



## SPECIFICATION

**CUSTOMER:**

**PRODUCTS : MICRO SPEAKER**

**MODEL : XHS171227WW27P27-01-RH**

**ITEM. NO. :**

**DATE :2021-6-24**



|                 |                |                 |
|-----------------|----------------|-----------------|
|                 |                |                 |
| <b>APPROVER</b> | <b>CHECKER</b> | <b>DESIGNER</b> |

### **CUSTOMER APPROVER**

|                  |                    |
|------------------|--------------------|
|                  |                    |
| <b>SIGNATURE</b> | <b>IMPRINTMENT</b> |

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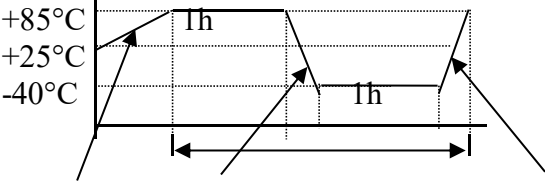
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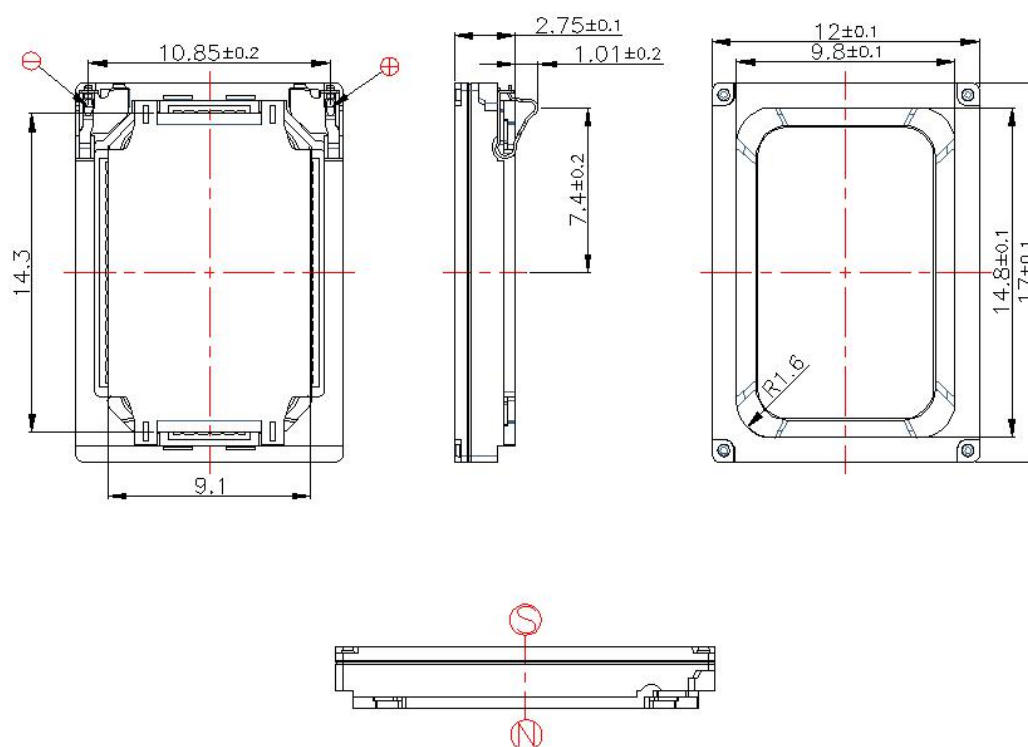
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| <b>ZHEJIANG ELECTRONIC CO.,LTD.</b><br>TEL:86-573-84645930 、 84646197<br>FAX:86-573-84646190<br>E-mail: services@xh-haosheng.com. |                                  | <b>HAOSHENG TECHNOLOGY</b><br><b>SPECIFICATIONS</b><br><b>(1/11)</b> |                               |                  |
|                                                                                                                                   |                                  | <b>TYPE NO.</b>                                                      | <b>XHS171227WW27P27-01-RH</b> | <b>Issue:A/3</b> |
| <b>Revision</b>                                                                                                                   |                                  |                                                                      |                               |                  |
| <b>No</b>                                                                                                                         | <b>Date</b>                      | <b>Page</b>                                                          | <b>Description</b>            | <b>Sign</b>      |
| A1                                                                                                                                | 2019-9-18                        | 8/11                                                                 | SPEC UPDATE                   | XF               |
| A2                                                                                                                                | 2020-5-28                        | 8/11                                                                 | SPEC UPDATE                   | XF               |
| A3                                                                                                                                | 2021-6-24                        | 4/11                                                                 | SPEC UPDATE                   | XF               |
|                                                                                                                                   |                                  |                                                                      |                               |                  |
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| ZHEJIANG<br>ELECTRONIC<br>CO.,LTD.<br><br>TEL:86-573-84645930 、 84646197<br>FAX:86-573-84646190<br>E-mail: services@xh-haosheng.com. | HAOSHENG<br>TECHNOLOGY | SPECIFICATIONS<br>(2/11)                                                                                                                                                                                        |                        |           |
|                                                                                                                                      |                        | TYPE NO.                                                                                                                                                                                                        | XHS171227WW27P27-01-RH | Issue:A/3 |
| 1. Product Outline                                                                                                                   |                        |                                                                                                                                                                                                                 |                        |           |
| 1-1. Scope                                                                                                                           |                        | This specification is a typical speaker unit for telephone handset                                                                                                                                              |                        |           |
| 1-2. Dimensions                                                                                                                      |                        | As shown in figure 1                                                                                                                                                                                            |                        |           |
