

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

Product	WATERPROOF TYPE SPEAKER
Part No.	HDK-241508AA-1C(RoHS)
Customer	
Customer Part No.	L935

Approved By	Checked By	Made By
王台平 NOV-21-2016	曹丽萍 NOV-21-2016	LILY NOV-21-2016

常州华龙电子有限公司**DRAGONSTATE ELECTRONIC CORPORATION**

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EDITION:1.1

1.Specification
HDK-241508AA-1C(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 2000Hz 1.0V	
06	Resonance Frequency (Fo)	750Hz ± 20% at Fo 1V	
07	Sensitivity (S.P.L.)	93dB (0.5W / 0.1m) ± 3 dB	at AVE 1.0K,1.2K,1.5K,2.0KHz.
08	Frequency Range	Fo – 20KHz	
09	Dustproof and waterproof	IP67	
10	Total Harmonics Distortion	Max 8 % at 1 KHz,0.8W.	
11	Voice Coil	Diameter 8.5 mm	
12	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ8.0 x 1.0 mm	
13	Weight	1.8g ± 0.2g	
14	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
15	Operation Test	Must be normal at program source – 0.8W	
16	Buzz, Rattle, etc.	Should not be audible at 2.53V sine Wave between Fo to 20KHz	
17	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
18	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
19	Temperature	Operating temperature: -20℃ to +60℃ Storage temperature: -30℃ to +70℃	

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

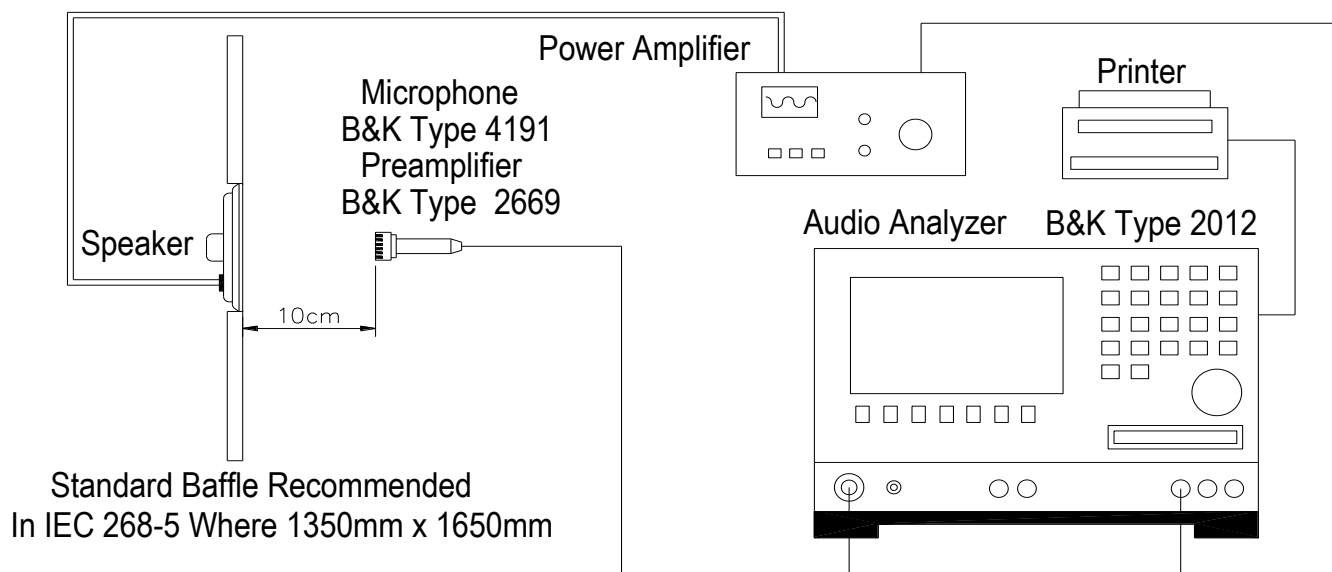
1. Input Power : 0.5W (2.0V)

