

**MESSRS.**

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

Product	DYNAMIC SPEAKER
Part No.	HDK-241508EA-1W7 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 MAR-16-2016	曹丽萍 MAR-16-2016	LILY MAR-16-2016

**常州华龙电子有限公司**

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**1. Specification**
**HDK-241508EA-1W7 (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 ± 15% at 1500Hz.	
06	Resonance Frequency (Fo)	750Hz ± 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	90dB(0.1W/0.1m) ± 3 dB	at AVE 0.8K, 1.0K, 1.2K, 1.5KHz.
		96dB (0.8W / 0.1m) ± 3dB	
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 Φ8.0 x 1.0 mm	
12	Weight	1.5g ± 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 - 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	

Test Condition

**STANDARD**

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

**BASIC**

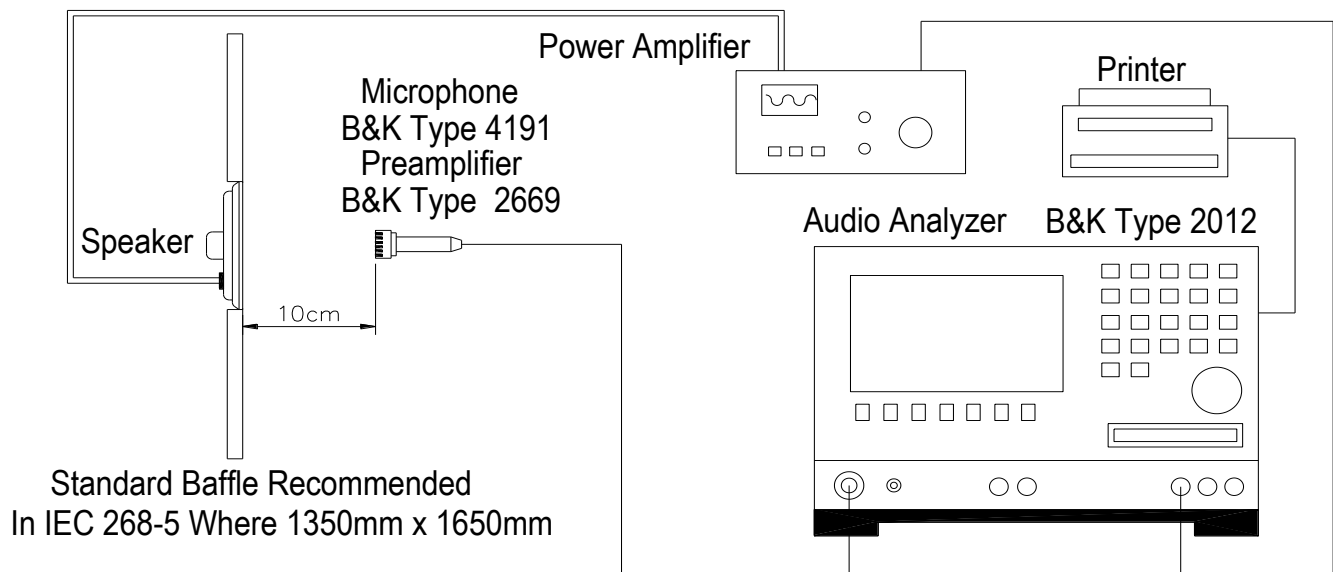
Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

