MESSRS.

SPECIFICATION FOR APPROVAL
承 认 书

Product	**DYNAMIC SPEAKER**
Part No.	**HDK-3608BB-42C (RoHS)**
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 JUL-29-2024	曹丽萍 JUL-29-2024	LILY JUL-29-2024

常 州 华 龙 电 子 有 限 公 司
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EDITION:1.1

History change record

Change Items	Date	Note	Drawn by	Checked by
	2024-07-29	First Issue	Lily 2024-07-29	Niko 2024-07-29

1. Specification

HDK-3608BB-42C (RoHS)

	ITEM	SPECIFICATIONS	
01	**Type**	Dynamic speaker	
02	**Dimension**	External diameter 36 mm	
03	**Rated Input Power**	1.5W	
04	**Max. Input Power**	2W for 1 minute	
05	**Impedance**	8 ohm ± 15% at 1500Hz.	
06	**Resonance Frequency (Fo)**	630Hz ± 20% at Fo, 1V	
07	**Sensitivity (S.P.L.)**	102dB (1.5W / 0.1m) ± 3 dB	at AVE0.8K,1.0K,1.2K,1.5KHz.
08	**Frequency Range**	Fo – 10KHz	
09	**Total Harmonics Distortion**	Max 10% at 1 KHz,1.5W.	
10	**Dustproof and Waterproof**	IP67	
11	**Appearance**	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
12	**Operation Test**	Must be normal at program source – 1.5W	
13	**Buzz, Rattle, etc.**	Should not be audible at 3.46V sine Wave between 300 to 5KHz	
14	**Polarity**	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
15	**Terminal Strength**	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
16	**Temperature**	Operating temperature: -25℃ to +65℃ Storage temperature: -30℃ to +70℃	

2-1. Test Condition

Standard

Temperature : 15 ~ 35℃

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : 20±3℃

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2.Standard Test Fixture

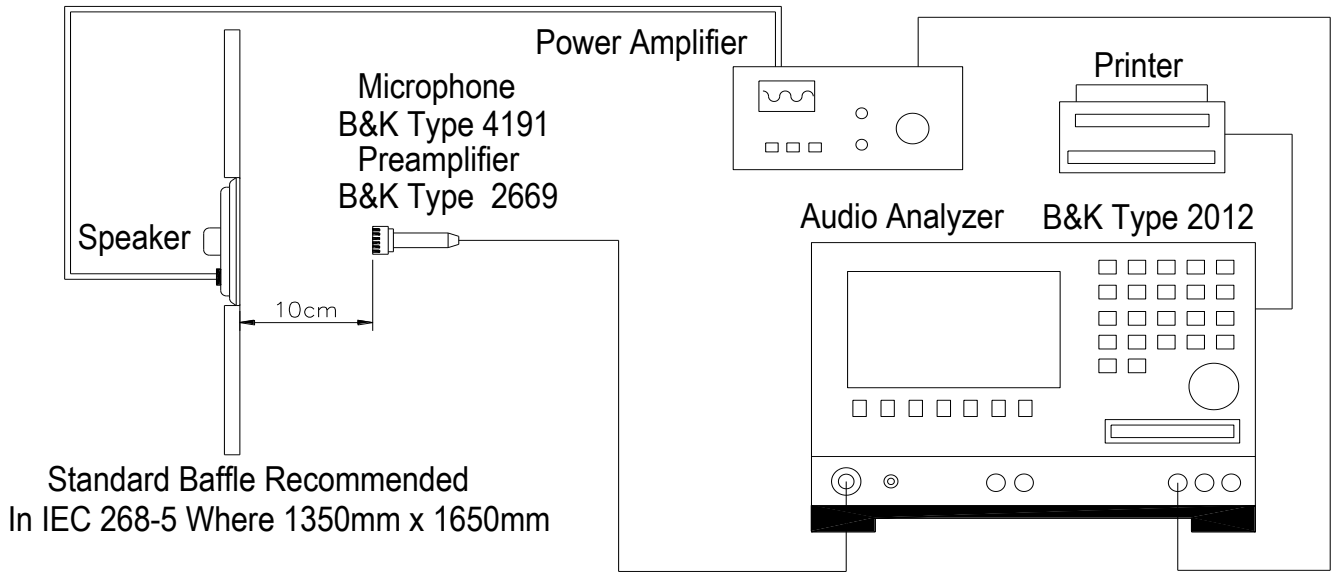
1.Input Power : 1.5W (3.46V)

