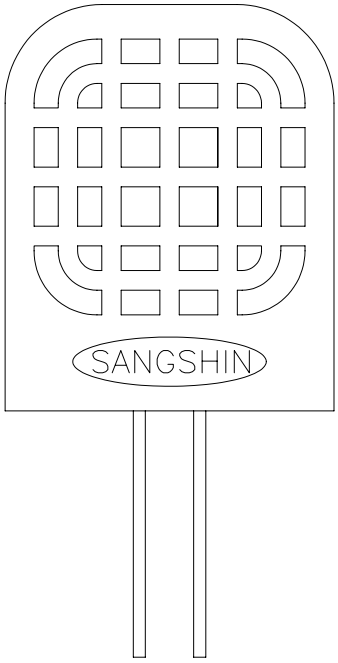
HUMIDITY SENSOR

KSH-03BHL



Our Humidity Sensor “KSH-03BHL” is a high quality, highly responsive polymer film humidity sensor. At ambient temperature the sensor resistance drops from 30%RH to 90%RH in approximately 1.5minutes.
Attractively priced,this is an excellent resistives sensor which is suited to a range wide of market applications.

SANGSHIN ELECOM CO.,LTD.
614-1 Wolhari Suhmyon Yunkikun Choongnam The Republic of Korea
TEL 82-41-865-9000 FAX 82-41-865-9009

KSE Humidity Sensor Key features

- Humidity range 20%RH ~ 95%RH
- Rapid response
- Low hysteresis
- Small and light – weight
- Attractively priced
- Robust construction

Applications

- Humidifier & Dehumidifier
- Air conditioners
- Automobile
- Printer
- Copier
- Food industry etc..

Electrical Characteristics

- Rated Voltage : 0~5V AC
- Rated Power : 0.3mW
- Operating Temperature Range : 0 ~ 60℃
- Operating Humidity Range : 20 ~ 95% RH
- Storable Temperature : -20 ~ 85℃
- Storable Humidity : 95% RH or Less
- Standard Humidity Resistance : 23 Kohm (25℃ , 60%RH)
- Humidity Detecting Accuracy : ± 3%RH (25℃ , 60%RH)
- Humidity Response characteristics : See chart
- Hysteresis ± 2%RH (30 ~ 90 %RH)

SANGSHIN ELECOM CO.,LTD.
614-1 Wolhari Suhmyon Yunkikun Choongnam The Republic of Korea
TEL 82-41-865-9000 FAX 82-41-865-9009

Mechanical Characteristics

■ Drop test

Humidity Sensor is dropped on to a wooden surface from a height of 1meter three times.
No change in appearance or performance is allowed.

■ Lead strength test

A load of 1kg is applied to each lead in the vertical plane against the surface of the sensor for 10± 1 seconds.
No change in appearance or performance is allowed.

■ Lead bend strength test

The humidity sensor is kept in the vertical direction and the leads should be bent 1 cycle in the direction of 90 degree of load applied 250g.
No change in appearance or performance is allowed.

Environmental Characteristics

■ Dry heat (85℃, 〈 30%RH) Δ%RH 〈 ±5% RH ,1000 hours

After 1000 hours in 85'C and under 30% RH, and 1 hours in normal temperature and normal humidity, the goods be expected to be tested in chamber.
Thereafter, to be within ±5% RH of change in the initial value

■ Low Temperature (- 30 ℃) Δ%RH 〈 ±5% RH, 1000 hours

After 1000 hours in -30'C and 30%RH and 1hours in normal temperature and normal humidity, the goods be expected to be tested.
Thereafter, to be within ±5% RH of change in the initial value

■ Moisture (45℃,95%RH) Δ%RH 〈 ±5% RH ,1000 hours

After 1000 hours in 45'C and 95%RH and 1hours in normal temperature and normal humidity, the goods be expected to be tested.
Thereafter, to be within ±5% RH of change in the initial value

■ Temperature Cycling Δ%RH 〈 ±5% RH

【 -30 ℃(30minutes)then 85 ℃(30 minutes),100Cycle】

After 100 times in -30'C and 85'C at 30minute and 1hours in normal temperature and normal humidity, the goods be expected to be tested.

