



SPECIFICATION

CUSTOMER:

PRODUCTS : MICRO SPEAKER

MODEL : XHS151151LN-01-RH

ITEM. NO. :

DATE :2021-11-18



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

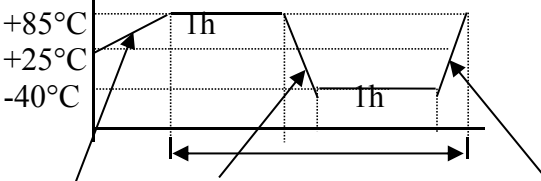
TEL:86-573-84645930 84646197

Fax:86-573-84646190

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

ZHEJIANG ELECTRONIC CO.,LTD. TEL:86-573-84645930 、 84646197 FAX:86-573-84646190 E-mail: services@xh-haosheng.com.		HAOSHENG TECHNOLOGY SPECIFICATIONS (1/12)		
		TYPE NO.	XHS151151LN-01-RH	Issue:A/0
Revision				
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		TYPE NO.	XHS151151LN-01-RH	Issue:A/0
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 1.35 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		AC:7.3 ± 10% ohm(at 2 KHz, 2.83V input) DC:6± 10%ohm		
2-3.Sound Pressure Level		93.5 ± 2 dB SPL /1.14W/10cm at 2kHz in 0.65cc box Speaker shall be mounted in a baffle. See Figure 5.		
2-4.Frequency Response		See Figure 5, Table 2 Test at 1.14W/10 cm with the speaker mounted in 0.65cc measure box in a baffle.		
2-5.Bass Resonance Frequency		800±10% Hz in 0.65cc box		
2-6.Rated Frequency Range		200 Hz-10kHz		
2-7. Iput Power (Rated./Max.)		Rated Power: 1.14W (in 0.65cc box) Maximum Power: 1.75W (in 0.65cc box)		
2-8.Rub and Buzz:		Using an audio oscillator, 200-3.4kHz at 2.83V, in 0.65cc box, no abnormal sound, 200Hz-600Hz at 3.5V, in 0.65cc box, no abnormal sound.		
2-9.THD		See Figure7 , Table 3 Test at 1.14W /10 cm with the speaker mounted in 0.65cc measure box in a baffle.		
2-10.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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	TYPE NO.	XHS151151LN-01-RH	Issue:A/0
3. General Reliability			
3-1 General	After any following tests the response at 2 KHz shall not deviate more than ± 3 dB from the initial value		
3-2 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)		
3-3 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.		
3-4 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, 2mm displacement $\pm x$, $\pm y$, $\pm z$ directions with 15 g's force for 2 hrs per each plane.		
3-5 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)		
3-6 Operating Life Test	0.65cc box; 25°C ;Pink noise;20Hz-20kHz; 1.14W;Crest factor 3-4;96 H		
3-7.Rated Sweep Power Test	0.65cc box; 25°C ;Rated Power(1.14W);650-1050Hz; 1 sec;12 H		
3-8 Max Power Test	0.65cc box; 25°C ;Pink noise;20Hz-20kHz;1.75W;1 sec on/60 sec off;60 cycles		
3-9.High Temperature Test	$85 \pm 2^{\circ}\text{C}$;96H;2H Recovery time		
3-10.Low Temperature Test	$-40 \pm 2^{\circ}\text{C}$;96H;2H Recovery time		