2.Zero Level : -dB,

3.Mode : SPEAKER

4.potentiometer Range : 50dB

5.Sweep Time : 0.5sec



2-3.FREQUENCY RESPONSE (SPL curve,IMP curve THD curve,R&B curve)

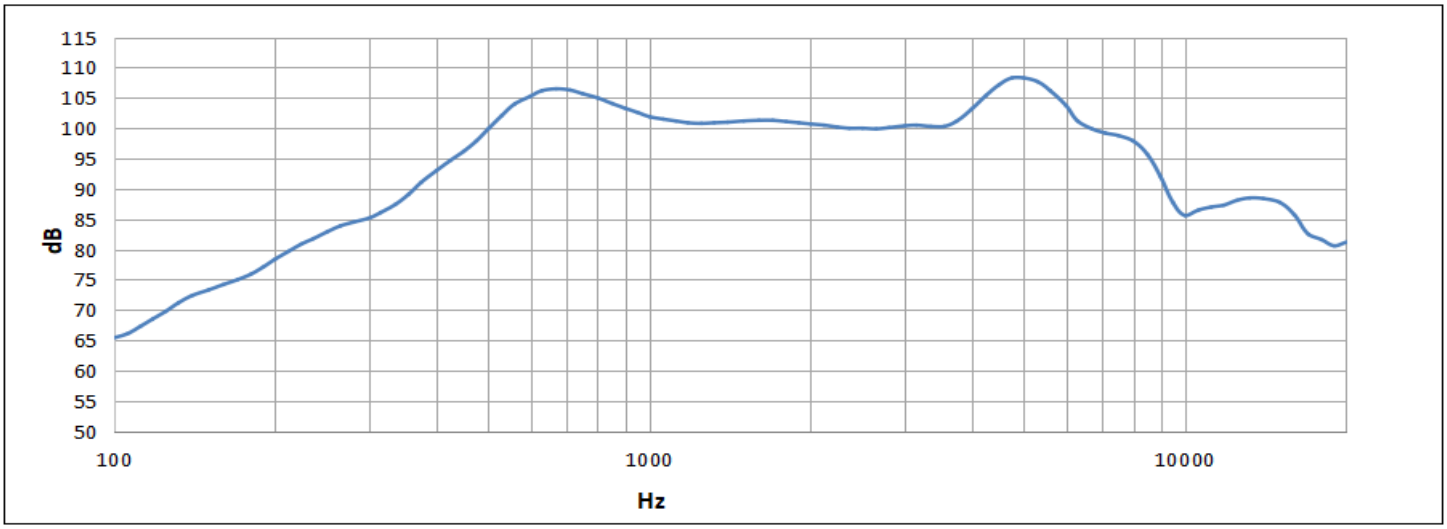


Fig.1 Frequency response

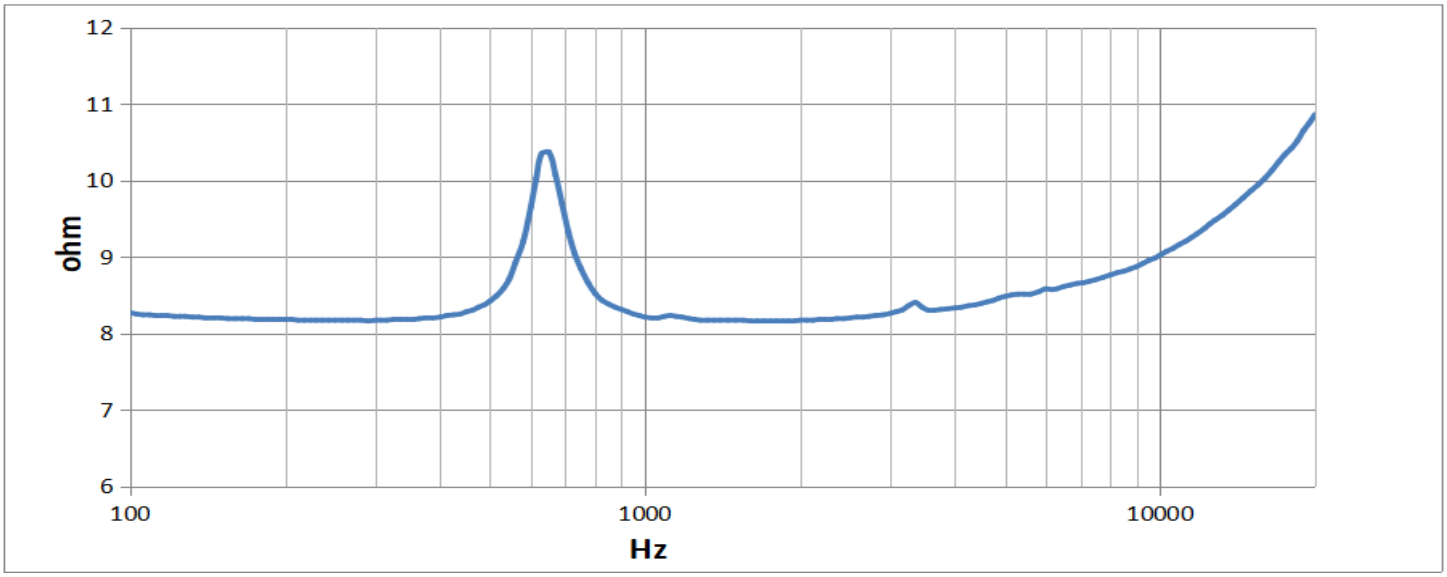


Fig.2 IMP