Thereafter, to be within ±5% RH of change in the initial value

■ Humidity Cycling Δ%RH 〈 ±5% RH

【 30%RH (30minutes)then 90%RH (30minutes),500Cycle】

After 500 times between 30% RH and 90% RH at 30 minute and 1hours in normal temperature and normal humidity, the goods be expected to be tested.

Thereafter, to be within ±5% RH of change in the initial value

■ Normal Temperature Load Life Δ%RH 〈 ±5% RH

【 25℃,1V AC,1kHz,1000hours 】

After 1000 hours in 25'C, 1V AC, 1kHz and 1hours in normal temperature and normal humidity, the goods be expected to be tested.

Thereafter, to be within ±5% RH of change in the initial value

■ Organic solvent resistance Δ%RH 〈 ±5% RH,300 hours

【Benzene 30Wt%, Toluene 30Wt%, Xylene 40Wt%】

After 300 hours in organic solvent and 1hours in normal temperature and normal humidity, the goods be expected to be tested.

Thereafter, to be within ±5% RH of change in the initial value

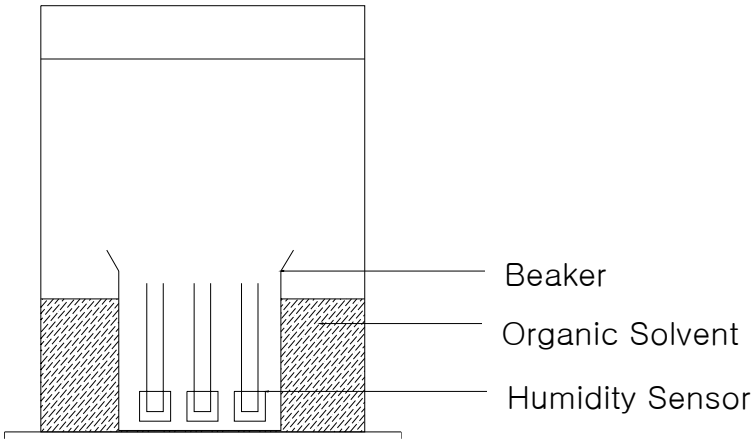


Fig. 1

■ Alcohol resistance Δ%RH 〈 ±5% RH,300 hours

【Test 1 : Ethanol 50% , Test 2 : Methanol 50%】

. After 300hours in 25'C , and 1 hours in normal temperature and normal humidity, the goods be expected to be tested.
Thereafter, to be within ±5% RH of change in the initial value

