

MESSRS.

SPECIFICATION FOR APPROVAL**承 認 書**

Product	DYNAMIC SPEAKER
Part No.	HDK-302008ZA-BOX13D (RoHS)
Customer Approval	C56

Approved By	Checked By	Made By
王台平 OCT-29-2019	曹丽萍 OCT-29-2019	LILY OCT-29-2019

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

2.Specification

HDK-302008ZA-BOX13D (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 30 × 20mm	
03	Rated Input Power	1.2W	
04	Max. Input Power	1.5W	
05	Impedance	8 ohm ± 15% at 2000Hz.	
06	Resonance Frequency (Fo)	1600Hz ± 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	105dB(1.2W/0.1m) ± 3 dB	at AVE 1.0 ,1.2,1.5,2.0KHz.
08	Frequency Range	Fo – 20KHz	
09	Dustproof and waterproof	IP67	
10	Total Harmonics Distortion	Max 8 % at 1 KHz,2.0W.	
11	Voice Coil	Diameter 11.75mm	
12	Magnet	Rare earth permanent (Nd-Fe-B) magnet 11*1.65mm	
13	Weight	6.9g ± 0.5g	
14	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
15	Operation Test	Must be normal at program source – 1.2W	
16	Buzz, Rattle, etc.	Should not be audible at 3.2V sine Wave between Fo to 20KHz	
17	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
18	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
19	Temperature	Operating temperature: -20°C to +60°C Storage temperature: -30°C to +70°C	

3-1. Test Condition

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

3-2. Standard Test Fixture

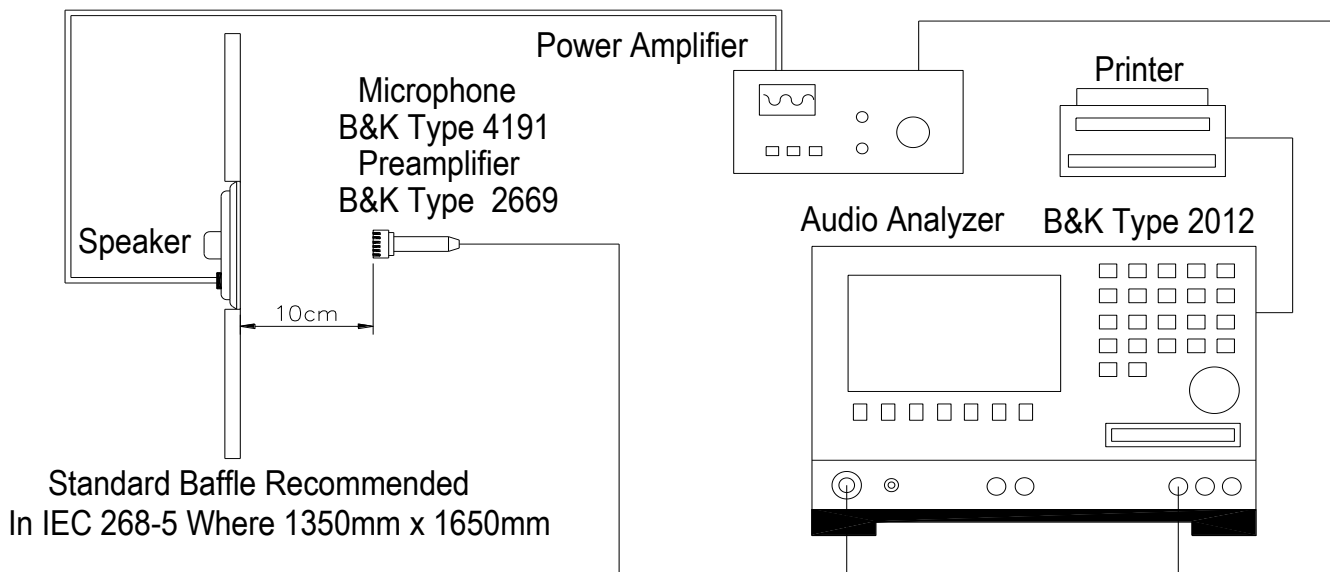
1. Input Power : 1.2W (3.2V)

