

*MESSRS.*

## SPECIFICATION FOR APPROVAL

## 承 认 书

Product	DYNAMIC SPEAKER
Part No.	HDK-241508EA-1C14 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 JAN-20-2021	曹丽萍 JAN-20-2021	LILY JAN-20-2021

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EDITION:1.1

## 1. Specification

HDK-241508EA-1C14 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 24*15 mm	
03	Rated Input Power	0.8W	
04	Max. Input Power	1.0W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 1500Hz.	
06	Resonance Frequency (Fo)	750Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	90dB(0.1W/0.1m) $\pm$ 3 dB	at AVE 0.8K, 1.0K, 1.2K, 1.5KHz.
		96dB(0.8W/0.1m) $\pm$ 3 dB	
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz,0.8W.	
10	Voice Coil	Diameter 8.5 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet $\Phi$ 8.0 x 1.0 mm	
12	Weight	2.0g $\pm$ 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 - 0.8W	
15	Buzz, Rattle, etc.	Should not be audible at 2.53V 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°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 :  $20 \pm 3^\circ\text{C}$

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

## 2-2. Standard Test Fixture

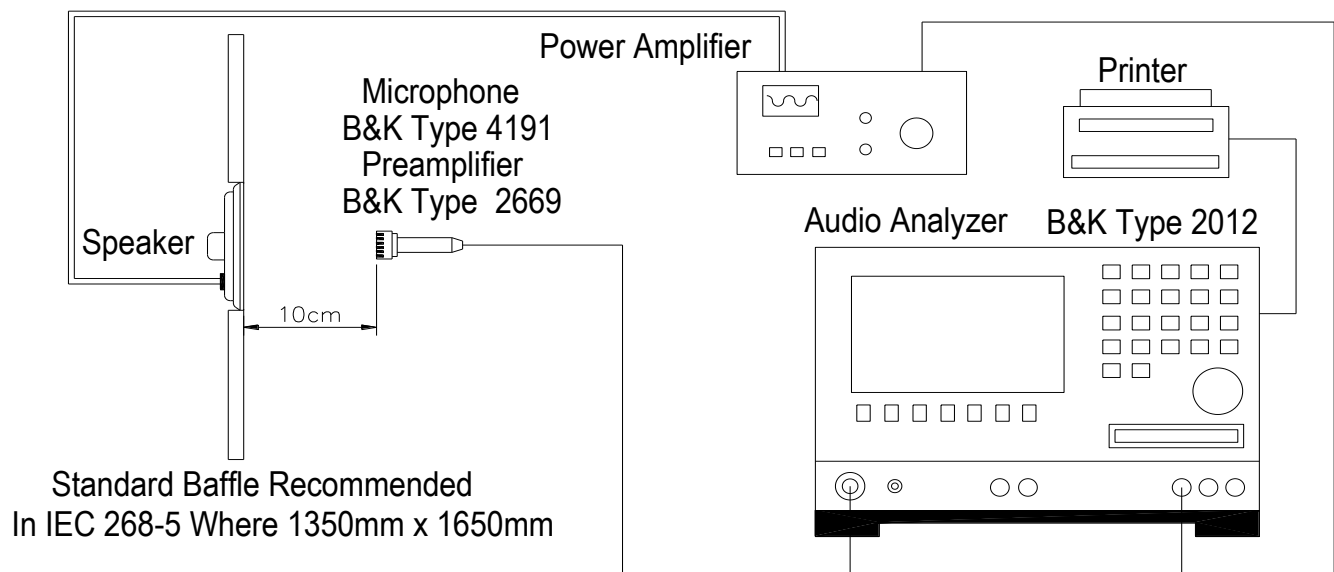
1. Input Power : 0.8W ( 2.53V )