2. Zero Level : -dB

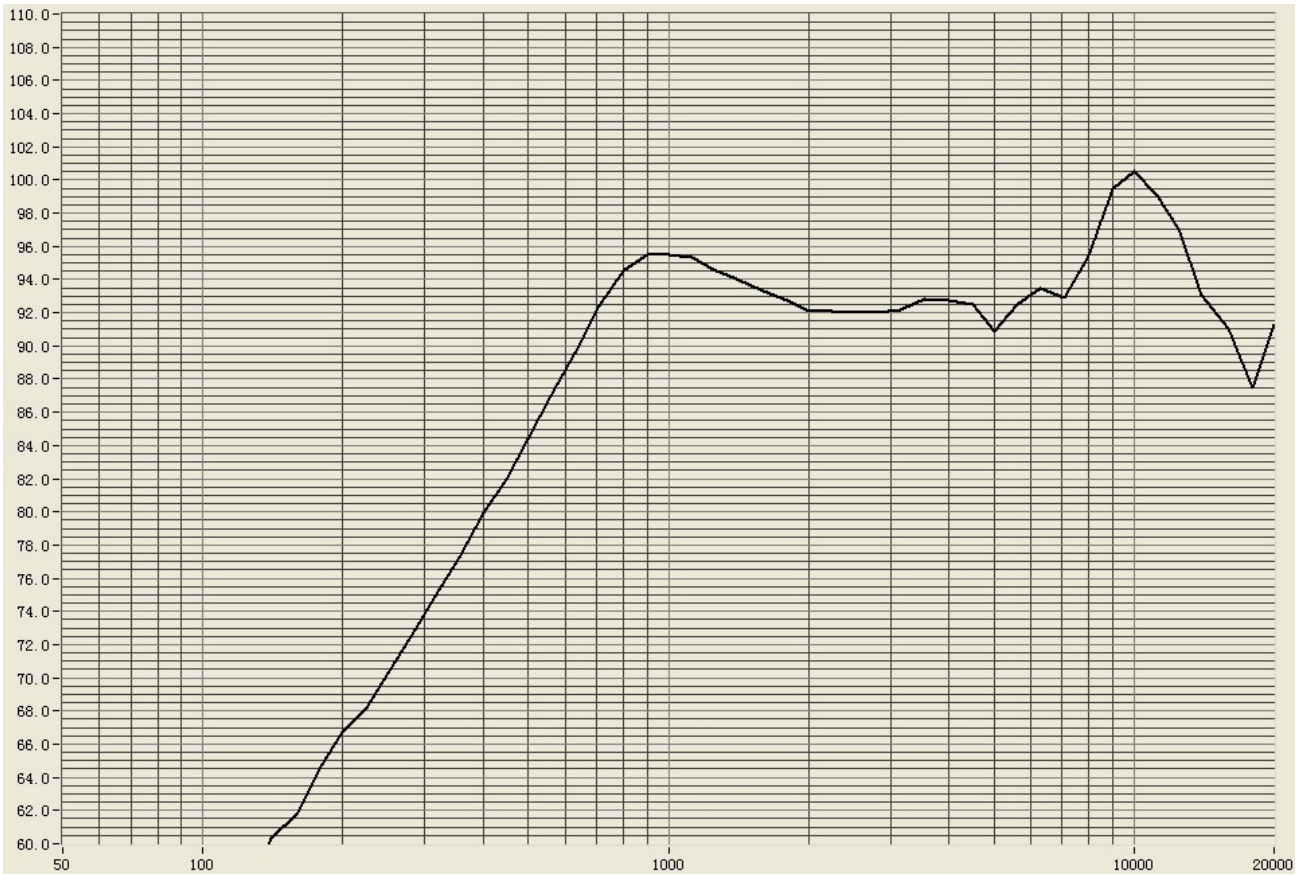
3. Mode : SPEAKER

4. potentiometer Range : 50dB

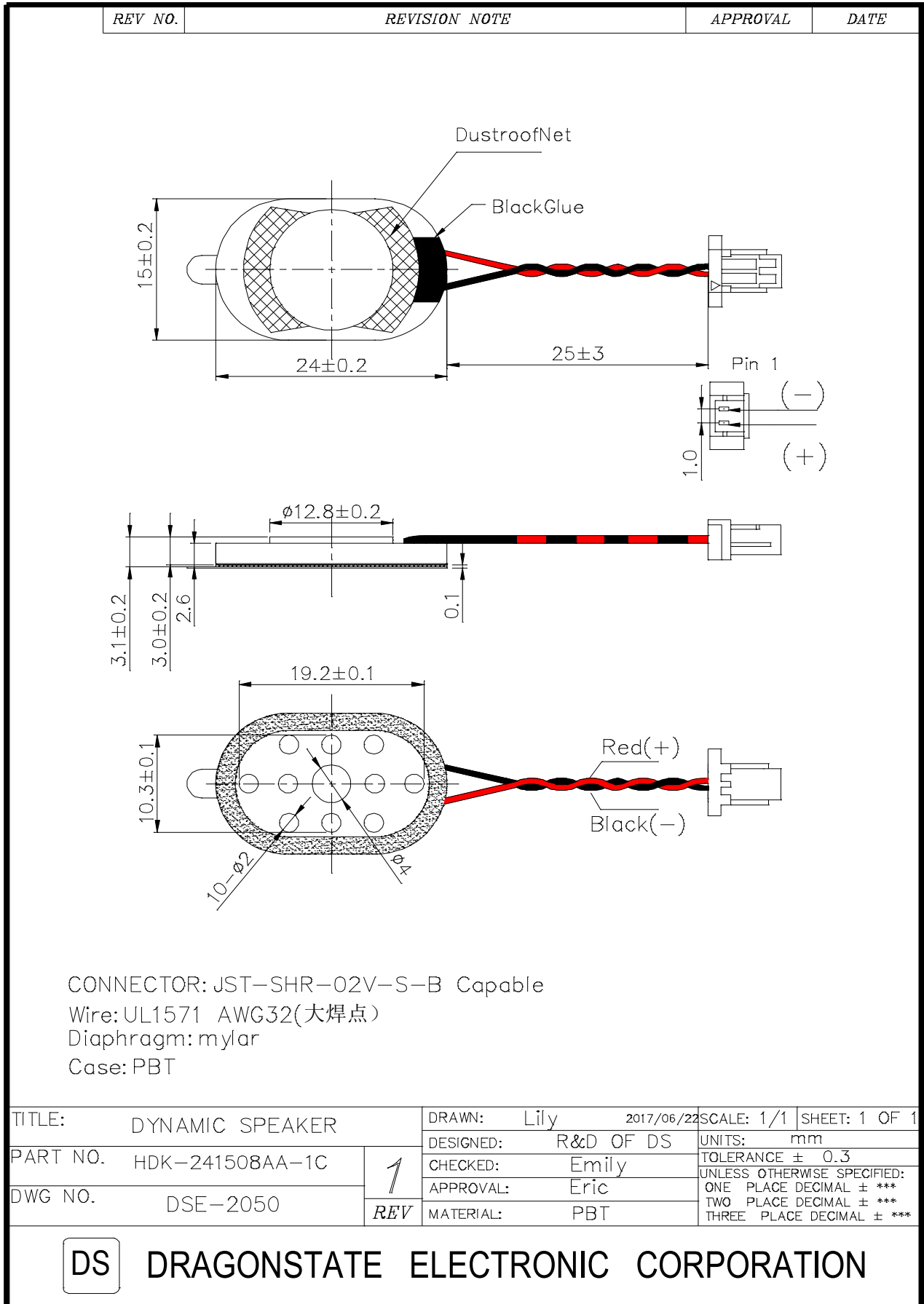
5. Sweep Time : 0.5sec



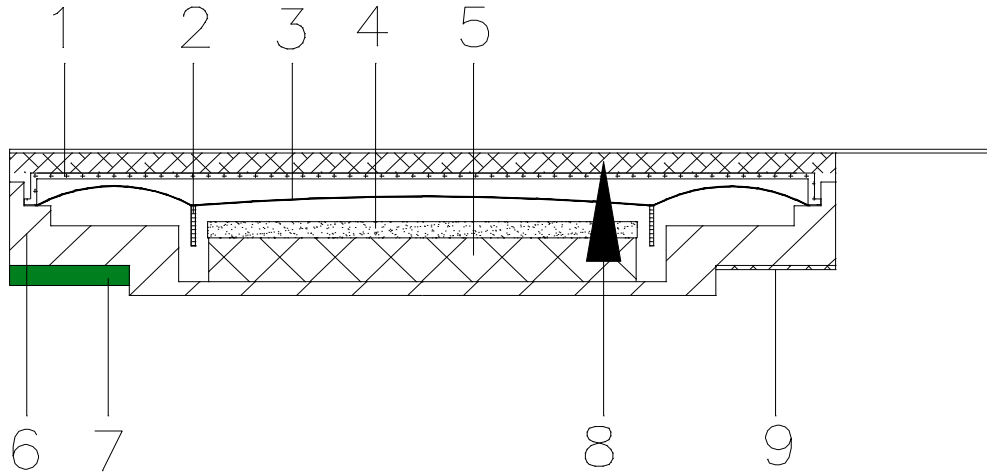
2-3.Frequency Response Curve



3.Dimension

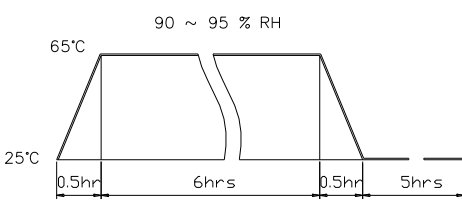


4. Material and Structure



NO	PART NAME	MATERIAL	Q`TY
1	CAP	SUS304	1
2	VOICE COIL	COPPER	1
3	DIAPHRAGM	PEN	1
4	PLATE	SPCC	1
5	MAGNET	Nd-Fe-B	1
6	FRAME	PBT	1
7	TERMINAL	JST-SHR-02V-S-B Capable	1
8	GASKET	ADHESIVE	1
