

MESSRS.

SPECIFICATION FOR APPROVAL

承 認 书

Product	DYNAMIC SPEAKER
Part No.	HDK-4008BB-2 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 FEB-10-2015	曹丽萍 FEB-10-2015	LILY FEB-10-2015

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-4008BB-2 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 40 mm	
03	Rated Input Power	1.5W	
04	Max. Input Power	1.8W for 1 minute	
05	Impedance	8 ohm \pm 15% at 1000Hz.	
06	Resonance Frequency (Fo)	550Hz \pm 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	93dB (0.1W / 0.1m) \pm 2dB	at AVE 1.0, 1.2, 1.5, 2.0 KHz
08	Frequency Range	Fo - 4.5KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz, 0.5W.	
10	Voice Coil	Diameter 13.5 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 12.5x1.5 mm	
12	Weight	9.6g \pm 0.5g	
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 - 1.5W	
15	Buzz, Rattle, etc.	Should not be audible at 3.46V 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. TEST CONDITION

2.1 STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

2.2 BASIC

Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

Standard Test Fixture

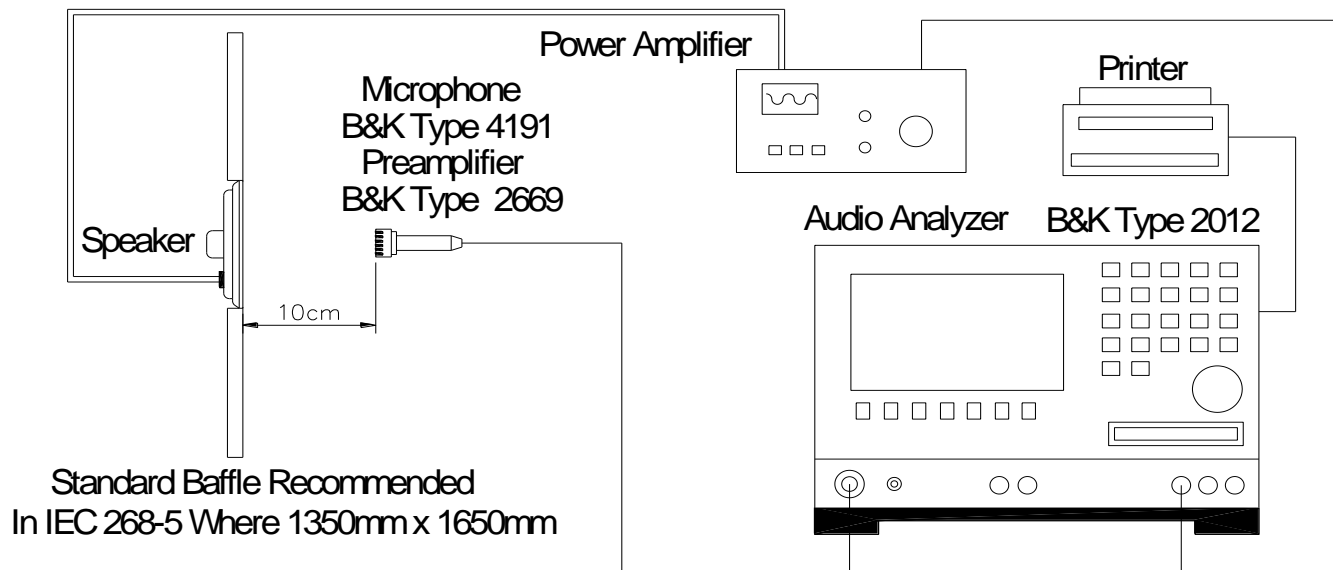
1. Input Power : 0.1W (0.89V)