2. Zero Level : -dB

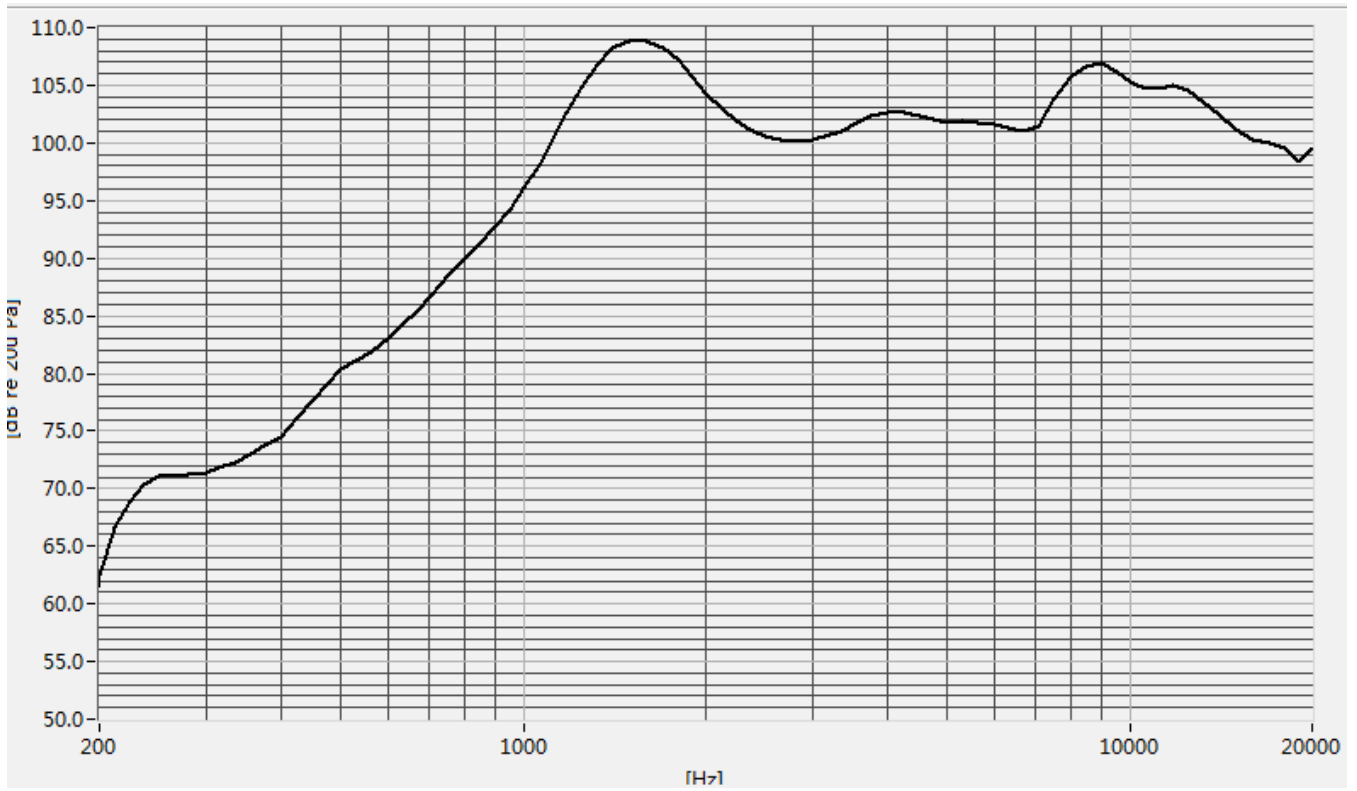
3. Mode : SPEAKER

4. potentiometer Range : 50dB

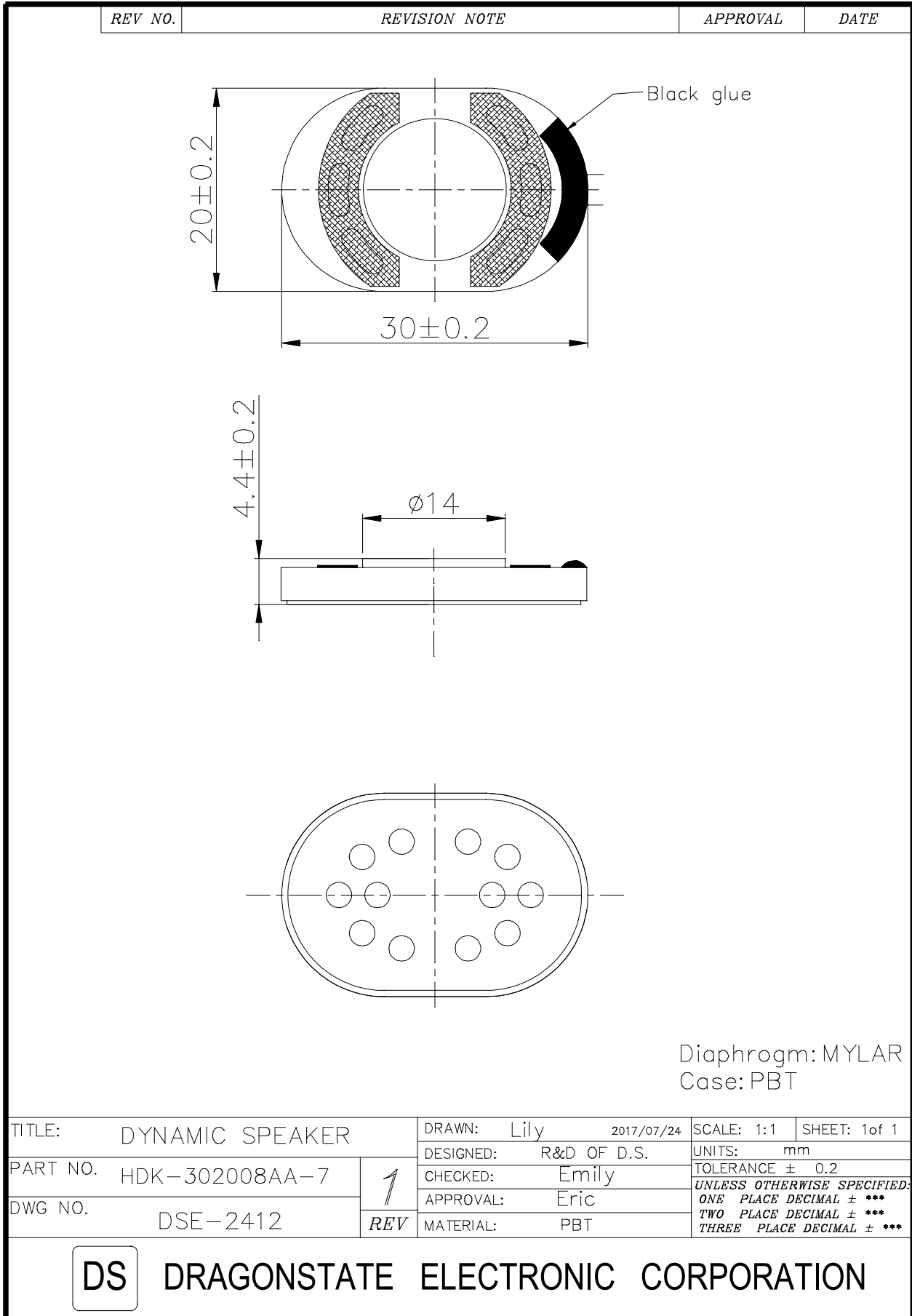
