

**MESSRS.**

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

<b>Product</b>	<b>DYNAMIC SPEAKER</b>
<b>Part No.</b>	<b>HDK-171208ZA-BOX15 (RoHS)</b>
<b>Customer</b>	
<b>Customer Part No.</b>	<b>M115</b>

<b>Approved By</b>	<b>Checked By</b>	<b>Made By</b>
Niko 2020-11-11	Lily 2020-11-11	Tim 2020-11-11

**常 州 华 龙 电 子 有 限 公 司****DRAGONSTATE ELECTRONIC CORPORATION**

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EDITION:1.1

## 1. Specification

HDK-171208ZA-BOX15 (RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 17*12mm
03	Rated Input Power	1.0W In Box
04	Max. Input Power	1.3W In Box For 1 Minute
05	Impedance	8 $\pm$ 15% ohms @2kHz 1.0W Input
	DC RESISTANCE	7.2 $\pm$ 10% ohms
06	Resonance Frequency (Fo)	800Hz $\pm$ 20%
07	Sensitivity (S.P.L.)	110 $\pm$ 3 dB /1.0W/0.1m at Fh
08	Frequency Range	Fo –20KHz
09	Total Harmonics Distortion	Max 10% at 1 KHz,1.0W.
10	Weight	4.5g $\pm$ 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
13	Buzz, Rattle, etc.	Should not be audible at 2.83V sine Wave between 300 to3.4KHz
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: -20°C to +60°C Storage temperature: -30°C to +70°C

## 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

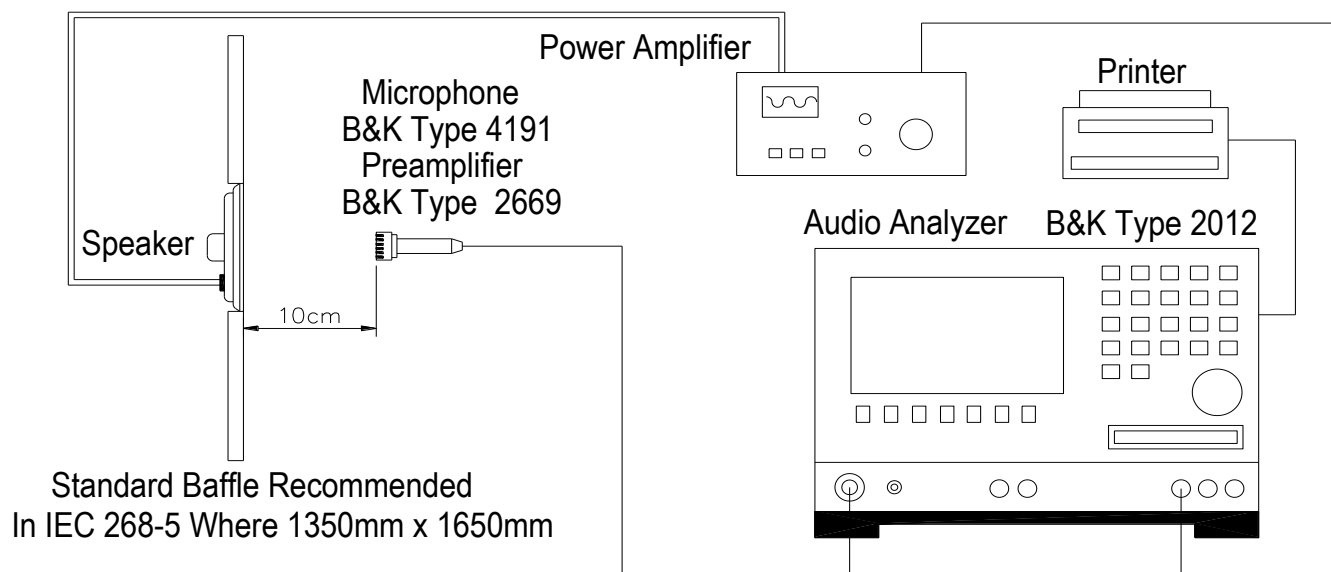
1.Input Power : 1.0W ( 2.83V )