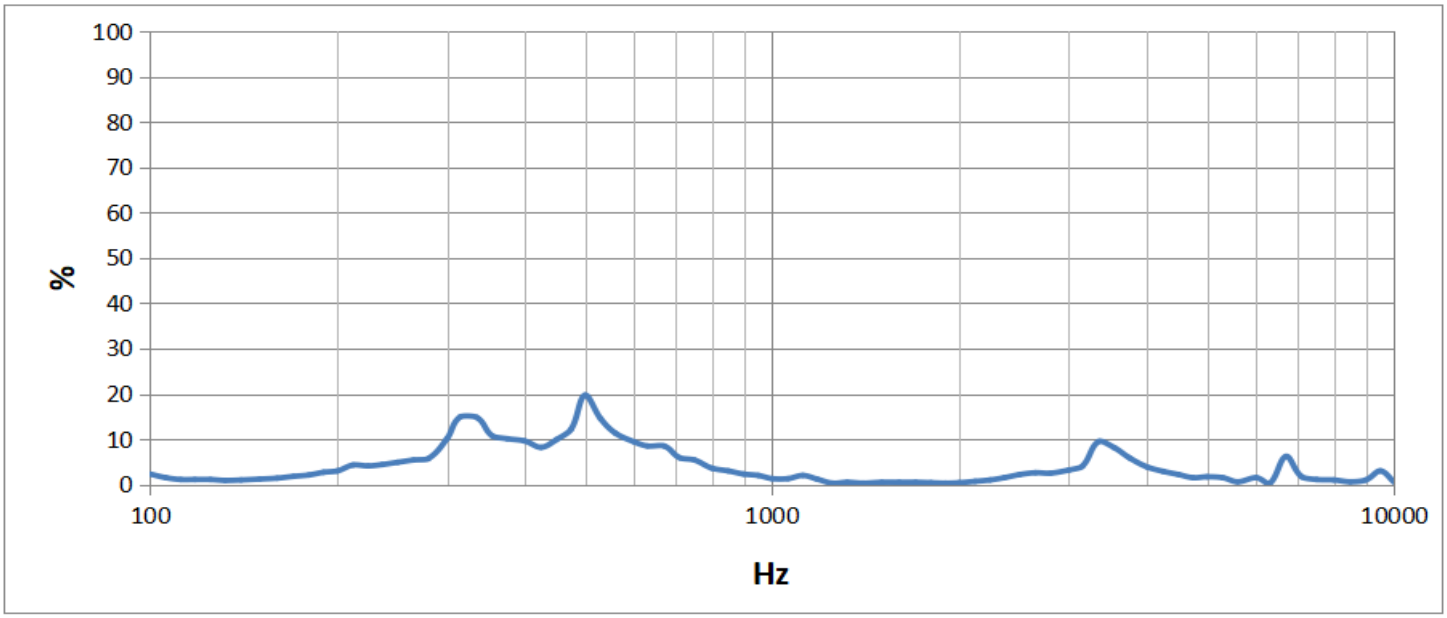


Fig.3 THD

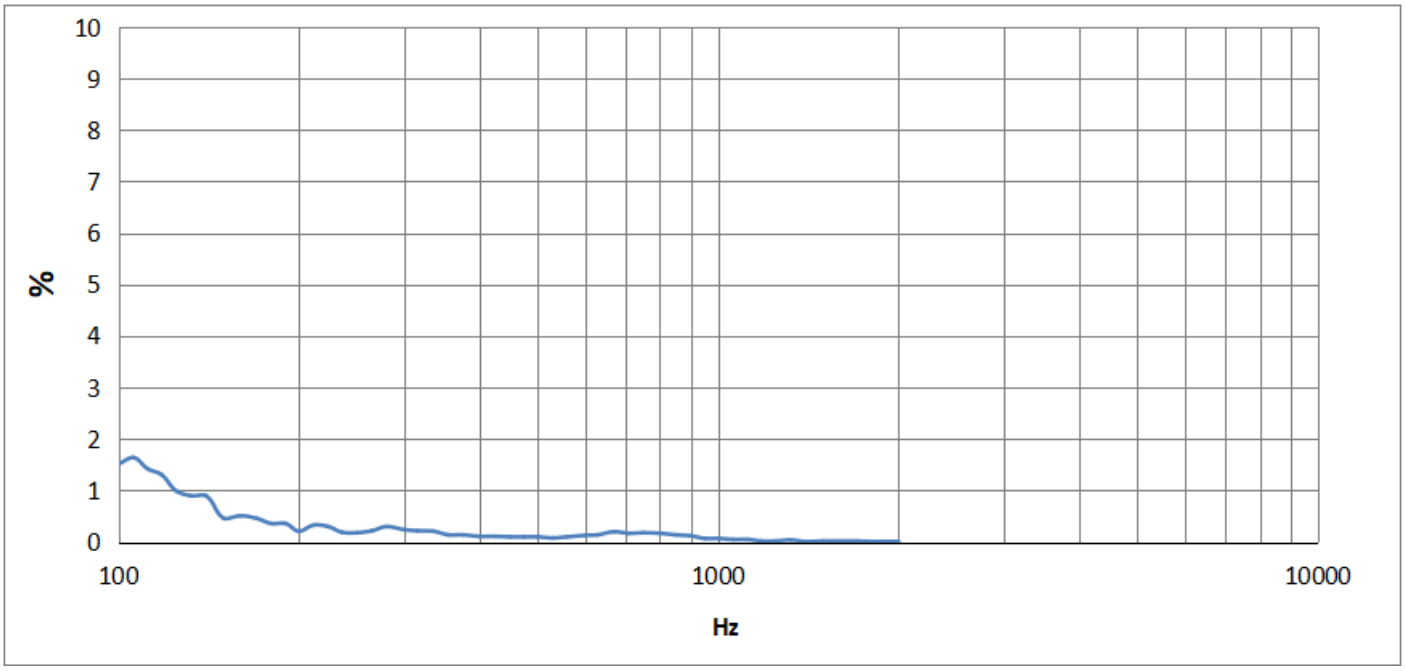
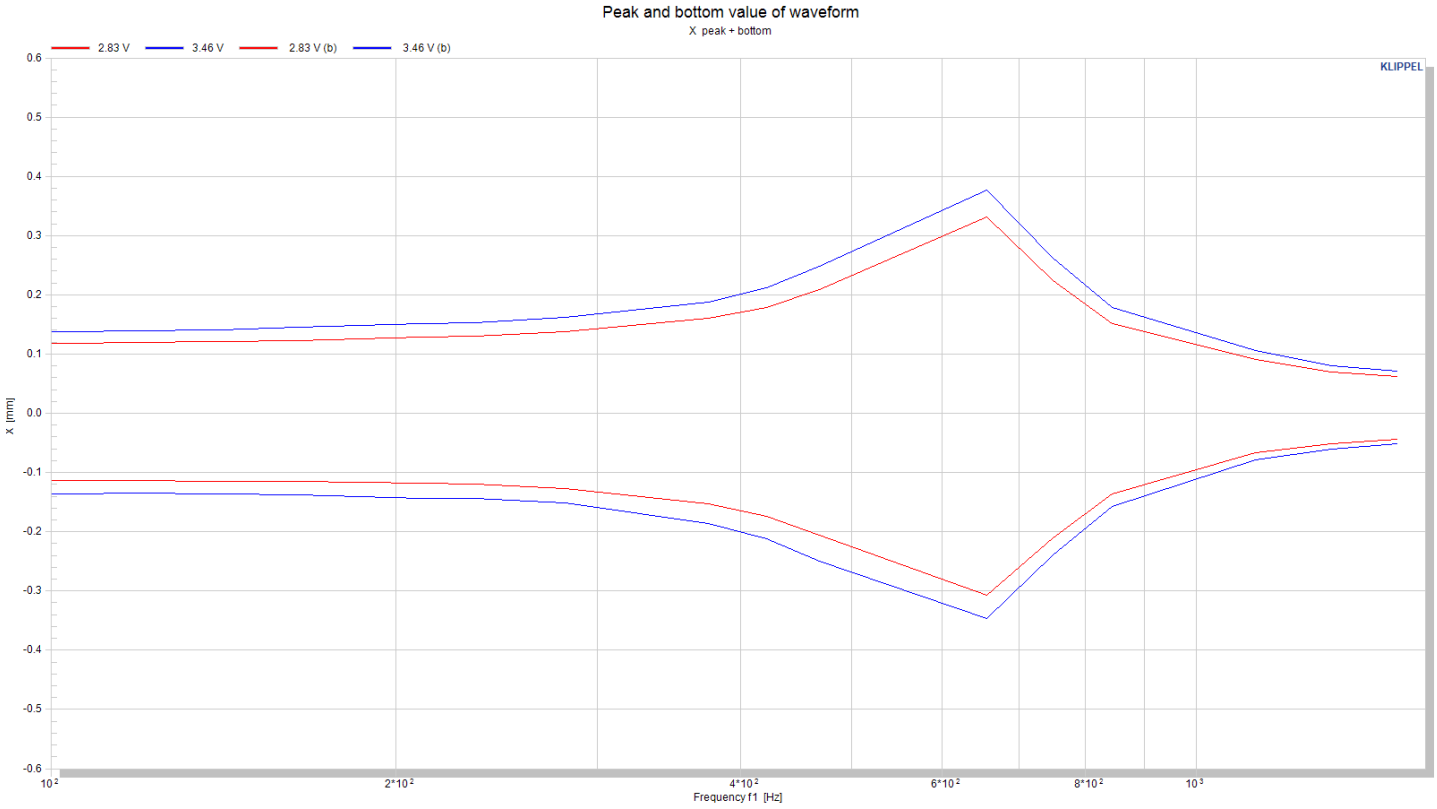