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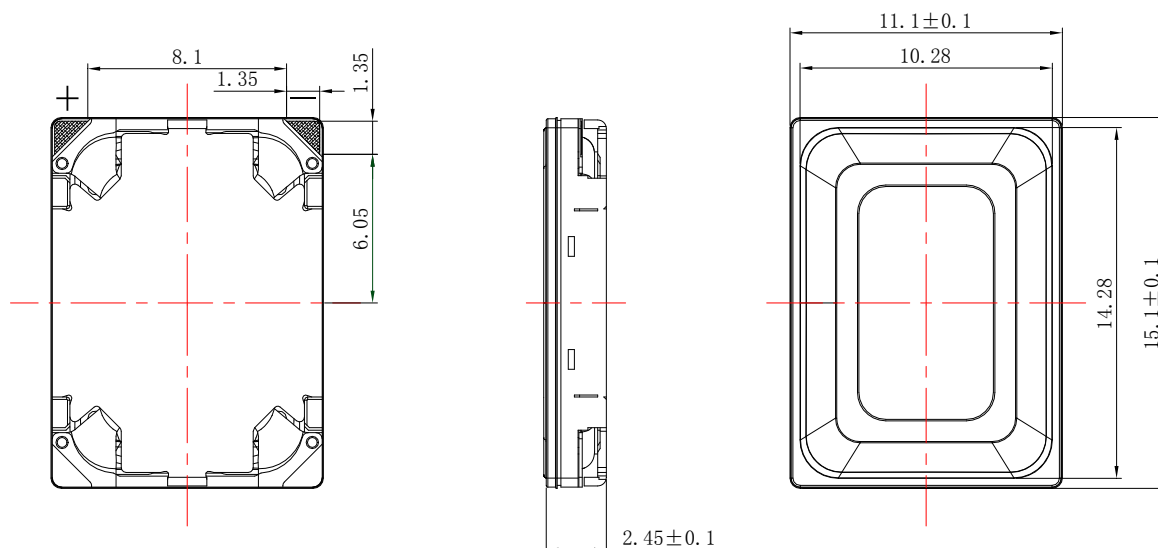
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NO.**

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4. Mechanical Layout and Dimensions

4.1 Mechanical Layout



Notes:

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

(Figure 1)

8	Voice Coil	Copper	1	
7	FPC	Copper foil	2	
6	Dome Type	Mcpet	1	
5	Diaphragm	Polymer	2	
4	Pole Piece	Iron	2	
3	Magnet	NdFeB	5	
2	Yoke	Iron	1	
1	Frame	Plastic	1	
No.	Part Name	Material	Q'TY	Remark

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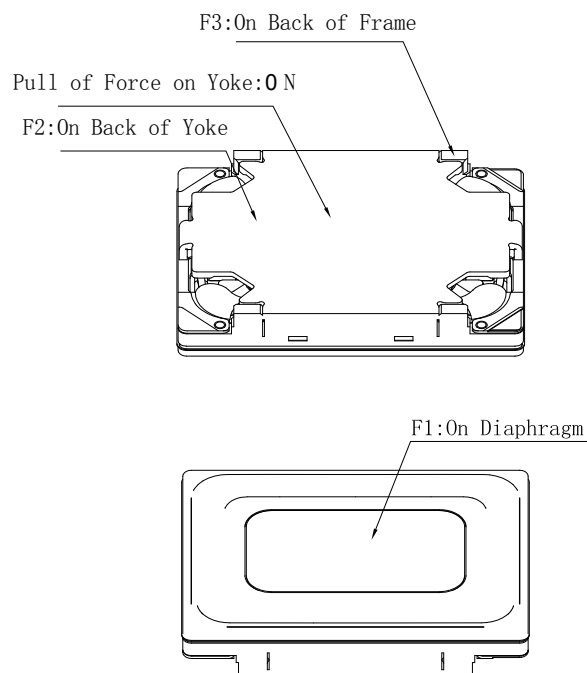
SPECIFICATIONS **(5/12)**

TYPE NO.

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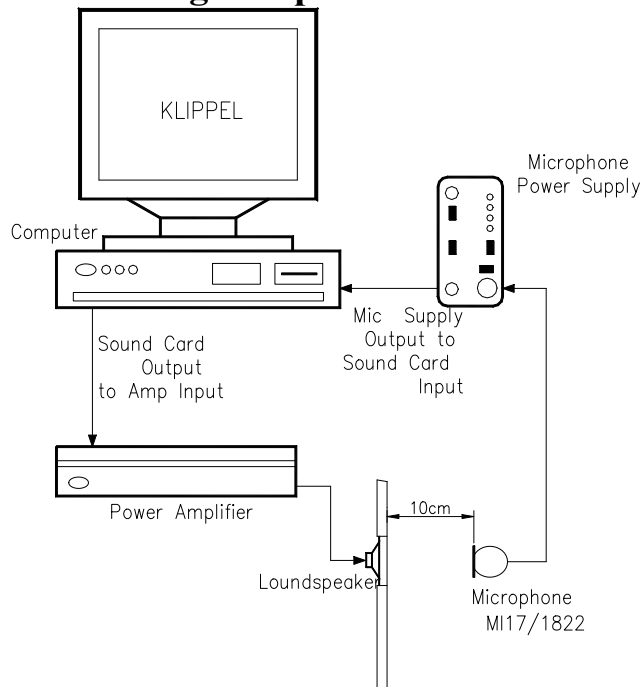
4.2 Permitted Force to Speaker