| 1-3. Net Weight                                                                                                                      |                        | Approx 1.7 grams                                                                                                                                                                                                |                        |           |
| 1-4. Operating Temperature Range                                                                                                     |                        | -30°C to +70°C without loss of function                                                                                                                                                                         |                        |           |
| 1-5. Storage Temperature Range                                                                                                       |                        | -40 °C to +85 °C (Note: Return to ambient room temperature before using)                                                                                                                                        |                        |           |
| 2. Electroacoustic Characteristics                                                                                                   |                        |                                                                                                                                                                                                                 |                        |           |
| 2-1. Test Setup                                                                                                                      |                        | Measuring instrument as shown in Figure 5                                                                                                                                                                       |                        |           |
| 2-2. Impedance                                                                                                                       |                        | AC: 8 ± 15% ohm （ at 2 KHz, 2.83V input ）                                                                                                                                                                       |                        |           |
| 2-3.Sound Pressure Level                                                                                                             |                        | 94 ± 3 dB SPL /2.83V/10cm at 2kHz in 0.7cc box with baffle<br>Speaker shall be mounted in a baffle with minimum dimensions of 80cm x 100cm. See Figure 6.                                                       |                        |           |
| 2-4.Frequency Response                                                                                                               |                        | See Figure 7,<br>Test at 1.0W /10 cm with the speaker mounted in 0.7cc measure box in a baffle.                                                                                                                 |                        |           |
| 2-5.Bass Resonance Frequency                                                                                                         |                        | 900±15% Hz in 0.7cc box input 2.83V;                                                                                                                                                                            |                        |           |
| 2-6. Iput Power (Rated./Max.)                                                                                                        |                        | Rated Power: 1.0W （in 0.7cc box）<br>Maximum Power: 1.5W （in 0.7cc box）                                                                                                                                          |                        |           |
| 2-7.Rub and Buzz:                                                                                                                    |                        | The input power shall be set at 1.0W. Using an audio oscillator, sweep from 200 to 3.4kHz with the speaker mounted in 0.7cc measure box and in a baffle.There shall be no buzzes, rattles, nor spurious noises. |                        |           |
| 2-8.THD                                                                                                                              |                        | Test at 1.0W /10 cm with the speaker mounted in 0.7cc measure box in a baffle. See Figure 8                                                                                                                     |                        |           |
| 2-9.Polarity                                                                                                                         |                        | When a DC source's “+” polarity is attached to speaker's “+” polarity,“-“ polarity is attached speaker's “-“ polarity ,the membrane will move forward .                                                         |                        |           |

