

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

Product	DYNAMIC SPEAKER
Part No.	HDK-1008RA-5C14 (RoHS)
Customer Approval	

常 州 华 龙 电 子 有 限 公 司

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EDITION:1. 1

1. Specification

HDK-1008RA-5C14 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 10 mm	
03	Rated Input Power	0.3W (Long Time)	
04	Max. Input Power	0.5W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 1500Hz.	
06	Resonance Frequency (Fo)	1000Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	84dB (0.1W / 0.1m) $\pm$ 3 dB	At AVE 1.0, 1.2, 1.5, 2.0KHz.
		88dB (0.3W / 0.1m) $\pm$ 3 dB	
08	Frequency Range	Fo - 6KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz, 0.3W.	
10	Voice Coil	Diameter 5.7mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 5.2 x0.8mm	
12	Weight	0.6g $\pm$ 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 - 0.3W	
15	Buzz, Rattle, etc.	Should not be audible at 1.55V 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℃

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : 20±3℃

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2. Standard Test Fixture

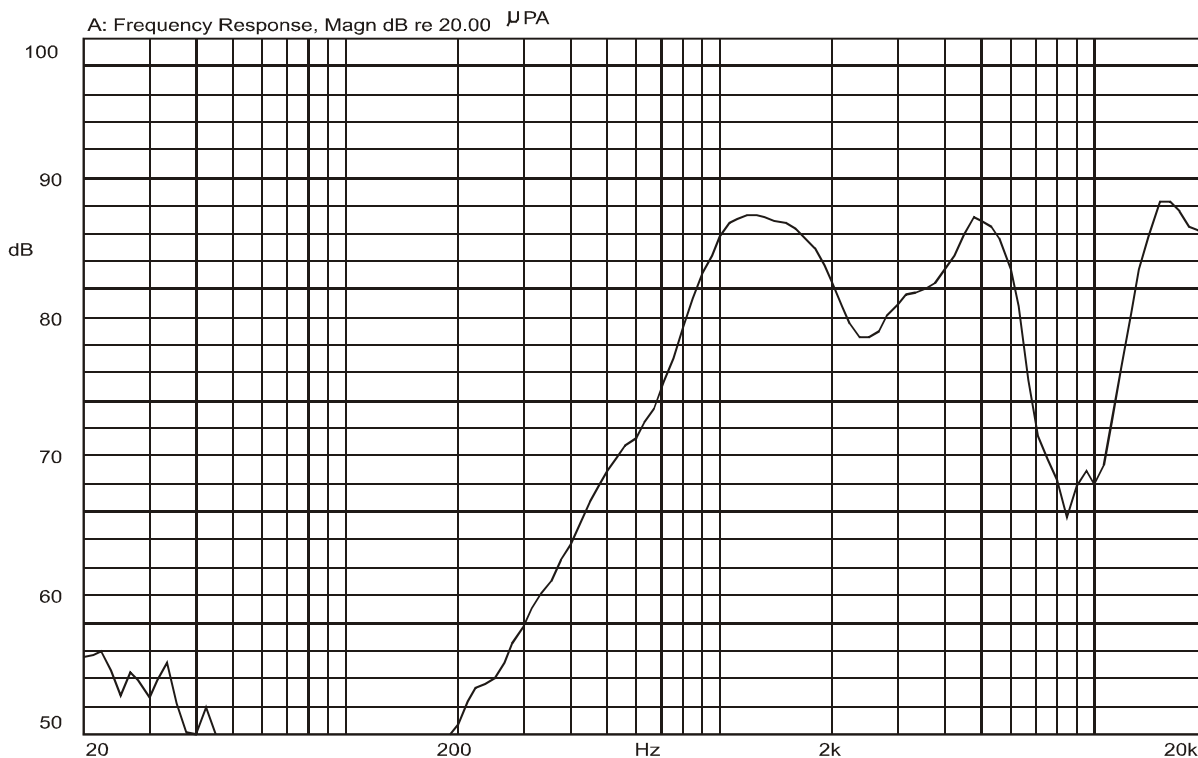
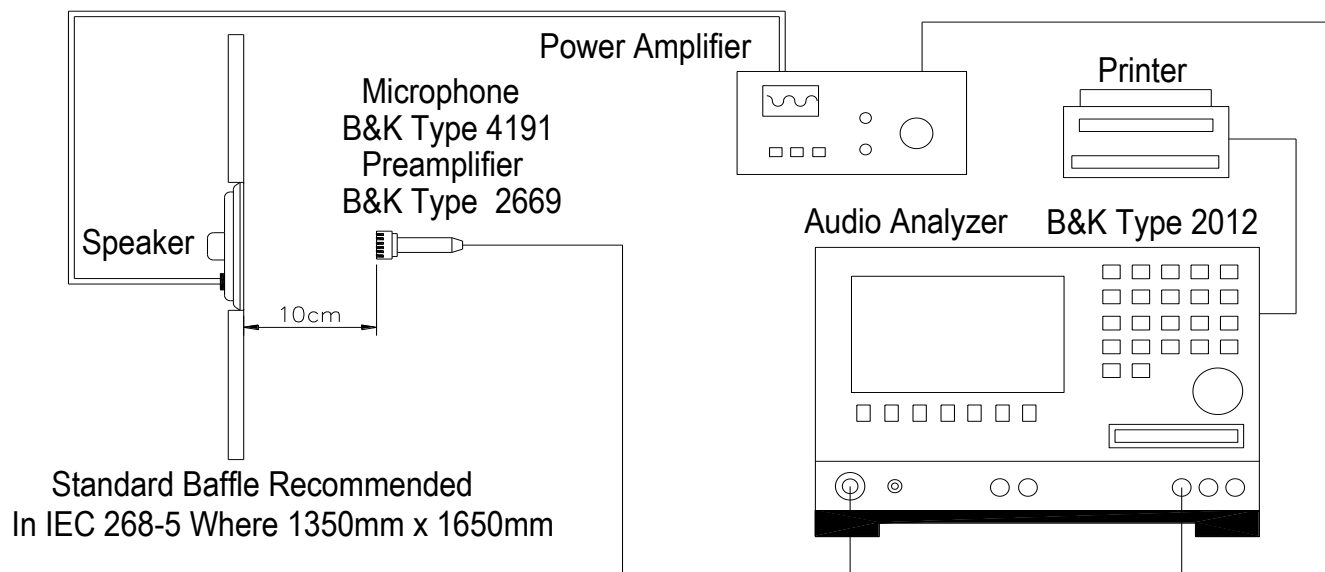
1. Input Power : 0.3W (1.55V)

