

MESSRS.**SPECIFICATION FOR APPROVAL****承 認 书**

Product	DYNAMIC SPEAKER
Part No.	HDK-302008ZA-10W (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 SEP-23-2020	曹丽萍 SEP-23-2020	LILY SEP-23-2020

常 州 华 龙 电 子 有 限 公 司*Changzhou Dragon State Electronic Co., Ltd*

中国江苏省常州市新区电子园新四路 36 号

Tel: +86-519-85110078. 86-519-85106698, Fax: +86-519-85101081

EDITION:1.1

1. SPECIFICATION

HDK-302008ZA-10W (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 30×20 mm	
03	Rated Input Power	2.0W	
04	Max. Input Power	2.2W For 1 Minute	
05	Impedance	8 ohm $\pm$ 15% at 2000Hz.	
06	Resonance Frequency (Fo)	1100Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	105dB(2.0W/0.1m) $\pm$ 3 dB	at AVE 0.8, 1.0, 1.2, 1.5KHz.
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 10 % at 1 KHz, 2.0W.	
10	Voice Coil	Diameter 11.75mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet 11*1.5 mm	
12	Weight	5.6g $\pm$ 0.2g	
13	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
14	Operation Test	Must be normal at program source - 2.0W	
15	Buzz, Rattle, etc.	Should not be audible at 4.0V sine Wave between Fo to 20KHz	
16	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
17	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
18	Temperature	Operating temperature: -20℃ to +60℃ Storage temperature: -30℃ to +70℃	

2. Test Condition

2-1 STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

2-2 BASIC

Temperature : $20 \pm 3^\circ\text{C}$

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

Standard Test Fixture

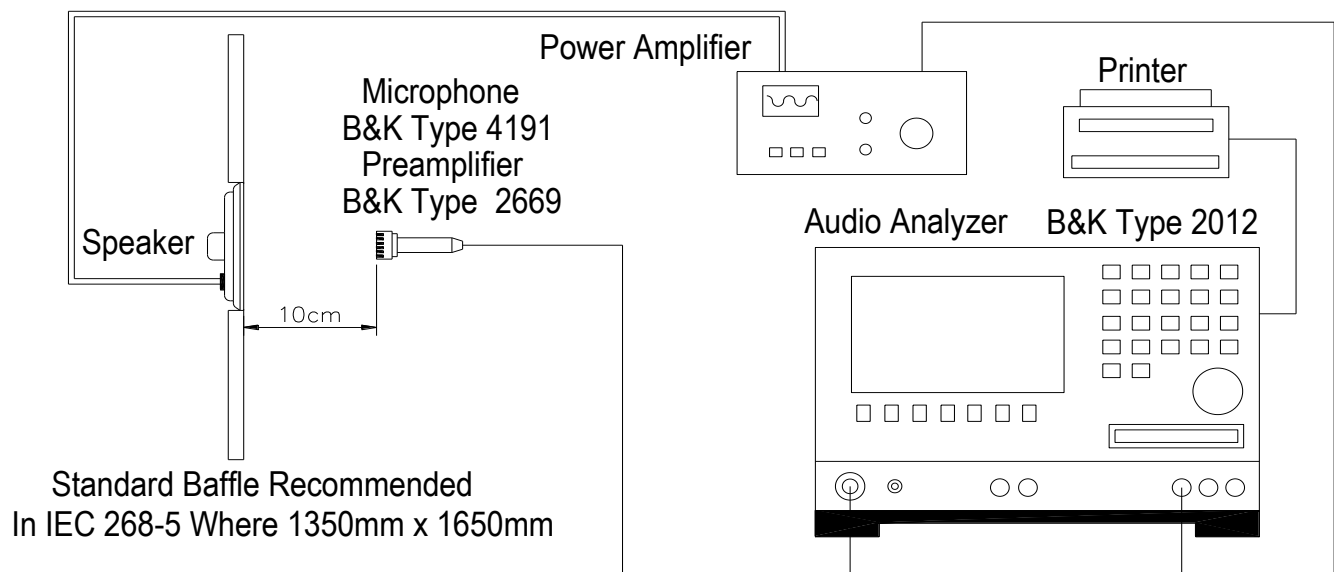
1. Input Power : 2.0W (4.0V)

