

MESSRS.

SPECIFICATION FOR APPROVAL**承 認 书**

Product	DYNAMIC SPEAKER
Part No.	HDK-151108ZA-5P6 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 DEC-26-2012	曹丽萍 DEC-26-2012	LILY DEC-26-2012

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-151108ZA-5P6 (RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 15*11 mm
03	Rated Input Power	0.5W In 1cc Box
04	Max. Input Power	1.0W In 1cc Box For 1 Minute
05	Impedance	8 ohm \pm 15% at 2KHz.
06	Resonance Frequency (Fo)	500Hz \pm 20% (in free air)
	Resonance Frequency (Fo)	800Hz \pm 20% (in 1cc air)
07	Sensitivity (S.P.L.)	87 \pm 3 dB /0.5W/0.1m at 2.0KHz
08	Frequency Range	Fo – 20KHz
09	Dustproof and waterproof	IP67
10	Total Harmonics Distortion	Max 10% at 1 KHz,0.5W.
11	Weight	1.5g \pm 5%g
12	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
13	Operation Test	Must be normal at program source – 0.5W
14	Buzz, Rattle, etc.	Must be normal at sine wave 0.89Vrms (in free air) /2.0Vrms(in 1.0cc box) from 200~3400Hz
15	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
16	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
19	Temperature	Operating temperature: -20℃ to +70℃ Storage temperature: -20℃ to +70℃

2. Test Condition

2.1 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

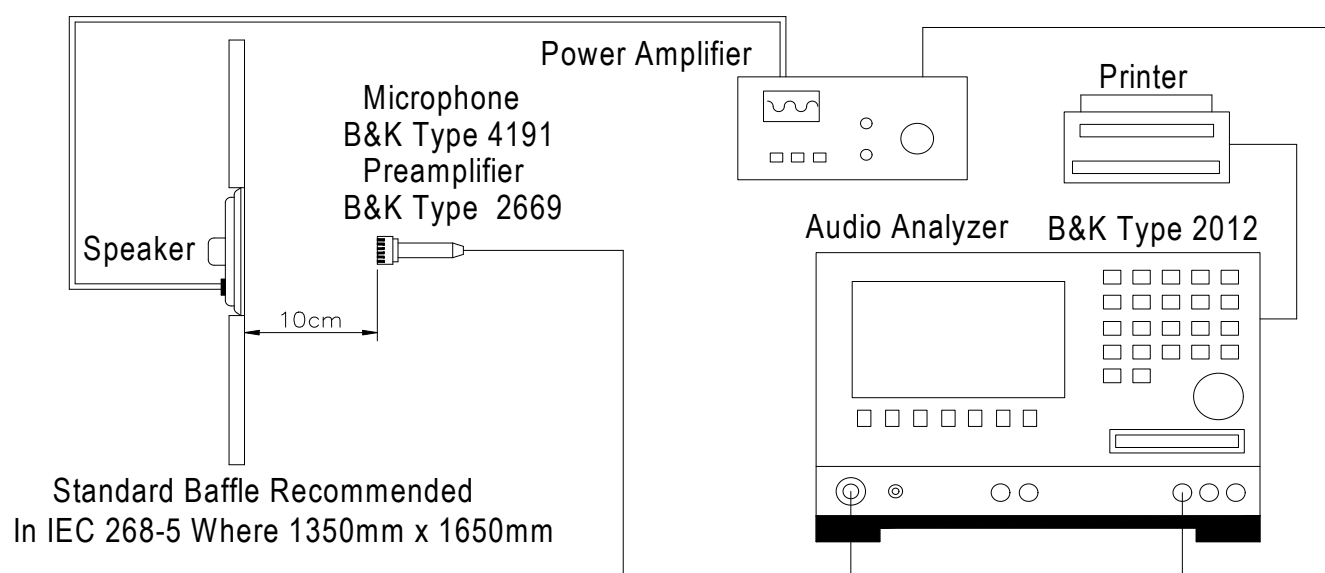
1. Input Power : 0.5W (2.0V)

