

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

Product	DYNAMIC SPEAKER
Part No.	HDK-402008CB-1C (RoHS)
Customer	
Customer Part No.	334-066-001

Approved By	Checked By	Made By
王台平 APR-22-2019	曹丽萍 APR-22-2019	LILY APR-22-2019

常 州 华 龙 电 子 有 限 公 司

Changzhou Dragon State Electronic Co., Ltd

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-402008CB-1C (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 40*20 mm	
03	Rated Input Power	1.0W	
04	Max. Input Power	1.5W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 2000Hz.	
06	Resonance Frequency (Fo)	1200Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	99dB (1.0W / 0.1m) $\pm$ 3 dB	at AVE 1.0K,1.2K,1.5K,2.0KHz
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 10% at 1 KHz,1.0W.(2.83V)	
10	Voice Coil	Diameter 11.75 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 11 x 1.6 mm	
12	Weight	4.8g $\pm$ 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 - 1.0W	
15	Buzz, Rattle, etc.	Should not be audible at 2.83V sine Wave between 300 to 5KHz	
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℃ to +60℃ Storage temperature: -40℃ to +75℃	

2-1. Test Condition

Standard

Temperature : 15 ~ 35℃

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : $20 \pm 3^{\circ}\text{C}$

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2.Standard Test Fixture

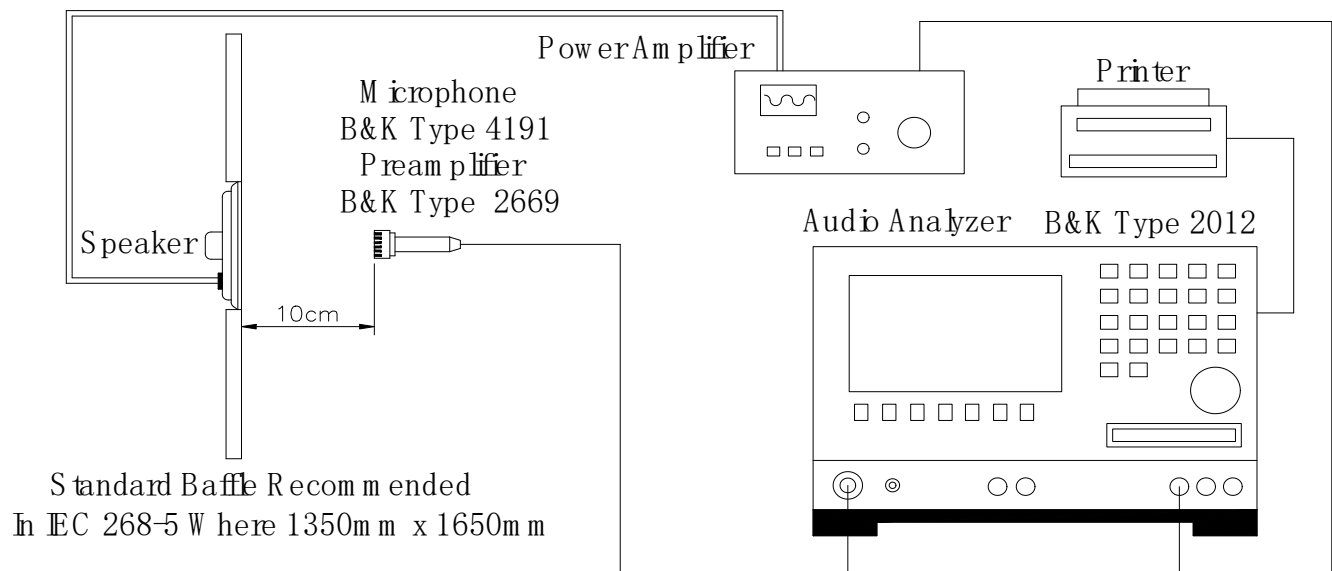
1.Input Power : 1.0W (2.83V)