2. Zero Level : -dB

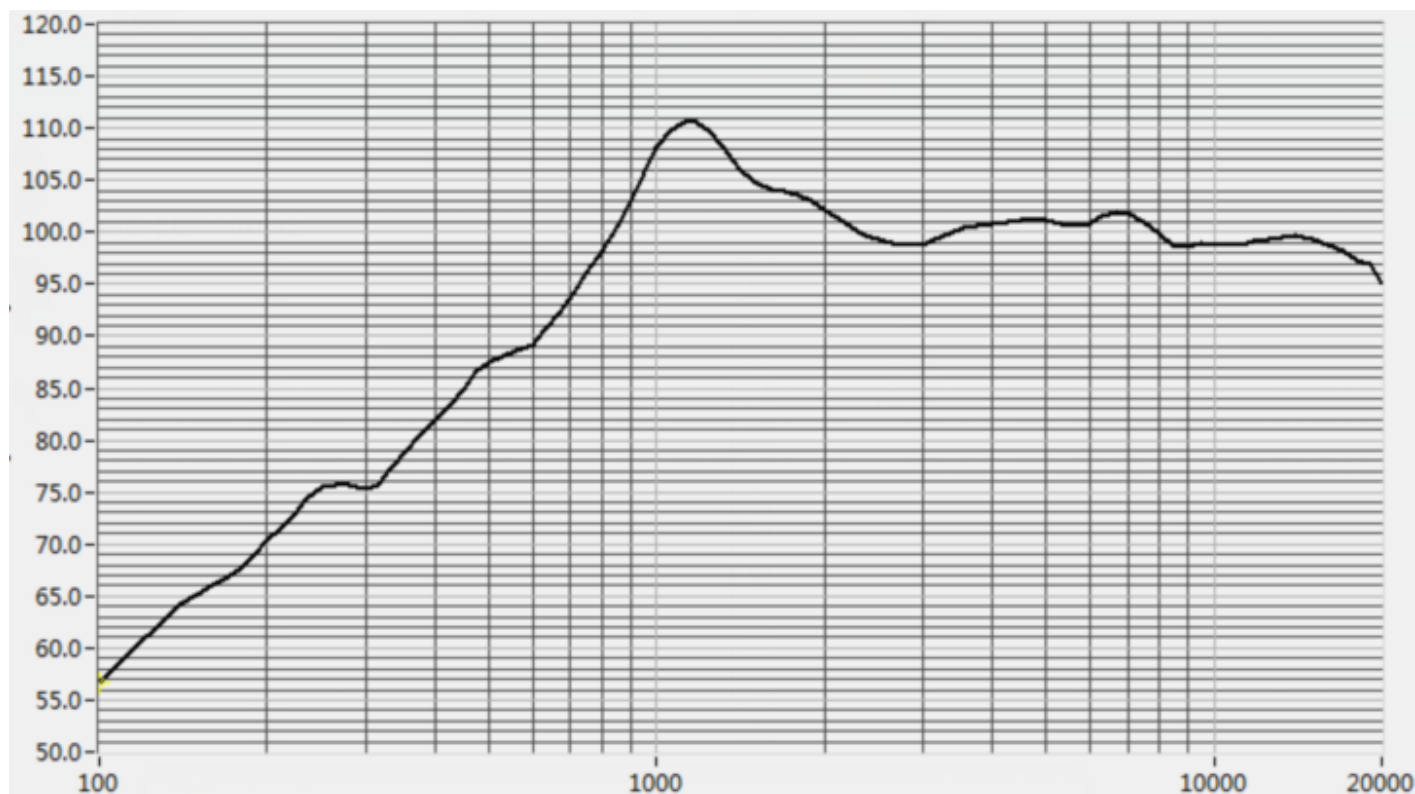
3. Mode : SPEAKER

4. potentiometer Range : 50dB

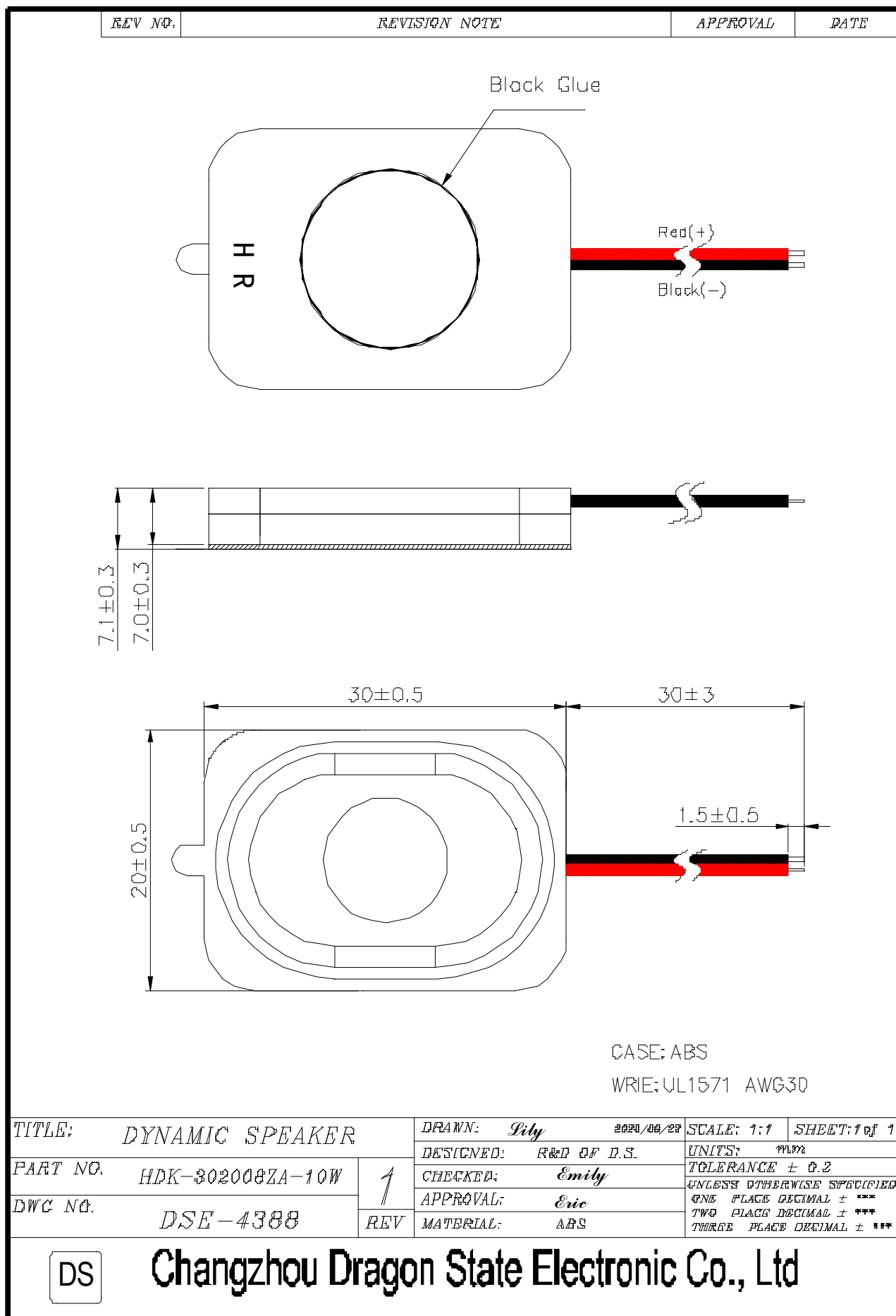
5. Sweep Time : 0.5sec



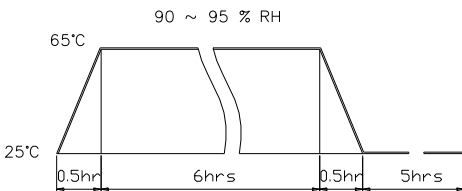
2-3. Frequency Response Curve



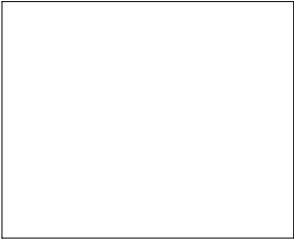
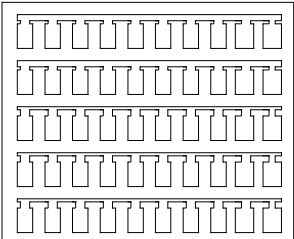
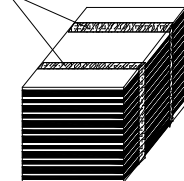
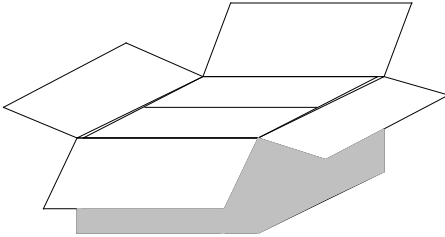
3.Dimension



4. Reliability tests

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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: $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$, temperature: $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 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 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
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 $\pm 3 \text{ dB}$.		

5.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
 Cover(350*285*5mm) Material: Paper			
 Box(350*285*20mm) 50pcs Material: Paper+Epe			
DPP TAPE  Middle(320*220*120mm) 450pcs(9*50pcs) Material: Paper+Epe			
 Outer Box(590*390*405mm) 1800pcs(4*450pcs) Material: Paper			
单位: mm			
TITLE: packing		DRAWN: Lily 2015/08/15 DESIGNED: R&D OF D.S. CHECKED: Emily APPROVAL: Eric MATERIAL: xxx	
PART NO.	1	SCALE: 2:1	
DWG NO.		SHEET: 1 of 1	
		UNITS: mm TOLERANCE 20~11 ± 0.3 10~5 ± 0.2 <4 ± 0.1	
DS		Changzhou Dragon State Electronic Co., Ltd	