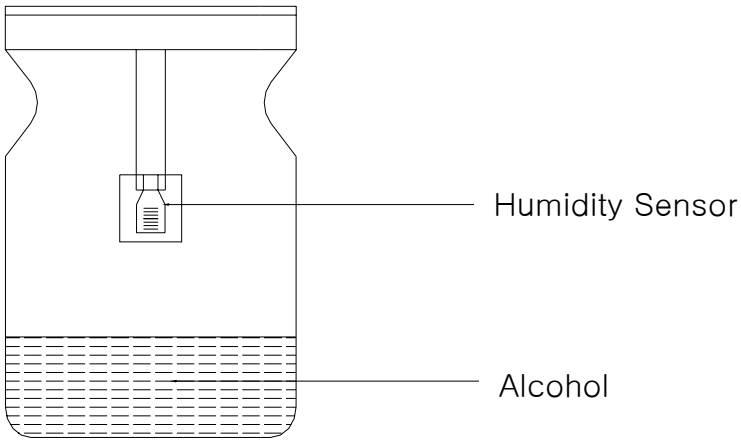


Fig. 2

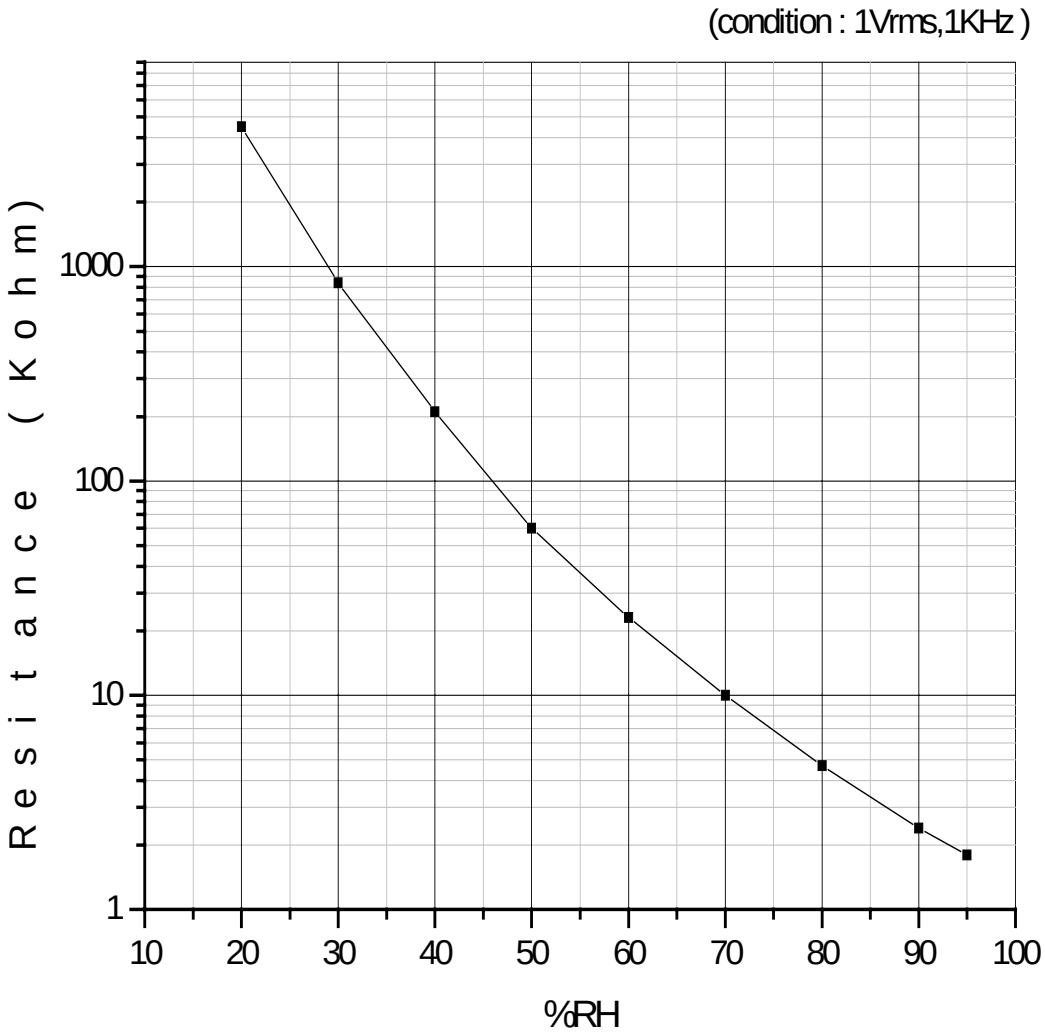
■ Water Dip Test Δ%RH 〈 ±5% RH

Dip the humidity sensor in water for 10minutes and dry them in air for 1hour , the goods be Expected to be tested.
Thereafter, to be within ±5% RH of change in the initial value