2.Zero Level : -dB

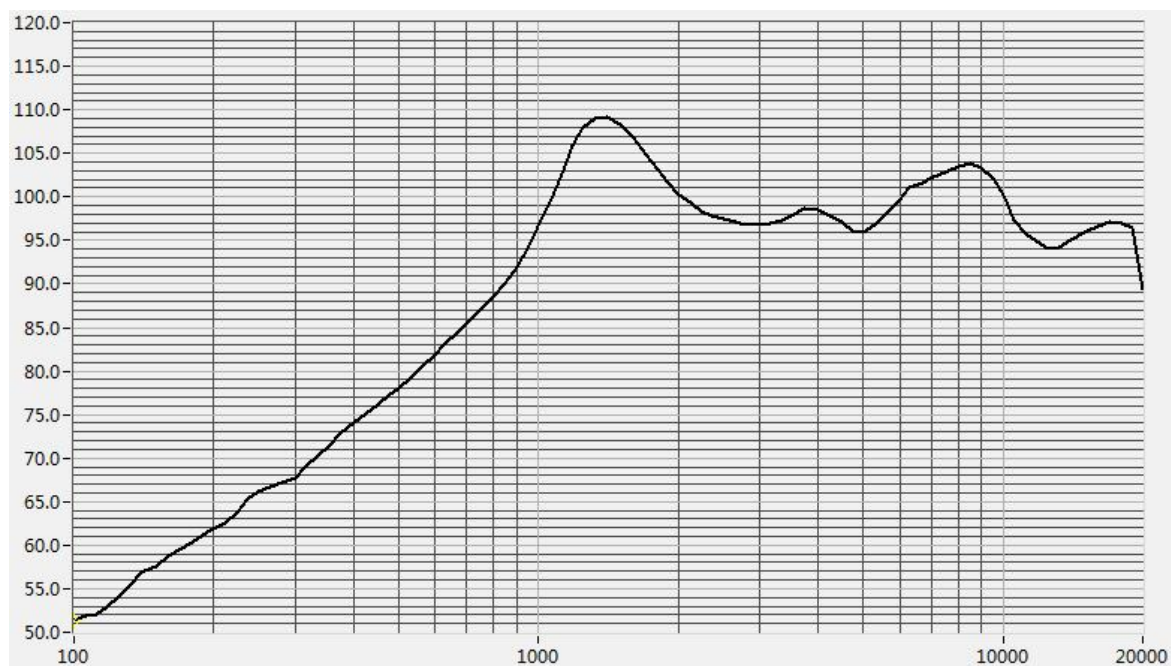
3.Mode : SPEAKER

4.potentiometer Range : 50dB

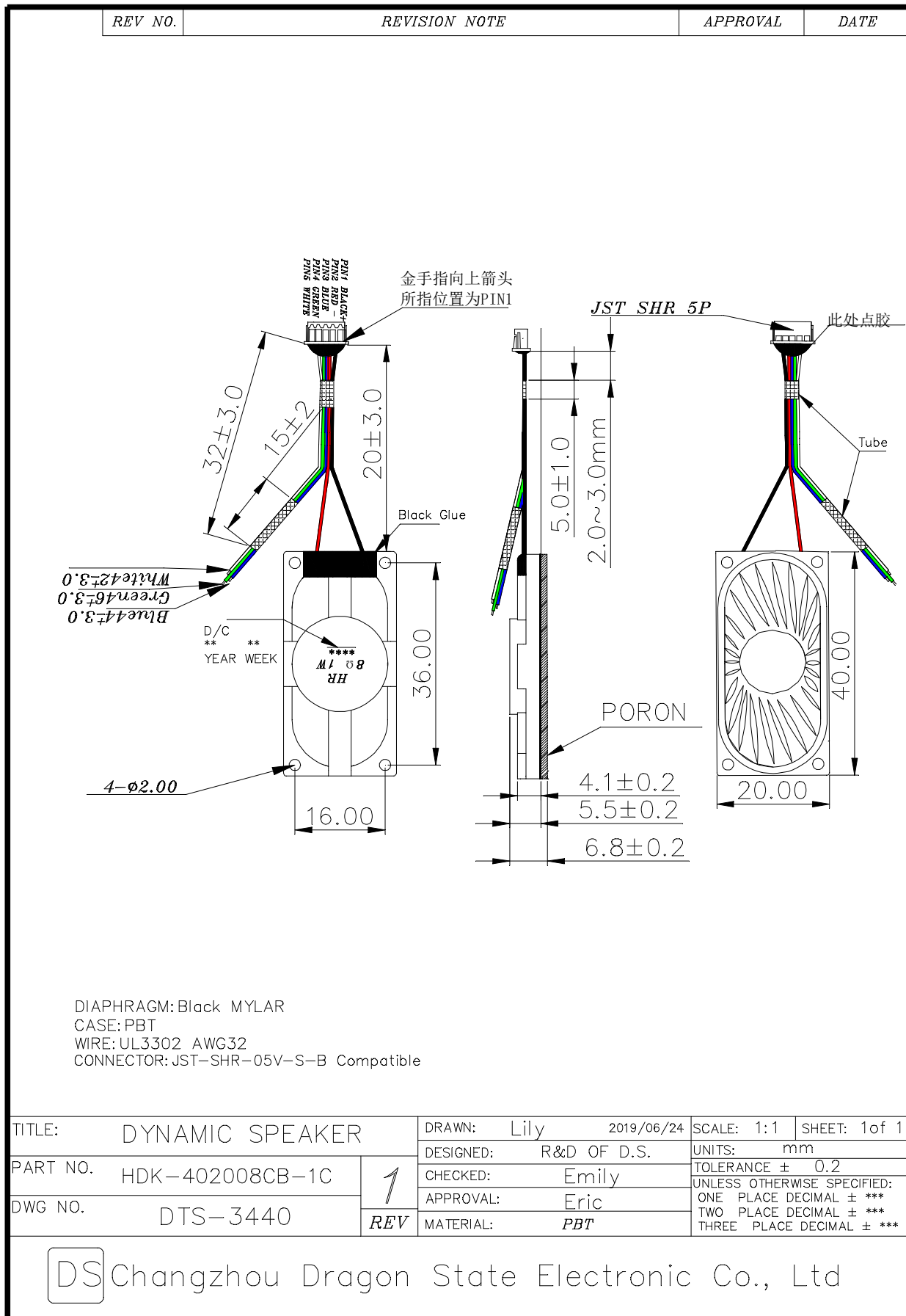
5.Sweep Time : 0.5sec



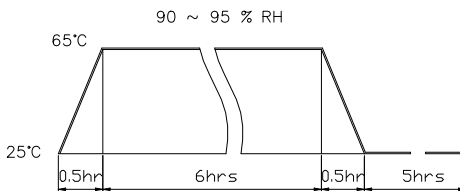
2-3.Frequency Response Curve



3.Dimension



4. Reliability Test

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+75^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, temperature: $+75^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 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 Pink noise is applied for 100 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 $\pm 3 \text{ dB}$.		

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.