9	ACOUSTIC CLOTH	UNWOVEN FABRIC	2


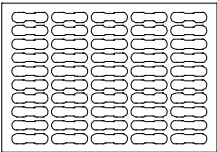
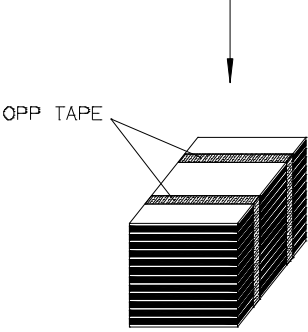
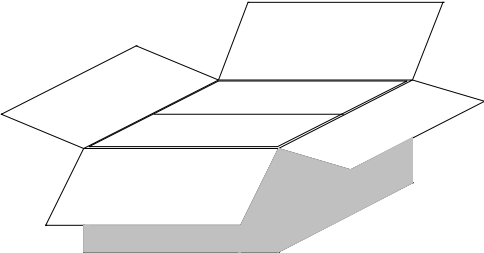
5. Reliability Test

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 $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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.
<p>Criterion: After these test , the change of S.P.L shall be within ± 3 dB .</p>		

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.

6.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 <p>Cover(320*220*5mm) Material: Eps</p>		
	 <p>Box(320*220*13.5mm) 100pcs Material: Eps</p>		
	 <p>Middle(320*220*140mm) 1000pcs Material: Eps</p>		
	 <p>Outer Box(360*270*280mm) 2000pcs Material: Paper</p>		
<p>单位: mm</p>			
TITLE: packing		DRAWN: Lily	2015/4/23
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
DWG 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
<div style="border: 1px solid black; display: inline-block; padding: 2px 5px;">DS</div> DRAGONSTATE ELECTRONIC CORPORATION			