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

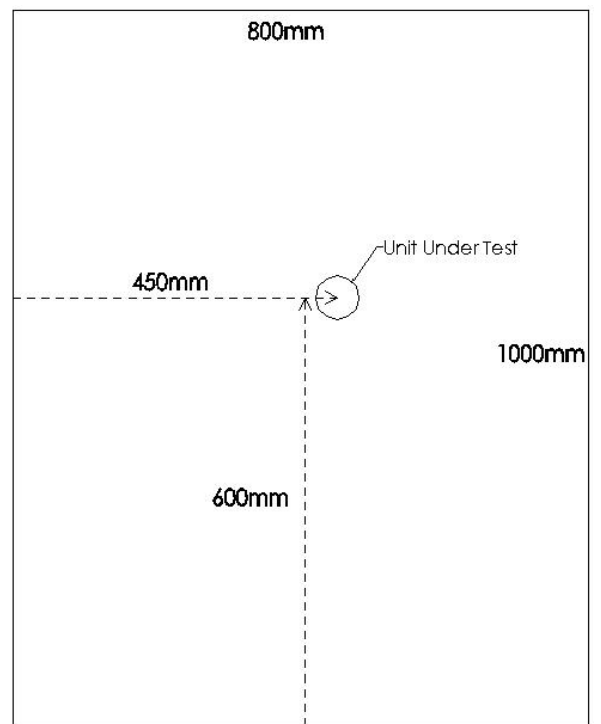
(Figure 2)

5. Measuring Setup



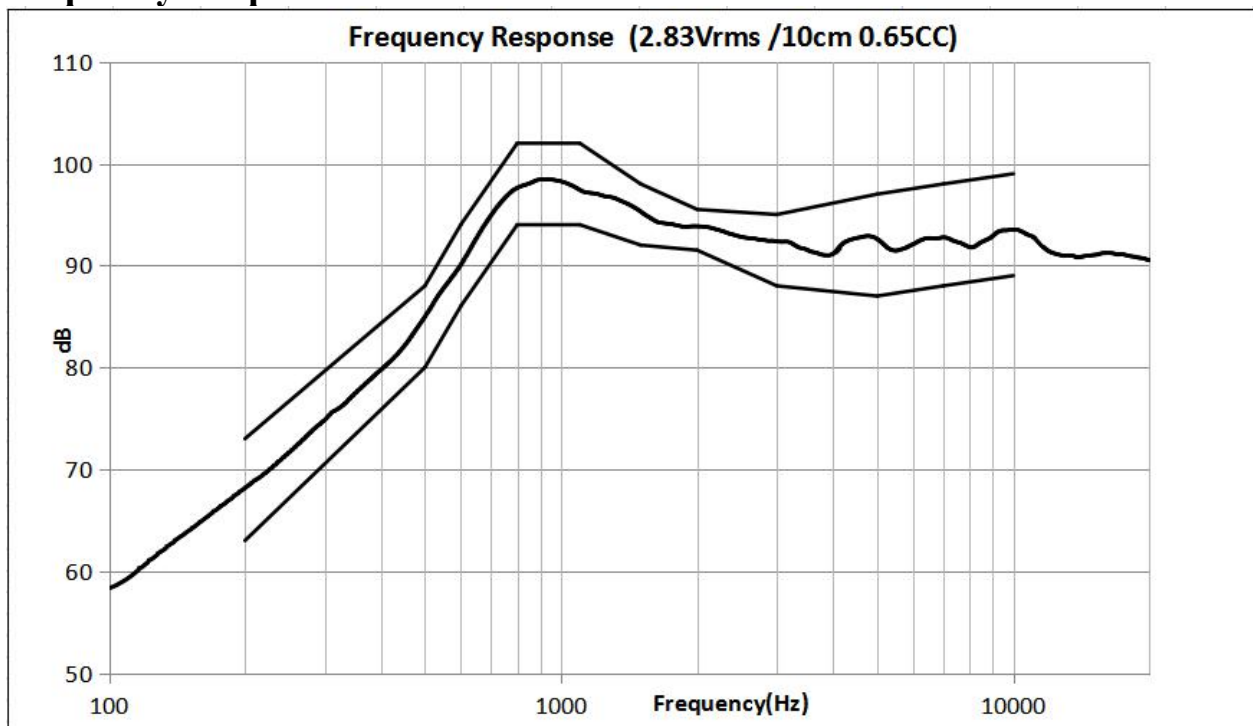
(Figure 3)

