



SPECIFICATION

CUSTOMER:

PRODUCTS : MICRO SPEAKER

MODEL : XHS171224PN-03-RH

ITEM. NO. :

DATE : 2019-5-31



APPROVER	CHECKER	DESIGNER

CUSTOMER APPROVER

SIGNATURE	IMPRINTMENT

ZHEJIANG HAOSHENG ELECTRONIC TECHNOLOGY CO., LTD

Add: HaoSheng Technology Building, NO.328, Huimin, Jiashan, Zhejiang, P.R.China
314112

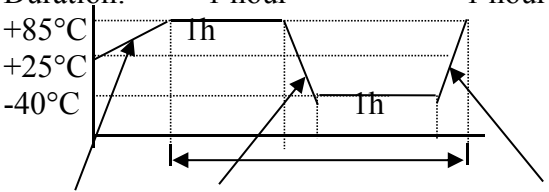
TEL:86-573-84645930 84646197

Fax:86-573-84646190

E-mail: services@xh-haosheng.com.

ZHEJIANG HAOSHENG ELECTRONIC TECHNOLOGY CO., LTD TEL:86-573-84645930 、 84646197 FAX:86-573-84646190 E-mail: services@xh-haosheng.com.			SPECIFICATIONS (1/11)			
			TYPE NO.	XHS171224PN-03-RH		Issue:A/2
Environmental Requirement	HF	✓	RoHS	✓	REACH	✓
Revision						
No	Date	Page	Description			Sign
1	2019-3-6		SPEC Update			ZY
2	2019-5-31		SPEC Update			ZY
Table of Contents						
No.	Item					Page
1	Product Outline					2/11
2	Electroacoustic Characteristics					2/11
3	General Reliability					3/11
4	Mechanical Layout and Dimensions					4,5,6/11
5	Measuring Setup					7/11
6	Frequency Response					8/11
7	Total Harmonic Distortion					9/11
8	R&B					10/11
9	TS					11/11

ZHEJIANG HAOSHENG ELECTRONIC TECHNOLOGY CO., LTD TEL:86-573-84645930 、 84646197 FAX:86-573-84646190 E-mail: services@xh-haosheng.com.	SPECIFICATIONS (2/11)		
	TYPE NO.	XHS171224PN-03-RH	Issue:A/2
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 1.3 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 3		
2-2. Impedance	8 ± 15% ohm （ at 2.5 KHz, 2.83V input ）		
2-3.Sound Pressure Level	95 ± 2 dB SPL /1W/10cm at 2kHz in 0.75cc box Speaker shall be mounted in a baffle with minimum dimensions of 80cm x 100cm.		
2-4.Frequency Response	Test at 2.83Vrms/10 cm with the speaker mounted in 0.75cc measure box in a baffle.		
2-5.Bass Resonance Frequency	860±10% Hz in 0.75cc box		
2-6. Iput Power (Rated./Max.)	Rated Power: 1W (in 0.75cc box) Maximum Power: 1.5W (in 0.75cc box)		
2-7.Rub and Buzz:	Using an audio oscillator, 200-3.4kHz at 2.83V, in 0.75cc box, no abnormal sound, 200Hz-600Hz at 3.5V, in 0.75cc box, no abnormal sound.		
2-8.THD	Test at 2.83Vrms/10cm with the speaker mounted in 0.75cc measure box in a baffle.		
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 .		