2. Zero Level : -dB

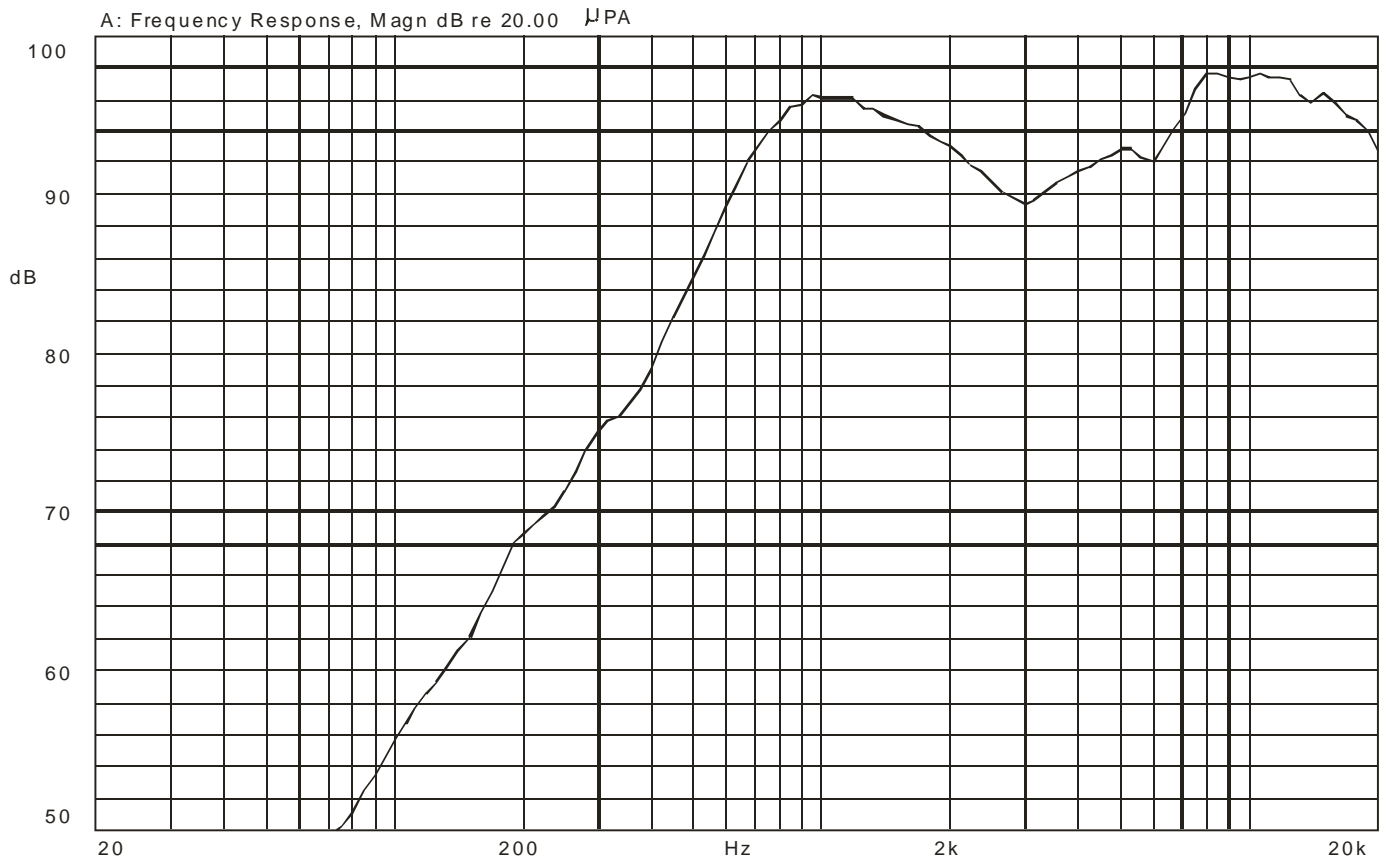
3. Mode : SPEAKER

4. potentiometer Range : 50dB

5. Sweep Time : 0.5sec



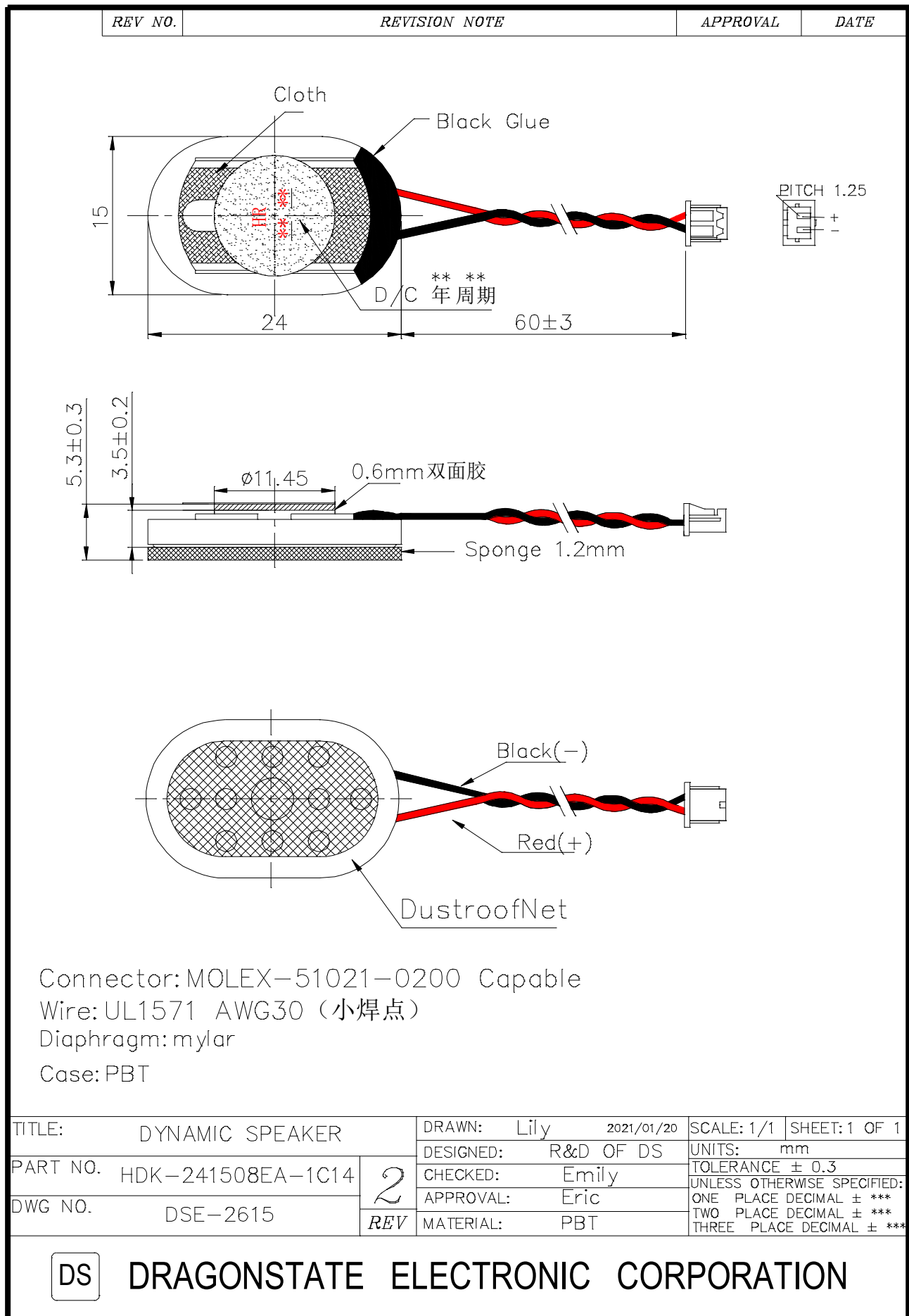
## 2-3. Frequency Response Curve



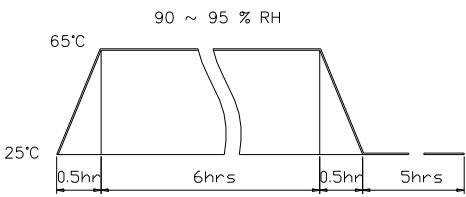
Mode: SSR



### 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	<p>Fix on jig. Then drop from 152cm height to the concrete floor</p> <p>X, y, z 6 direction. 5 times each, total 30 times.</p>
08	Free drop test	<p>Free drop from 100cm height to the concrete floor</p> <p>X, y, z 6 direction. 1 times each, total 6 times.</p>
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.

