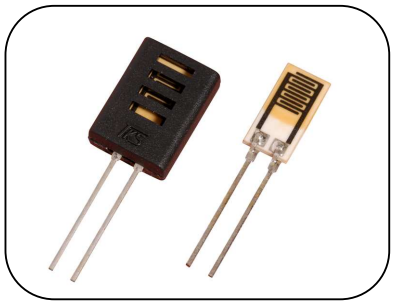
Relative Humidity Sensor： THS Type

Resistive Type for Humidity Sensing

■ Features

1. RoHS compliant
2. Easy operation
3. Fast response time of less than 60 sec.
4. Low hysteresis
5. Small and lightweight



■ Recommended Applications

1. Air conditioner, humidifier, and dehumidifier.
2. Humidity controller, humidity transmitter.
3. Hygrometer, hygro-recorder.
4. Copy machine.
5. Clock, weather-forecast barometer.

■ Part Number Code

1	2	3	4	5	6	7	8	9	10	11	12	13	14

Product Type	
THS	Thinking humidity sensor THS type

Type	
1A	Dip type

Normal Impedance Value at 25℃ 60%RH	
163	16 x $10^3\Omega$
233	23 x $10^3\Omega$
313	31 x $10^3\Omega$

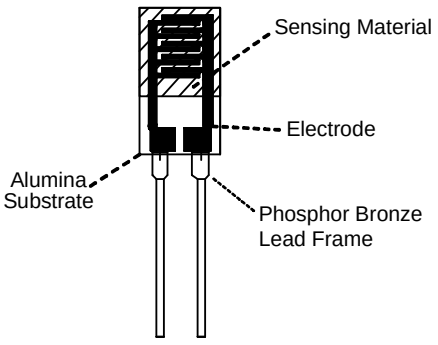
Humidity Accuracy (%RH)	
H	± 3%
J	± 5%

Appearance	
A	With housing
B	Without housing

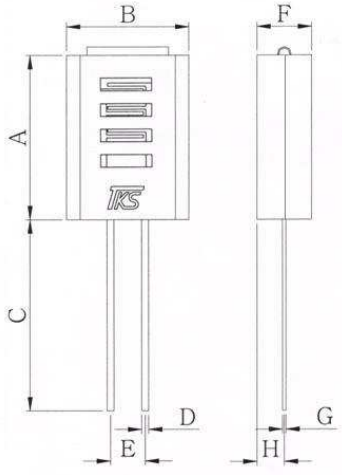
Packaging	
B	Bulk

Optional Suffix
001 ~ZZZ

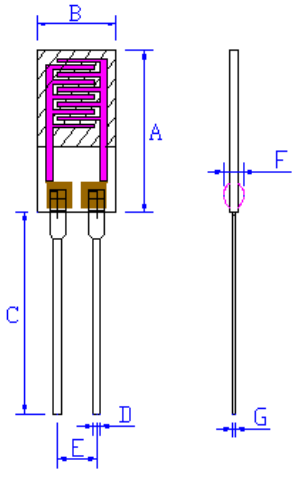
■ Structure and Dimensions



A Type



B Type



(Unit : mm)

	A	B	C	D	E	F	G
A Type	12 ± 0.2	9 ±0.2	12 ± 2	0.5± 0.2	2.54± 0.5	4±0.5	0.25±0.2
B Type	10 ± 0.2	5.08±0.2	15 ± 2	0.5± 0.2	2.54± 0.5	1.8max	0.25±0.2

■ Electrical Characteristics

Part No.	Rated Voltage	Rated Power	Operating Temp. Range	Operating Frequency Range	Max. Operating Humidity	Typical Impedance	Humidity Accuracy	Max. Hysteresis (40%RH ~80%RH)
	(Vrms)	(mA)	(℃)	(KHZ)	(%RH)	(KΩ)	(%RH)	(%RH)
THS1A163JAB	1	0.2	0~60	0.5~2	90	16	±5	2
THS1A163JBB								
THS1A233JAB	1	0.2	0~60	0.5~2	90	23	±5	2
THS1A233JBB								
THS1A313JAB	1	0.2	0~60	0.5~2	90	31	±5	2
THS1A313JBB								
THS1A313HAB	1	0.2	0~60	0.5~2	90	31	±3	2
THS1A313HBB								