Baffle



**Spaker Baffle
(Figure 4)**

6. Frequency Response

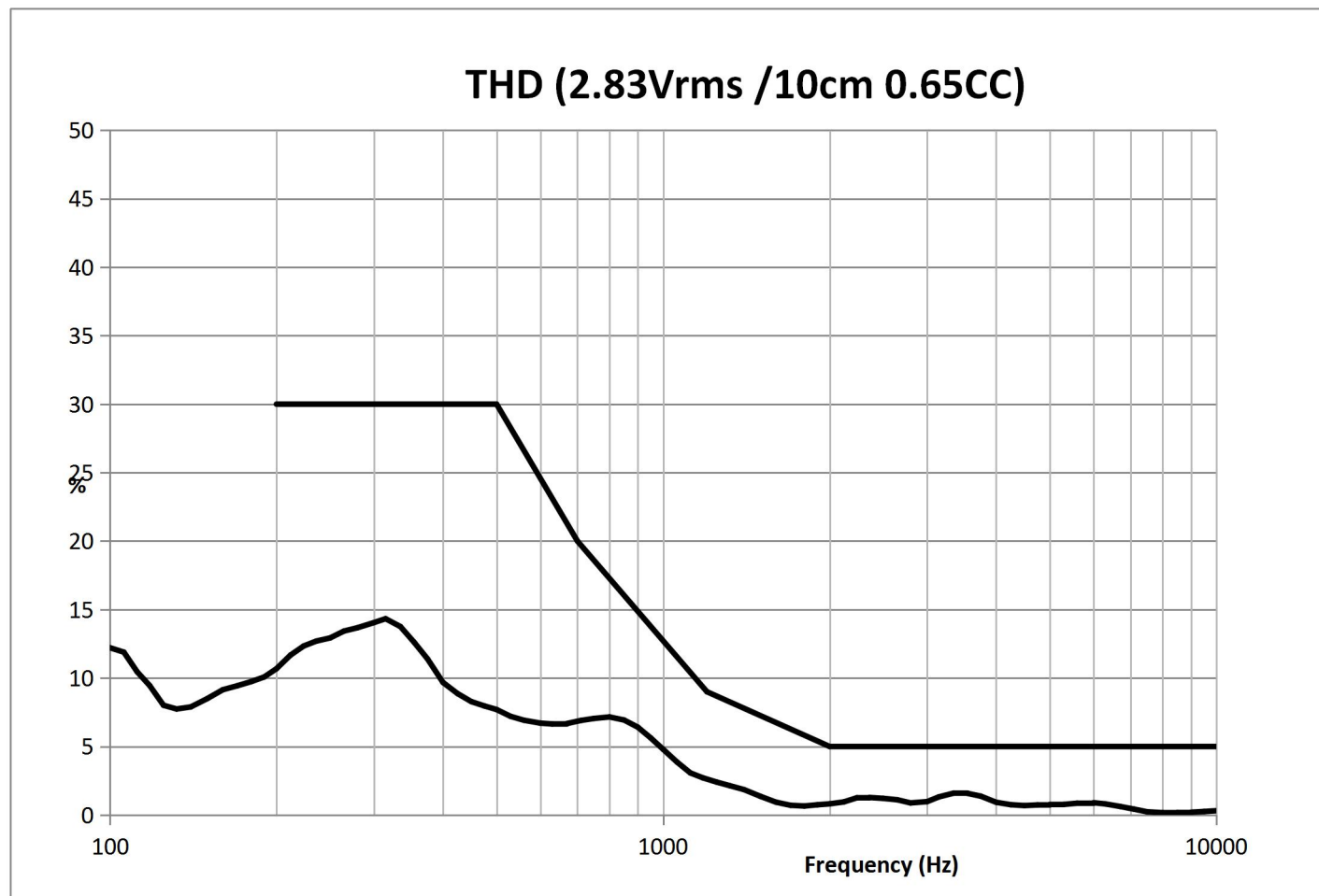


(Figure 5)

