

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

Product	DYNAMIC SPEAKER
Part No.	HDK-360848-001 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 DEC-29-2024	曹丽萍 DEC-29-2024	LILY DEC-29-2024

常 州 华 龙 电 子 有 限 公 司

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EDITION:1.1

History change record

Change Items	Date	Note	Drawn by	Checked by
	2023-02-13	Firsh Issue	Lily	王台平 2023-02-13
增加前泡棉 连接器点 UV 胶	2023-04-26	Second Issue	Lily	王台平 2023-04-26
压边改为一体式 包装盒喇叭穴位加款	2024-12-29	Third Issue	Lily	王台平 2024-12-29
一体式压边改为塑料压边+泡棉 泡沫盒改为纸板盒	2025-07-07	Fourth Issue	Lily	王台平 2025-07-07

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 36 mm	
03	Rated Input Power	1.0W	
04	Max. Input Power	1.5W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 1500Hz.	
06	Resonance Frequency (Fo)	570Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	90dB (0.1W / 0.1m) $\pm$ 3 dB	at AVE0.8K,1.0K,1.2K,1.5KHz.
08	Frequency Range	Fo – 5KHz	
09	Total Harmonics Distortion	Max 5 % at 1 KHz,1.0W.	
10	Weight	8.6g $\pm$ 0.2g	
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 – 1.0W	
13	Buzz, Rattle, etc.	Should not be audible at 2.83V sine Wave between 300 to 5KHz	
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: -40℃ to +65℃	

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

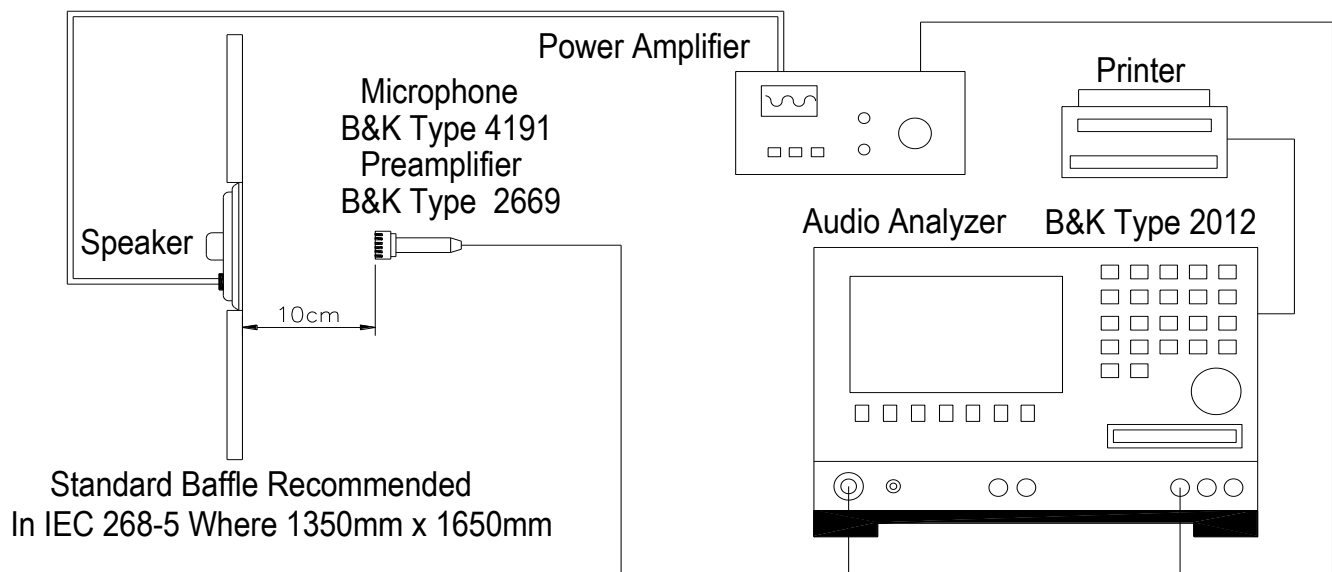
1.Input Power : 1.0W (2.83V)