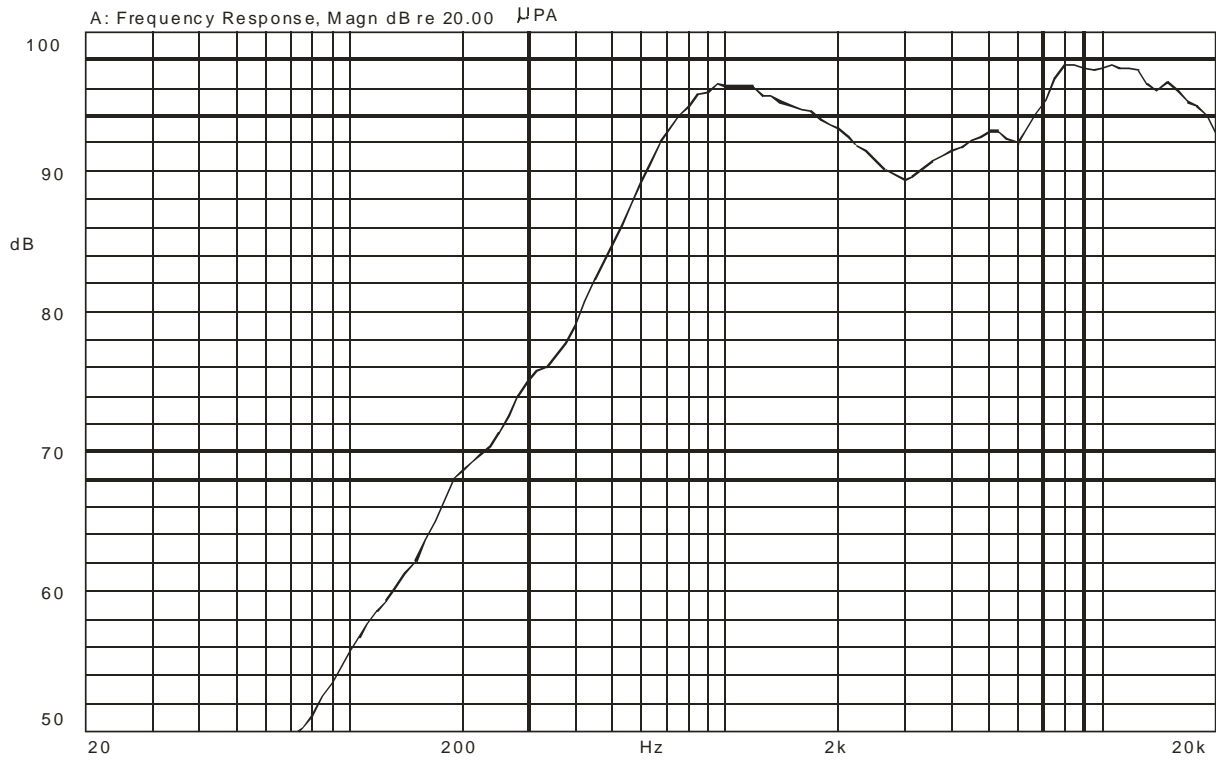
Atmospheric pressure : 860mbar to 1060mbar

