

MESSRS.

SPECIFICATION FOR APPROVAL

承 認 书

Product	DYNAMIC SPEAKER
Part No.	HDK-120808ZA-2W1 (RoHS)
Customer Part No.	

Approved By	Checked By	Made By
王台平 23.7.27	曹丽萍 23.7.27	LILY 23.7.27

客户承认	
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常州华龙电子有限公司

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EDITION:1.1

1. Specification

HDK-120808ZA-2W1(RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 12*8 mm
03	Rated Input Power	1.0W note1
04	Max. Input Power	1.2W note1
05	Impedance	8 ohm $\pm$ 15% at 2KHz.
	DC Resistance	7.2 ohm $\pm$ 15%
06	Resonance Frequency (Fo)	500Hz $\pm$ 20%
07	Sensitivity (S.P.L.)	90 $\pm$ 3dB 2.83V/10cm (with EQ) at 2KHz In 5cc Box
08	Frequency Range	200 – 8KHz
09	Total Harmonics Distortion	Max 10% at 1 KHz, 2.83V/10cm (with EQ)
10	Weight	0.8g $\pm$ 5%g
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 – 1.0W note1
13	Buzz, Rattle, etc.	A sine sweep among 100~2000Hz use "EQ test signal"(note1)in 5cc box for a period of 1second will not result in any buzzing or extraneous sound
14	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
15	Temperature	Operating temperature: -20℃ to +70℃ Storage temperature: -40℃ to +85℃
16	Note 1	SPK note must use specific test signal, Please refer to Section 2-3 "Typical Equalizer(EQ) test signal"

2-1. Test Condition

Standard

Temperature : 15 ~ 35℃

Relative humidity : 25% ~ 75%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : 25±2℃

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2. Standard Test Fixture

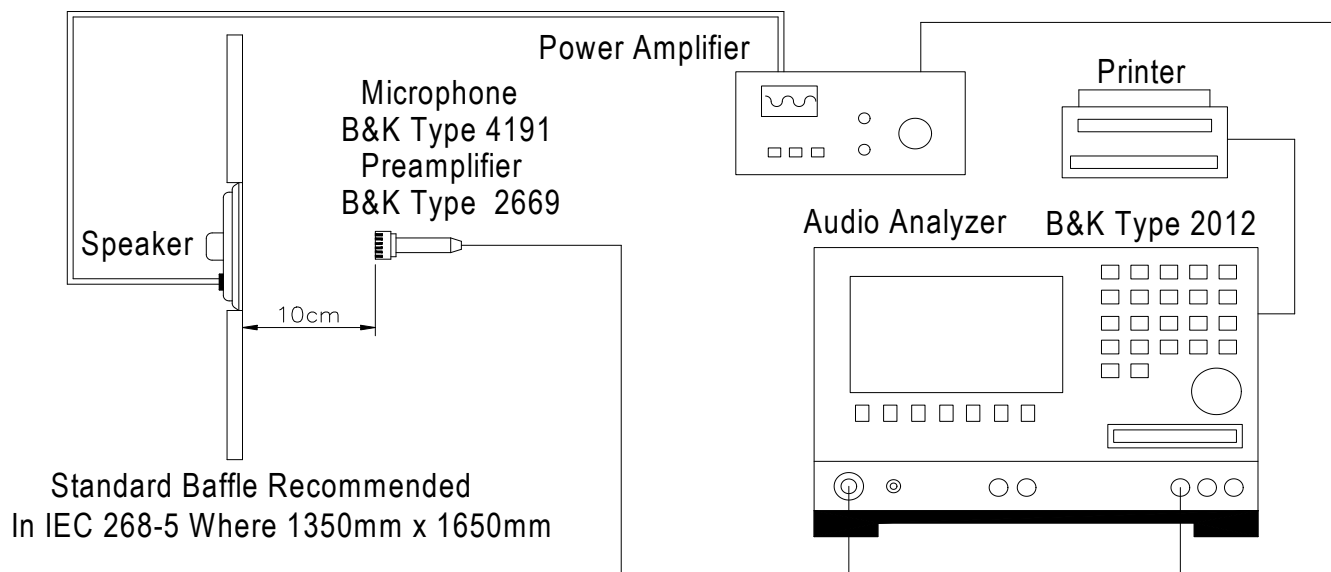
1. Input Power : 1.0W (with EQ)