|                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                            |                               |                  |
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|                                                                                                                                                                 | <b>TYPE NO.</b>                                                                                                                                                                                                                                                                                            | <b>XHS171227WW27P27-01-RH</b> | <b>Issue:A/3</b> |
| <b>3. General Reliability</b>                                                                                                                                   |                                                                                                                                                                                                                                                                                                            |                               |                  |
| <b>3-1 General</b>                                                                                                                                              | After any following tests the response at 2 KHz shall not deviate more than $\pm 3$ dB from the initial value                                                                                                                                                                                              |                               |                  |
| <b>3-2 Temperature Shock Test</b>                                                                                                                               | Temperature: $-40^{\circ}\pm 3^{\circ}\text{C}$ $\longleftrightarrow$ $+85^{\circ}\pm 3^{\circ}\text{C}$ Cycle: 24 cycles<br>Duration: 1 hour 1 hour (recovery 2 hours)<br><br>(30minutes) (5minutes) 1 cycle (5minutes) |                               |                  |
| <b>3-3 Static Humidity Test</b>                                                                                                                                 | Precondition at $+25^{\circ}\text{C}$ for 1 hour. Next expose samples to $+55^{\circ}\text{C}$ with 95% relative humidity for 96 hours with no bias. Finally allow test samples to dry at room ambient temperature for $3 \pm 1$ hour before taking final measurements.                                    |                               |                  |
| <b>3-4 Vibration Test</b>                                                                                                                                       | Secure device using a fixture appropriate for this test. Fixture shall be capable of mounting on vibration table. Vibrate from 10Hz to 500Hz, 1 octave per minute, 2mm displacement $\pm x$ , $\pm y$ , $\pm z$ directions with 15 g's force for 2 hrs per each plane.                                     |                               |                  |
| <b>3-5 Drop Test</b>                                                                                                                                            | Drop samples 1.5 meters three times in each direction along each of the three mutually perpendicular axes for a total of 18 shocks.(Samples shall be mounted in a 100g fixture)                                                                                                                            |                               |                  |
| <b>3-6 Operating Life Test</b>                                                                                                                                  | 0.7cc box; $25^{\circ}\text{C}$ ;Pink noise;20Hz-20kHz; 1.0W;Crest factor 3-4;96 H                                                                                                                                                                                                                         |                               |                  |
| <b>3-7.Rated Sweep Power Test</b>                                                                                                                               | 0.7cc box; $25^{\circ}\text{C}$ ;Rated Power(1.0W);700-1100Hz; 1 sec;12 H                                                                                                                                                                                                                                  |                               |                  |
| <b>3-8 Max Power Test</b>                                                                                                                                       | 0.7cc box; $25^{\circ}\text{C}$ ;Pink noise;20Hz-20kHz;1.5W;1 sec on/60 sec off;60 cycles                                                                                                                                                                                                                  |                               |                  |
| <b>3-9.High Temperature Test</b>                                                                                                                                | $85 \pm 2^{\circ}\text{C}$ ;96H;2H Recovery time                                                                                                                                                                                                                                                           |                               |                  |
| <b>3-10.Low Temperature Test</b>                                                                                                                                | $-40 \pm 2^{\circ}\text{C}$ ;96H;2H Recovery time                                                                                                                                                                                                                                                          |                               |                  |

## 4. Mechanical Layout and Dimensions

### 4.1 Mechanical Layout



(Figure 1)

#### Notes:

1、 General unless otherwise noted  $\pm 0.15\text{mm}$ .

| No. | Part Name  | Material     | Q'TY | Remark |
|-----|------------|--------------|------|--------|
| 9   | Cover      | Cu           | 1    |        |
| 8   | spring     | SUS301 0.15t | 2    |        |
| 7   | Voice Coil | Copper       | 1    |        |
| 6   | Dome Type  | Polymer      | 1    |        |
| 5   | Diaphragm  | Polymer      | 1    |        |
| 4   | Pole Piece | Iron         | 1    |        |
| 3   | Magnet     | NdFeB        | 1    |        |
| 2   | Yoke       | Iron         | 1    |        |
| 1   | Frame      | Plastic      | 1    |        |
| No. | Part Name  | Material     | Q'TY | Remark |

