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|-----------|------|----------|----------------|------|----|
| Part Name | HS20 | Part No. | HUF001U00-00A0 | Rev. | 00 |
|-----------|------|----------|----------------|------|----|

SPECIFICATION of Humidity SENSOR

Product Name: HS20

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1. SCOPE

This specifications applies to the Humidity Sensor HS20

2. CHARACTERISTICS OF HUMIDITY SENSOR

| Parameter | LIMITS | | | UNIT | CONDITION |
|-----------------------------------|----------------|------|------|------|-----------------------------|
| | MIN | TYP | MAX | | |
| STORAGE TEMPERATURE | 0 | | 50 | °C | |
| STORAGE HUMIDITY | 20 | | 90 | %RH | Without condensation |
| OPERATING HUMIDITY RANGE | 30 | | 90 | %RH | Do not let it have dewdrops |
| OPERATING TEMPERATURE RANGE | 0 | | 50 | °C | |
| RATED POWER | 0.3mW | | | | 50Hz ~ 1KHz |
| NOMINAL INPEDANCE VALUE | | 67.3 | | kΩ | 25°C, 50%RH |
| TOLERANCE AN IMPENDANCE VLAUE | 53.9 | | 70.7 | kΩ | |
| TYPICAL SENSITIVE CHARACTERISTICS | Shown in Fig.1 | | | | |
| TYPICAL RESPONSE CHARACTERISTICS | Shown in Fig.2 | | | | |

3. RELIABILITY

Impedance value change as relative humidity at 25°C, 50%RH

| Parameter | CRITERIA | CONDITION |
|----------------------|----------|---------------------------------------|
| Dry heat storage | <±5 %RH | 80°C, 1000 hours |
| Cold storage | <±5 %RH | -40 °C, 1000 hours |
| Damp heat storage | <±5 %RH | 60 °C, 90 %RH, 1000 hours |
| Heat cycle test | <±5 %RH | -40°C/30min ~ +80°C/30min, 100 cycles |
| Low humidity storage | <±5 %RH | 25 °C, 20 %RH, 1000 hours |
| Dry heat operation | <±5 %RH | 80 °C, 1000 hours, AC 1V, 1KHz |

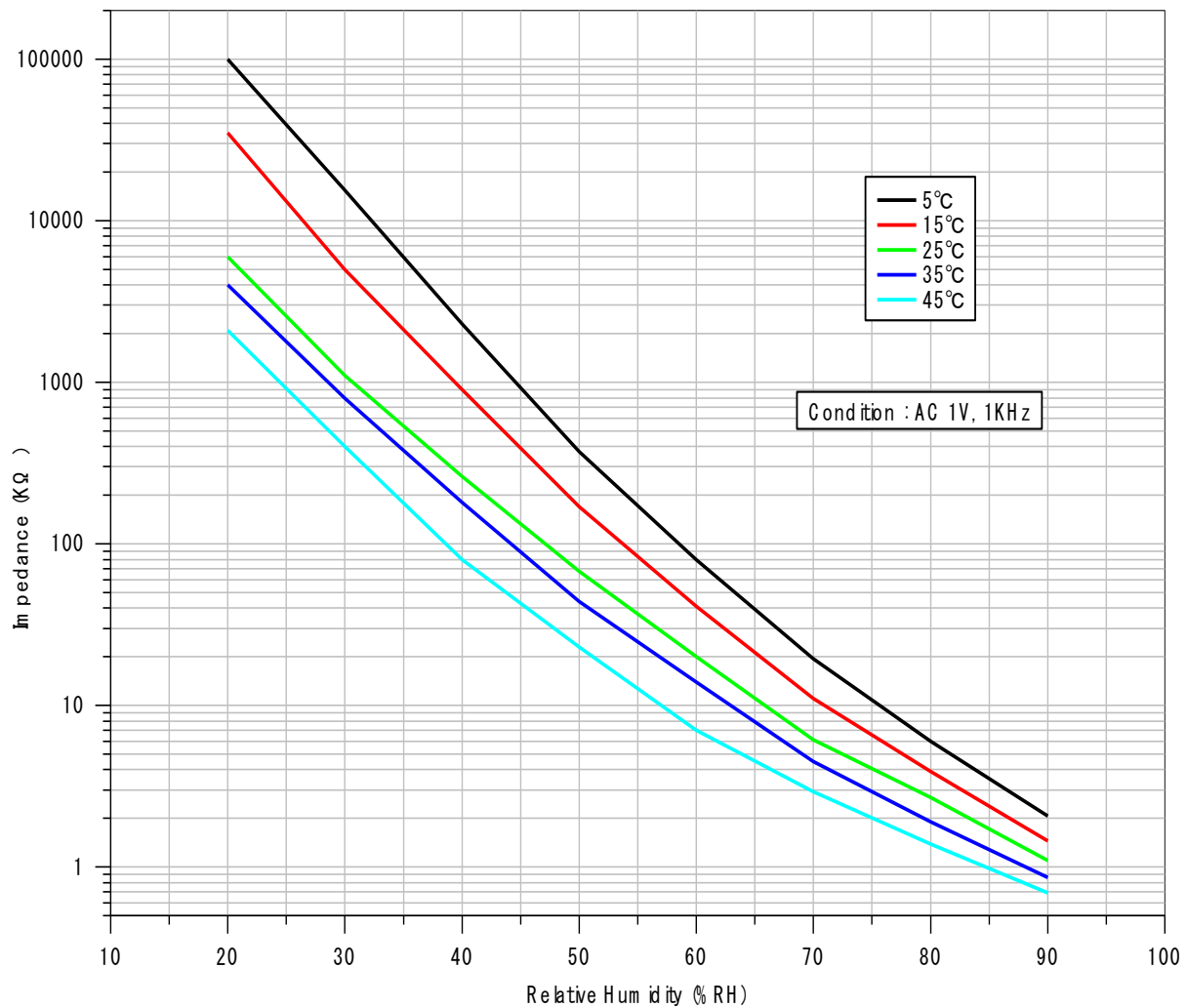
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4. TYPICAL CHARACTERISTIC