2. Zero Level : -dB

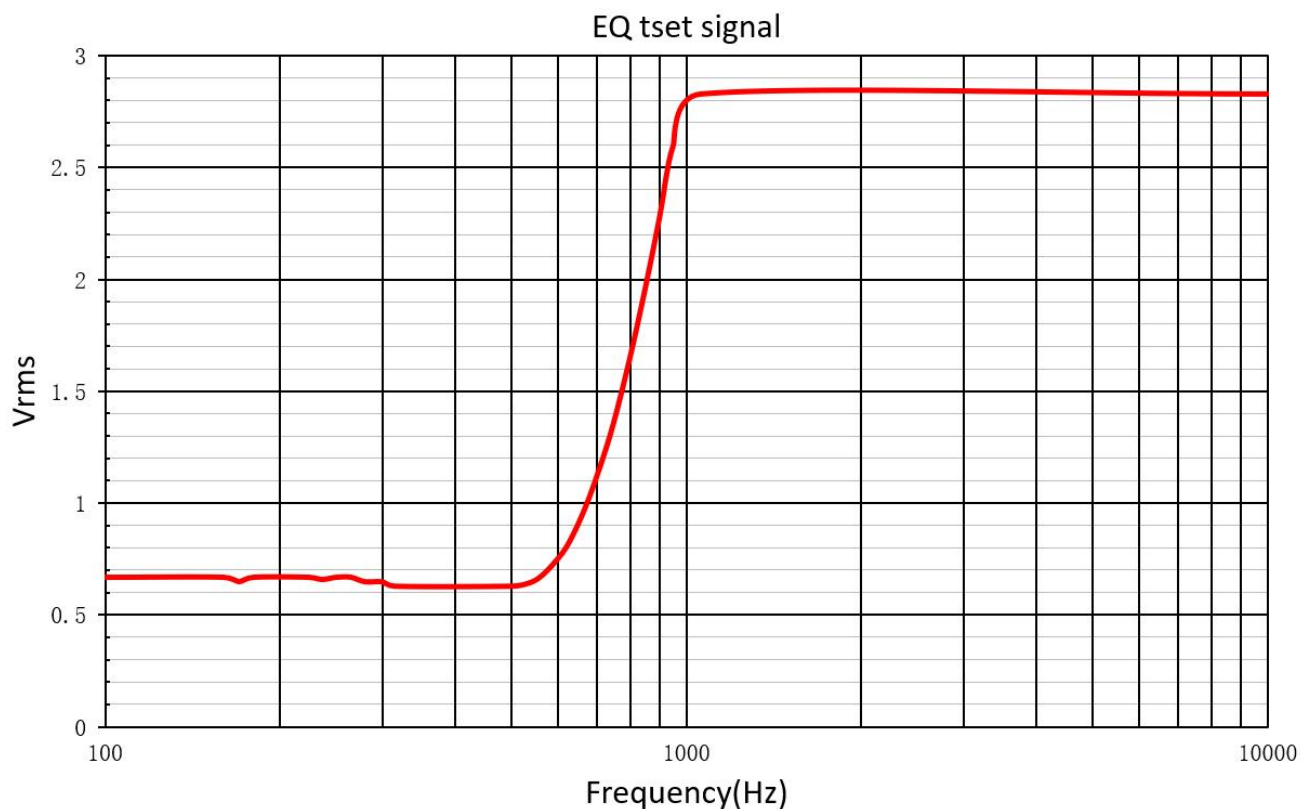
3. Mode : SPEAKER

4. potentiometer Range : 50dB

5. Sweep Time : 0.5sec



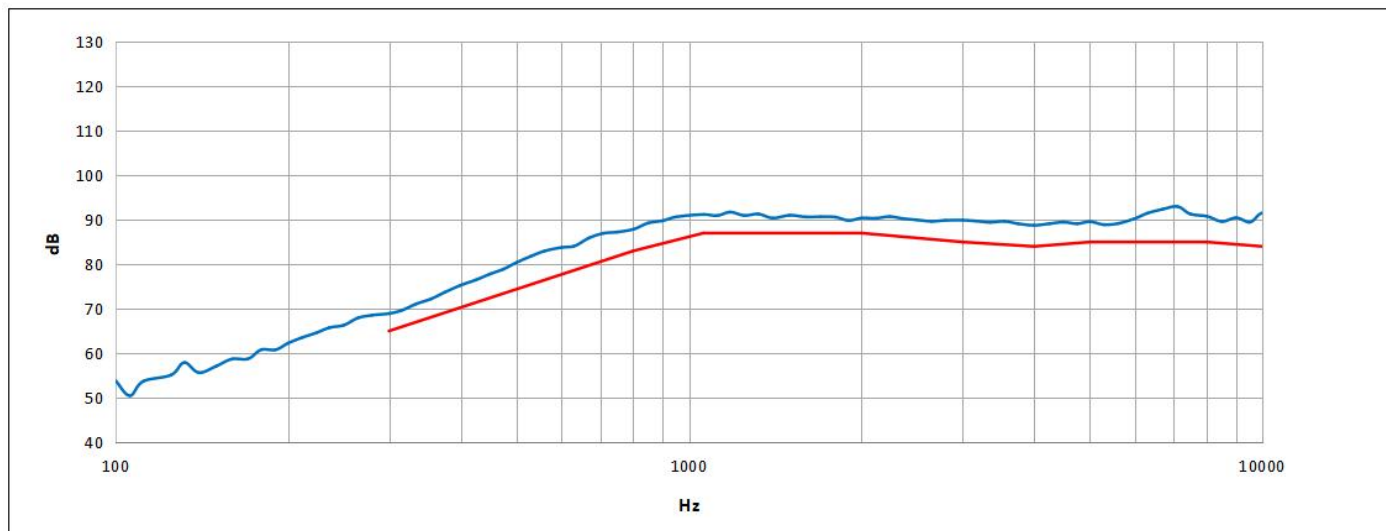
2-3Typical Equilizer(EQ) test signal:



EQ voltage

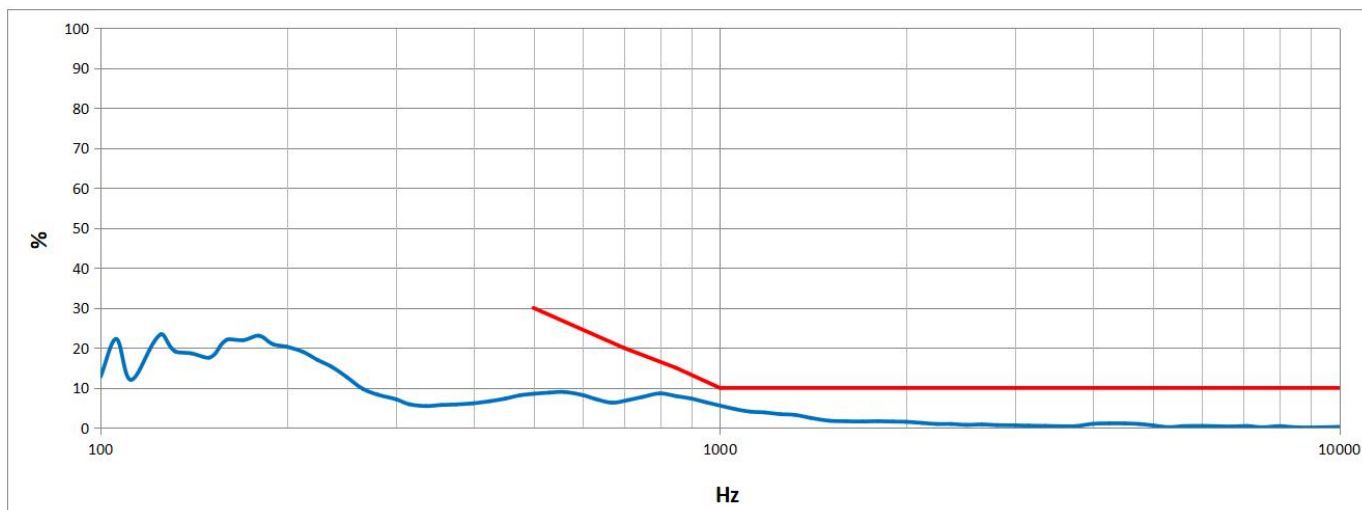
Frequency (HZ)	100	160	170	180	224	236	250	265	280	300	315	500	530
voltage(V)	0.67	0.67	0.65	0.67	0.67	0.66	0.67	0.67	0.65	0.65	0.63	0.63	0.64
Frequency (HZ)	560	600	630	670	710	750	800	850	900	950	1060	10000	
voltage(V)	0.67	0.75	0.83	0.98	1.16	1.36	1.65	1.96	2.28	2.6	2.83	2.83	