ZHEJIANG HAOSHENG ELECTRONIC TECHNOLOGY CO., LTD TEL:86-573-84645930 、 84646197 FAX:86-573-84646190 E-mail: services@xh-haosheng.com.	SPECIFICATIONS (3/11)		
	TYPE NO.	XHS171224PN-03-RH	Issue:A/2
3. General Reliability			
3-1 General	After any following tests the response at 1 KHz shall not deviate more than ± 3 dB from the initial value		
3-1 Temperature Shock Test	Temperature: $-40^{\circ}\pm 3^{\circ}\text{C}$ $\longleftrightarrow$ $+85^{\circ}\pm 3^{\circ}\text{C}$ Cycle: 10 cycles Duration: 1 hour 1 hour (recovery 2 hours)  (30minutes) (5minutes) 1 cycle (5minutes)		
3-2 Static Humidity Test	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 ± 1 hour before taking final measurements.		
3-3 Vibration Test	Secure device using a fixture appropriate for this test. Fixture shall be capable of mounting on vibration table. Vibrate from 10Hz to 2000Hz, 1 octave per minute, 0.06" double amplitude, 2mm displacement $\pm x$, $\pm y$, $\pm z$ directions with 15 g's force for 2 hrs per each plane.		
3-4 Drop Test	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)		
3-5 Operating Life Test	0.75cc box; 25°C ;Pink noise;20Hz-20kHz;1W ;Crest factor 3-4;96 H		
3-6.Rated Sweep Power Test	0.75cc box; 25°C ;Rated Power(1W);660-1060Hz; 1 sec;12 H		
3-7 Max Power Test	0.75cc box; 25°C ;Pink noise;20Hz-20kHz;1.5W;1 sec on/60 sec off;60 cycles		
3-8.High Temperature Test	$85 \pm 2^{\circ}\text{C}$;96H;2H Recovery time		
3-9.Low Temperature Test	$-40 \pm 2^{\circ}\text{C}$;96H;2H Recovery time		
3-10. Tmax	100°C in 0.75cc box		
3-11. Xmax	0.3mm in 0.75cc box		

SPECIFICATIONS

(4/11)

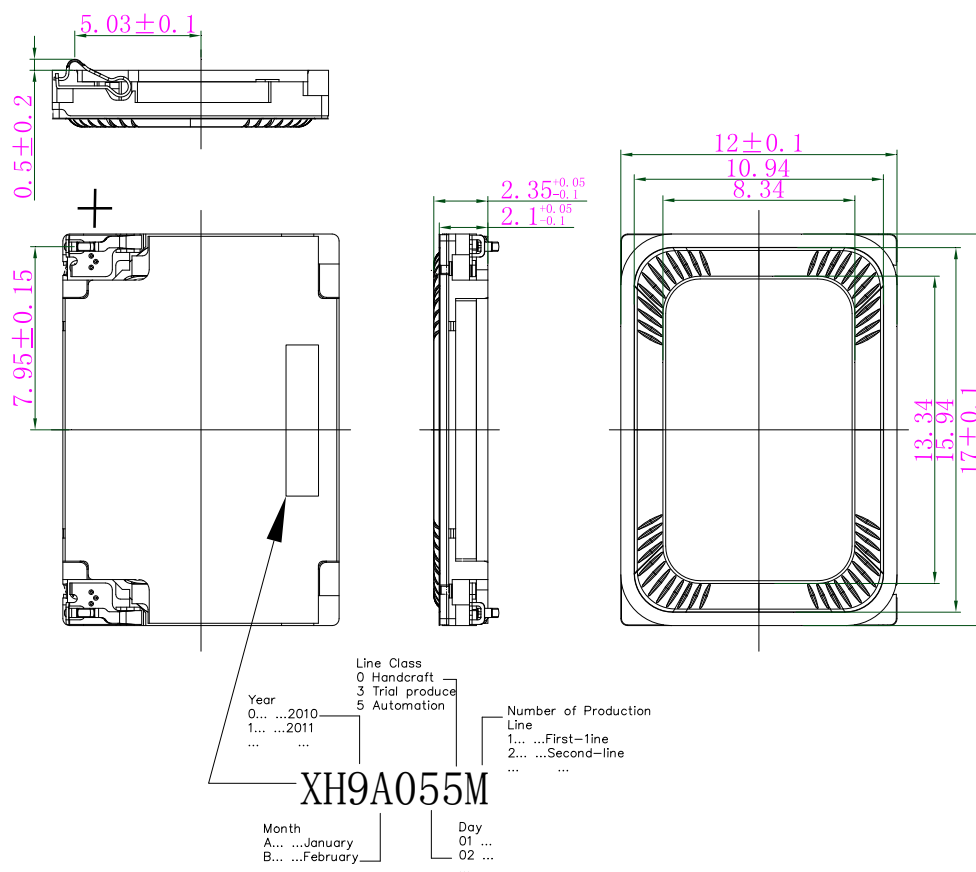
TYPE NO.