5. Sweep Time : 0.5sec

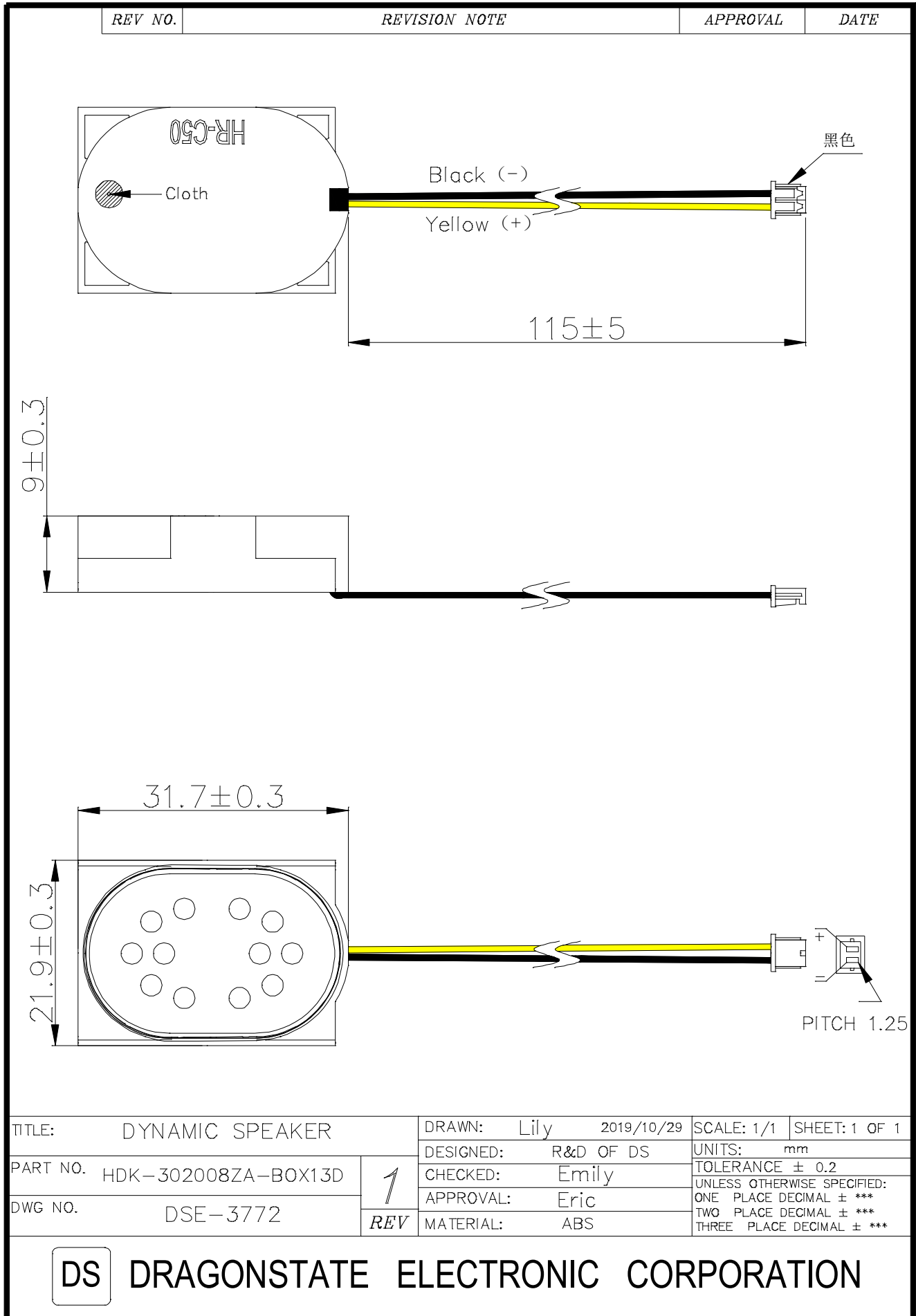


3-3. Frequency Response Curve

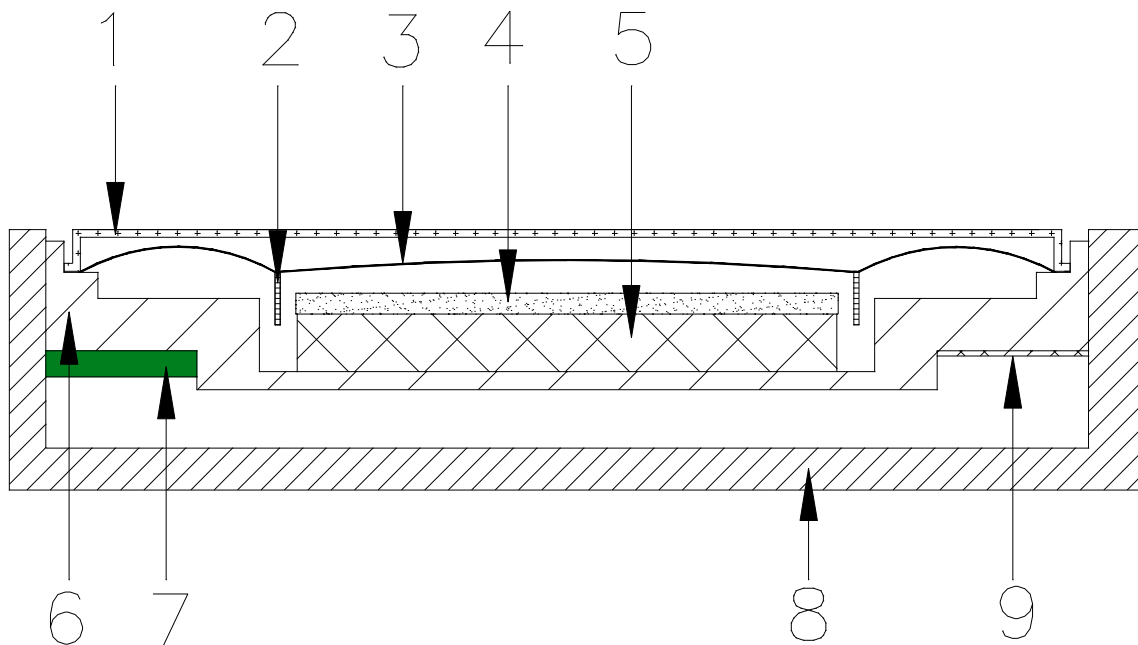


4.Dimension



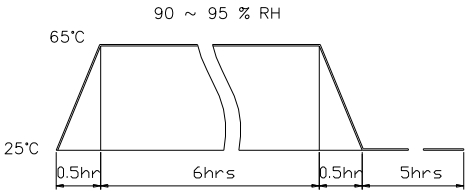


5. Material and Structure



NO	PART NAME	MATERIAL	Q'TY
1	CAP	SUS304	1
2	VOICE COIL	COPPER	1
3	DIAPHRAGM	MYLAR	1
4	PLATE	SPCC	1
5	MAGNET	Nd-Fe-B	1
6	FRAME	PBT	1
7	TERMINAL	黑色 2P-1.25 UL1571 AWG28 黄黑	1
8	GASKET	ADHESIVE	1
9	ACOUSTIC CLOTH	DUSTROOF NET	2