2-4 Frequency Response Curve



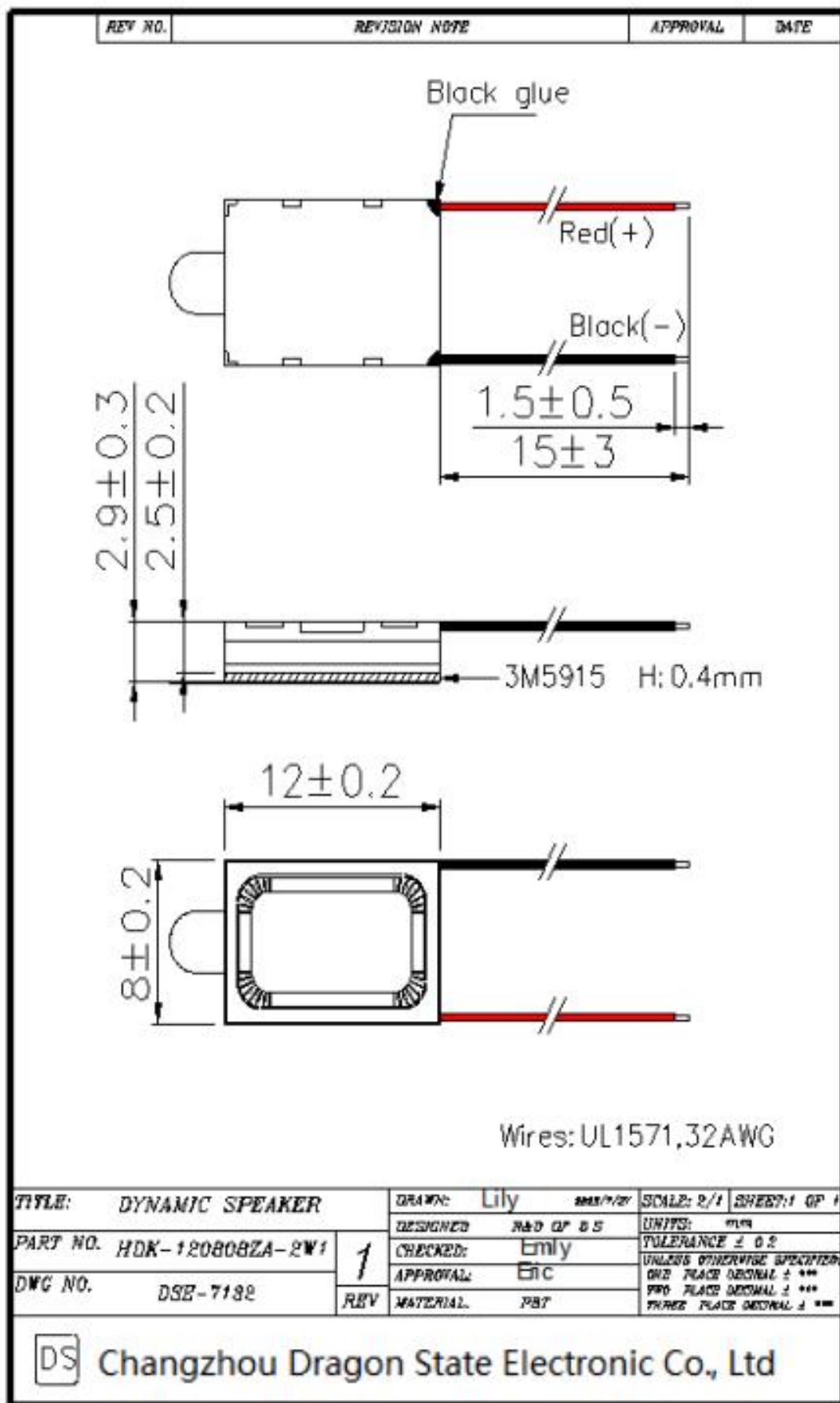
Frequency (Hz)	Lower limit (dB)
300	65
800	83
1060	87
2000	87
3000	85
4000	84
5000	85
8000	85
10000	84

