

**MESSRS.****SPECIFICATION FOR APPROVAL****承 認 书**

Product	DYNAMIC SPEAKER
Part No.	HDK-1508EA-11C1 (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 DEC-10-2017	曹丽萍 DEC-10-2017	LILY DEC-10-2017

**常州华龙电子有限公司**

DRAGONSTATE ELECTRONIC CORPORATION

中国江苏省常州市新区电子园新四路 36 号

Tel: +86-519-85110078. 86-519-85106698, Fax: +86-519-85101081

EDITION: 1. 1

**1. Specification**

HDK-1508EA-11C1 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 15 mm	
03	Rated Input Power	1.0W	
04	Max. Input Power	1.2 W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 2000Hz.	
06	Resonance Frequency (Fo)	950Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	90dB (0.5W / 0.1m) $\pm$ 3 dB	at AVE 0.8K, 1.0K, 1.2K, 1.5KHz
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 $\Phi$ 7.9x 1.0mm	
12	Weight	2.0 $\pm$ 0.3g	
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 - 1.0W	
15	Buzz, Rattle, etc.	Should not be audible at 2.83V 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°C to +70°C Storage temperature: -40°C to +80°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

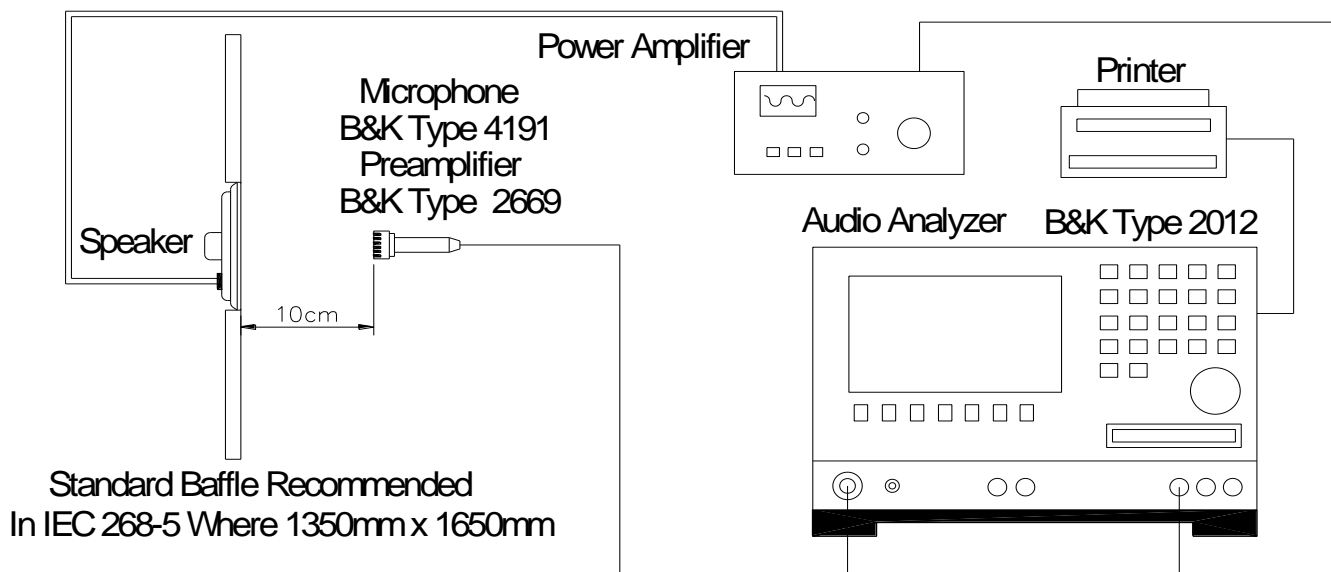
1. Input Power : 0.5W (2.0V )