XHS171224PN-03-RH

Issue:A/2

4. Mechanical Layout and Dimensions

4.1 Mechanical Layout



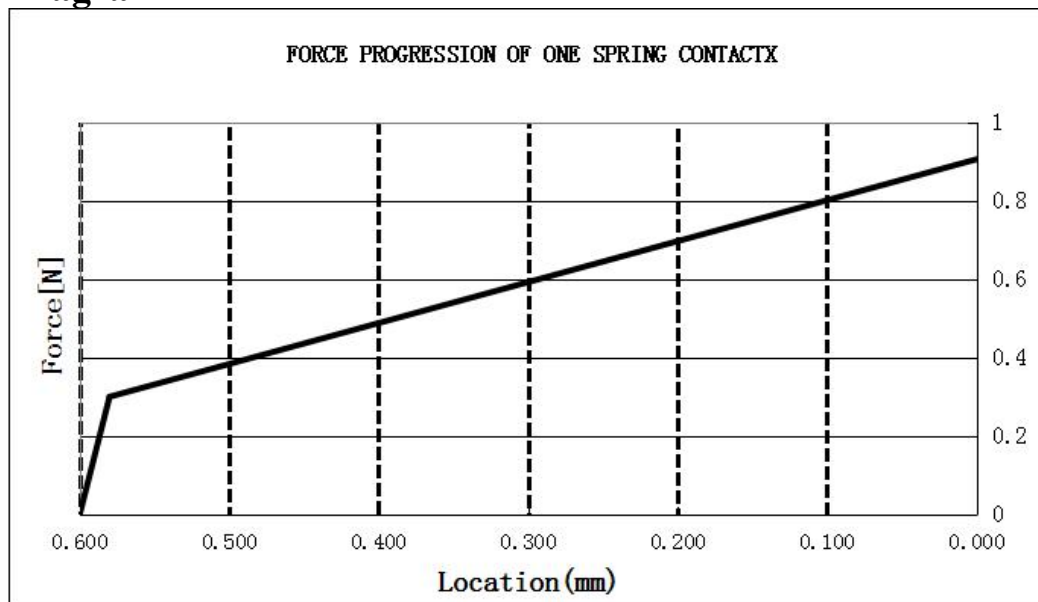
Notes:

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

(Figure 1)

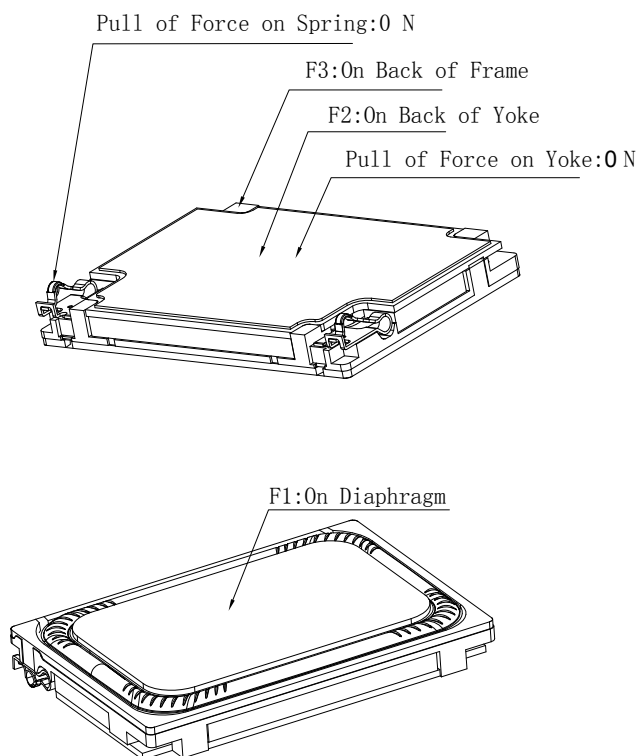
8	Spring	SUS301 3/4H	2	
7	TERMINAL	SUS304 0.15t	2	
6	Voice Coil	Copper	1	
5	Diaphragm	Polymer	1	
4	Pole Piece	Iron	2	
3	Magnet	NdFeB	5	
2	Yoke	Iron	1	
1	Frame	Plastic	1	
No.	Part Name	Material	Q'TY	Remark

