

**MESSRS.**

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**SPECIFICATION FOR APPROVAL****承 認 书**

<b>Product</b>	<b>DYNAMIC SPEAKER</b>
<b>Part No.</b>	<b>HDK-3008BB-7(RoHS)</b>
<b>Customer</b>	
<b>Customer Part No.</b>	

<b>Approved By</b>	<b>Checked By</b>	<b>Made By</b>
王台平 SEP-29-2018	曹丽萍 SEP-29-2018	LILY SEP-29-2018

**常 州 华 龙 电 子 有 限 公 司**

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EDITION:1.1

## 1. Specification

HDK-3008BB-7 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 30 mm	
03	Rated Input Power	0.5W	
04	Max. Input Power	1.0W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 1500Hz.	
06	Resonance Frequency (Fo)	800Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	95dB(1.0W/0.1m) $\pm$ 3dB	at AVE0.6, 0.8, 1.0, 1.2KHz
08	Frequency Range	Fo – 10KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz,0.5W.	
10	Voice Coil	Diameter 13.3 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet $\Phi$ 12.5*1.5 mm	
12	Weight	7.5 $\pm$ 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 – 0.5W	
15	Buzz, Rattle, etc.	Should not be audible at 2.0V 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: -30℃ to +60℃ Storage temperature: -40℃ 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

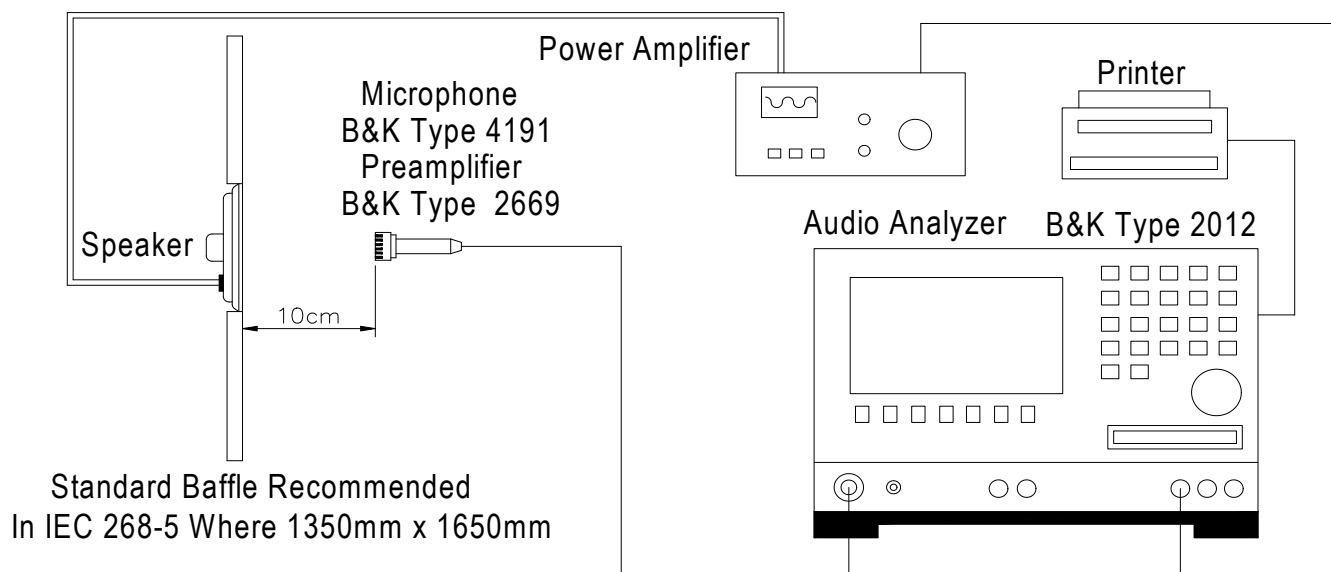
1.Input Power : 1.0W ( 2.83V )

