

MESSRS.

**SPECIFICATION FOR APPROVAL**  
**承 认 书**

Product	WATERPROOF TYPE SPEAKER
Part No.	HDK-251308ZA-4P1 (RoHS)
CUSTOMER	
CUSTOMER PART NO.	

Approved By	Checked By	Made By
王台平 MAY-07-2021	曹丽萍 MAY-07-2021	LILY MAY-07-2021

**常州华龙电子有限公司**  
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## 1. Specification

HDK-251308ZA-4P1 (RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 25*13 mm
03	Rated Input Power	1.2W In 1.0cc Close Box
04	Max. Input Power	1.3W In 1.0cc Close Box For 1 Minute
05	Impedance	8 ohm $\pm$ 15% at 2000Hz 0.5V
06	Resonance Frequency (Fo)	700 $\pm$ 20% Hz (in free air)
07	Resonance Frequency (Fo)	950 $\pm$ 20 %Hz (in 1.0cc Close Box)
08	Sensitivity (S.P.L.)	100 $\pm$ 3dB/0.1M/1.2W 800---2.0KHz AV In 1.0cc Close Box
08	Frequency Range	Fo – Fh Hz
09	Weight	2.8 g $\pm$ 5%g
10	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
11	Operation Test	Must be normal at program source – 1.2W
12	Buzz, Rattle, etc.	Must be normal at sine wave 3.1Vrms(in 1.0cc Close box) from 300~20KHz
13	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
14	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
15	Temperature	Operating temperature: -20°C to +60°C Storage temperature: -30°C to +70°C

## 2.1 Test Condition

### Standard

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

### Basic

Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

## 2.2 Standard Test Fixture

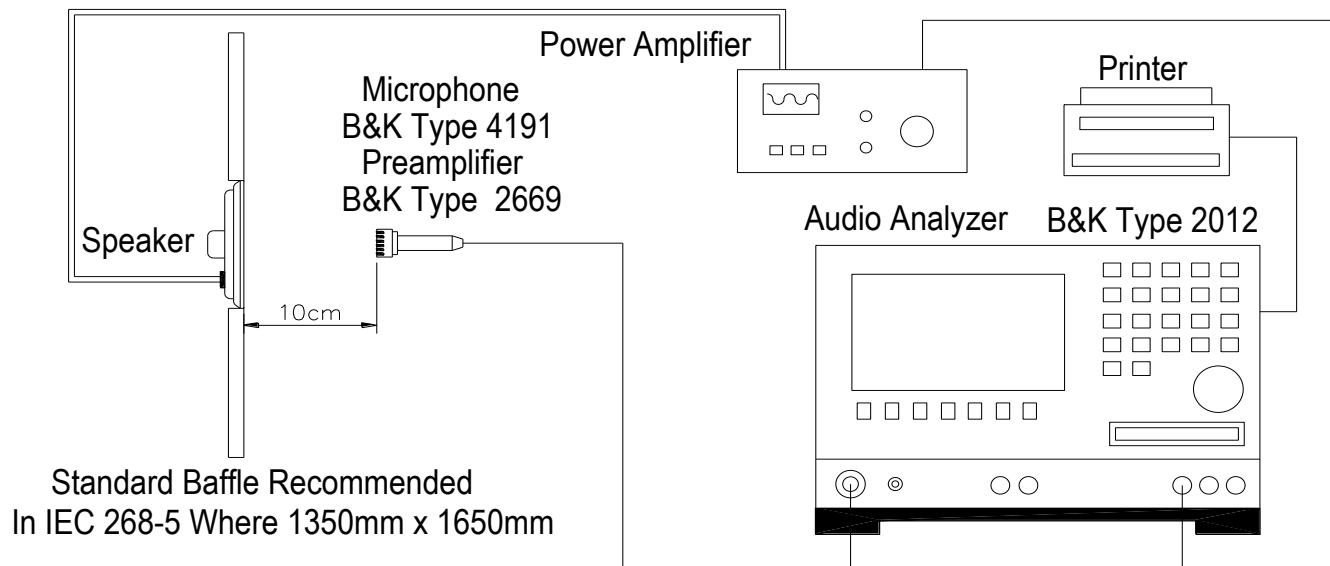
1. Input Power : 1.2W ( 3.1V )