2. Zero Level : -dB

3. Mode : SPEAKER

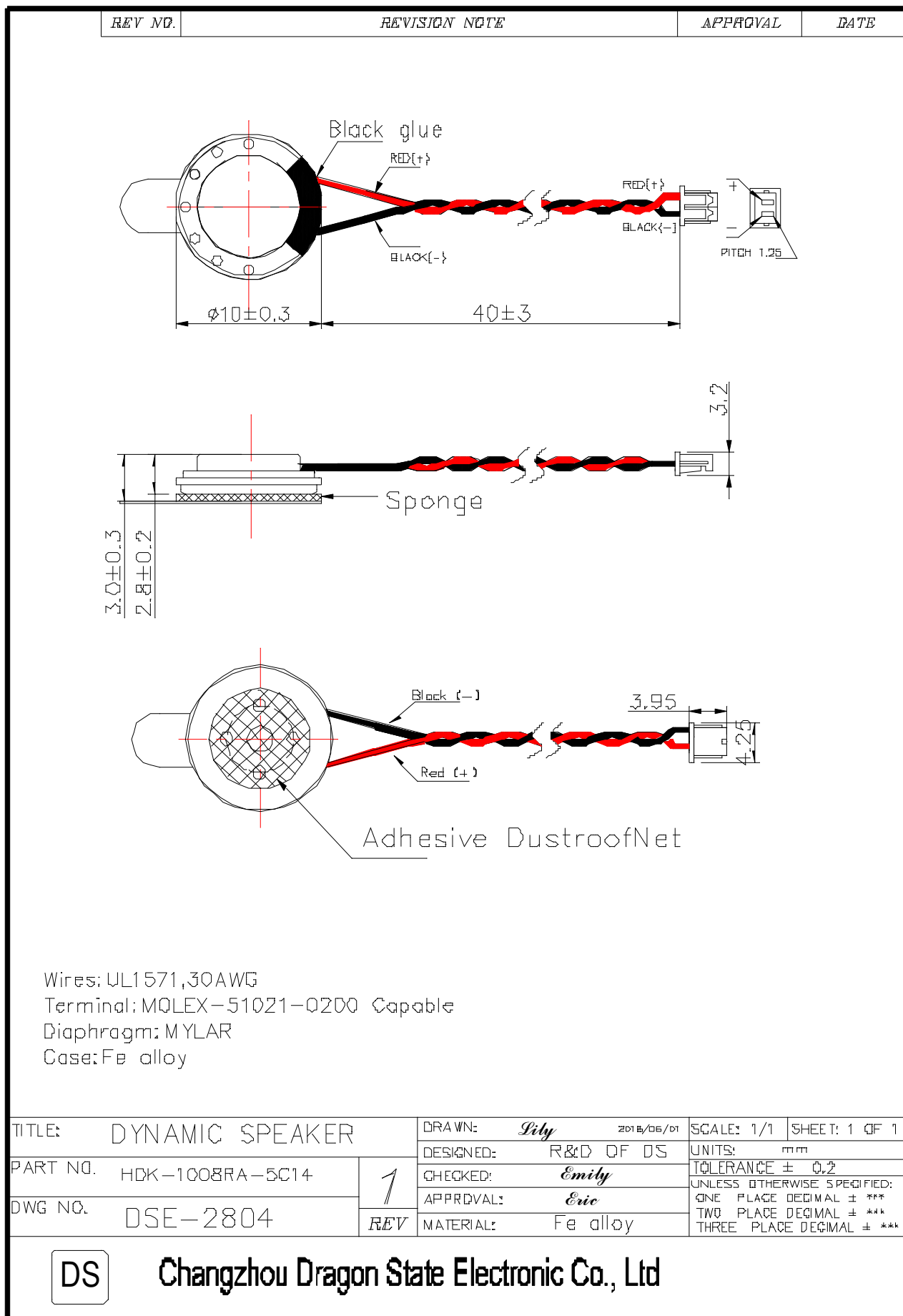
4. potentiometer Range : 50dB

5. Sweep Time : 0.5sec

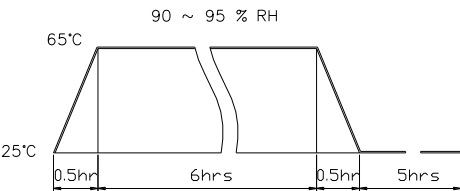


2-3. F
reque
ncy
Respo
nse
Curve

3. Dimension



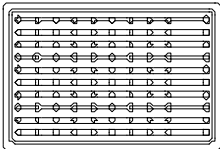
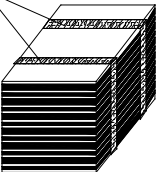
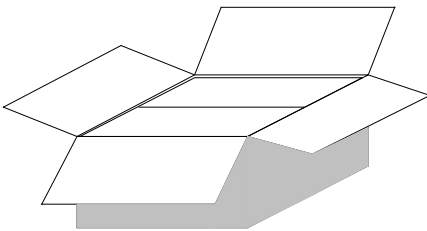
4. Reliability Test

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	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of; 
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 24 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 ± 3 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

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Cover(350*240*10mm) Material: Pvc		
	 Box(350*240*10mm) 100pcs Material: Pvc		
	 Middle(350*240*120mm) 1000pcs(10*100pcs) Material: Pvc		
	 Outer Box(490*360*350mm) 6000pcs(6*1000pcs) Material: Paper		
单位: mm			
TITLE: packing		DRAWN: Lily 2008/06/18	SCALE: 2:1
PART NO.		DESIGNED: R&D OF D.S.	SHEET: 1 of 1
DWG NO.		CHECKED: Emily	UNITS: mm
REV 1		APPROVAL: Eric	TOLERANCE
		MATERIAL: ***	20~11 ± 0.3
			10~5 ± 0.2
			<4 ± 0.1
DS Changzhou Dragon State Electronic Co., Ltd			