

**MESSRS.**

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

<b>Product</b>	<b>DYNAMIC SPEAKER</b>
<b>Part No.</b>	<b>HDK-302008AA-5W14 (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 DEC-20-2017	曹丽萍 DEC-20-2017	LILY DEC-20-2017

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**1.Specification**
**HDK-302008AA-5W14(RoHS)**

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 30×20 mm	
03	Rated Input Power	1.5W	
04	Max. Input Power	1.7W	
05	Impedance	8 ohm ± 15% at 2000Hz.	
06	Resonance Frequency (Fo)	900Hz ± 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	95dB(0.5W/0.1m) ± 3 dB	at AVE 1.0 ,1.2,1.5,2.0KHz.
08	Frequency Range	Fo – 20KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz,1.2W.	
10	Voice Coil	Diameter 10.5 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ9.8 x 1.5 mm	
12	Weight	3.5g ± 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 – 1.2W	
15	Buzz, Rattle, etc.	Should not be audible at 3.1V 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±3 °C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

## 2-2. Standard Test Fixture

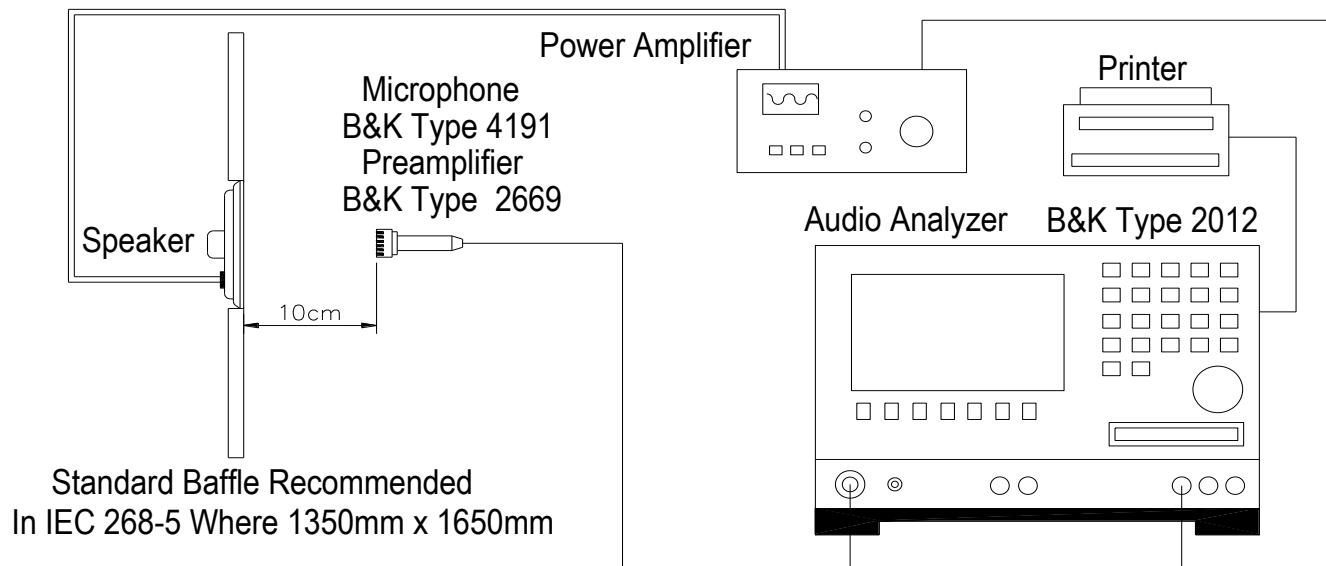
1. Input Power : 0.5W ( 2.0V )