■ Relative Humidity - Impedance (KΩ)

RH % / Part No.	20	30	40	50	60	70	80	90
THS1A163	1,428	370	113	40	16	7.1	3.4	1.7
THS1A233	5,000	920	220	66	23	9	4.2	1.9
THS1A313	6,300	1,400	310	87	31	11.8	4.8	2

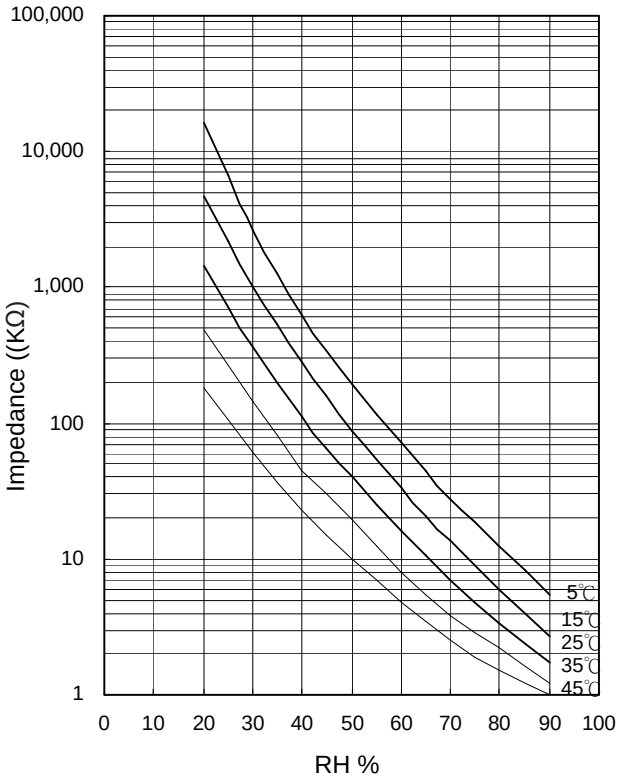
25℃, 1KHZ , 1Vrms(Sine Wave)

