

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

Product	DYNAMIC SEAKER
Part No.	HDK-151105ZA-1C (RoHS)
Customer	
Customer Part No.	

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

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EDITION:1.1

1. Specification

HDK-151105ZA-1C(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	0.8W In 1cc Box For 1 Minute
05	Impedance	5 ohm $\pm$ 15% at 2KHz.
06	Resonance Frequency (Fo)	750Hz $\pm$ 20% (in free air)
	Resonance Frequency (Fo)	950Hz $\pm$ 20% (in 1cc box)
07	Sensitivity (S.P.L.)	87 $\pm$ 3 dB /0.5W/0.1m at 2.0KHz
08	Frequency Range	Fo – 20KHz
09	Total Harmonics Distortion	Max 10% at 1 KHz,0.5W.
10	Weight	1.7g $\pm$ 5%g
11	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
12	Operation Test	Must be normal at program source – 0.5W
13	Buzz, Rattle, etc.	Must be normal at sine wave 0.89Vrms (in free air) /1.58Vrms(in 1.0cc box) from 200~3400Hz
14	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
15	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
16	Temperature	Operating temperature: -20℃ to +60℃ Storage temperature: -30℃ to +70℃

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

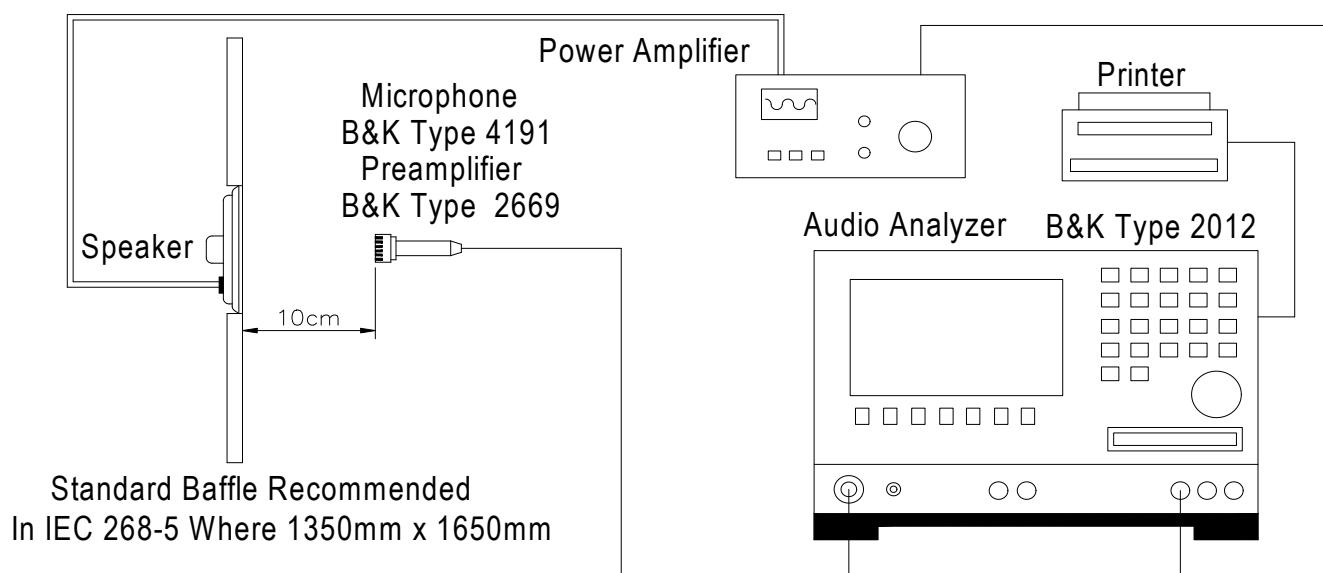
1. Input Power : 0.5W (1.58V)