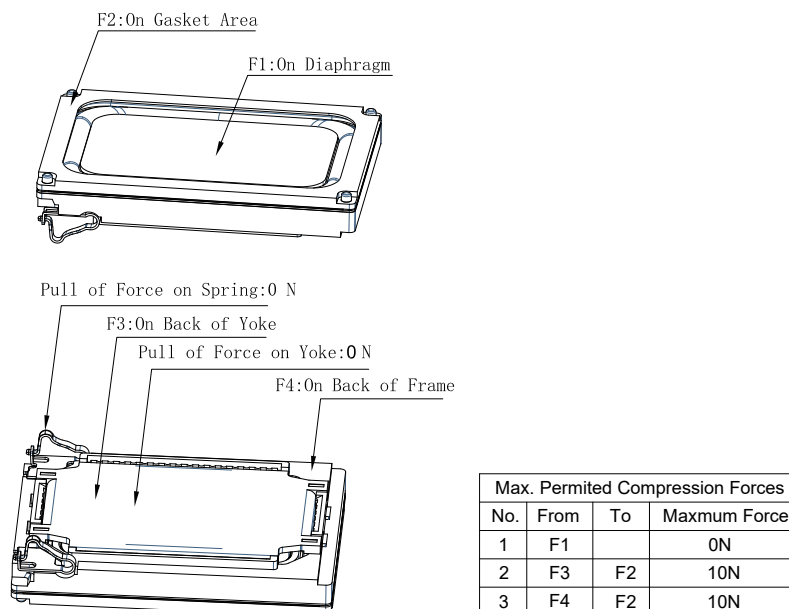
## SPECIFICATIONS (5/11)

**TYPE NO.**

**XHS171227WW27P27-01-RH**

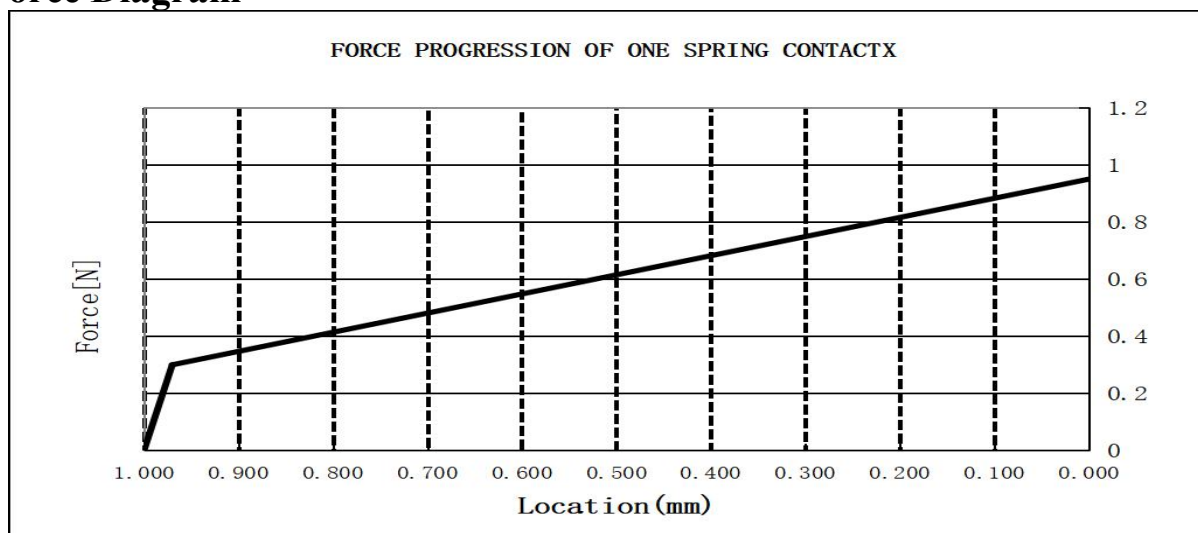
**Issue:A/3**

### 4.2 Permitted Force to Speaker



(Figure 2)

