box)

6. Mechanical durability

Drop test (Dropped onto wooden plate from a height of 1m, 3 times) Passed

Vibration test (Amplitude of 5mm, X, Y, Z directions, 10Hz for 20 min.) Passed

Tensile strength of lead wire (Pulled with 1kg load for 10 sec.) Passed

Lead wire bending test
(lead wire was bended to 90 degrees
with 250g load, and bended again to opposite direction.) Passed

7. Reliability 1 (Temperature and humidity test)

Sensors were tested/stored in the conditions described below respectively, and the humidity characteristics at 25℃,60%RH before test and after test were inspected, and described in the following.

	Test conditions	Variation
1	Sensors are stored in high temperature(80℃) for 1,000 hrs.	＜±5%RH
2	Sensors are stored in low temperature(-20℃) for 1,000 hrs.	＜±5%RH
3	Sensors are stored in high temperature and high humidity (50℃,90%RH) for 1,000 hrs.	＜±5%RH
4	Sensors are stored in low humidity (25℃, less than 15%RH) for 1,000 hrs.	＜±5%RH
5	Sensors are energized in high temperature(80℃) for 1,000 hrs. Supply voltage is AC1.0V, 1kHz.	＜±5%RH
6	Sensors are energized in high temperature and high humidity (50℃,90%RH) for 1,000 hrs. Supply voltage is AC1.0V, 1kHz.	＜±5%RH
7	200 cycles of dewing condition for 10 minutes – drying condition for 10 minutes.	＜±5%RH

8. Reliability 2 (Organic solvent vapor, corrosive gases test)

Test conditions	Variation
1 Methanol (1000ppm, 100 hrs.)	＜±5%RH
2 Ethanol (1000ppm, 100 hrs.)	＜±5%RH

3 Ammonia (1000ppm, 100 hrs.)	＜±5%RH
4 Acetic acid (1000ppm, 100 hrs.)	＜±5%RH
5 Mixed solvents (Benzene 3 : Toluene 3: Xylene 4, 1000ppm, 100 hrs.)	＜±5%RH
6 H_2S (200ppm, 20 hrs.)	＜±5%RH
7 Acetone (1000ppm, 100 hrs.)	＜±5%RH
8 SO_2 (200ppm, 20 hrs.)	＜±5%RH

9. Remarks

＊ Do not disassemble the sensor element.

＊ Do not supply direct current to sensor.

＊ Sensor is durable enough under high temperature / humidity or dew condensation conditions, but storage for an exceedingly long time under too severe conditions may cause improper functions.

＊ Polymeric humidity sensing layer may be damaged at 100℃ or more. Refrain from using re-flow soldering systems.