Fig.4 R&B

3.Amplitude test curve

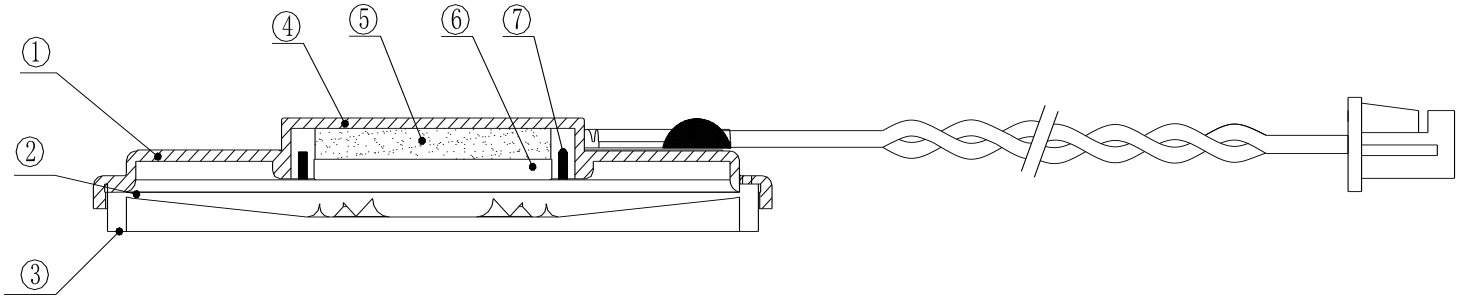


4. T/S parameter

parameter	data	unit	Note
F0	648	Hz	Resonant frequency in free air
Rdc	7.3	Ohm	Electrical voice coil resistance at DC
BL	0.567	N/A	Force factor
Mms	155	mg	Mechanical mass of drive diaphragm assembly including air load and voice coil
Cms	0.39	mm/N	Mechanical compliance of driver suspension
Rms	0.097	kg/s	Mechanical resistance of total-driver losses
Sd	4.15	cm^2	Diaphragm area
Vas	9.5	cc	Equivalent air volume of suspension
Qms	6.491		Mechanical Q factor of driver in free air considering Rms only.
Qes	14.309		Electrical Q factor of driver in free air considering Re only.
Qts	4.466		Total Q-factor considering Re and Rms only.