6. Reliability Tests



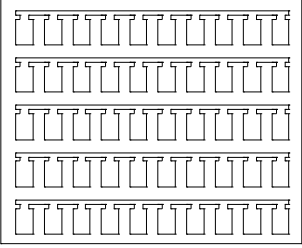

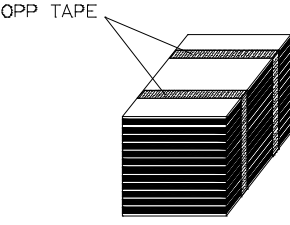

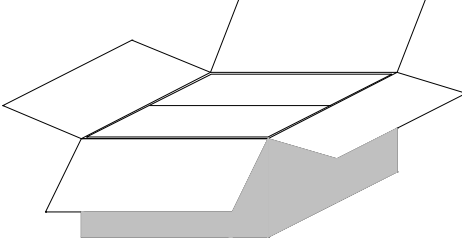
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+80^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 2 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 2 hours in normal temperature and then check
03	High temperature and humidity operation	The sample (outer sound surface exposed) at $55^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 95% humidity environment, the speaker sounds (5 seconds), pause for 10 seconds, so cycle 96 hours, record data changes every 24 hours; end of test Immediately test the performance of the sample
04	Humidity test	Keep 48 hours at $+65^{\circ}\text{C}\pm 3^{\circ}\text{C}$ relative humidity 95% and leave 2 hours in normal temperature and then checked.
05	Temp./Humidity cycle	The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of; <div style="text-align: center;">  <p>The graph shows a temperature cycle. It starts at 25°C, ramps up to 65°C over 0.5 hours, stays at 65°C for 6 hours (with 90~95% RH indicated), ramps down to 25°C over 0.5 hours, and stays at 25°C for 5 hours. This cycle repeats 5 times.</p> </div>
06	Thermal cycle test.	Low temperature/ $-20^{\circ}\text{C}\pm 3^{\circ}\text{C}$, temperature: $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$, cycle: 1 hour/cycle each, Switching time < 15min , and then keep 32 cycles in a room
07	Vibration	The vibration condition is frequency 10~55hz, sweep rate 1OCT/min; acceleration 29.4m/s^2 。 X,Y, Z 3 direction.2 hours each , total 6 hours then test the sample performance immediately after the test
08	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.
09	Free drop test	Free drop from 100cm height to the concrete floor X, y, z 6 direction. 1 times each, total 6 times.
10	Rated Power test	Rated Power white noise is applied for 96 hours
11	Max Power test	Max power 1 min on – 2 min off 10 cycles.
12	Terminal strength test	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
13	Protection against liquids	Protected against 30 minutes of immersion under 1M pressure
14	Waterproof after vibration	After the vibration test, the waterproof test is carried out according to the method specified in GB4208-2017
15	Waterproof after high and low temperature shock	After high and low temperature impact, the waterproof test is carried out according to the method specified in GB4208-2017
16	Drop dfter high and low temperature shock	After high and low temperature impact, free fall at 1m height, 6 faces, 1 time per face
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 ± 10°C.

Soldering time not over 3 seconds.

7.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Cover(350*285*5mm) Material: Paper		
	  Box(350*285*20mm) 50pcs Material: Paper+Epe		
	  Middle(320*220*120mm) 450pcs(9*50pcs) Material: Paper+Epe		
	  Outer Box(590*390*405mm) 1800pcs(4*450pcs) Material: Paper		
单位: mm			
TITLE: packing		DRAWN: Lily	2015/08/16
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
DWG NO.		CHECKED: Emily	SHEET: 1 of 1
1 REV		APPROVAL: Eric	UNITS: mm
		MATERIAL: ***	TOLERANCE
			20~11 ± 0.3
			10~5 ± 0.2
			<4 ± 0.1
<div style="border: 1px solid black; display: inline-block; padding: 5px; margin-right: 10px;">DS</div> DRAGONSTATE ELECTRONIC CORPORATION			

Trial production label

常州华龙电子有限公司		
物料名称:		
物料编码:		
规格型号:		
订单编号:		
数量:	批次:	
QC:	生产日期:	
试产		

Inner box

常州华龙电子有限公司			
产品别		料号	
订单号		品名	
规格		模穴号	
重量		数量	
批次		生产日期	
QC检验 (盖章或签字)			
备注			

Outer box

Mass production label

常州华龙电子有限公司		
物料名称:		
物料编码:		
规格型号:		
订单编号:		
数量:	批次:	
QC:	生产日期:	

Inner box

常州华龙电子有限公司			
产品别		料号	
订单号		品名	
规格		模穴号	
重量		数量	
批次		生产日期	
QC检验 (盖章或签字)			
备注			

Outer box