4.2 Force Diagram



(Figure 2)

4.3. Permitted Force to Speaker

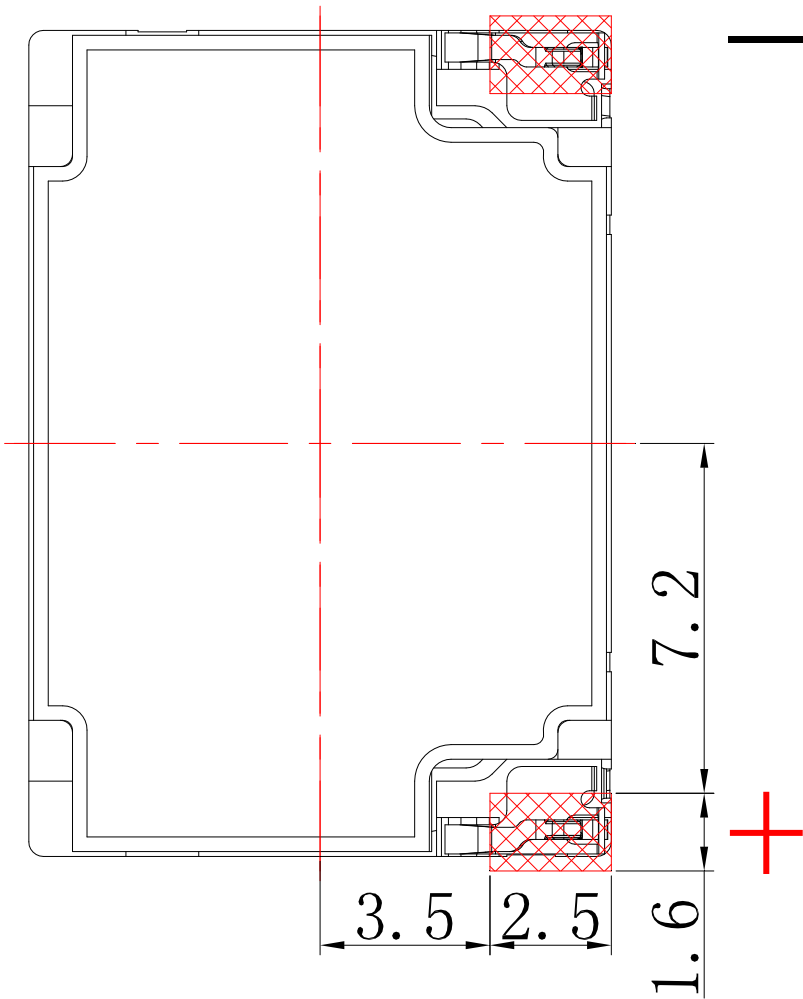


Max. Permitted Compression Forces			
No.	From	To	Maxmum Force
1	F1		0N
2	F2		10N
3	F3		10N

(Figure 3)

4.4. PAD Layout

PAD Layout



(Figure 4)

ZHEJIANG HAOSHENG ELECTRONIC TECHNOLOGY CO., LTD
TEL:86-573-84645930 、 84646197
FAX:86-573-84646190
E-mail: services@xh-haosheng.com.

