

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

Product	DYNAMIC SPEAKER
Part No.	HDK-170837-001 (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 MAR-02-2024	曹丽萍 MAR-02-2024	LILY MAR-02-2024

常 州 华 龙 电 子 有 限 公 司

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EDITION:1.1

1.SPECIFICATION

HDK-170837-001 (RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 17 mm
03	Rated Input Power	0.8 W
04	Max. Input Power	1.0 W for 1 minute
05	Impedance	8 ohm \pm 15% at 1500Hz
06	Resonance Frequency (Fo)	800 Hz \pm 20% at Fo, 1V
07	Sensitivity (S.P.L.)	95dB(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 1K Hz, 0.8W.
10	Weight	1.8g \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 0.8W
13	Buzz, Rattle, etc.	Should not be audible at 2.53V sine Wave between Fo 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: -30℃ to +70℃

2.MEASURING METHOD

2-1 .Test Condition

STANDARD

Temperature: 15 ~ 35℃

Relative humidity : 45% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

JUDGEMENT

Temperature: 20±3℃

Relative humidity: 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2 . Standard Test Fixture

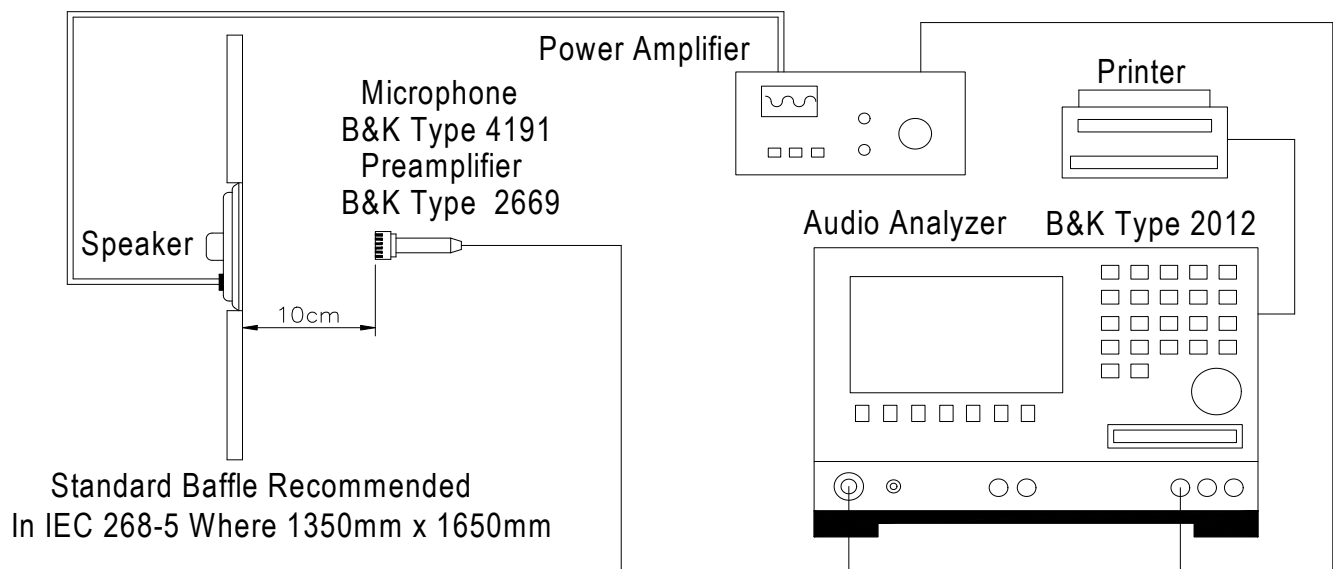
1.Input Power : 0.8 W(2.53V)