2. Zero Level : -dB

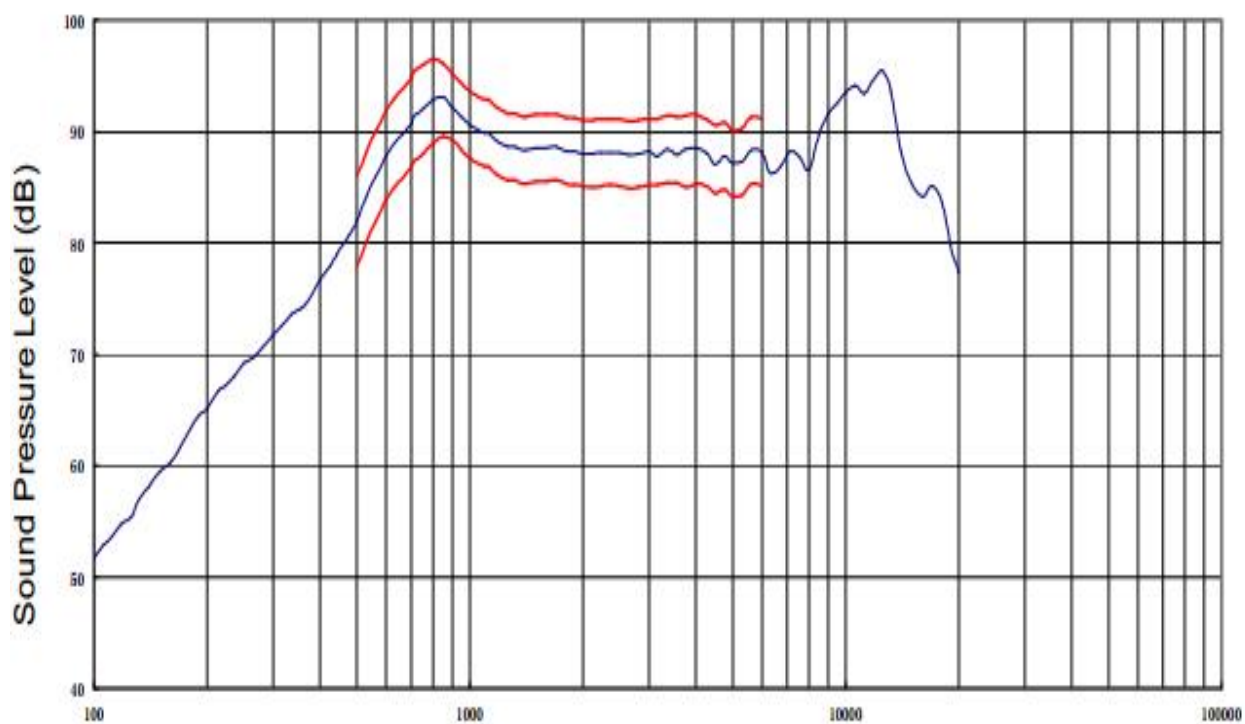
3. Mode : SPEAKER

4. potentiometer Range : 50dB

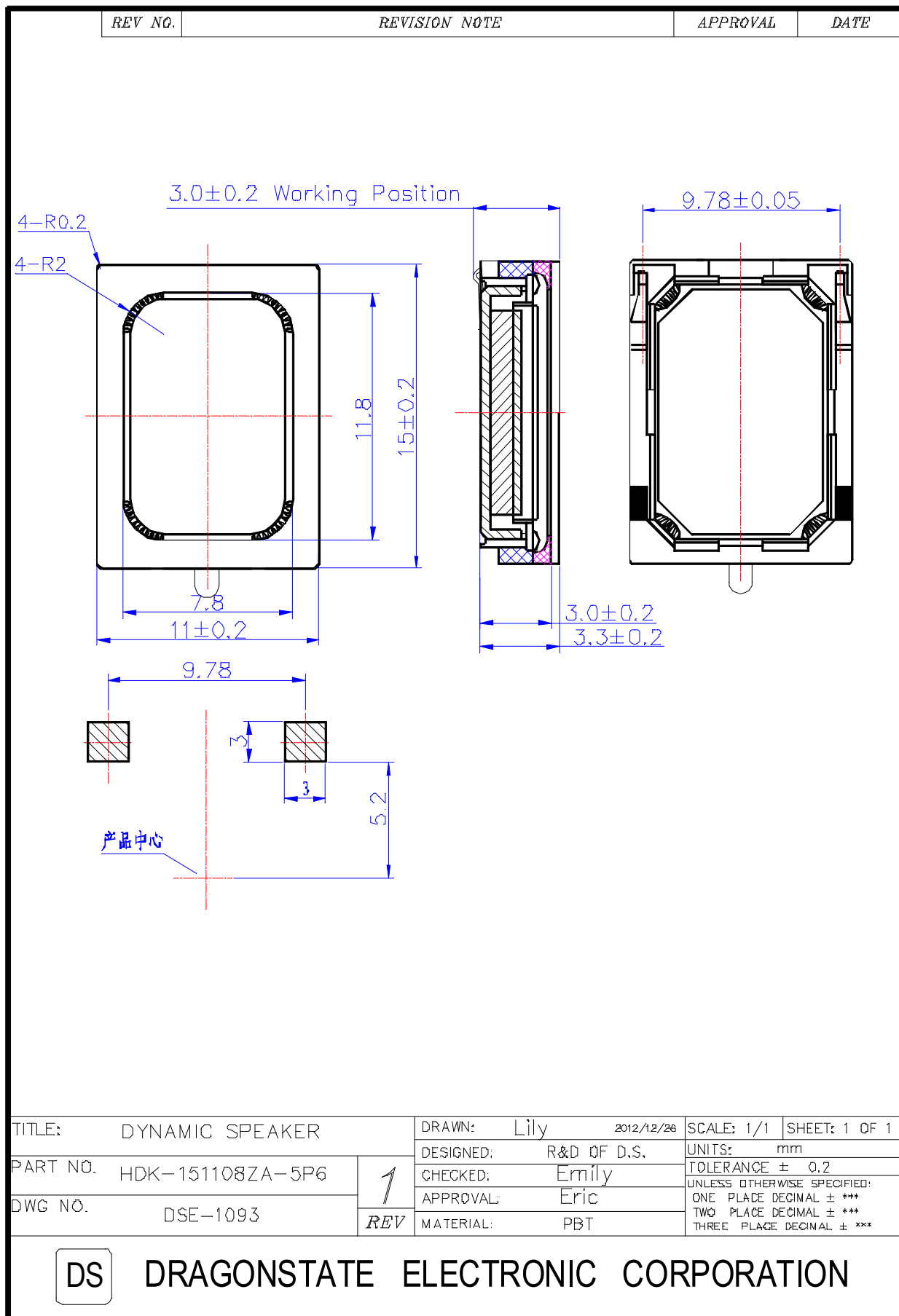
5. Sweep Time : 0.5sec



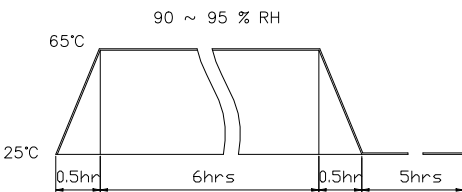
2.3 Frequency Response Curve



3.Dimension



4. Reliability Tests


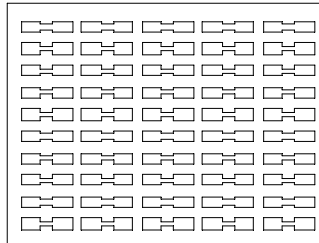
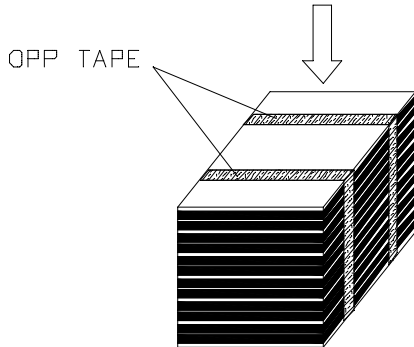
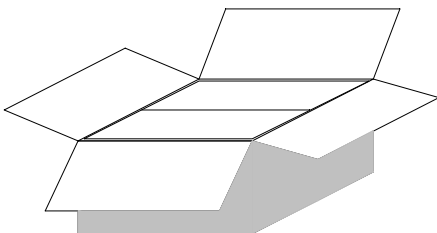
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity test	Keep 96 hours at $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	<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.
12	Protection against liquids	Protected against 30 minutes of immersion under 1M pressure
Criterion: After these test , the change of S.P.L shall be within $\pm 3 \text{ dB}$.		

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
	 <p>Cover(290*225*3mm) Material: Paper</p>		
	 <p>Box(290*225*10mm) 100pcs Material: Paper+Epe</p>		
	 <p>Middle(290*225*135mm) 1000pcs(10*100pcs) Material: Paper+Epe</p>		
	 <p>Outer Box(515*320*280mm) 4000pcs(4*1000pcs) Material: Paper</p>		
单位: mm			
TITLE: Packing		DRAWN: Lily	2012/10/17
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
DWG NO.		CHECKED: Emily	SHEET: 1 of 1
<div style="border: 1px solid black; padding: 5px; display: inline-block;">1</div> REV		UNITS: mm	
		TOLERANCE	
		APPROVAL: Eric	20~11 ± 0.3
		MATERIAL:	10~5 ± 0.2
			<4 ± 0.1
<div style="border: 1px solid black; padding: 5px; display: inline-block;">DS</div> DRAGONSTATE ELECTRONIC CORPORATION			