### 4.3 Force Diagram

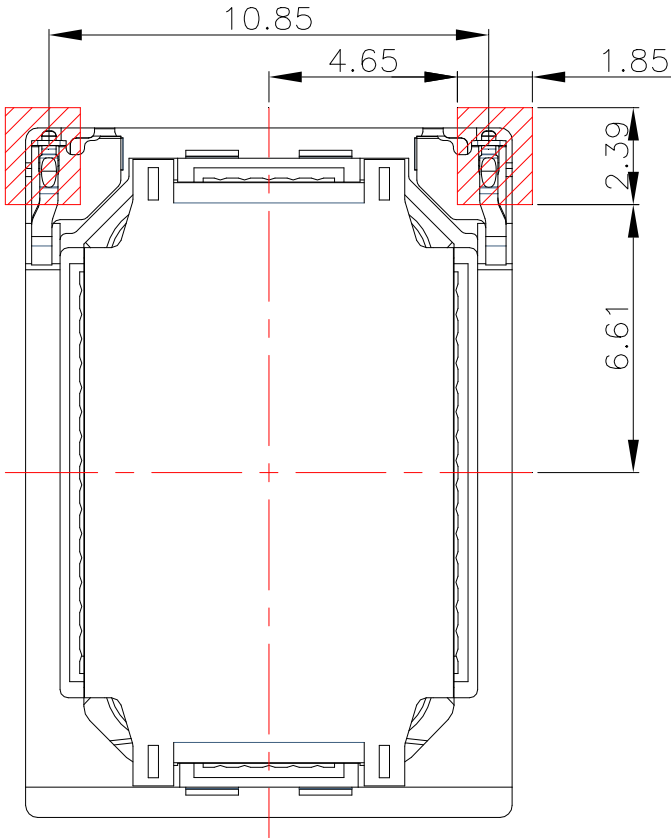


(Figure 3)

4.4 Pad Layout of Spring contact

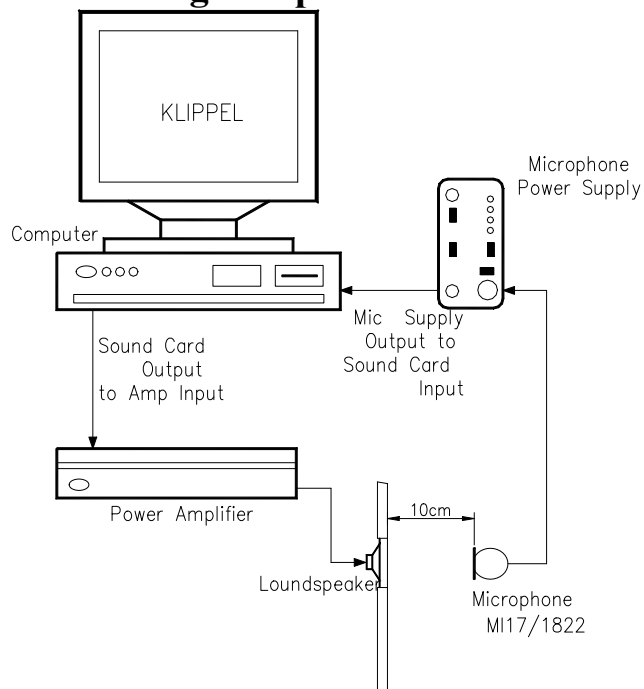
Pad Layout

(Bottom View)