2.Zero Level : -dB

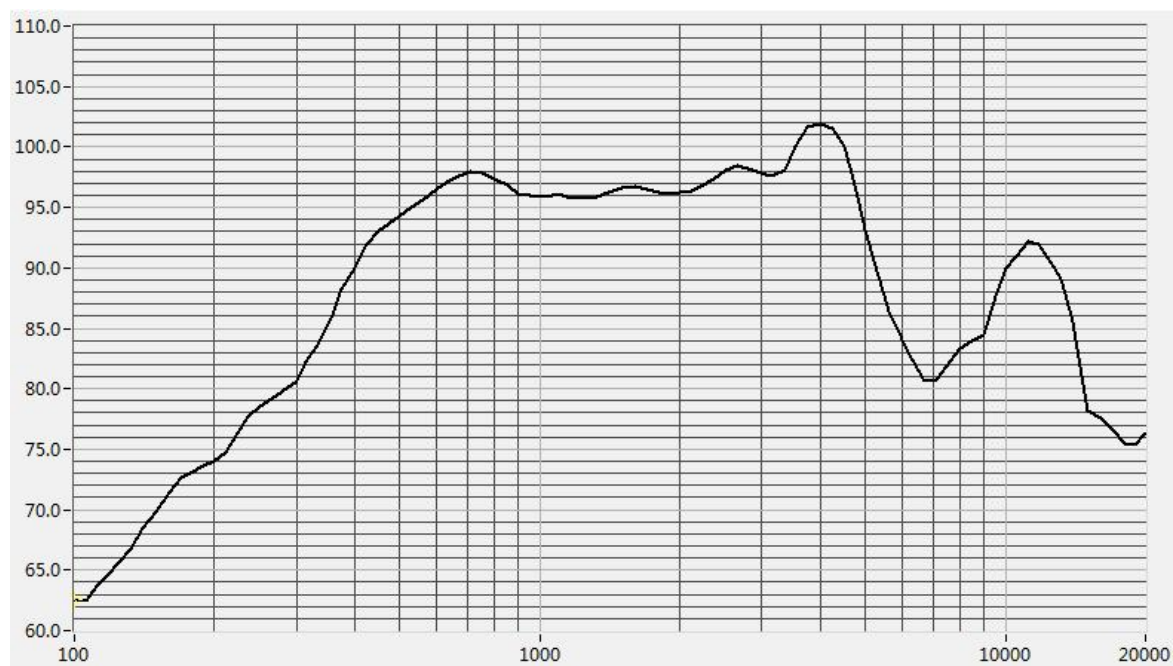
3.Mode : SPEAKER

4.potentiometer Range : 50dB

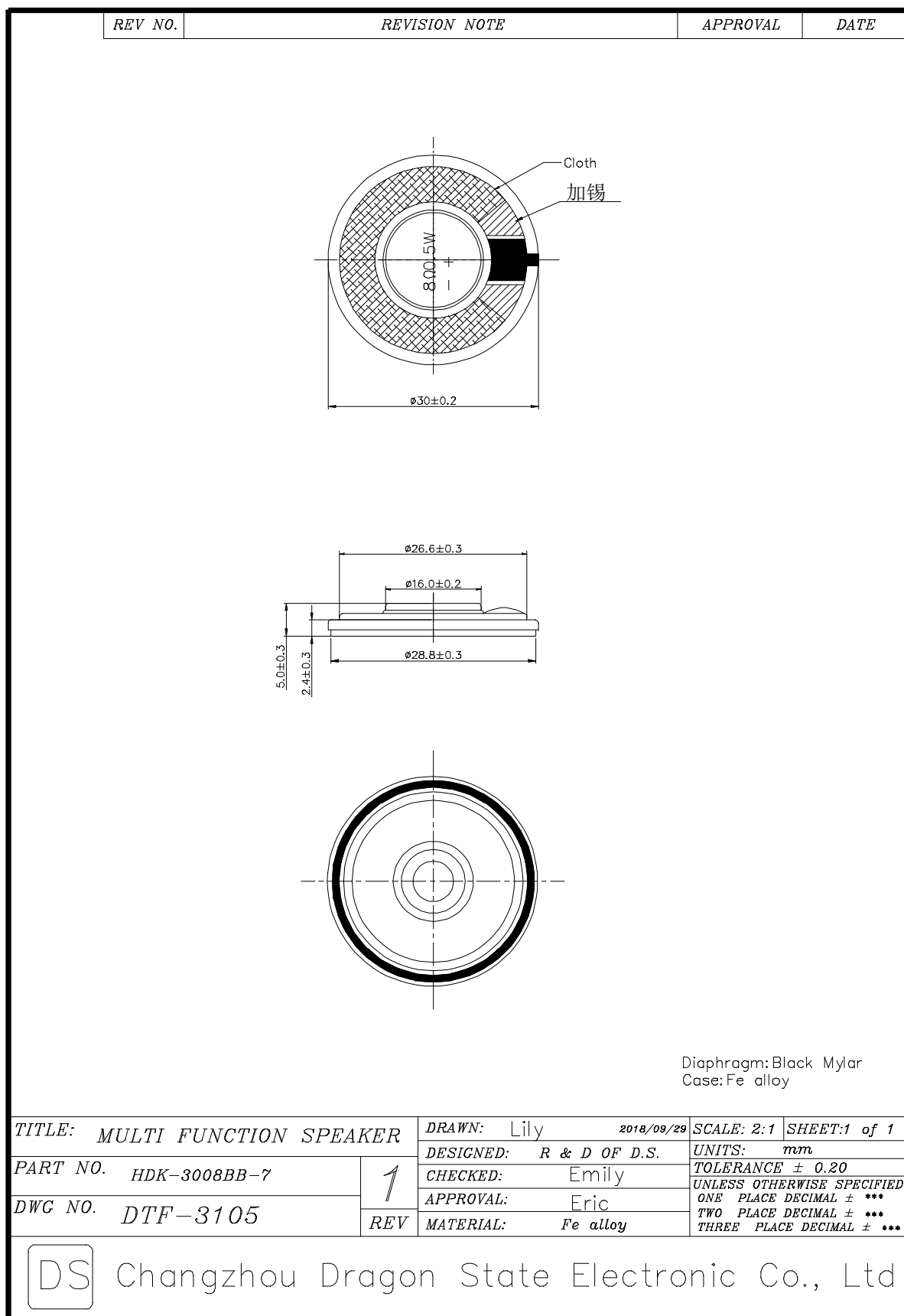
5.Sweep Time : 0.5sec



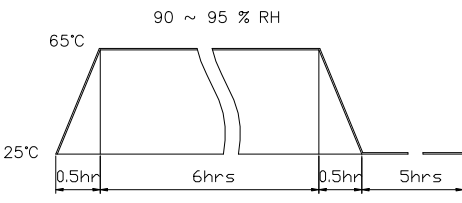
## 2-3. Frequency Response Curve



### 3.Dimension



## 4. Reliability Test

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	<p>The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of;</p> 
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 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:

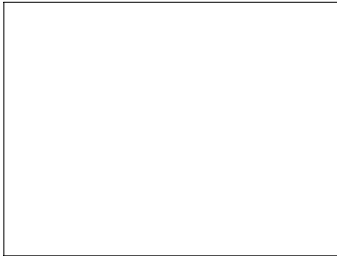
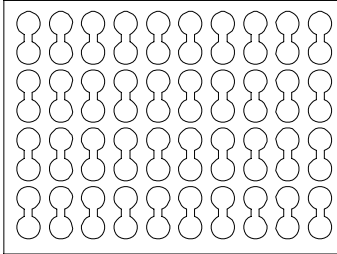
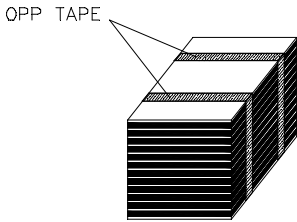
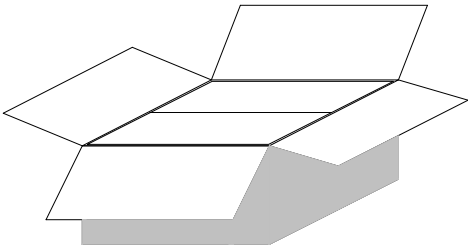
After these test , the change of S.P.L shall be within  $\pm 3 \text{ dB}$  .

### 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
 <div style="float: right; text-align: right;">           Cover(345*285*5mm) Material: Eps         </div>			
↓			
 <div style="float: right; text-align: right;">           Box(345*285*16mm) 80pcs Material: Eps         </div>			
↓			
 <div style="float: right; text-align: right;">           Middle(345*285*160mm) 800pcs Material: Eps         </div>			
↓			
 <div style="float: right; text-align: right;">           Outer Box(510*390*405mm) 3200pcs Material: Paper         </div>			
单位: mm			
TITLE: packing		DRAWN: Lily 2014/06/09	
PART NO.		DESIGNED: R&D OF D.S.	
DWG NO.		CHECKED: Emily	
<div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div> REV		APPROVAL: Eric	
		MATERIAL: ***	
		SCALE: 2:1	SHEET: 1 of 1
		UNITS: mm	
		TOLERANCE	
		20~11	± 0.3
		10~5	± 0.2
		<4	± 0.1
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">DS</div> <div>Changzhou Dragon State Electronic Co., Ltd</div> </div>			