Standard Characteristics

% RH	20%RH	30%RH	40%RH	50%RH	60%RH	70%RH	80%RH	90%RH	95%RH
SPEC.	4500	840	210	60	23	10	4.7	2.4	1.8

(Unit Kohm)

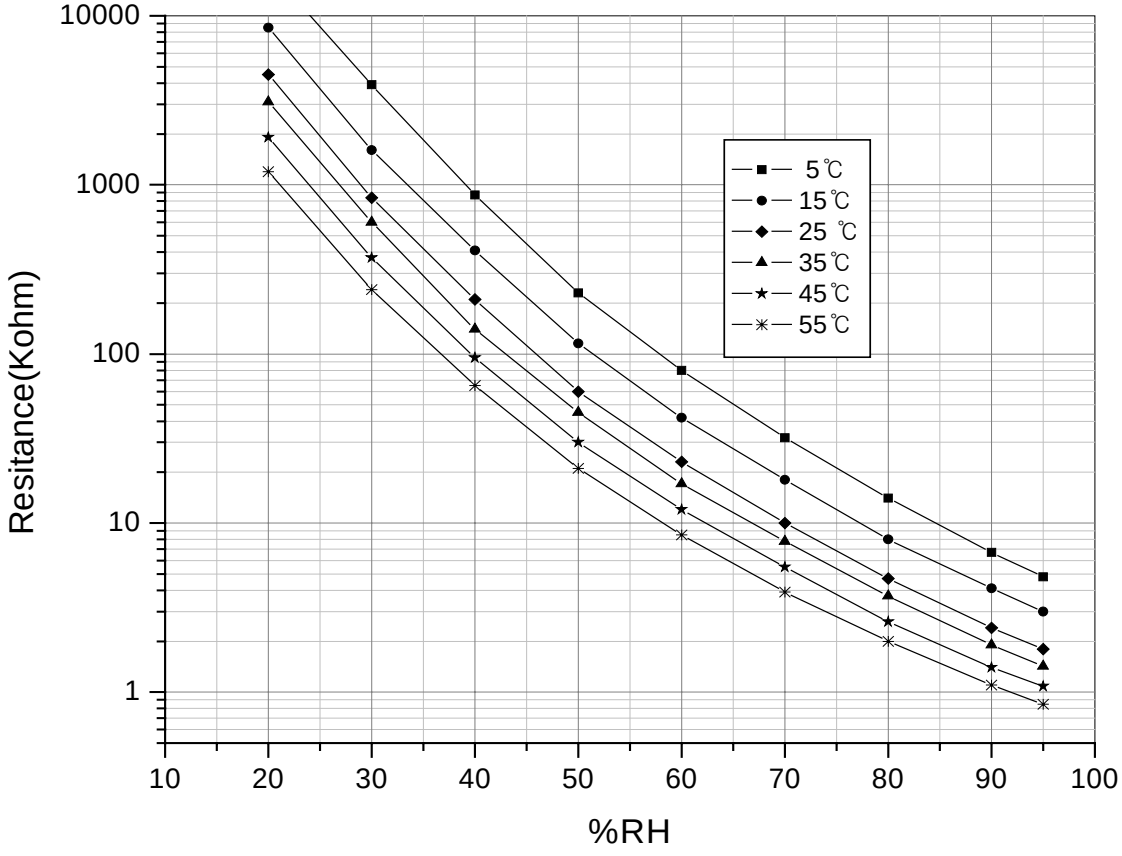


Humidity Response Characteristics

	5℃	15℃	25℃	35℃	45℃	55℃
20 %RH		8500	4500	3100	1910	1200
30 %RH	3900	1610	840	600	370	240
40%RH	870	410	210	140	95	65
50%RH	230	115	60	45	30	21
60%RH	80	42	23	17	12	8.5
70%RH	32	18	10	7.8	5.5	3.9
80%RH	14	8.0	4.7	3.7	2.6	2.0
90%RH	6.7	4.1	2.4	1.9	1.4	1.1
95%RH	4.8	3.0	1.8	1.4	1.1	0.9