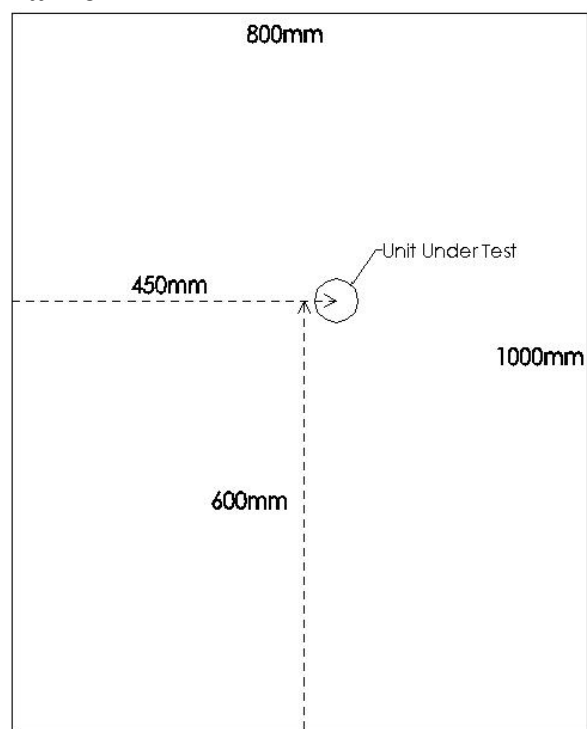
(Figure 4)