2. Zero Level : -dB

3. Mode : SPEAKER

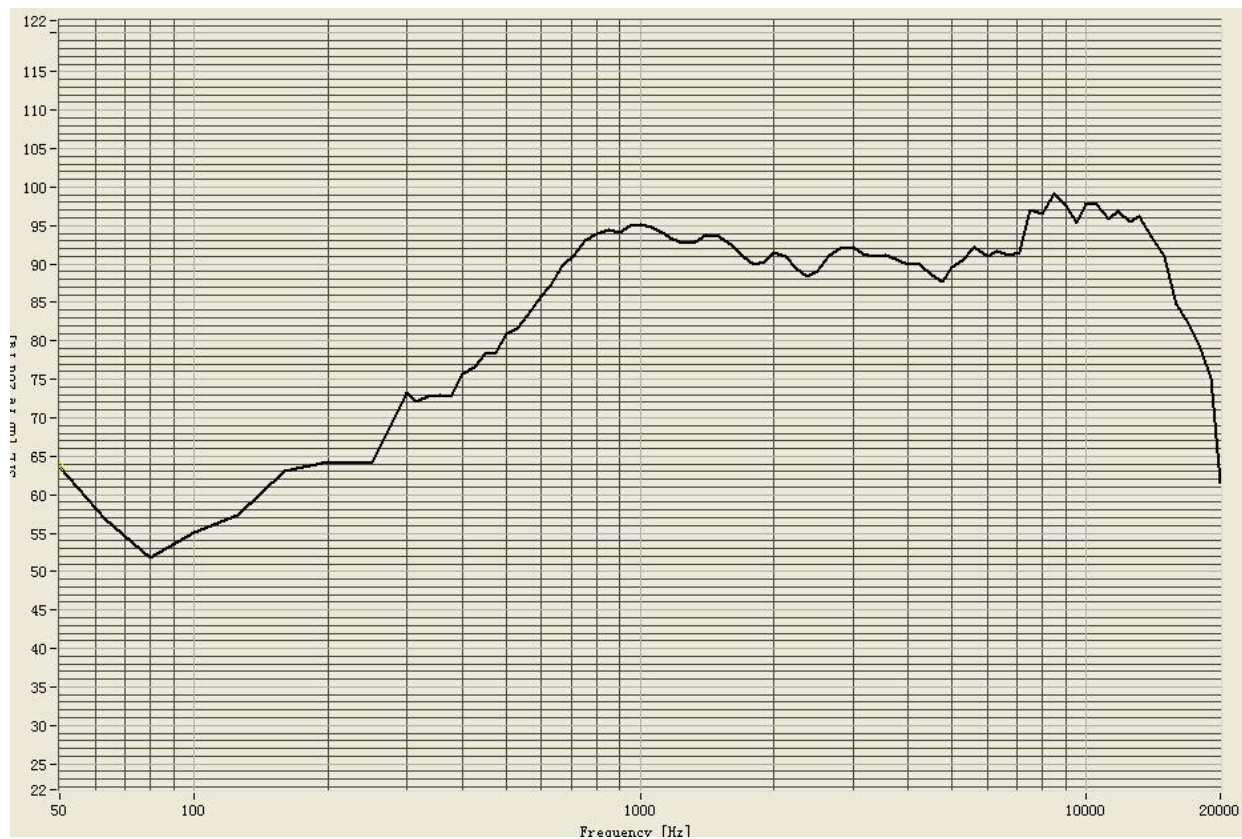
4. potentiometer Range : 50dB

5. Sweep Time : 0.5sec

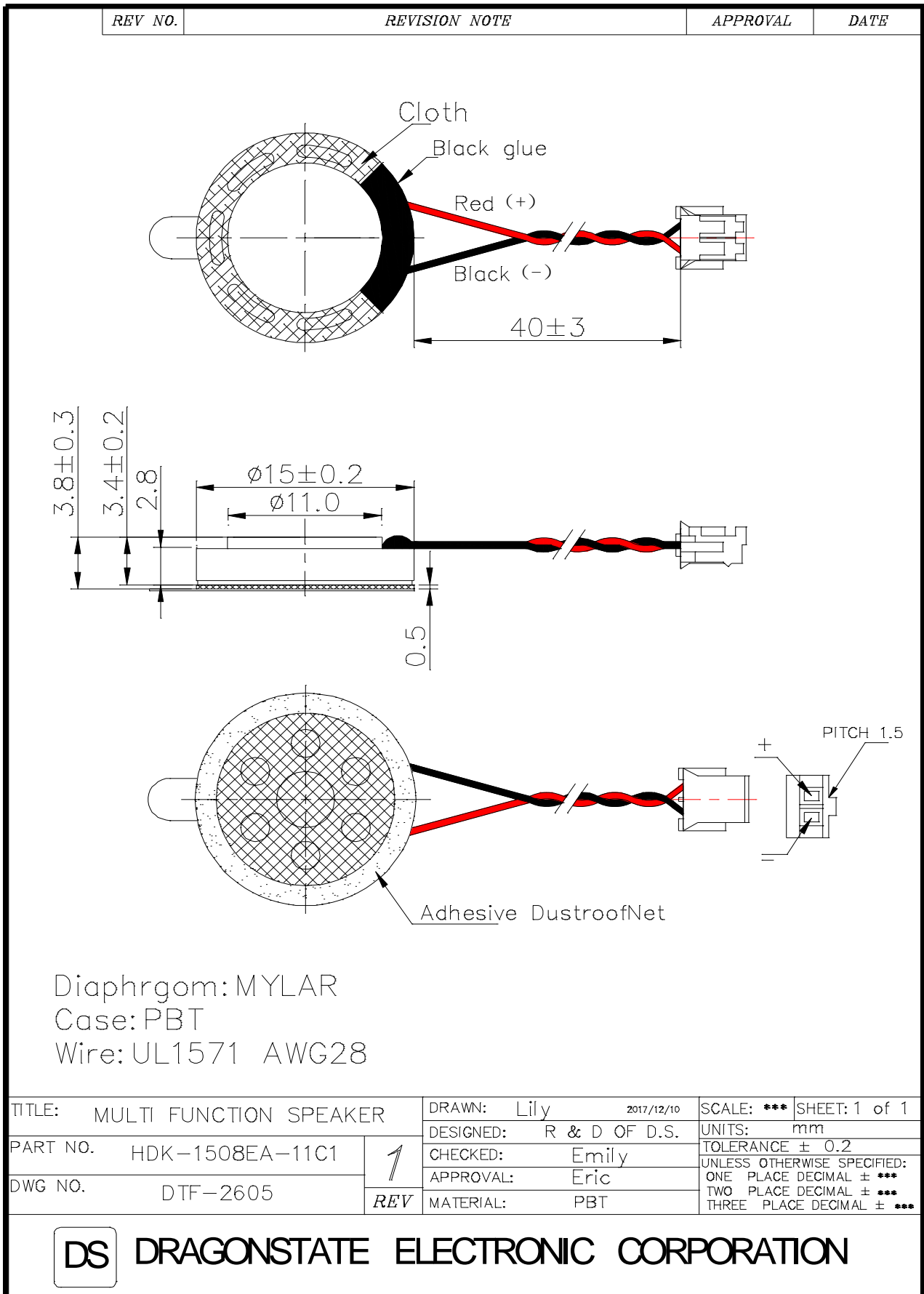


2-3. Frequency Response Curve

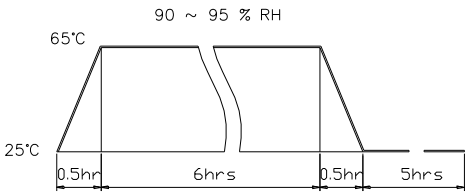
0.5W/10cm



3. Dimension



#### 4. Reliability Tests



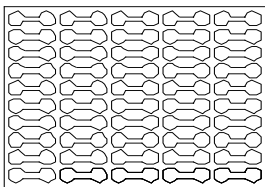

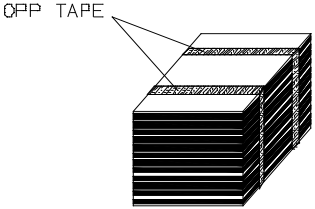

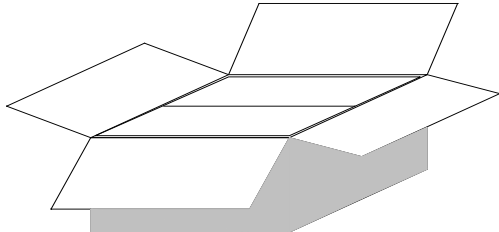

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+80^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity 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	$10 \sim 200 \sim 10\text{Hz}$ 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 48 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.
<p>Criterion: After these test , the change of S.P.L shall be within <math>\pm 3</math> dB .</p>		

#### Soldering Condition

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

Soldering time not over 2 seconds.

5. Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 <p>Cover(325*245*5mm) Material: Paper</p>		
			
	 <p>Box(325*245*13mm) 100pcs Material: Paper+Epe</p>		
			
	 <p>OPP TAPE</p> <p>Middle(325*245*155mm) 1000pcs(10*100pcs) Material: Paper+Epe</p>		
			
	 <p>Outer Box(490*360*350mm) 5000pcs(5*1000pcs) Material: Paper</p>		
<p>单位: mm</p>			
TITLE: packing		DRAWN: Lily	2016/08/26
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
DWC NO.		CHECKED: Emily	SHEET: 1 of 1
REV		APPROVAL: Eric	UNITS: mm
		MATERIAL: ***	TOLERANCE
			20~11 ± 0.3
			10~5 ± 0.2
			<4 ± 0.1
 <p>DRAGONSTATE ELECTRONIC CORPORATION</p>			