Table 1: Tolerance Limits Data for FR

Frequency(Hz)	Upper Limits(dB)	Frequency(Hz)	Lower Limits(dB)
200	73	200	63
500	88	500	80
600	94	600	86
850	102	850	94
1100	102	1100	94
1500	98	1500	92
2000	95.5	2000	91.5
3000	95	3000	88
5000	97	5000	87
7000	98	7000	88
10000	99	10000	89

7. Total Harmonic Distortion

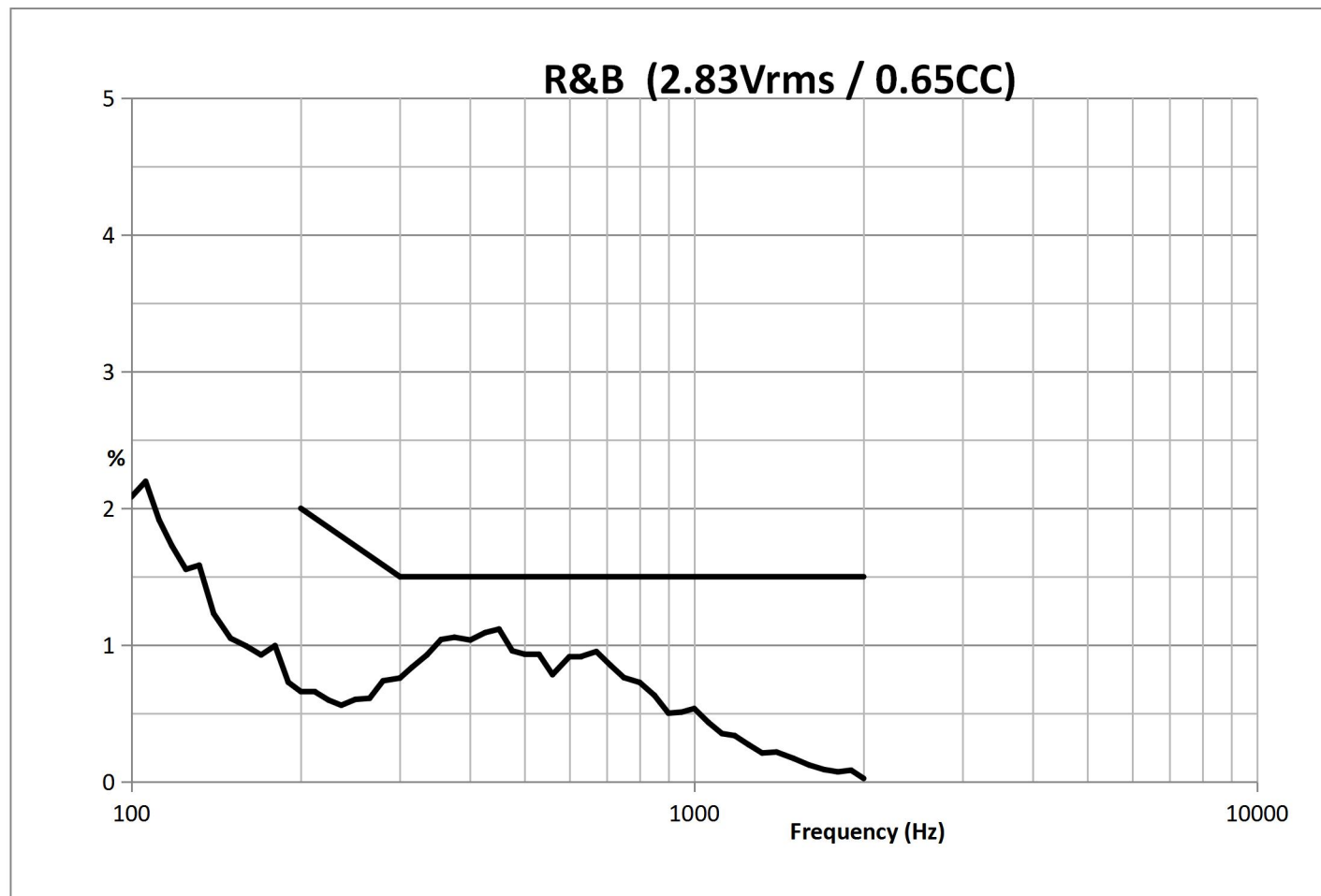


(Figure 6)