(Unit Kohm)

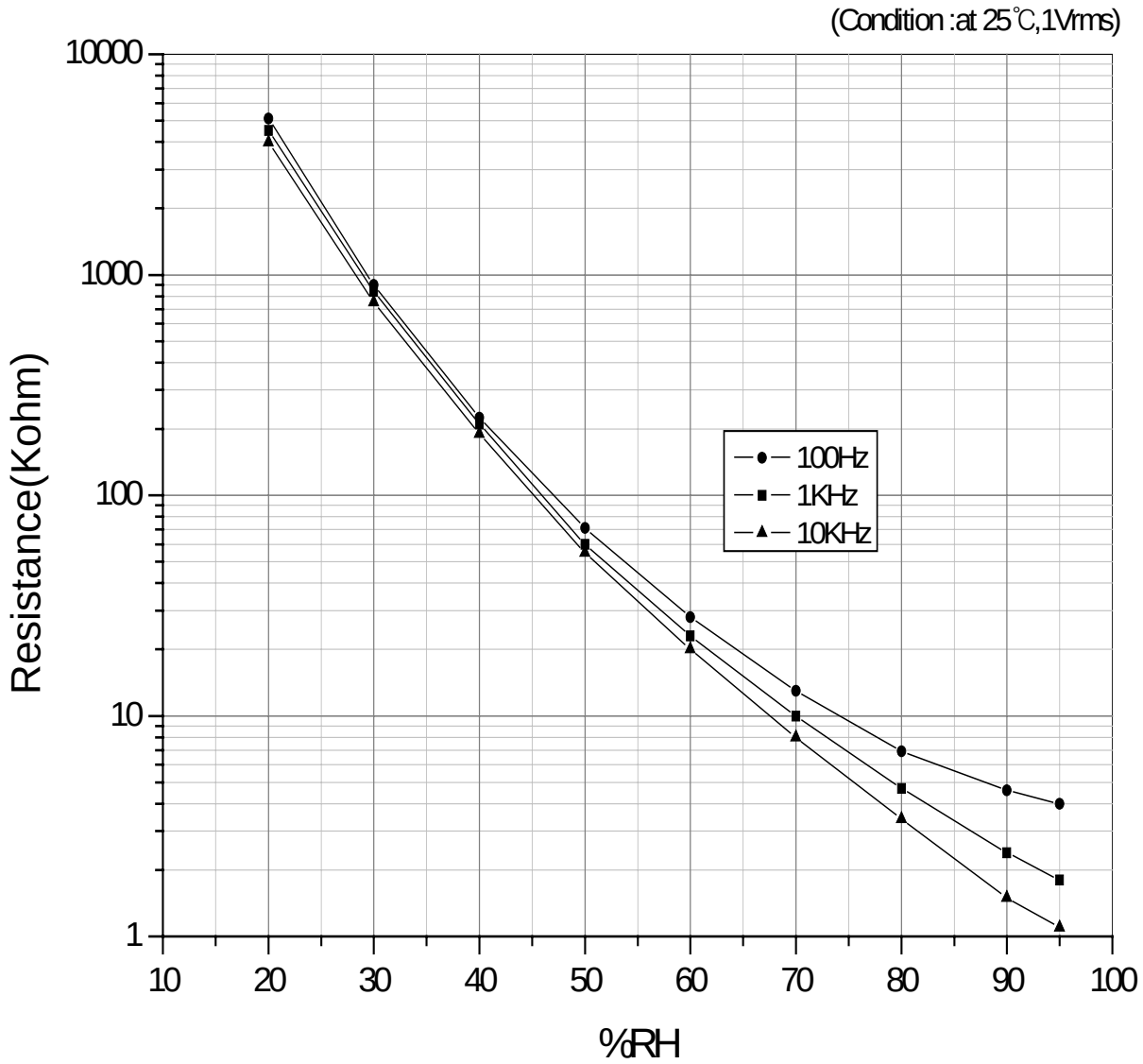
(condition : 1Vrms,1KHz)