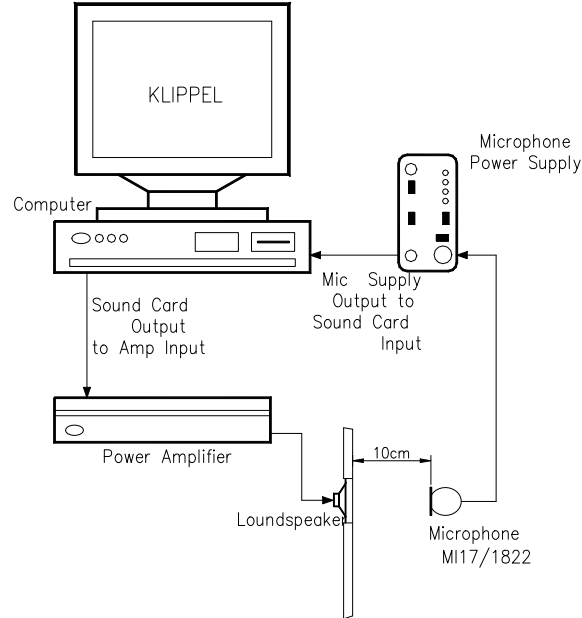
SPECIFICATIONS
(7/11)

TYPE NO.

XHS171224PN-03-RH

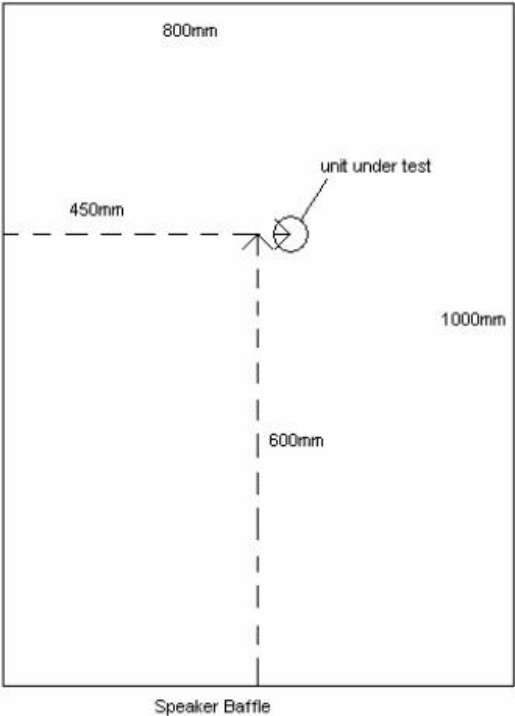
Issue:A/2

5. Measuring Setup



(Figure 5)

Baffle



(Figure 6)

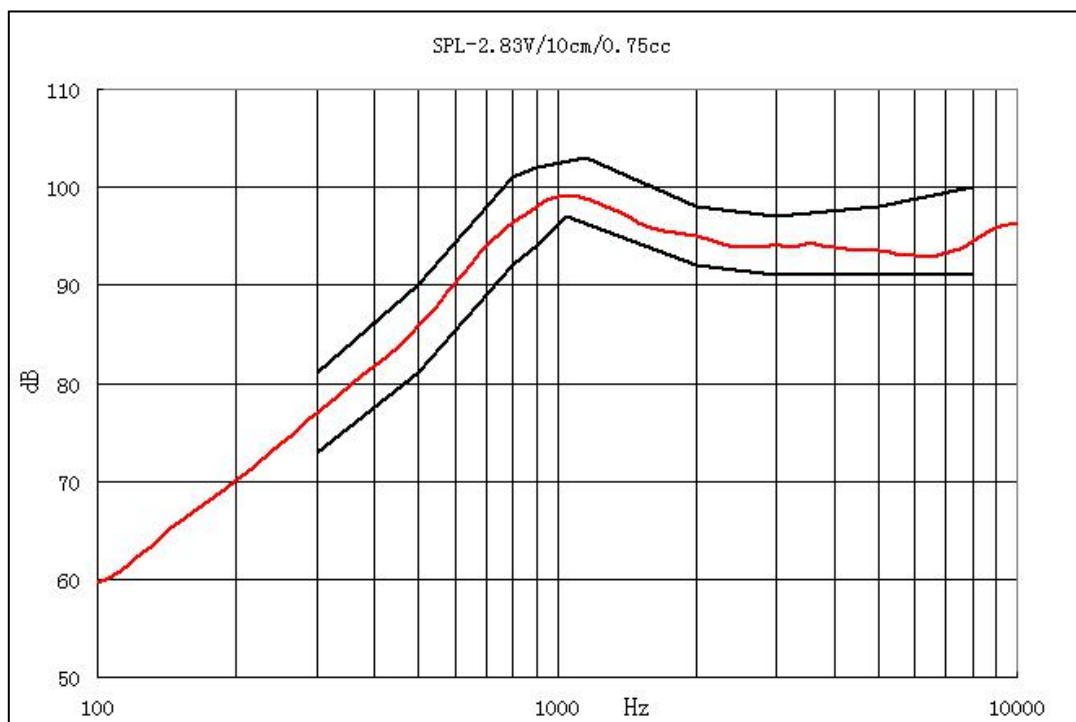
SPECIFICATIONS (8/11)