Table 2: Limits Data for THD

Frequency(Hz)	Limits
200	30
500	30
700	20
1200	9
2000	5
10000	5

8. Rub and Buzz

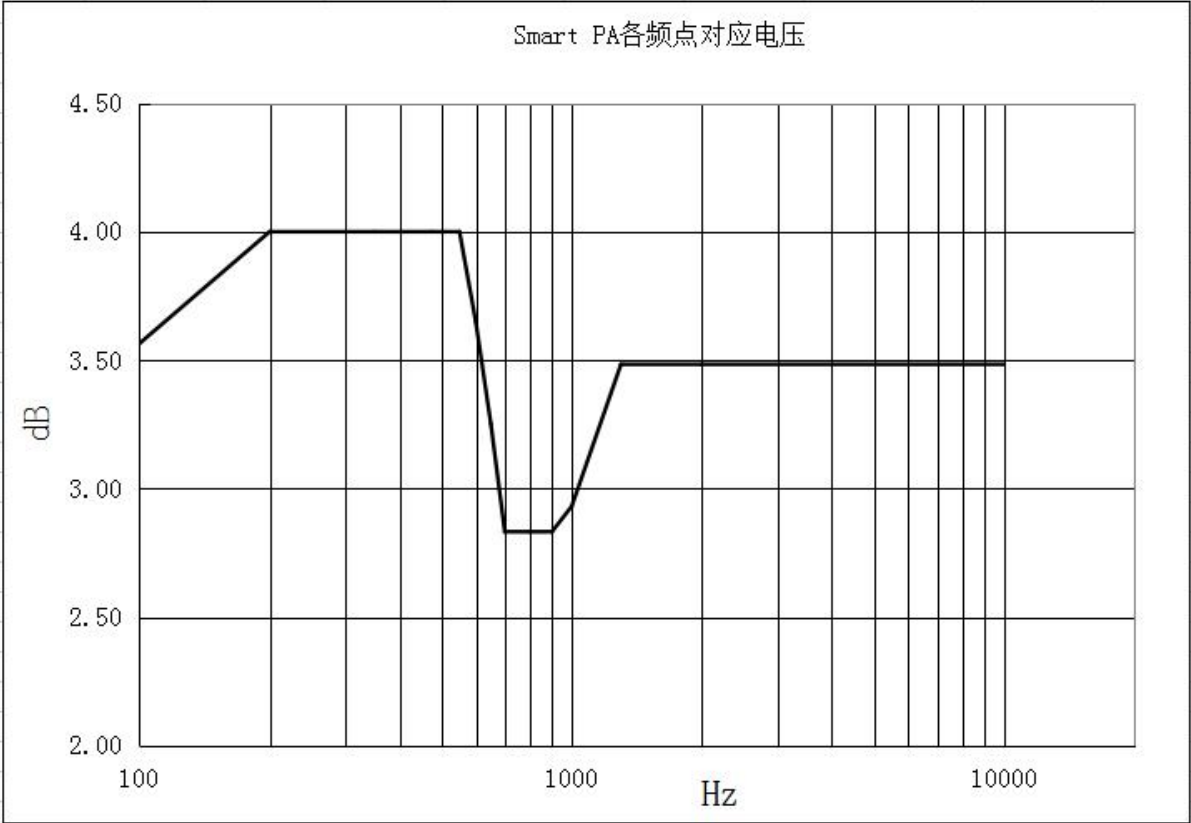


(Figure 7)