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



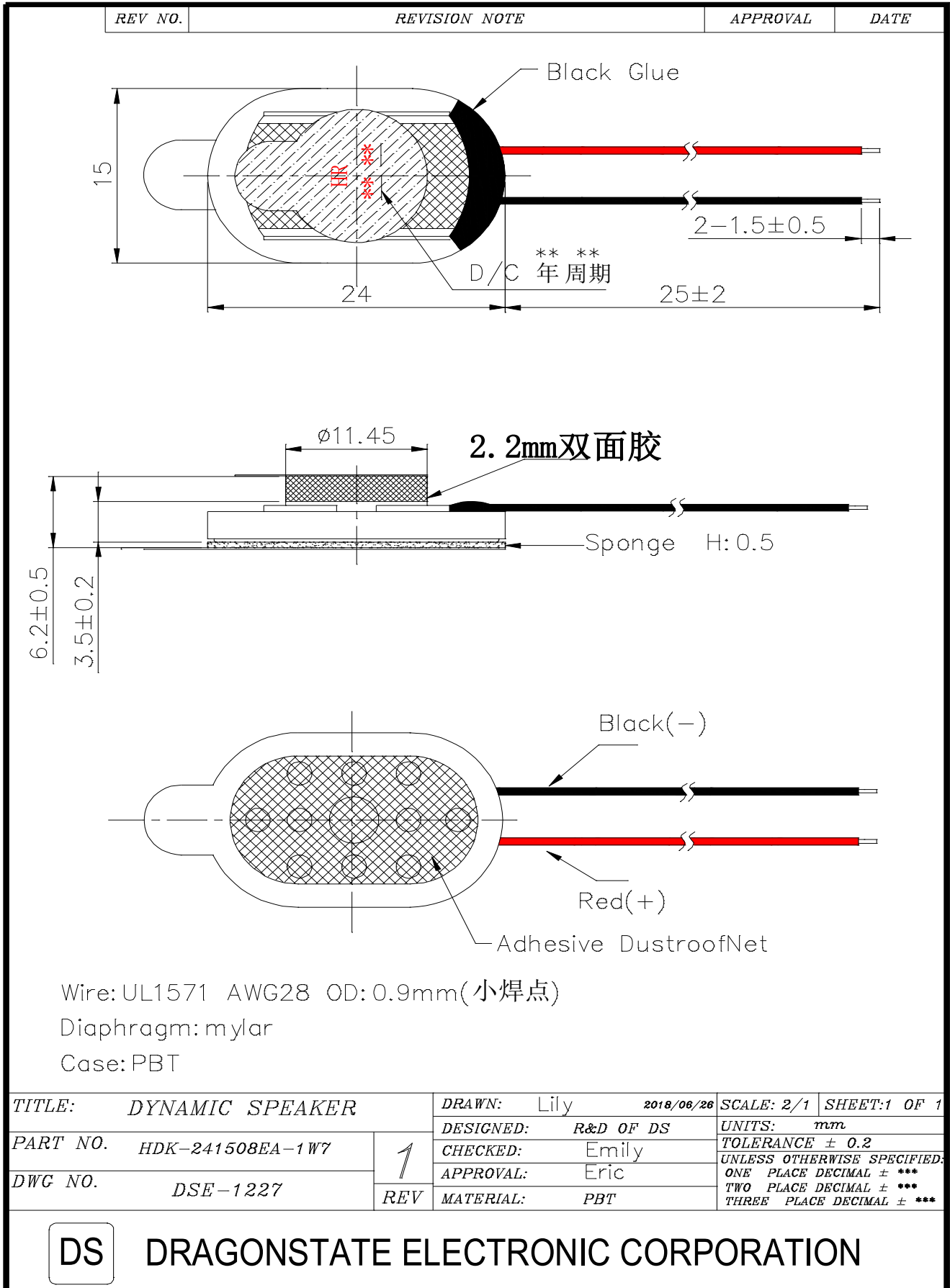
## 2. Frequency Response Curve



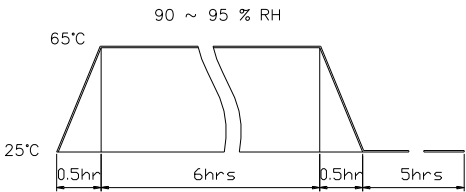
Mode: SSR



### 3. Dimension



#### 4. Reliability tests

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:


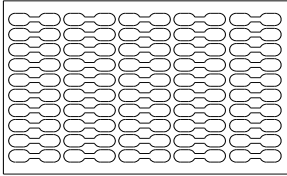
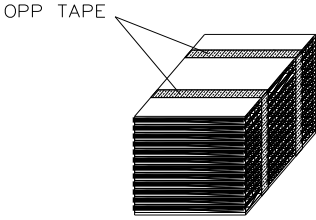
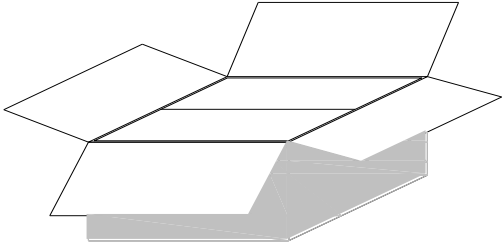
After these test , the change of S.P.L shall be within  $\pm 3$  dB .

#### SOLDERING CONDITION

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

Soldering time not over 3 seconds.

## 5. Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
			
	↓		
			
			
	↓		
			
	<p>Cover(320*220*5mm) Material: Paper</p> <p>Box(320*220*10mm) 100pcs Material: Paper+Epe</p> <p>Middle(320*220*120mm) 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	2013/12/06
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
		CHECKED: Emily	SHEET: 1 of 1
DWG NO.		APPROVAL: Eric	UNITS: mm
		MATERIAL: ***	TOLERANCE
	1		20~11 ± 0.3
	REV		10~5 ± 0.2
			<4 ± 0.1
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">DS</div> <b>DRAGONSTATE ELECTRONIC CORPORATION</b>			