2. Zero Level : -dB

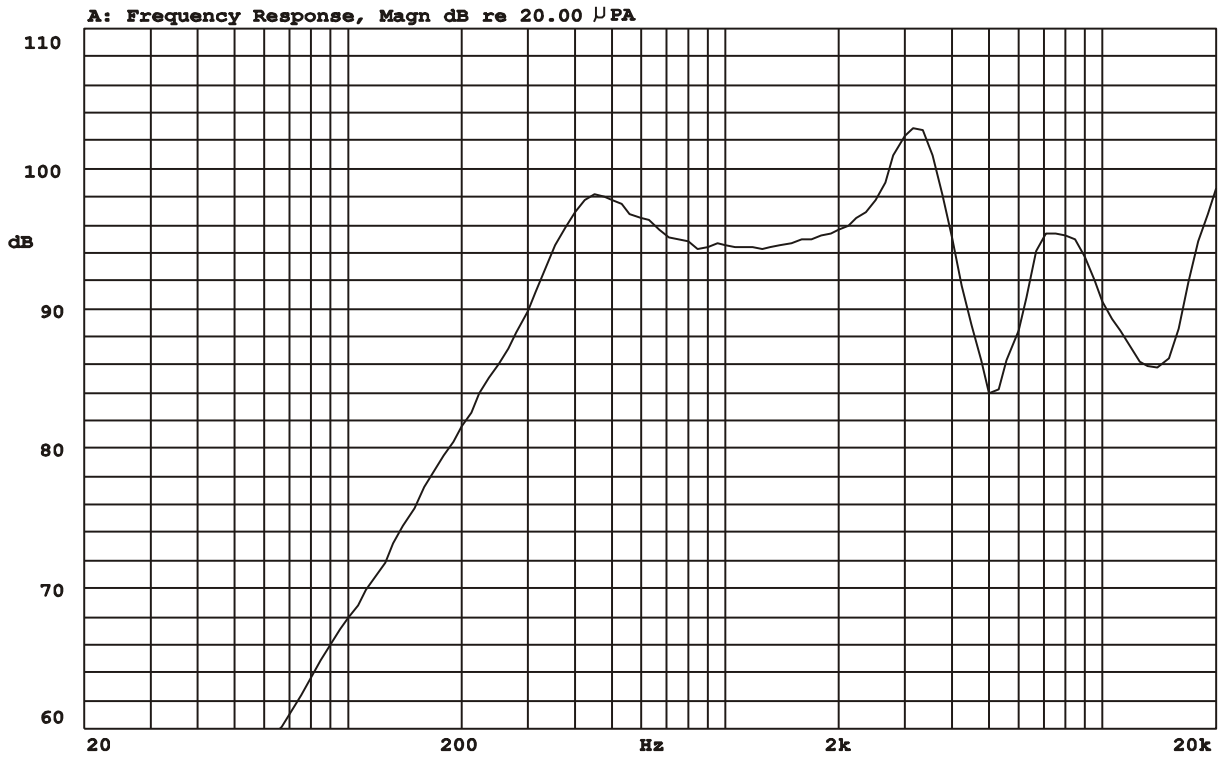
3. Mode : SPEAKER

4. potentiometer Range : 50dB

5. Sweep Time : 0.5sec



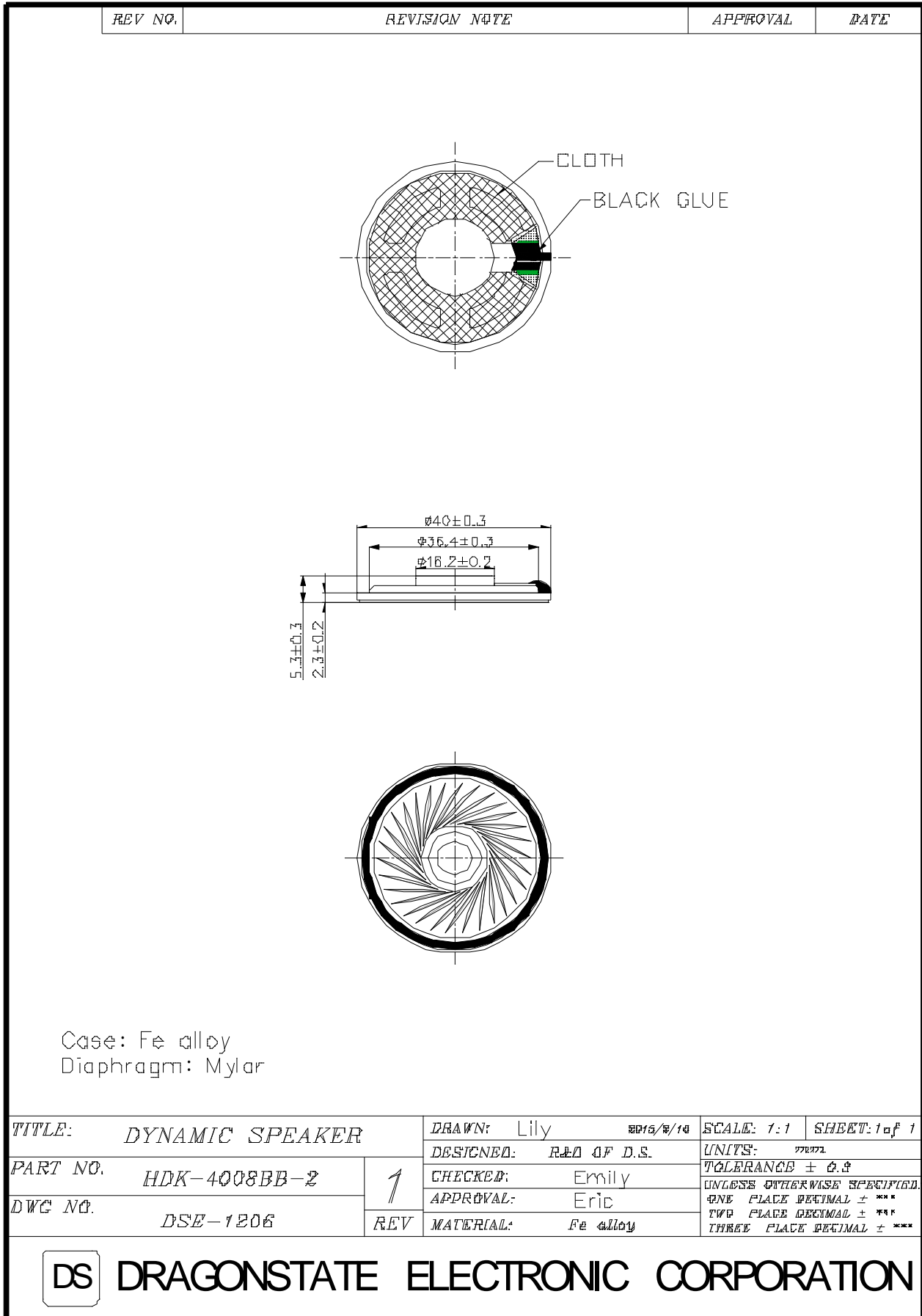
2.3 Frequency Response Curve



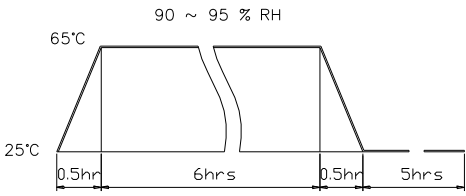
Mode: SPEAKER



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	$10 \sim 200 \sim 10\text{Hz}$ 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 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:


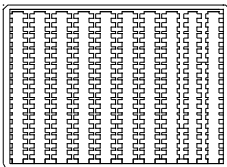
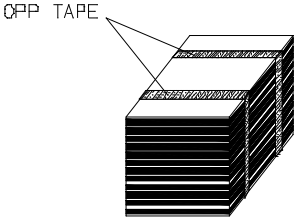
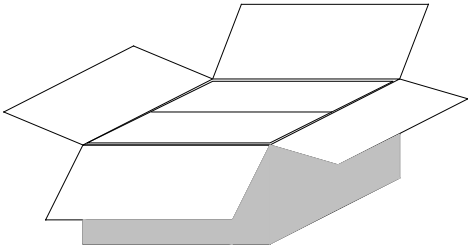

After these test , the change of S.P.L shall be within ± 3 dB .

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 3 seconds.

5. PACKING

REV NO.	REVISION NOTE	APPROVAL	DATE
			
			Cover(375*275*12mm) Material: Eps
	↓		
			
			Box(375*275*48mm) 200pcs Material: Eps
			
			Middle(375*275*260mm) 1000pcs(5*200pcs) Material: Eps
	↓		
			
			Outer Box(570*390*260mm) 2000pcs(2*1000pcs) Material: Paper
			单位: mm
TITLE: packing		DRAWN: Lily	2018/12/08
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
 DRAGONSTATE ELECTRONIC CORPORATION			