Relative Humidity Sensor： THS Type

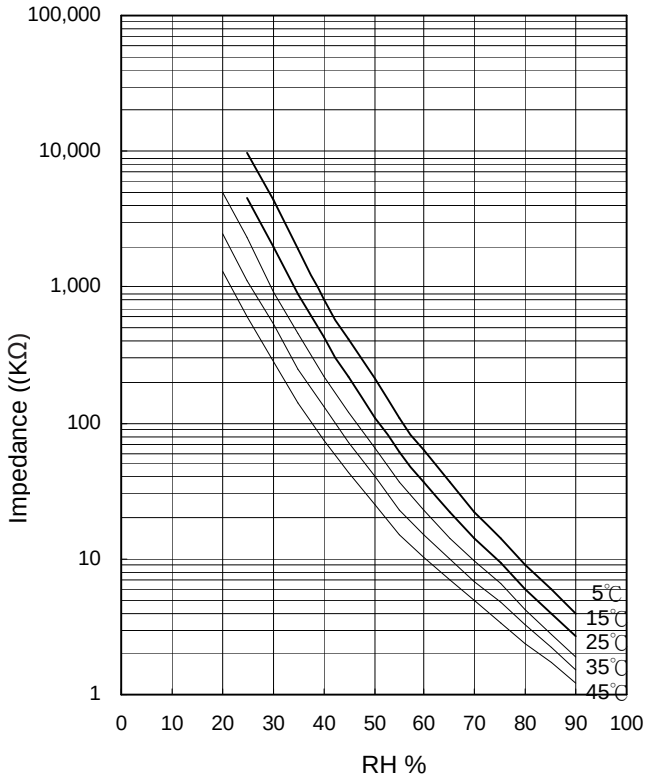
Resistive Type for Humidity Sensing

■ **Relative Humidity - Impedance Curves**

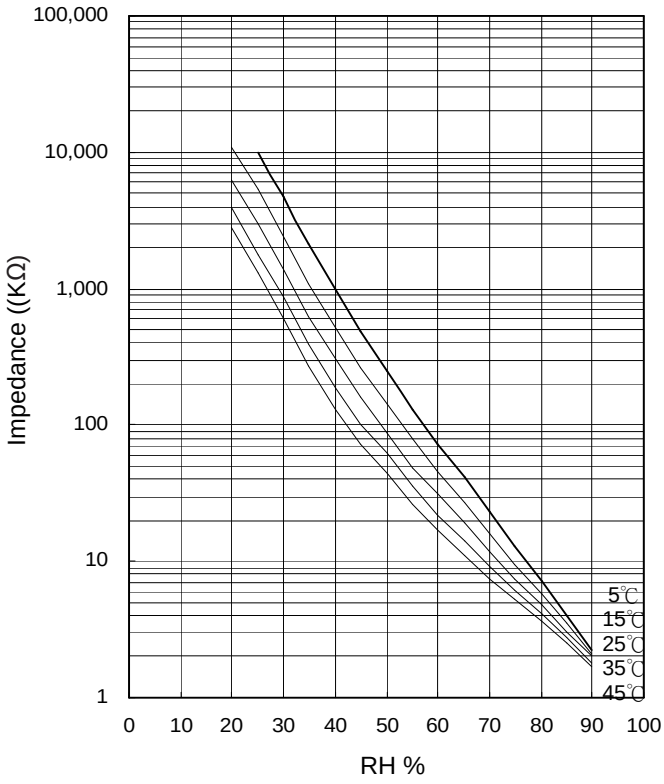
THS1A163



THS1A233



THS1A313



■ Reliability

Item	Test conditions / Methods	Specifications
Shock Resistance	Drop down 3 times at 80 cm	No abnormal appearance & electrical properties
Vibration	Frequency range : 10~55Hz Amplitude : 1.5mm Direction : 3 mutually perpendicular directions,2hrs each	No abnormal appearance & electrical properties
Resistance to Soldering Heat	The lead terminal shall be immersed by 3 mm from the substrate for 3 seconds in solder bath of 260±5℃	No abnormal appearance & electrical properties
Strength of Terminals	500g at 10 seconds in the axial direction of lead terminal	No visible damage
High Temp. Storage	70 ± 5 ℃ , 1000± 24 hrs	| △RH | ＜ 5 % No visible damage
Low Temp. Storage	-30 ± 5 ℃ , 1000± 24 hrs	| △RH | ＜ 5 % No visible damage
Damp Heat, Steady State	60 ± 2 ℃ , 90 ~ 95% RH , 1000 ± 24 hrs	| △RH | ＜ 5 % No visible damage
Humidity Cycle	The conditions shown below shall be repeated 1000 cycles Step 1: 25℃ ＜20%RH, 30 ± 3 Step 2: 25℃ ＞90%RH, 30 ± 3	| △RH | ＜ 5 % No visible damage
Voltage Resistance	3000 hrs at 1KHZ, 1Vrms	| △RH | ＜ 5 % No visible damage

■ Storage Conditions of Products

- **Caution Remarks on Operation**

  1. To avoid direct application of DC voltage on humidity sensor.
  2. To protect sensor from dewfall and drenching.
  3. To avoid any operation of humidity sensors in the following environmental ambient.
     - 3.1 Salt
     - 3.2 Inorganic gas – Sulfide dioxide, Chlorine, Ammonia etc.
     - 3.3 Organic gas – Alcoholic, Glycols, Aldehydes etc.

- **Storage Conditions** :

  1. Storage Temperature: 10℃ ~ 40℃
  2. Relative Humidity: ≦90%RH
  3. Long-term storage at 60 ℃ or above is not recommended for humidity sensors.