2.Zero Level : -dB

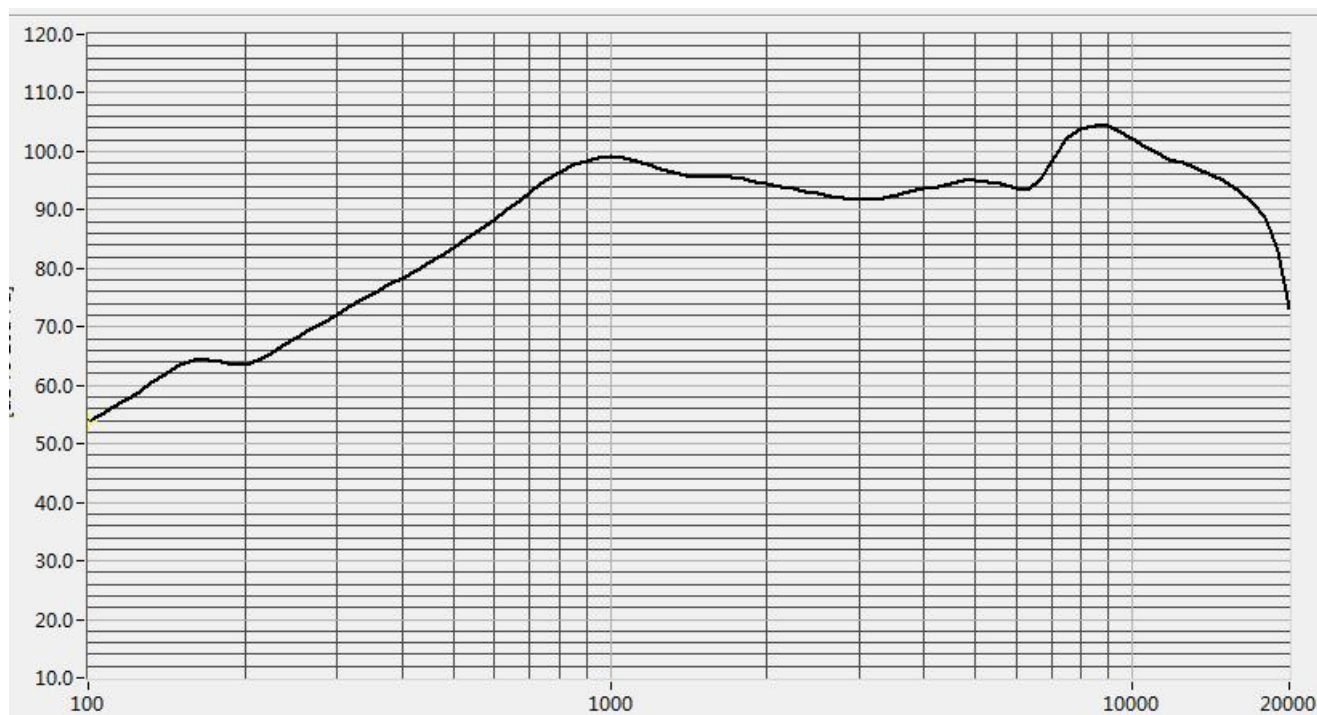
3.Mode : SPEAKER

4.potentiometer Range : 50dB

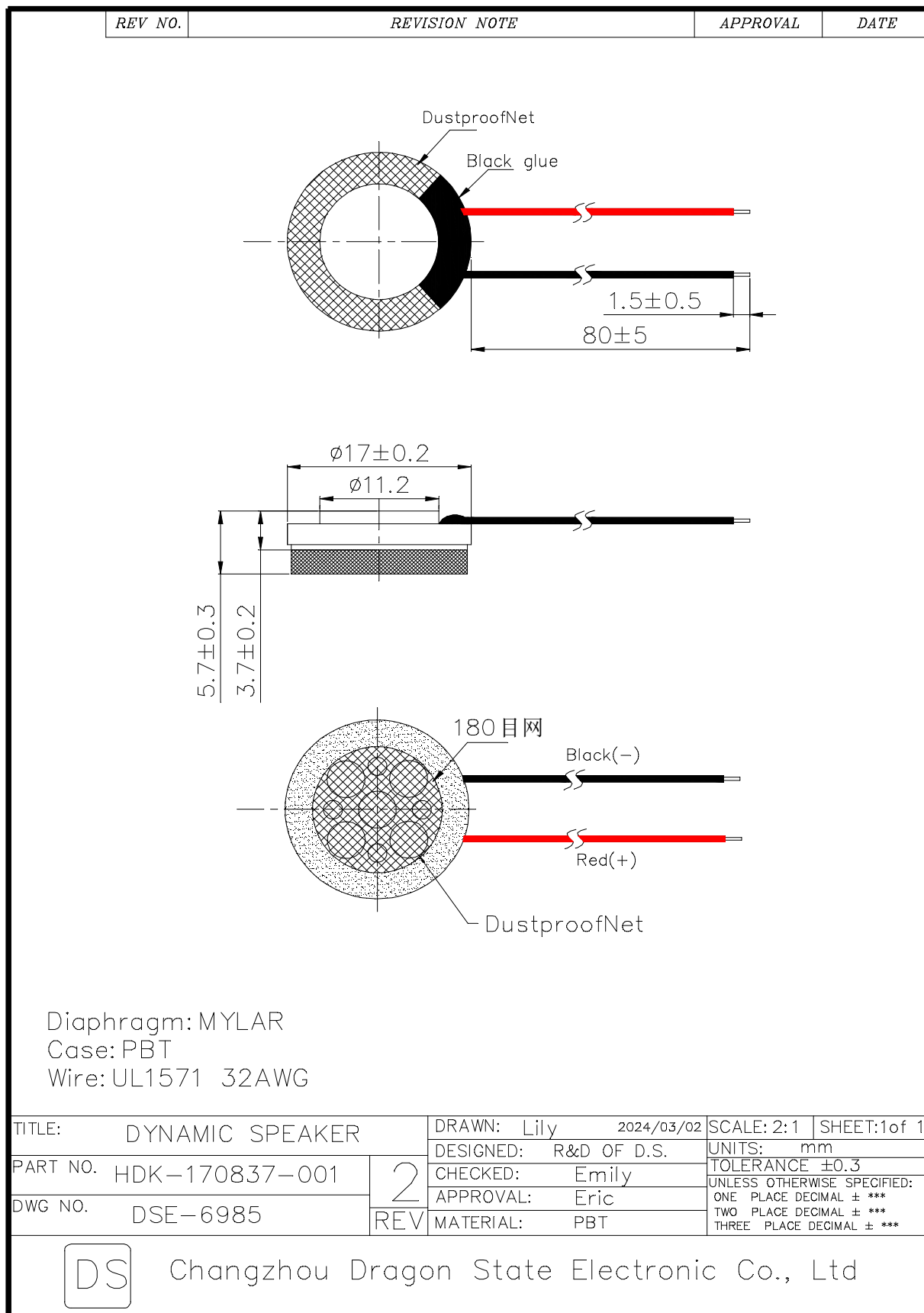
5.Sweep Time : 0.5sec



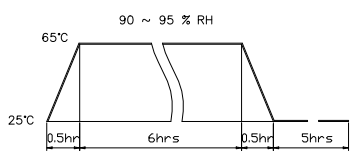
2-3. Frequency Response Curve



3.DIMENSION



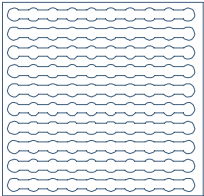
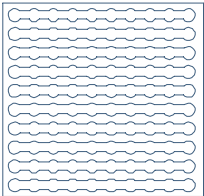
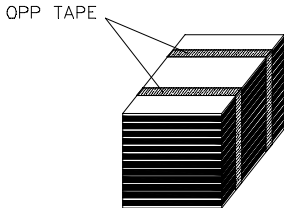
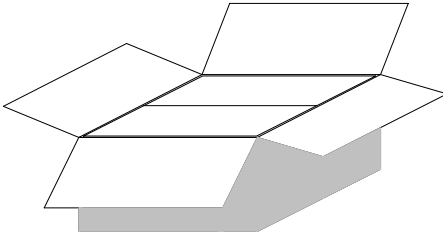
4.RELIABILITY TESTS

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 $+60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 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	Load test	Rated Power Pink 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 .		

SOLDERING CONDITION

Recommend using constant branding iron in **30W**, and in temperature range **$350\pm 10^{\circ}\text{C}$** . Soldering time **2** seconds.

5.PACKING

REV NO.	REVISION NOTE	APPROVAL	DATE
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Cover(260*240*15mm) Material: Pvc</p> </div> <div style="text-align: center;">  <p>Box(260*240*15mm) 100pcs Material: Pvc</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  <p>OPP TAPE</p> </div> <div style="text-align: center;"> <p>Middle(260*240*150mm) 1000pcs(10*100pcs) Material: Pvc</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>Outer Box(450*310*360mm) 6000pcs(6*1000pcs) Material: Paper</p> </div> </div> <div style="text-align: center; margin-top: 20px;"> <p>单位: mm</p> </div>			
TITLE: packing		DRAWN: Lily 2009/05/18	
PART NO. DWG NO.		SCALE: 2:1 SHEET: 1 of 1 UNITS: mm TOLERANCE	
		DESIGNED: R&D OF D.S.	
		CHECKED: Emily	
		APPROVAL: Eric	
REV		MATERIAL: ***	
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">DS</div> <div>Changzhou Dragon State Electronic Co., Ltd</div> </div>			

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