Table 3: Limits Data for R&B

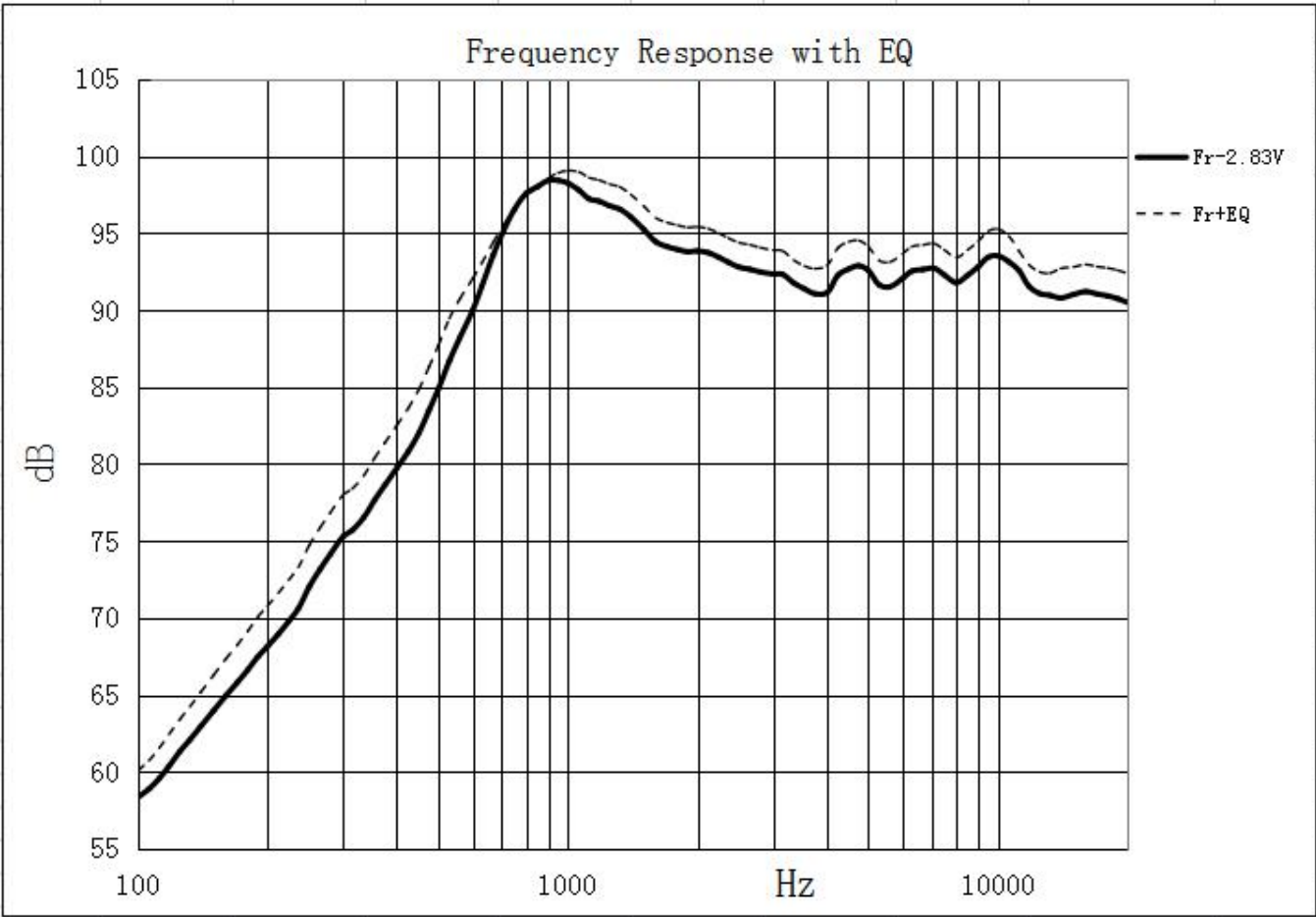
Frequency(Hz)	Limits
200	2
300	1.5
2000	1.5

10. EQ Power



频点 Hz	电压 Vrms
100	3.57
200	4.00
350	4.00
475	4.00
550	4.00
600	3.65
650	3.25
700	2.83
800	2.83
900	2.83
1000	2.93
1300	3.48
2000	3.48
10000	3.48

11. Frequency Response with EQ



12. T/S parameters

Thiele-Small Parameters: The following Thiele-Small Parameters are guidelines from a speaker exhibiting good audio performance.

Electrical Parameters	Re	6.51	Ohm
	Res	9.47	Ohm
	fs	530.3	Hz
Mechanical Parameters	Mms	0.096	mg
	Rms	0.098	kg/s
	Cms	0.941	mm/N
	Kms	1.062	N/mm
	Bl	0.964	T.m
Loss factors	Qms	3.429	
	Qes	2.357	
	Qts	1.397	
Other Parameters	Vas	0.0016	l
	Sd	1.12	cm ²

13. PA 应用参数

Ttem	Value	Unit
Xmax	0.5	mm
Tmax	100	°C
Tcoef	0.00393	1/°C