5. Bill of material

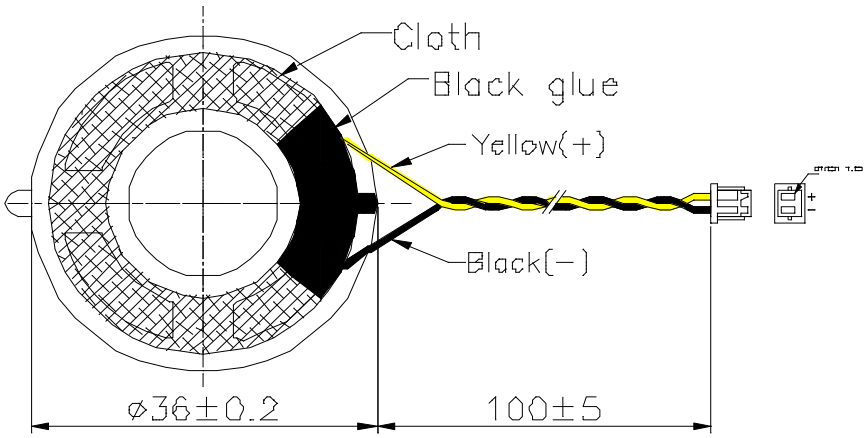
侧面剖面图

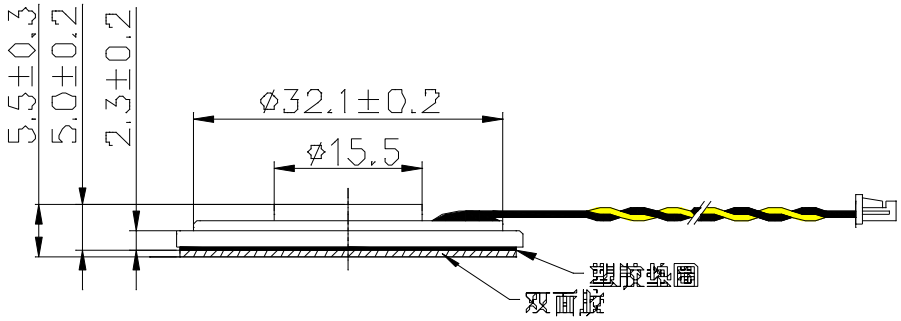


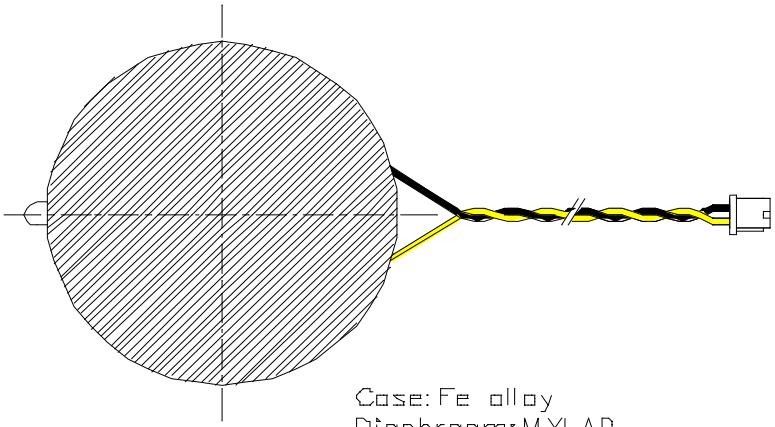
ITEM	DESCRIPTIONS	MATERIAL	QTY	Remarks
1	Frame	Fe alloy	1	
2	Diaphragm	Mylar	1	
3	Front cover	Plastic	1	
4	Yoke	Fe alloy	1	
5	Magnet	Nd-Fe-B	1	
6	plate	Iron	1	
7	Voice coil	copper	1	

5. Dimension

REV NO.	REVISION NOTE	APPROVAL	DATE







Case: Fe alloy
Diaphragm: MYLAR
Wire: UL1571 AWG30
CONNECTOR: MOLEX−51021−0200 Compatible