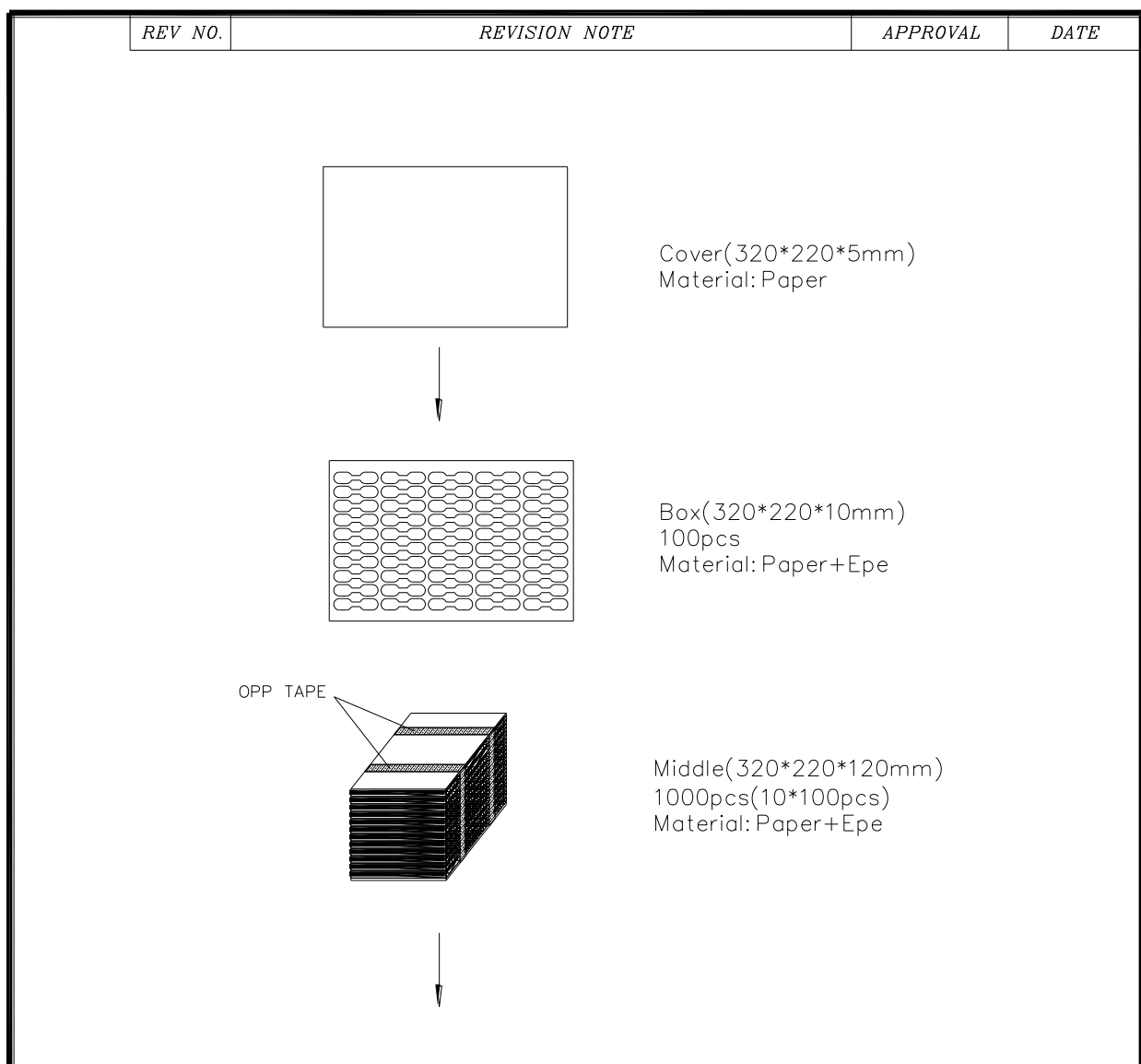
11	Terminal strength test	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
Criterion: After these test , the change of S.P.L shall be within $\pm 3$ dB .		

## Soldering Condition

Recommend using constant branding iron at temperature range  $350 \pm 10^{\circ}$  C.

Soldering time not over 3 seconds.

## 5. Packing









*Dragonstate Electronic Corporation*