TYPE NO.

XHS171224PN-03-RH

Issue:A/2

6. Frequency Response



Frequency (Hz)	Upper Limits (dB)	Frequency (Hz)	Lower Limits (dB)
300	81	300	73
500	90	500	81
800	101	800	92
900	102	900	94
1150	103	1050	97
2000	97	2000	93
3000	97	3000	91
5000	98	5000	91
8000	100	8000	91

(Figure 7)

SPECIFICATIONS

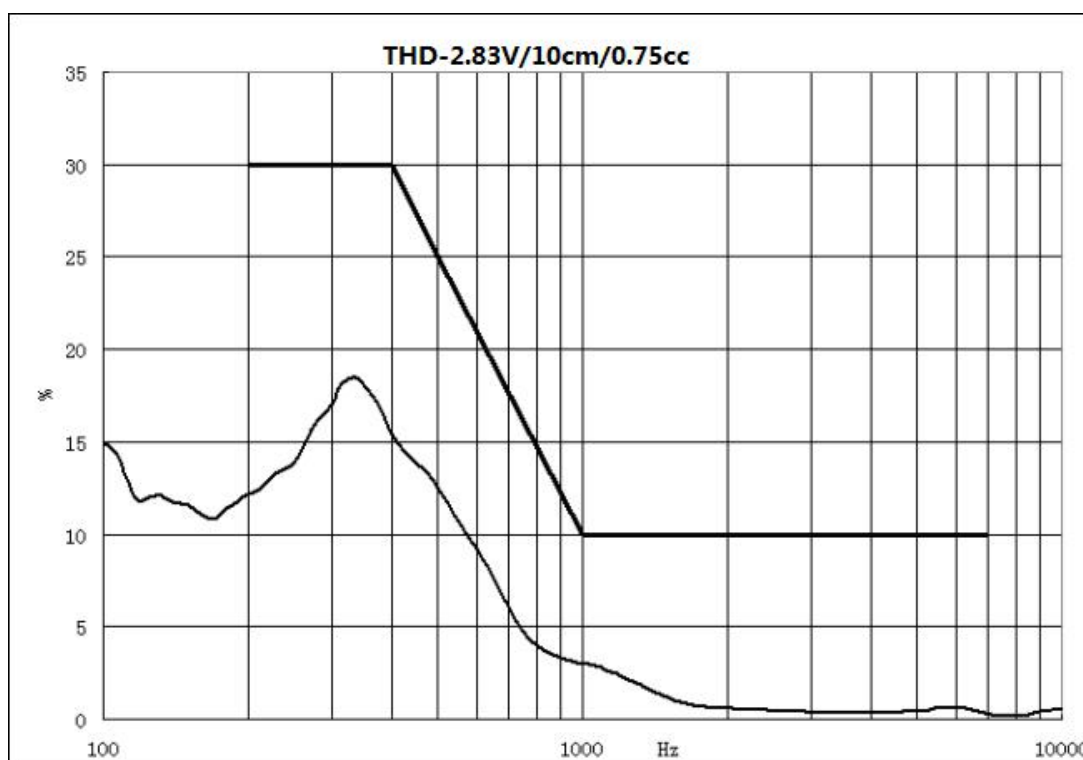
(9/11)

TYPE NO.