## 5. Measuring Setup



**(Figure 5)**

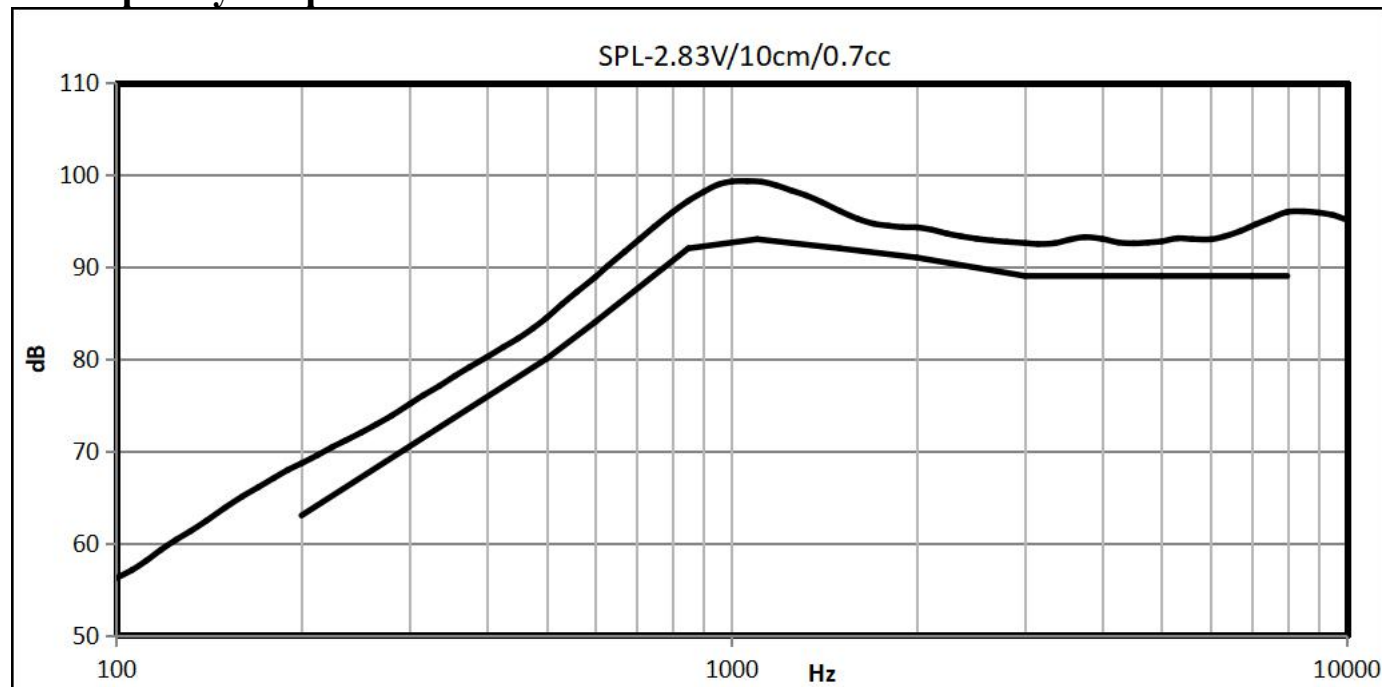
## Baffle



**Spaker Baffle**

**(Figure 6)**

## 6. Frequency Response

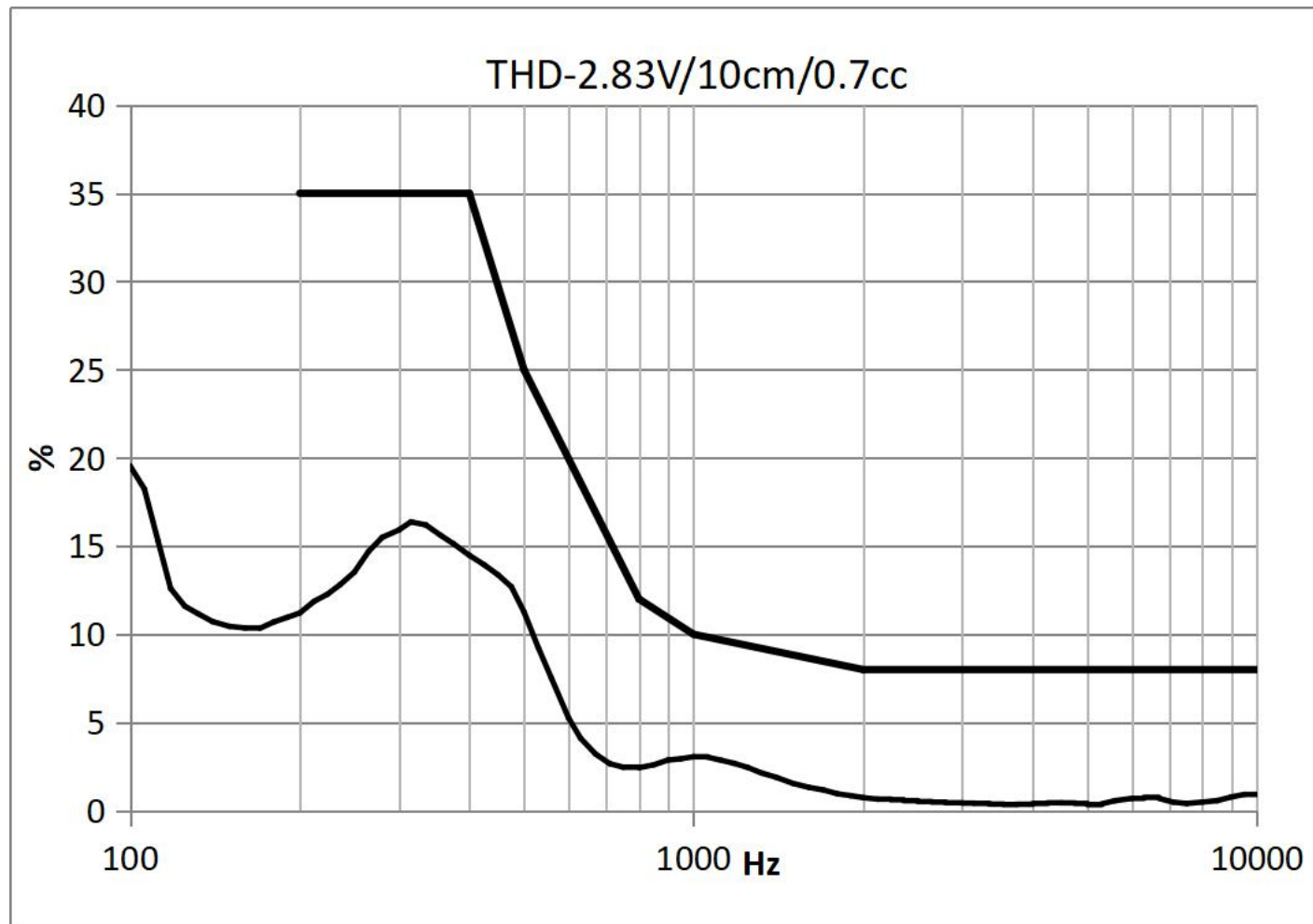


(Figure 7)