TITLE: DYNAMIC SPEAKER	DRAWN: Lily 2024/07/29	SCALE: 1/1	SHEET 1 OF 1
PART NO. HDK−36088E−42C	DESIGNED: RAD OF D.S.	UNITS: mm	
DWG NO. DSE−7810	CHECKED: Emily	TOLERANCE ± 0.5	
REV 1	APPROVAL: Eric	UNLESS OTHERWISE SPECIFIED: ONE PLACE DECIMAL ± .x / TWO PLACE DECIMAL ± .xx / THREE PLACE DECIMAL ± .xxx	
	MATERIAL: Fe alloy		

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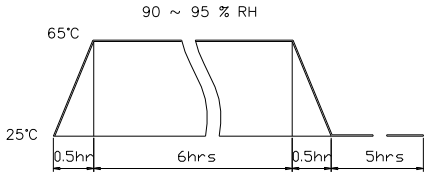
6.Reliablity Test

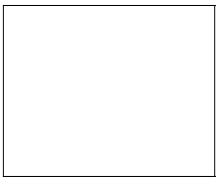
Items.		Specifications
01	**High temp. Test**	Keep 96 hours at +70℃±3℃ and leave 3 hours in normal temperature and then check
02	**Low temp. Test**	Keep 96 hours at -30℃±3℃ and leave 3 hours in normal temperature and then check
03	**Humidity test**	Keep 96 hours at +60℃±3℃ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	**Temp./Humidity cycle**	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of; 
05	**Thermal cycle test.**	Low temperature: -30℃±3℃, temperature:+70℃±3℃, cycle: 1 hour/cycle each, and then keep 5 cycles in a room.
06	**Vibration**	10~200~10Hz sin-wave sweep 15min. 5G(constant) X,Y, Z 3 direction. 2 hours each, total 6 hours.
07	**Fix drop test**	Fix on jig. Then drop from 152cm height to the concrete floor X, y, z 6 direction. 5 times each, total 30 times.
08	**Free drop test**	Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times.
09	**Rated Power test**	Rated Power pink noise is applied for 96 hours Sine wave between200 to 3400 kHz
10	**Max Power test**	Max power 1 min on – 2 min off 10 cycles.
11	**Terminal strength test**	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
12	**High temp. Rated Power test**	Rated Power pink noise is applied for 96 hours at 65℃±3℃ Sine wave between200 to 3400 kHz
13	**Low temp. Rated Power Test**	Rated Power pink noise is applied for 96 hours at -25℃±3℃ Sine wave between200 to 3400 kHz
14	**High temp. and high humidity Rated Power test**	Rated Power pink noise is applied for 96 hours at 65℃±3℃ and relative humidity 85% Sine wave between200 to 3400 kHz
Criterion: After these test , the change of S.P.L shall be within ±3 dB .		

Soldering Condition

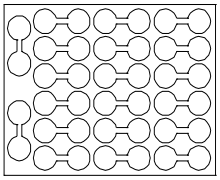
Recommend using constant branding iron in **15 ~ 30W**, and in temperature range **350±10°C**. Soldering time not over **3** seconds.

7.Packing

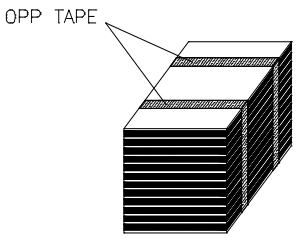
REV NO.	REVISION NOTE	APPROVAL	DATE



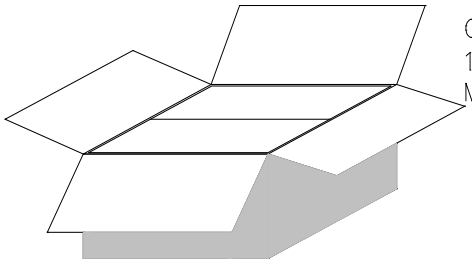
Cover(330*250*5mm)
Material:Eps



Box(330*250*16mm)
40pcs
Material:Eps



Middle(330*250*160mm)
400pcs
Material:Eps



Outer Box(490*350*360mm)
1600pcs(400*4pcs)
Material:Paper

单位：mm

TITLE: packing		DRAWN: Lily 2014/06/09	SCALE: 2:1	SHEET: 1of 1
PART NO.	1	DESIGNED: R&D OF D.S.	UNITS: mm	
		CHECKED: Emily	TOLERANCE	
DWG NO.		APPROVAL: Eric	20~11	± 0.3
	REV	MATERIAL: ***	10~5	± 0.2
			<4	± 0.1

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