XHS171224PN-03-RH

Issue:A/2

7. Total Harmonic Distortion



Frequency (Hz)	Limits
200	30
400	30
500	25
1000	10
7000	10

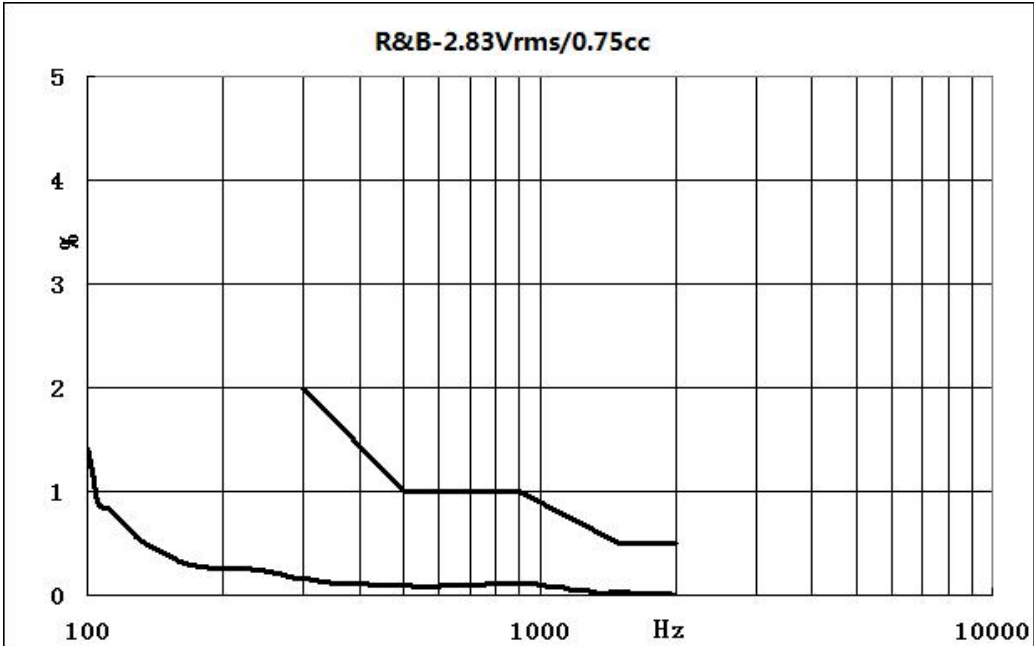
(Figure 8)

ZHEJIANG HAOSHENG ELECTRONIC
TECHNOLOGY CO., LTD
TEL:86-573-84645930 、 84646197
FAX:86-573-84646190
E-mail: services@xh-haosheng.com.

SPECIFICATIONS
(10/11)

TYPE NO.	XHS171224PN-03-RH	Issue:A/2
----------	-------------------	-----------

8.R&B



Frequency (Hz)	Limits
300	2
500	1
900	1
1500	0.5
2000	0.5

(Figure 9)

ZHEJIANG HAOSHENG ELECTRONIC
 TECHNOLOGY CO., LTD
 TEL:86-573-84645930 、 84646197
 FAX:86-573-84646190
 E-mail: services@xh-haosheng.com.

SPECIFICATIONS
 (11/11)

TYPE NO.	XHS171224PN-03-RH	Issue:A/2
----------	-------------------	-----------

9.T/S parameters
 Thiele-Small Parameters: The following Thiele-Small Parameters are guidelines from a speaker exhibiting good audio performance.

Re (ohms)	6.8
Le (mH)	0.044
BL (T*m)	0.909
D0 (mm)	13.26
Mm (g)	0.104
Cm (mm/N)	1.031
Rm (mech ohms)	0.154
F0 (Hz)	487.1
Qms	2.061
Vas (l)	0.0028
Xmax (mm)	0.3
Sd (mm ^2)	138
Vol disp. (mm ^3)	41.4
Tmax (°C)	100
Tcoeff	0.00357

(Figure 10)