2. Zero Level : -dB

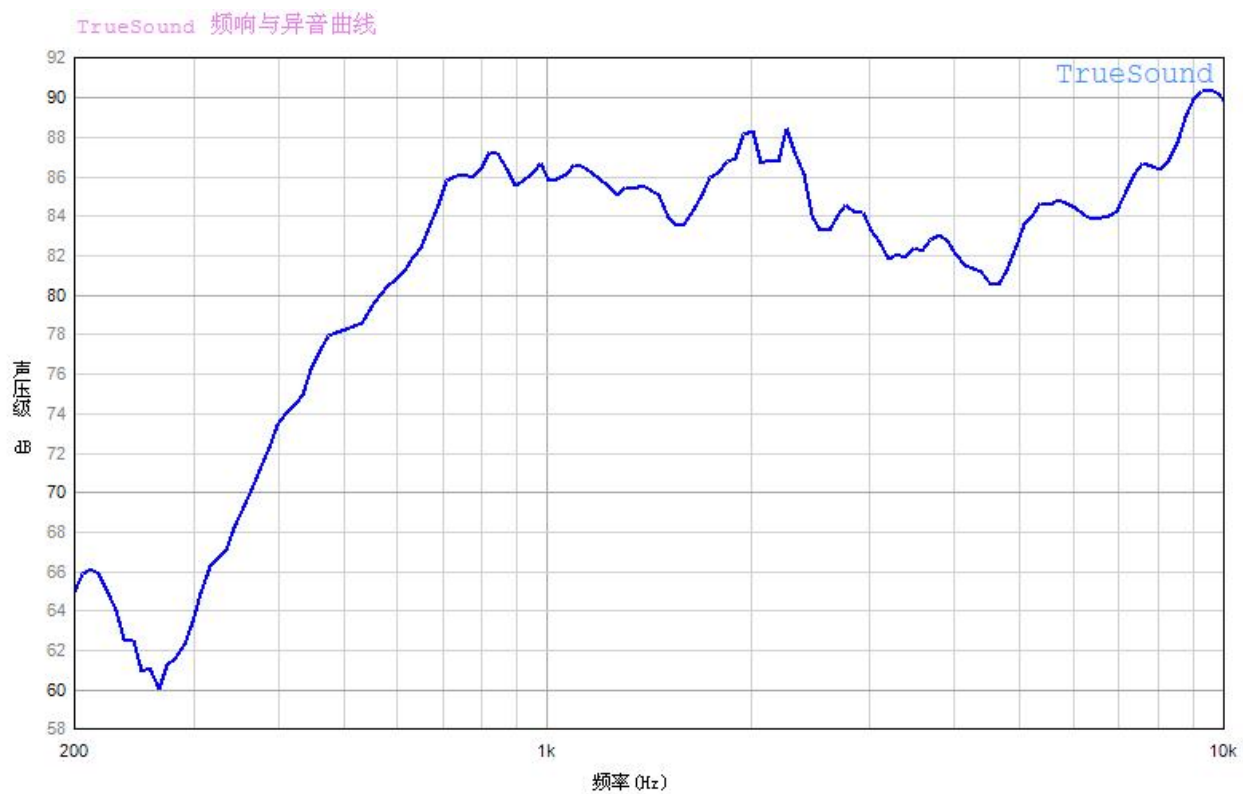
3. Mode : SPEAKER

4. potentiometer Range : 50dB

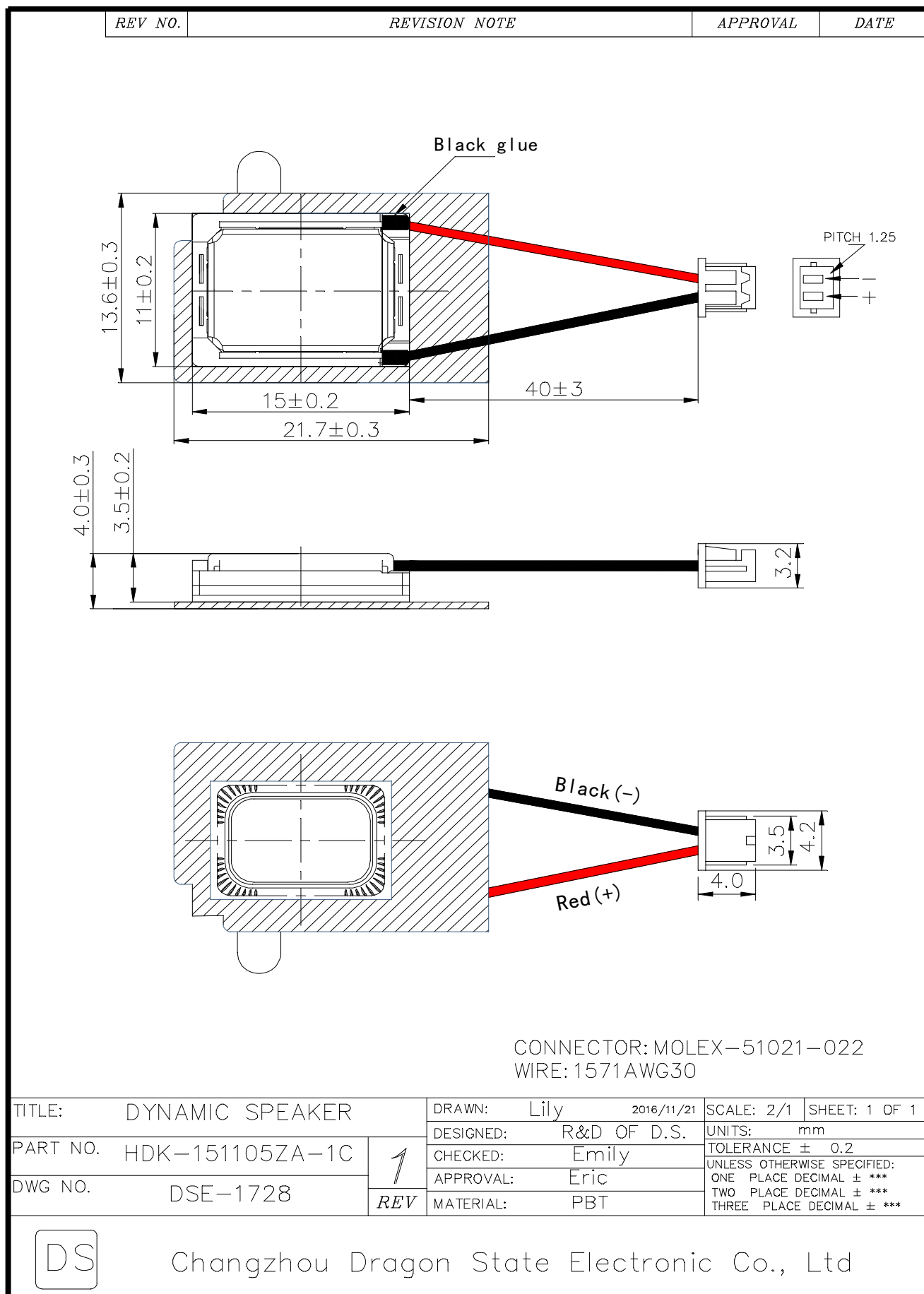
5. Sweep Time : 0.5sec



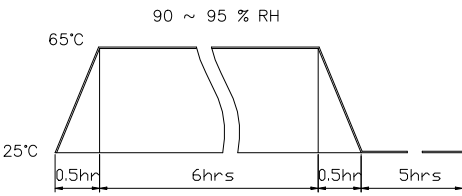
2-3.Frequency Response Curve



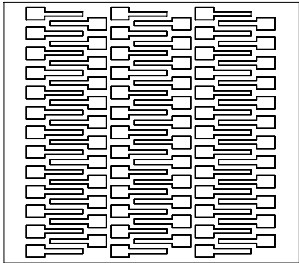
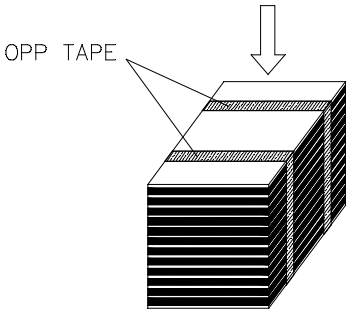
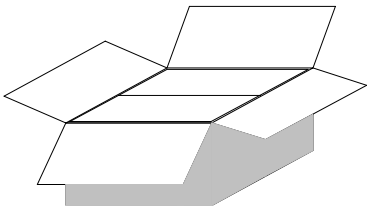
3.Dimension



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 $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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	Free drop test	Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times.
08	Rated Power test	Rated Power white noise is applied for 24hours (in Pink noise in 1cc box)
09	Max Power test	Max power 1 min on – 2 min off 10 cycles.

5.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Cover(350*290*3mm) Material: Paper		
	 Box(350*290*10mm) 75pcs Material: Paper+Epe		
	 Middle(350*290*135mm) 750pcs(10*75pcs) Material: Paper+Epe		
	 Outer Box(515*320*280mm) 3000pcs(4*750pcs) Material: Paper		
单位: mm			
TITLE: Packing		DRAWN: Lily 2012/10/17	
PART NO.		DESIGNED: R&D OF D.S.	
DWG NO.		CHECKED: Emily	
		APPROVAL: Eric	
		MATERIAL:	
DS		SCALE: 2:1	
		SHEET: 1 of 1	
		UNITS: mm	
		TOLERANCE	
		20~11	± 0.3
		10~5	± 0.2
		<4	± 0.1
DS Changzhou Dragon State Electronic Co., Ltd			