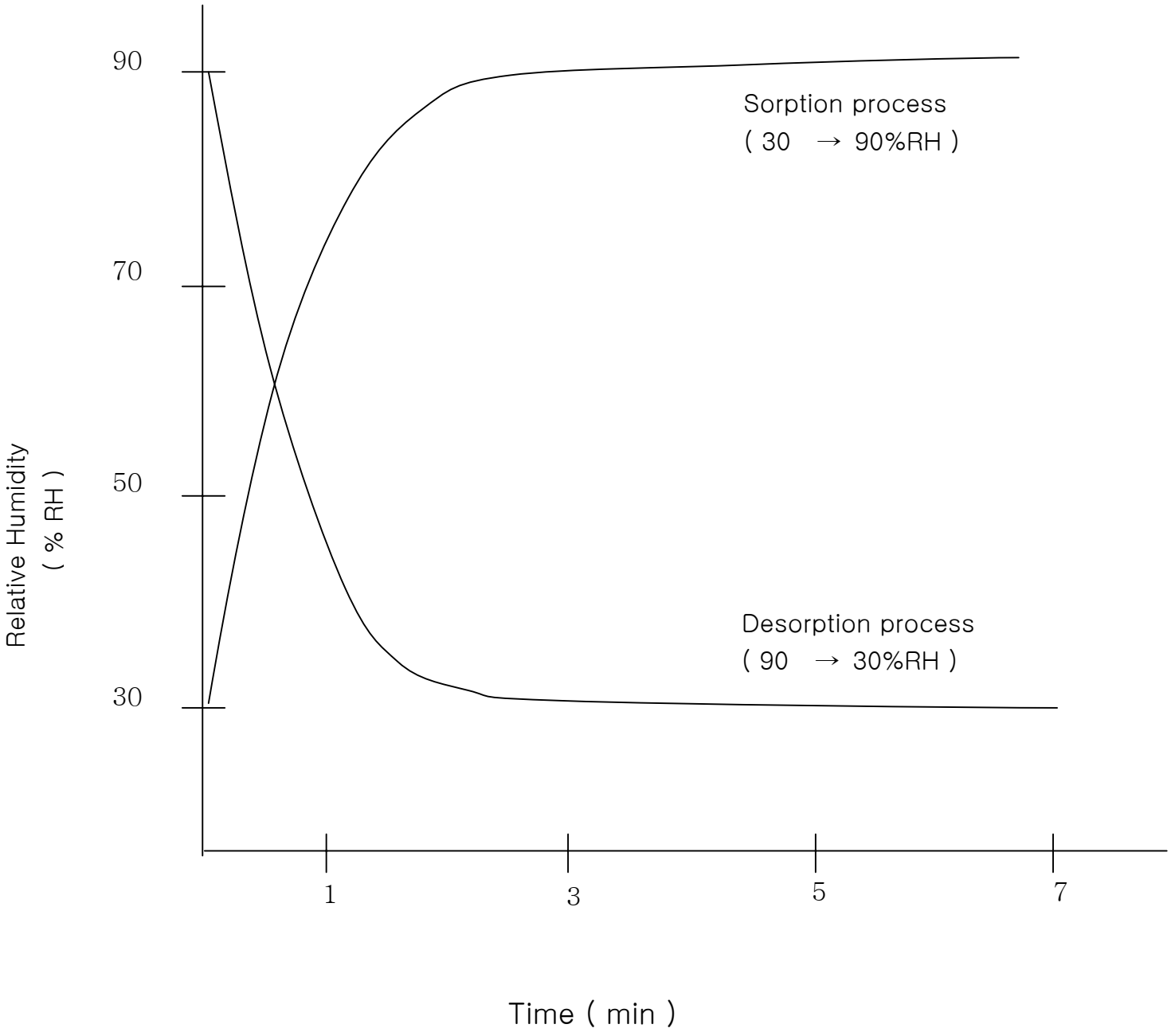
Frequency Characteristics

	20%RH	30%RH	40%RH	50%RH	60%RH	70%RH	80%RH	90%RH	95%RH
100 Hz	5100	900	225	71	28	13	6.9	4.6	4.0
1 KHz	4500	840	210	60	23	10	4.7	2.4	1.8
10 KHz	3990	750	190	55	20	8	3.4	1.5	1.1

(Unit Kohm)

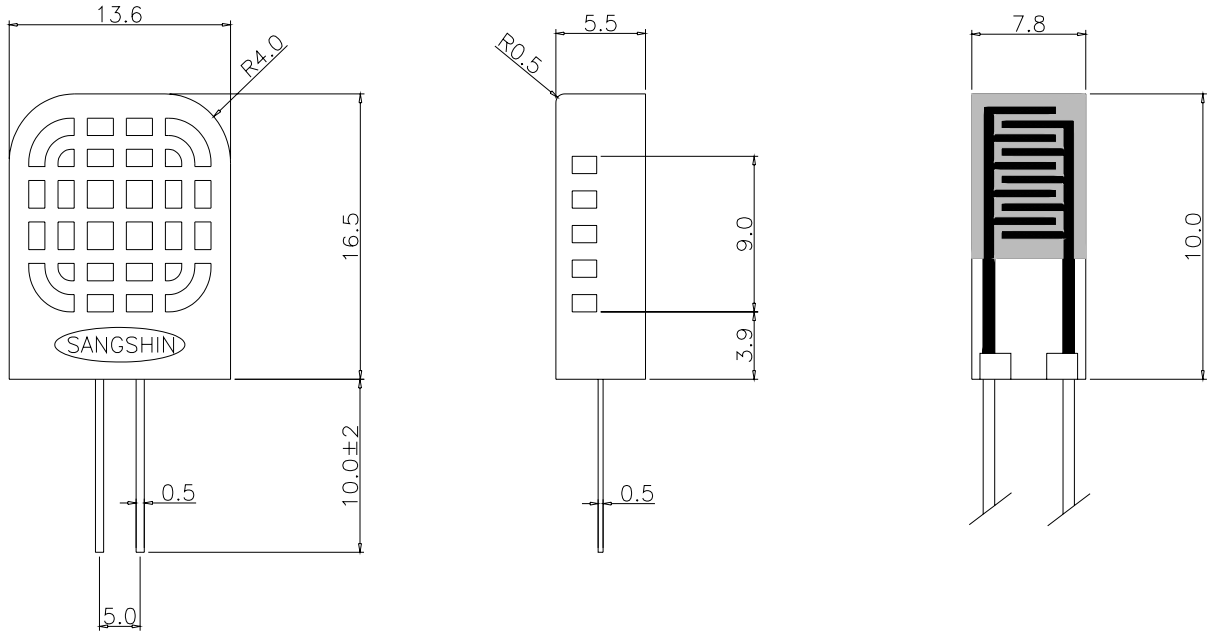


Response Curve (Time against Humidity)



Dimension of Humidity Sensor

(Type KSH – 03BHL)



Unit : mm

Handling Precautions

1. Do not touch the sensing surface with bare hands and ensure no contact with adhesives, solder, flux, oil, grease, organic solvents (alcohol, acetone trichloroethylene, thinners, etc….)and ionized material such as tap water.
2. Do not directly expose sensor to smoke from cigarettes, breath or steam.
3. Do not apply stress to the elements, as the ceramic substrate could crack and the sensor will not responds
4. Avoid to input DC voltage directly to humidity sensor.