2. Zero Level : -dB

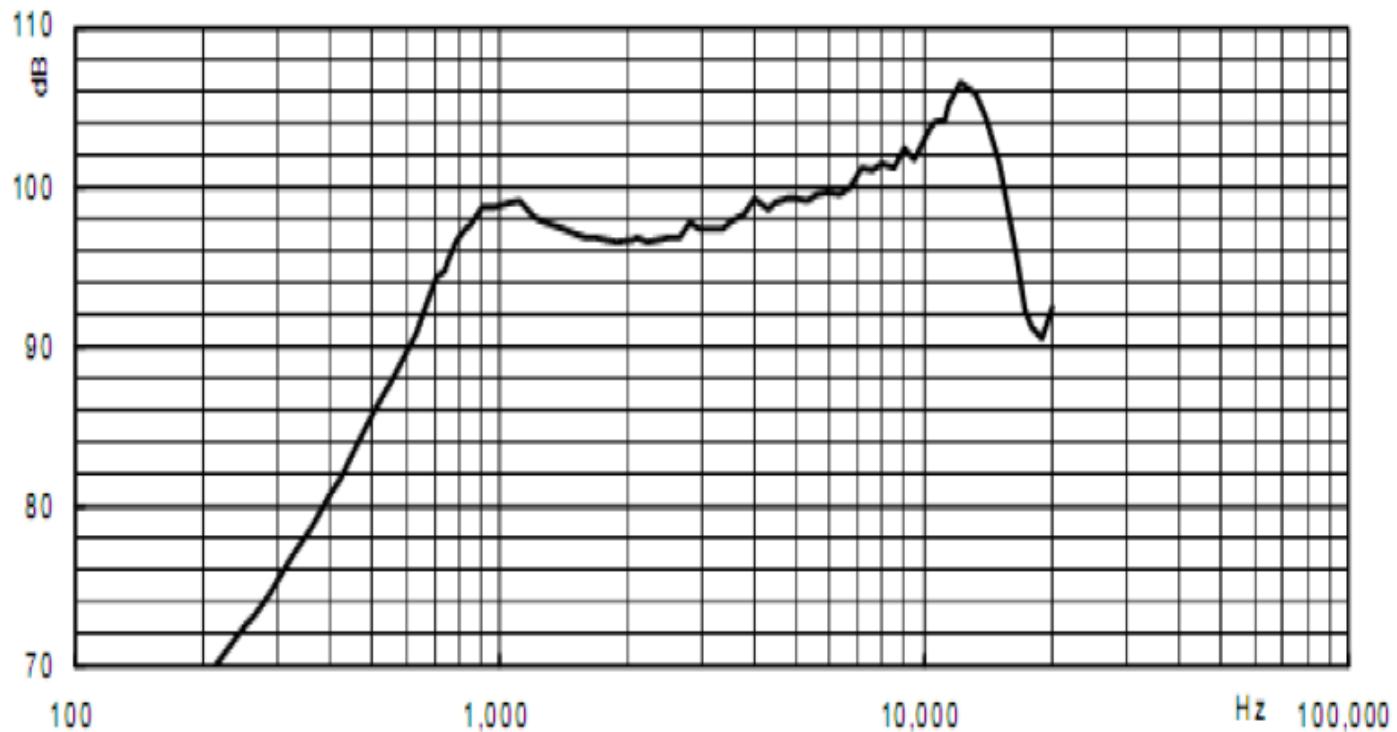
3. Mode : SPEAKER

4. potentiometer Range : 50dB

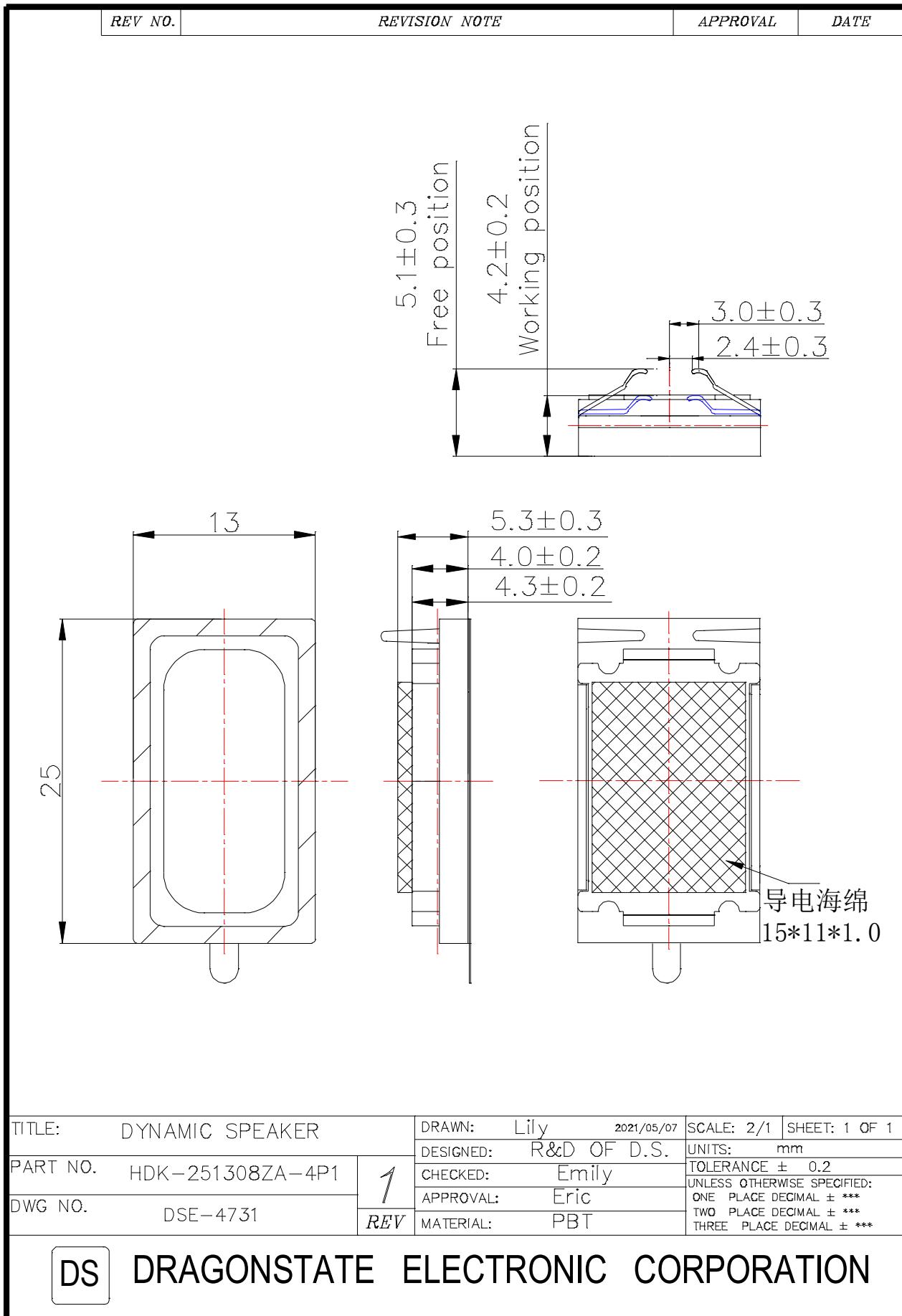
5. Sweep Time : 0.5sec



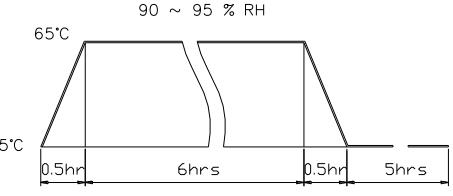
## 2.3 Frequency Response Curve



### 3.Dimension



## 4. Reliability tests

Items.		Specifications
01	<b>High temp. Test</b>	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	<b>Low temp. Test</b>	Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	<b>Humidity test</b>	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	<b>Temp./Humidity cycle</b>	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of;
		
05	<b>Thermal cycle test.</b>	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	<b>Vibration</b>	10~200~10Hz sin-wave sweep 15min. 5G(constant) X, Y, Z 3 direction. 2 hours each, total 6 hours.
07	<b>Fix drop test</b>	Fix on jig. Then drop from 152cm height to the concrete floor X, y, z 6 direction. 5 times each, total 30 times.
08	<b>Free drop test</b>	Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times.
09	<b>Rated Power test</b>	Rated Power white noise is applied for 96 hours in 1.5cc closebox