2. Zero Level : -dB

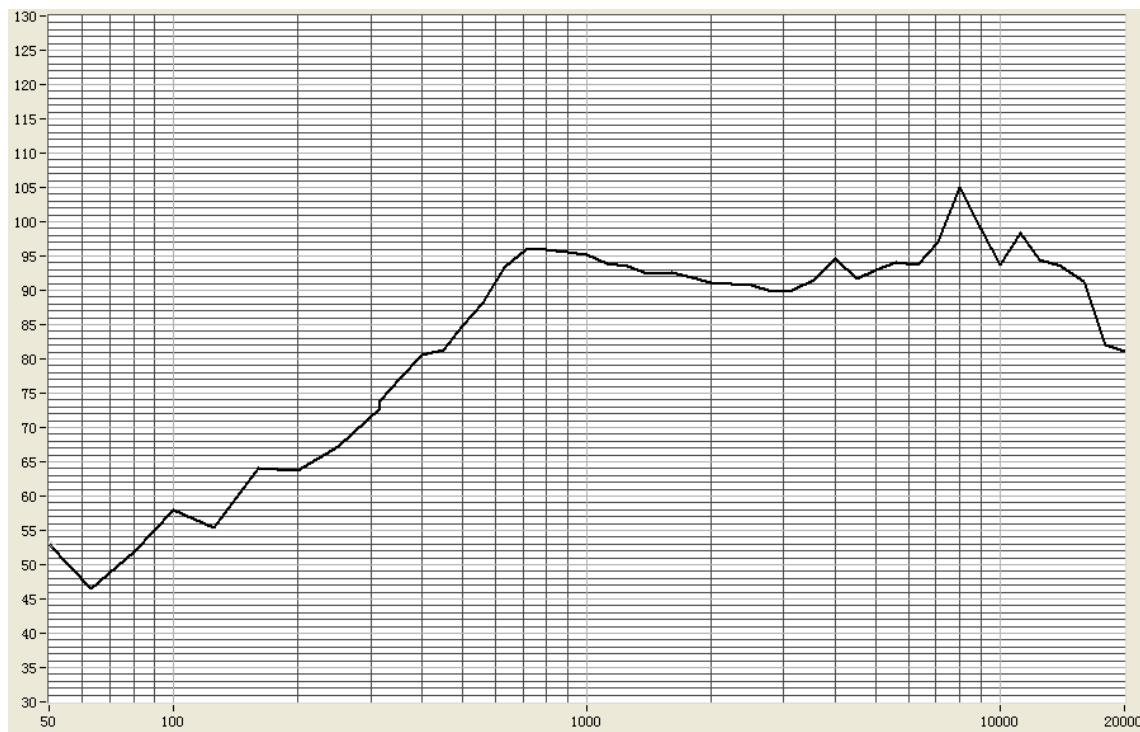
3. Mode : SPEAKER

4. potentiometer Range : 50dB

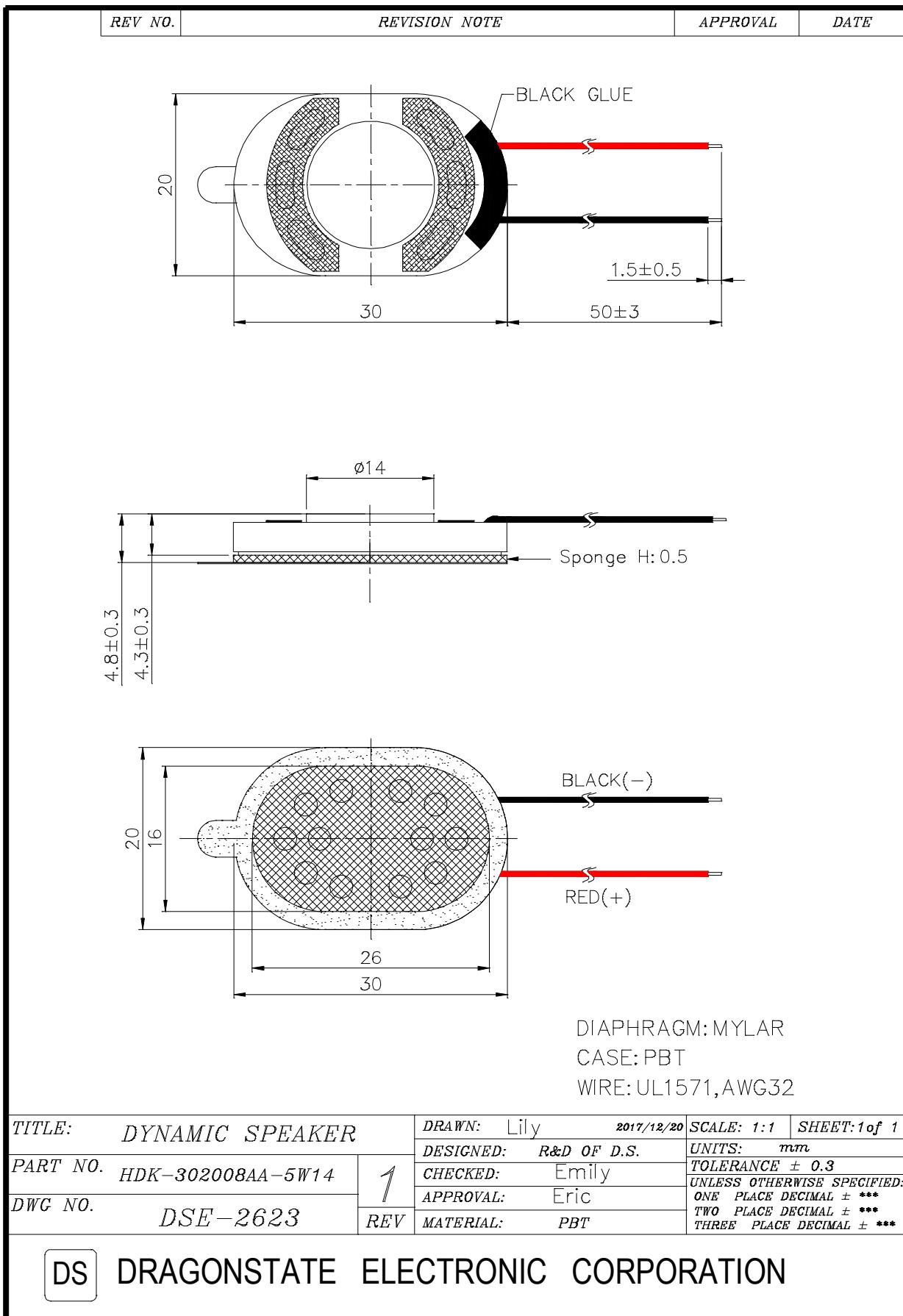
5. Sweep Time : 0.5sec



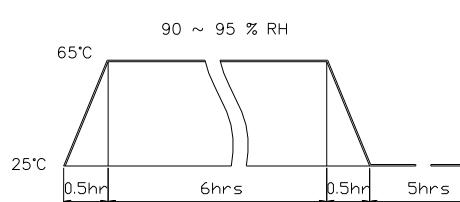
## 2-3. Frequency Response Curve



### 3. Dimension



#### 4. Reliability tests

Items.		Specifications
01	<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
10	<b>Max Power test</b>	Max power 1 min on – 2 min off 10 cycles.
11	<b>Terminal strength test</b>	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
<b>Criterion:</b>		
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