Table 1: Limits for SPL

| Frequency (Hz) | Lower Limits (dB) |
|----------------|-------------------|
| 200            | 63                |
| 500            | 80                |
| 600            | 84                |
| 850            | 92                |
| 1100           | 93                |
| 1500           | 92                |
| 2000           | 91                |
| 3000           | 89                |
| 5000           | 89                |
| 7000           | 89                |
| 8000           | 89                |

## 7. Total Harmonic Distortion

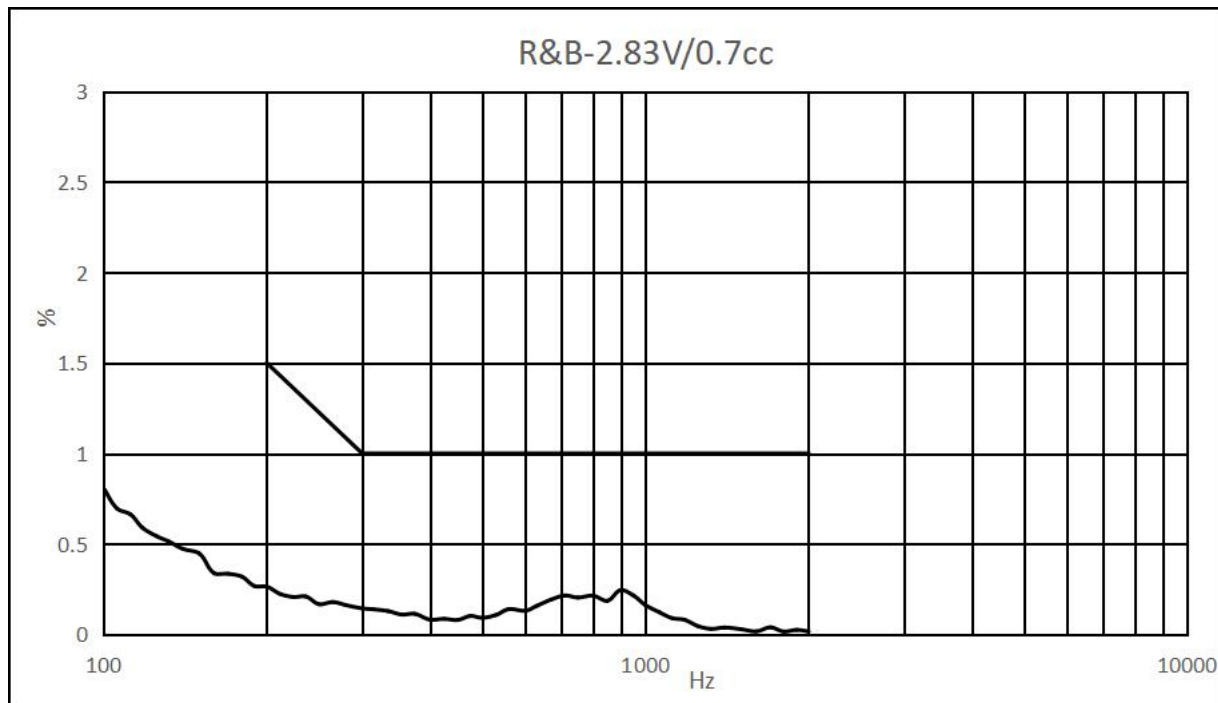


(Figure 8)

**Table 2: Limits for THD**

| Frequency (Hz) | Limits |
|----------------|--------|
| 200            | 35     |
| 400            | 35     |
| 500            | 25     |
| 800            | 12     |
| 1000           | 10     |
| 2000           | 8      |
| 10000          | 8      |

## 8. R&B



(Figure 9)

**Table 3: Limits for R&B**

| Frequency(Hz) | Limits |
|---------------|--------|
| 200           | 1. 5   |
| 300           | 1      |
| 2000          | 1      |

## SPECIFICATIONS (11/11)

**TYPE NO.**

**XHS171227WW27P27-01-RH**

**Issue:A/3**

### 9. Package

- 1、 100pcs of speaker in each tray
- 2、 20 trays in one carton
- 3、 Total:2000 pcs / 1 carton
- 4、 Gross Weight:5.4KGS
- 5、 Net Weight: 3.4KGS