10	<b>Protection against liquids</b>	Protected against 30 minutes of immersion under 1M pressure Product without leakage
11	<b>Max Power test</b>	Max power 1 min on – 2 min off 10 cycles.
12	<b>Terminal strength test</b>	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.

## Soldering Condition

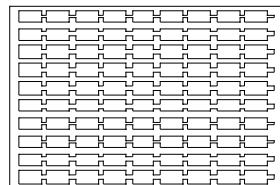
Recommend using constant branding iron in 15 ~ 30W, and in temperature range  $350 \pm 10^\circ\text{C}$ .

## 5.Packing

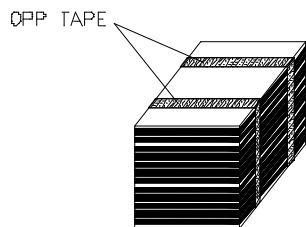
REV NO.	REVISION NOTE	APPROVAL	DATE
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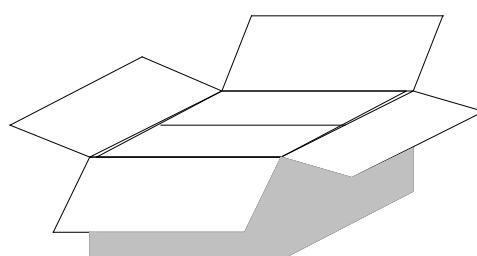
Cover(320\*220\*5mm)  
Material: Paper



Box(320\*220\*10mm)  
90pcs  
Material: Paper+Epe



Middle(320\*220\*120mm)  
900pcs(10\*90pcs)  
Material: Paper+Epe



Outer Box(490\*360\*350mm)  
3600pcs(4\*900pcs)  
Material: Paper

单位: mm

TITLE:	packing	DRAWN:	Lily	2013/12/06	SCALE:	2:1	SHEET: 1 of 1
PART NO.		DESIGNED:	R&D OF D.S.		UNITS:	mm	
	1	CHECKED:	Emily		TOLERANCE		
DWG NO.		APPROVAL:	Eric		20~11	± 0.3	
		REV			10~5	± 0.2	
				MATERIAL:	***	<4	± 0.1

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## 6. History change record