2.Zero Level : -dB

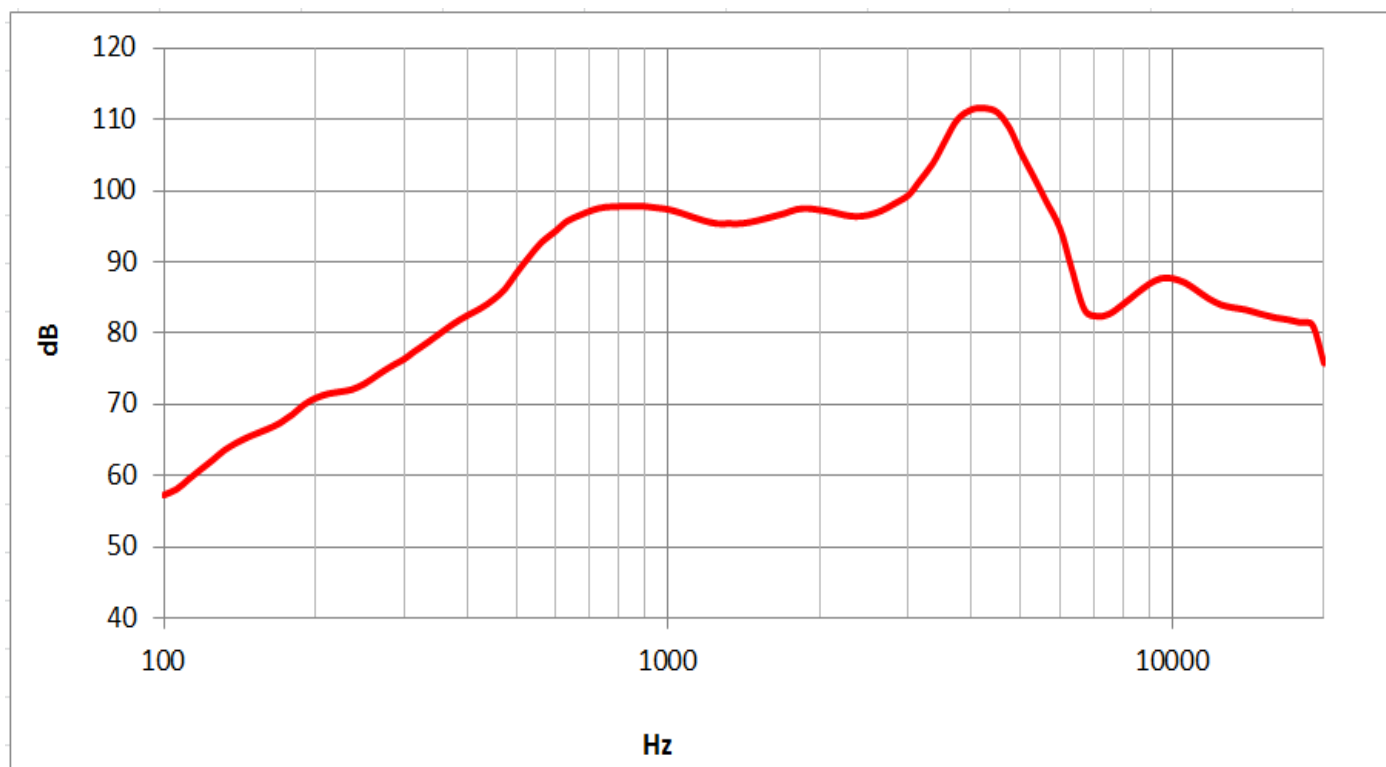
3.Mode : SPEAKER

4.potentiometer Range : 50dB

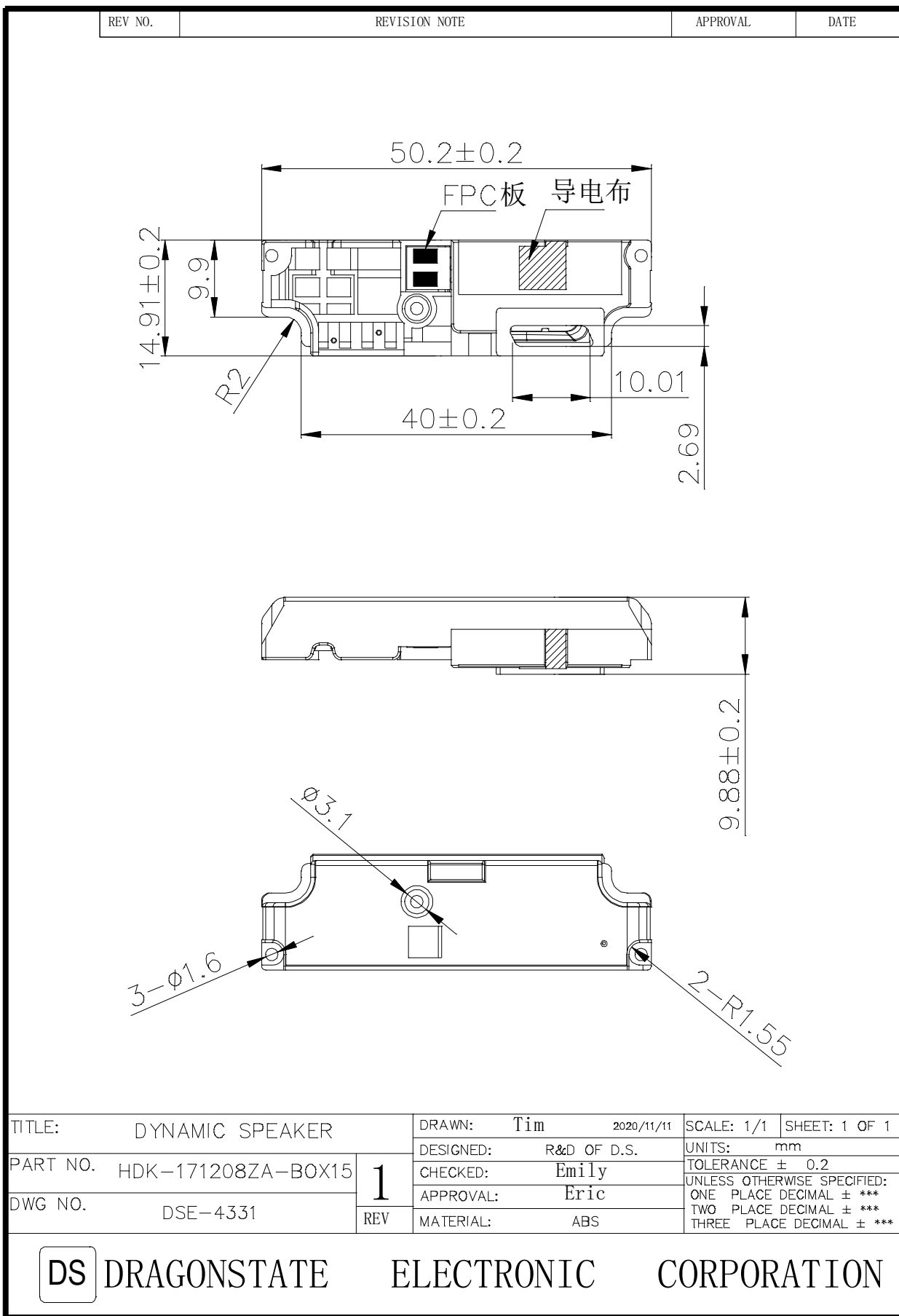
5.Sweep Time : 0.5sec



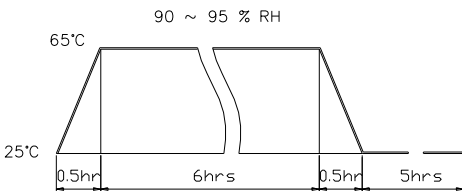
## 2-3. Frequency Response Curve



### 3 Dimension




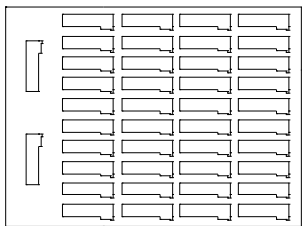
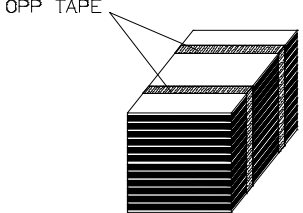
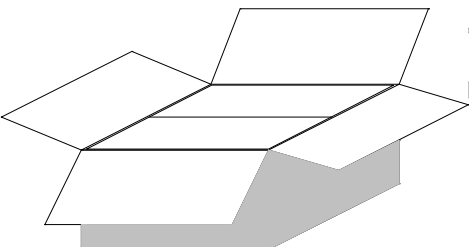
#### 4. Reliability Test

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 $+40^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 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.
<b>Criterion: After these test , the change of S.P.L shall be within <math>\pm 3</math> dB .</b>		

#### 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="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Cover(350*285*5mm)            Material: Paper         </div>		
	<div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Box(350*285*10mm)            42pcs            Material: Paper+Epe         </div>		
	<div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Middle(350*285*120mm)            420pcs(10*42pcs)            Material: Paper+Epe         </div>		
	<div style="text-align: center;">  </div> <div style="text-align: right; margin-top: 10px;">           Outer Box(590*360*405mm)            1680pcs(4*420pcs)            Material: Paper         </div>		
单位: mm			
TITLE: packing		DRAWN: Lily 2016/10/10	
PART NO.		DESIGNED: R&D OF D.S.	
DWG NO.		CHECKED: Emily	
<div style="border: 1px solid black; width: 30px; height: 30px; line-height: 30px; 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="border: 1px solid black; display: inline-block; padding: 5px 10px; margin-right: 10px;">DS</div> DRAGONSTATE ELECTRONIC CORPORATION			