4.1 SENSITIVITY

| %RH | 5°C | 15°C | 25°C | 35°C | 45°C |
|-----|------------|-----------|----------|----------|----------|
| 20 | 100000.000 | 35000.000 | 6000.000 | 4000.000 | 2100.000 |
| 30 | 15500.000 | 5000.000 | 1100.000 | 800.000 | 400.000 |
| 40 | 2300.000 | 900.000 | 260.000 | 180.000 | 80.000 |
| 50 | 372.000 | 170.000 | 67.300 | 44.000 | 23.000 |
| 60 | 80.000 | 41.000 | 20.000 | 14.000 | 7.000 |
| 70 | 19.500 | 11.000 | 6.130 | 4.500 | 2.920 |
| 80 | 6.000 | 3.900 | 2.700 | 1.900 | 1.390 |
| 90 | 2.060 | 1.450 | 1.100 | 0.860 | 0.693 |

Fig. 1 Typical sensitive characteristics



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4.2 TYPICAL RESPONSE

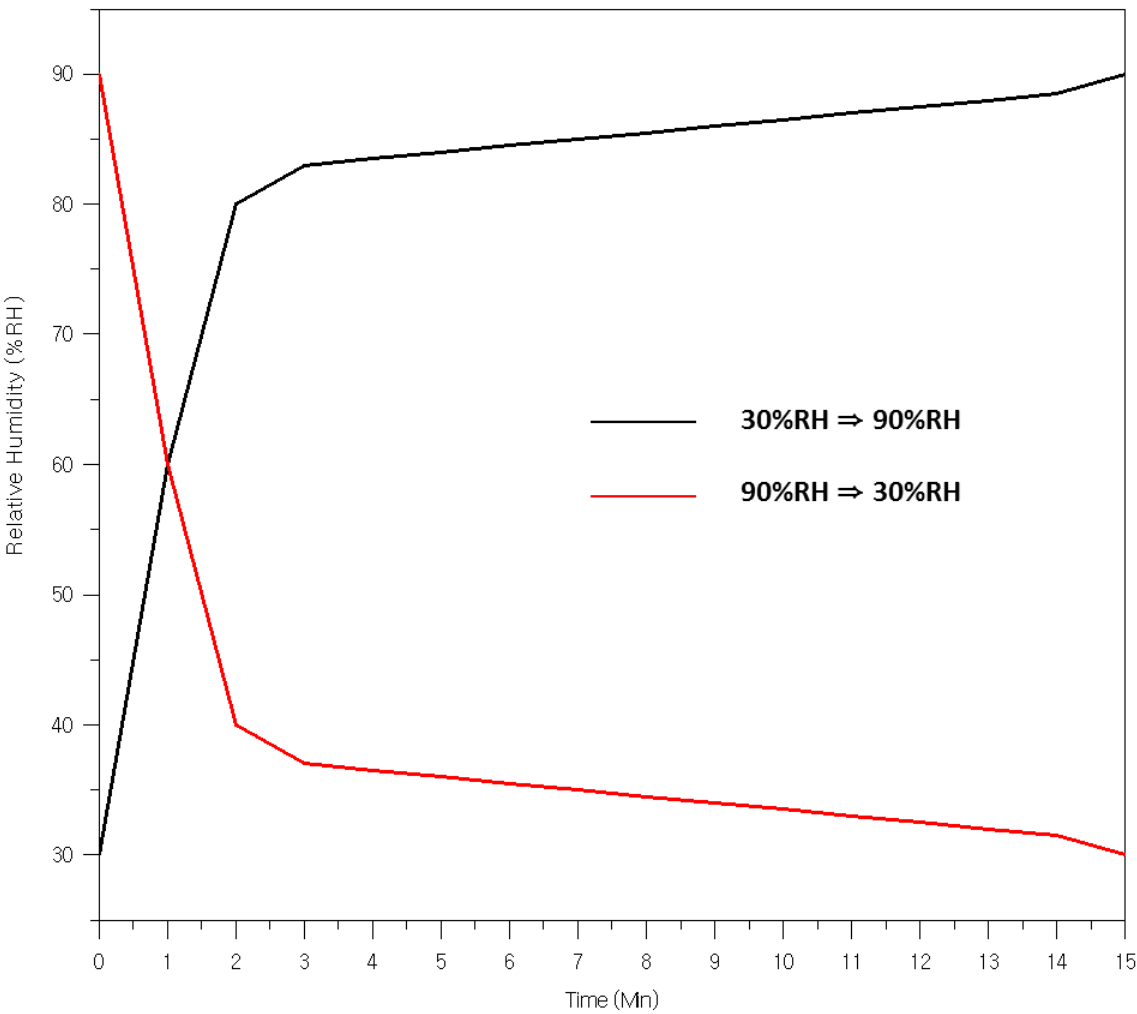
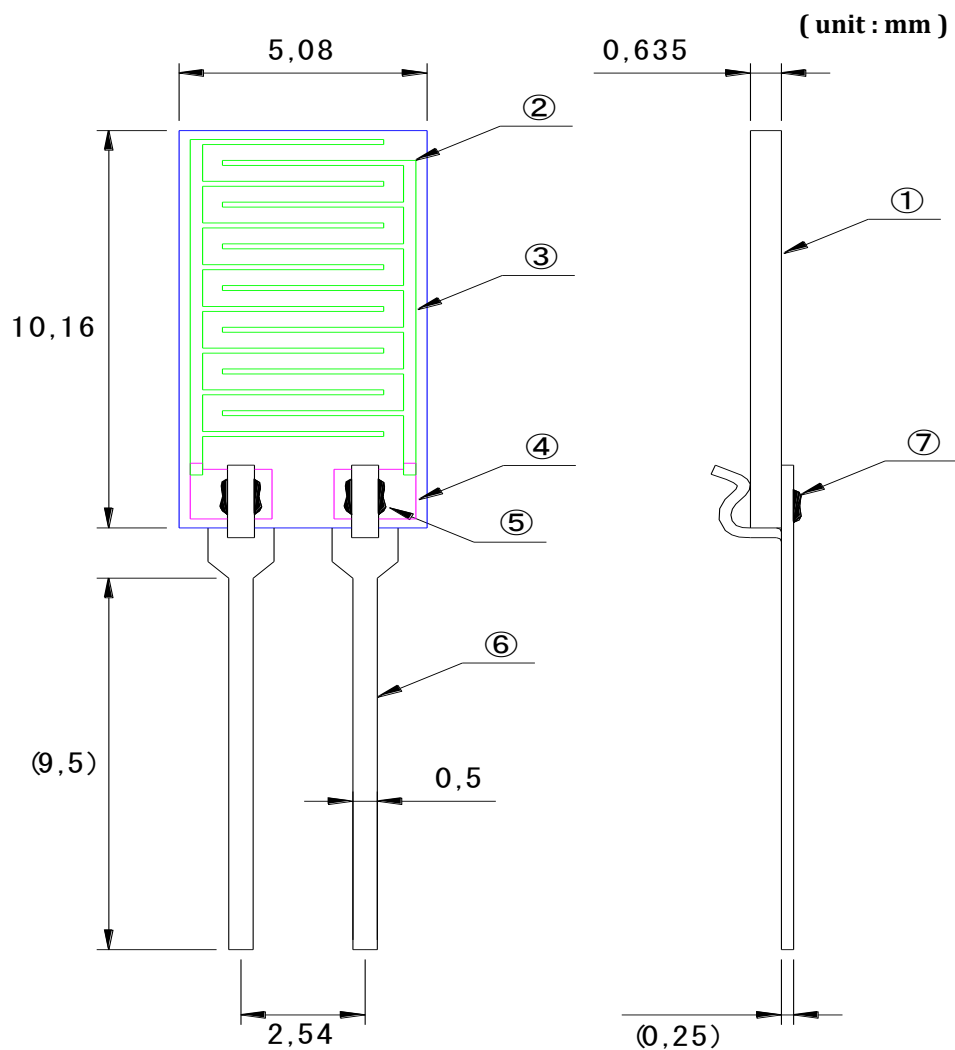


Fig. 2 Typical Humidity Response Curve

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5. MECHANICAL DIMENSIONOM



| No. | Construction List | Material | Notes |
|-----|-------------------|------------------------------------|-------|
| 1 | Substrate | Alumina(Al_2O_3) | |
| 2 | Resistance | RuO_2 | |
| 3 | Polymer Film | Organic Polymer | |
| 4 | Electrode | Pd-Ag | |
| 5 | Ag epoxy paste | Ag | |
| 6 | Terminal | | |
| 7 | Epoxy Resin | Black | |

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NOTES

1. Use only within specified conditions.
2. Don't disassemble or change any parts.
3. Don't touch sensor element.
4. Don't apply any direct current to the sensor.
5. Don't touch the film and the surface of the sensor.
6. In use and stock, freezing, dust, mist, oil, alcohol, corrosive gases or any other dirty/anomalous ambient may cause degradation of the sensor's characteristics.
7. Protect the sensor film from flux/fume and high temperature during the soldering.
8. Don't put sensor in water.

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