2-5.THD curve

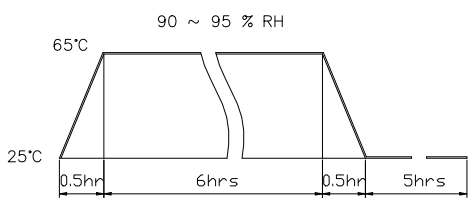


Frequency (Hz)	Limit (%)
500	30
700	20
850	15
1000	10
3000	10
10000	10

3. Dinmension



4. Reliability tests

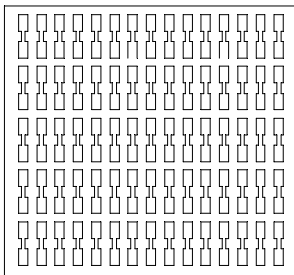
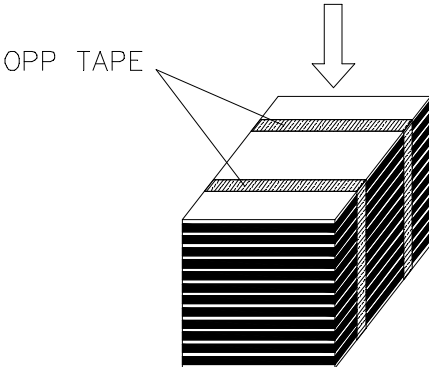
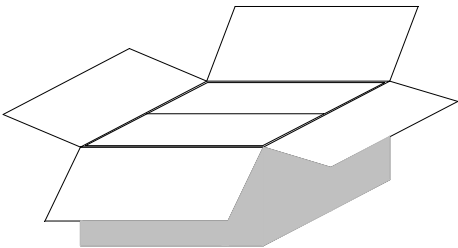
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity test	Keep 96 hours at $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, temperature: $+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 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 150cm height to the concrete floor X, y, z 6 direction. 5 times each, total 30 times.
08	Free drop test	Free drop from 150cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times.
09	Rated Power test	Rated Power white noise is applied for 96 hours
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.
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 **$350 \pm 10^{\circ}\text{C}$** .

Soldering time not over **3** seconds.

5.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Cover Material: Paper		
	 Box 150pcs Material: Paper+Epe		
	 Middle 1500pcs(10*150pcs) Material: Paper+Epe		
	 Outer Box(490*360*350mm) 9000pcs(6*1500pcs) Material: Paper		
单位: mm			
TITLE: Packing		DRAWN: Lily 2012/10/17	
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
1		CHECKED: Emily	SHEET: 1 of 1
		APPROVAL: Eric	UNITS: mm
		TOLERANCE	
DWG NO.		20~11	± 0.3
REV		10~5	± 0.2
		<4	± 0.1
		MATERIAL:	
DS Changzhou Dragon State Electronic Co., Ltd			