2.Zero Level : -dB

3.Mode : SPEAKER

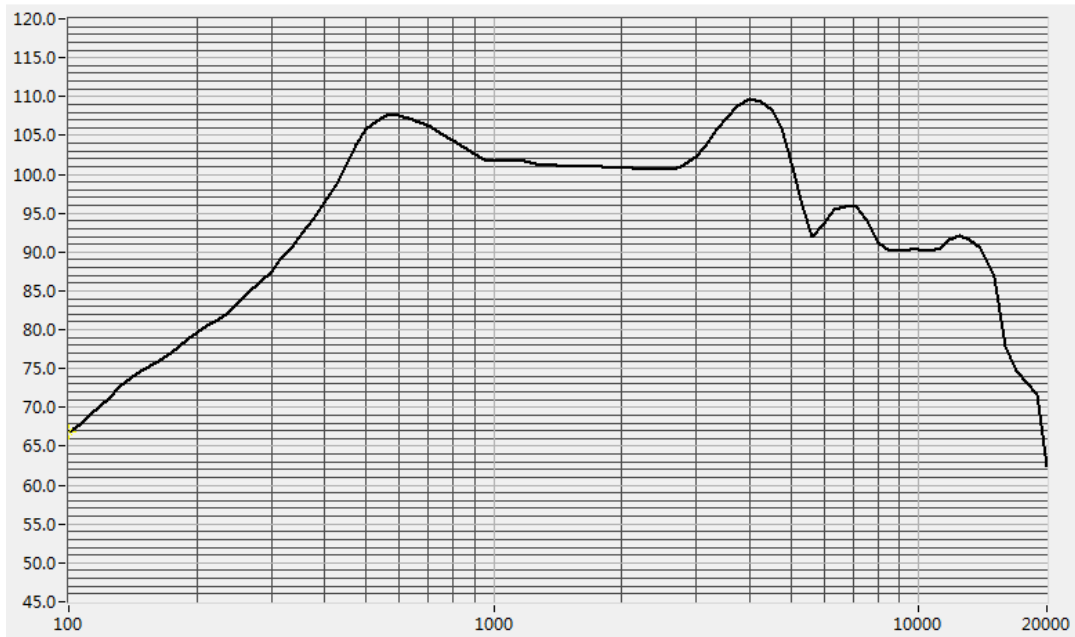
4.potentiometer Range : 50dB

5.Sweep Time : 0.5sec

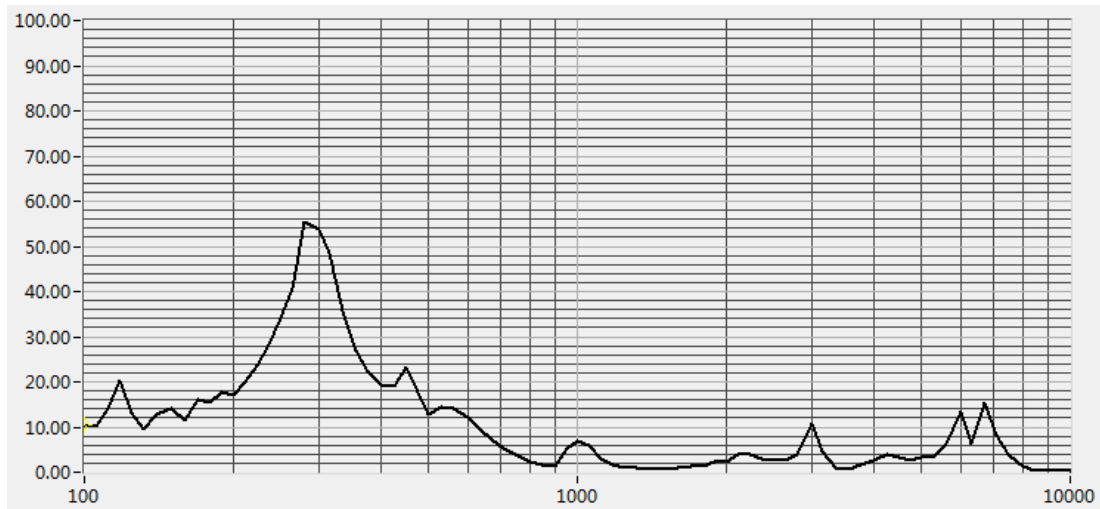


2-3.Frequency Response Curve

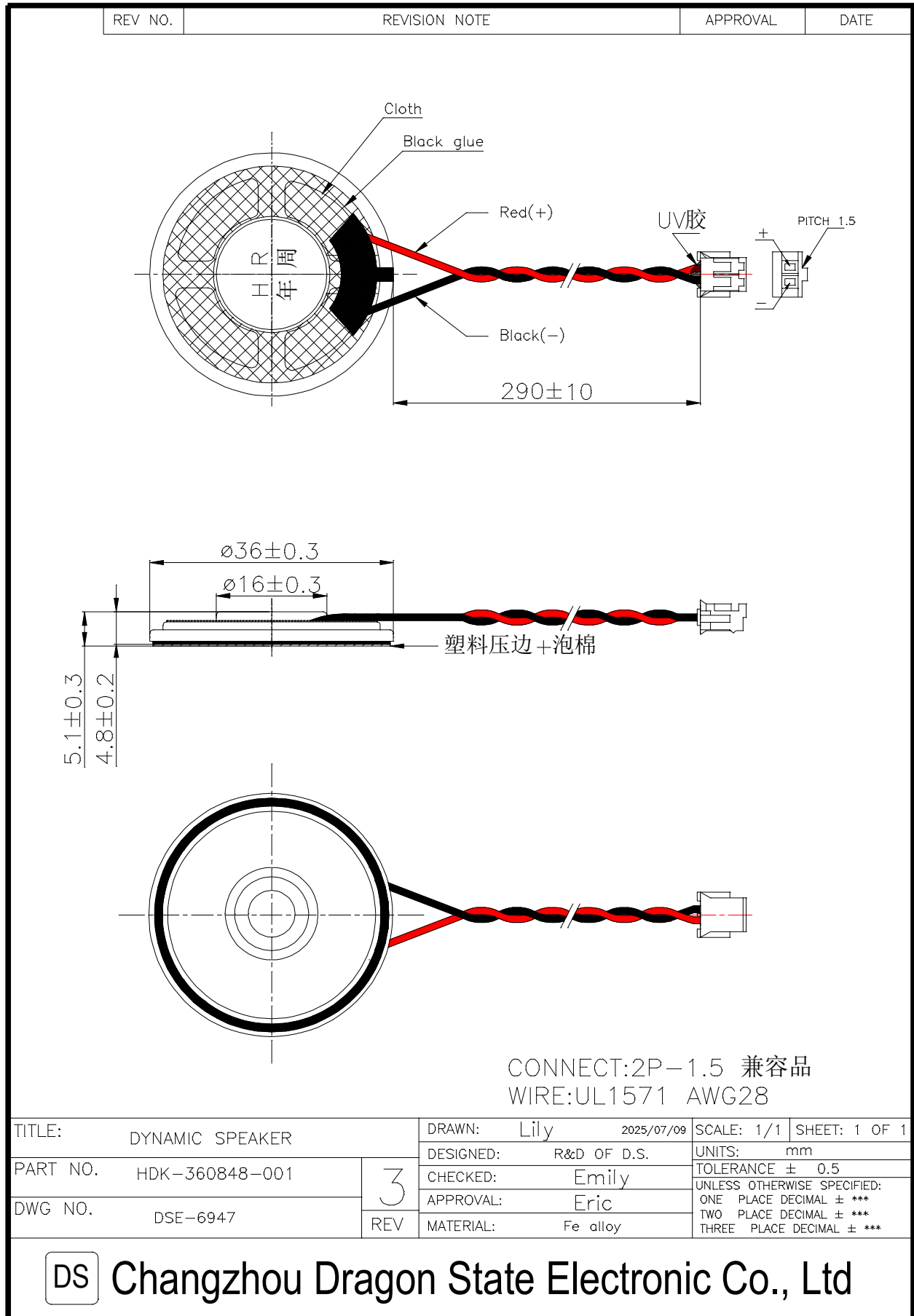
FR



THD

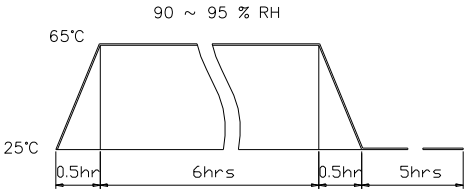


3.Dimension




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4.Reliability Test

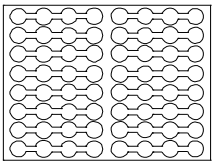
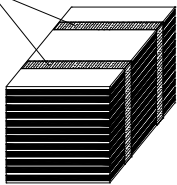
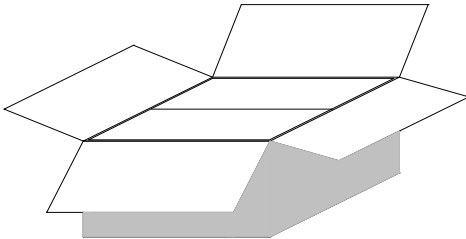
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity 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	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	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 . For trail products and samples, random 10pcs test. For MP products, test cycle is 6 month.		

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
 Cover(435*335*5mm) Material:Eps ↓  Box(435*335*15mm) 64pcs Material:Eps ↓ OPP TAPE  Middle(435*335*400mm) 832pcs(13*64pcs) Material:Eps ↓  Outer Box(465*390*405mm) 1664pcs(2*832pcs) Material:Paper 单位: mm			
TITLE: packing		DRAWN: Lily 2025/07/07	
PART NO.		DESIGNED: R&D OF D.S.	
		CHECKED: Emily	
DWG NO.		APPROVAL: Eric	
		MATERIAL: ***	
DS Changzhou Dragon State Electronic Co., Ltd		SCALE: 2:1	SHEET: 1 of 1
		UNITS: mm	
		TOLERANCE	
		20~11	± 0.3
10~5	± 0.2		
<4	± 0.1		