

MESSRS.

SPECIFICATION FOR APPROVAL**承 認 书**

Product	DYNAMIC SPEAKER
Part No.	HDK-4004BB-BOX7 (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 2023. 2. 27	曹丽萍 2023. 2. 27	LILY 2023. 2. 27

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1. SPECIFICATION

HDK-4004BB-BOX7 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 58.99*49.94(mm)	
03	Rated Input Power	2.0W	
04	Max. Input Power	3.0W for 1 minute	
05	Impedance	4 ohm \pm 20% at 1500Hz.	
06	Resonance Frequency (Fo)	450Hz \pm 20% at Fo, 2.83V	
07	Sensitivity (S.P.L.)	105dB(2.0W/0.1m) \pm 3 dB	at AVE0.6K, 0.8K, 1.0K, 1.5KHz.
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz, 2.0W.	
10	Weight	25.5g \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 - 2.0W	
13	Buzz, Rattle, etc.	Should not be audible at 2.83V sine Wave between Fo to 20KHz	
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°C to +60°C Storage temperature: -30°C to +70°C	

Test Condition

STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

BASIC

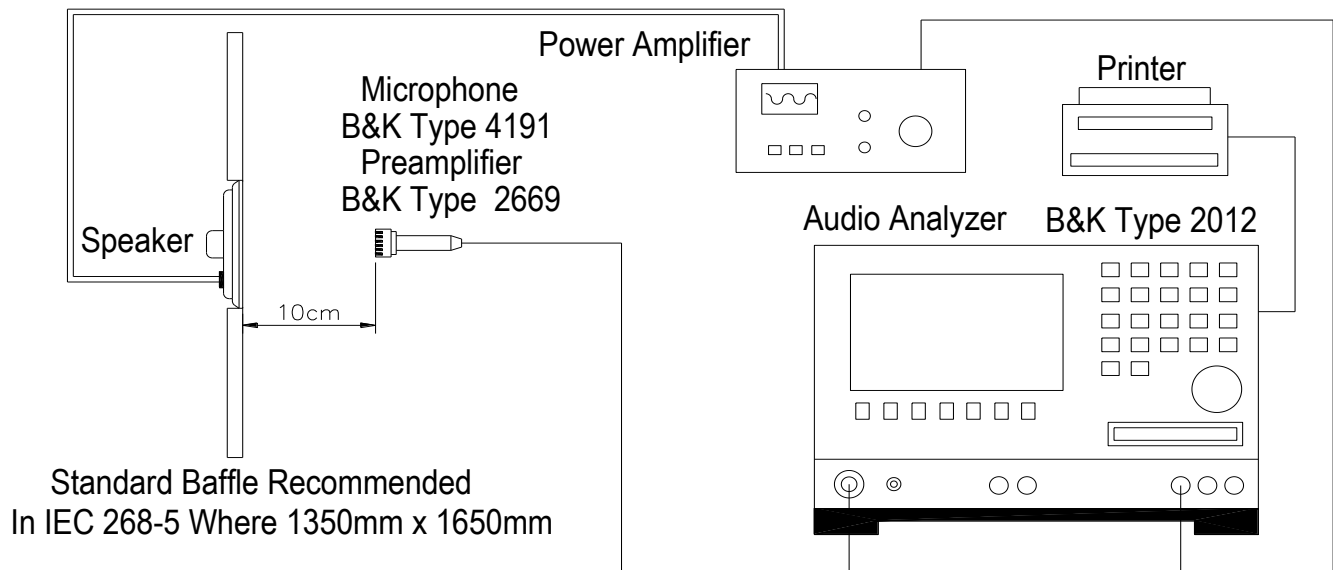
Temperature : $20 \pm 3^\circ\text{C}$

Relative humidity : 60% ~ 70%,

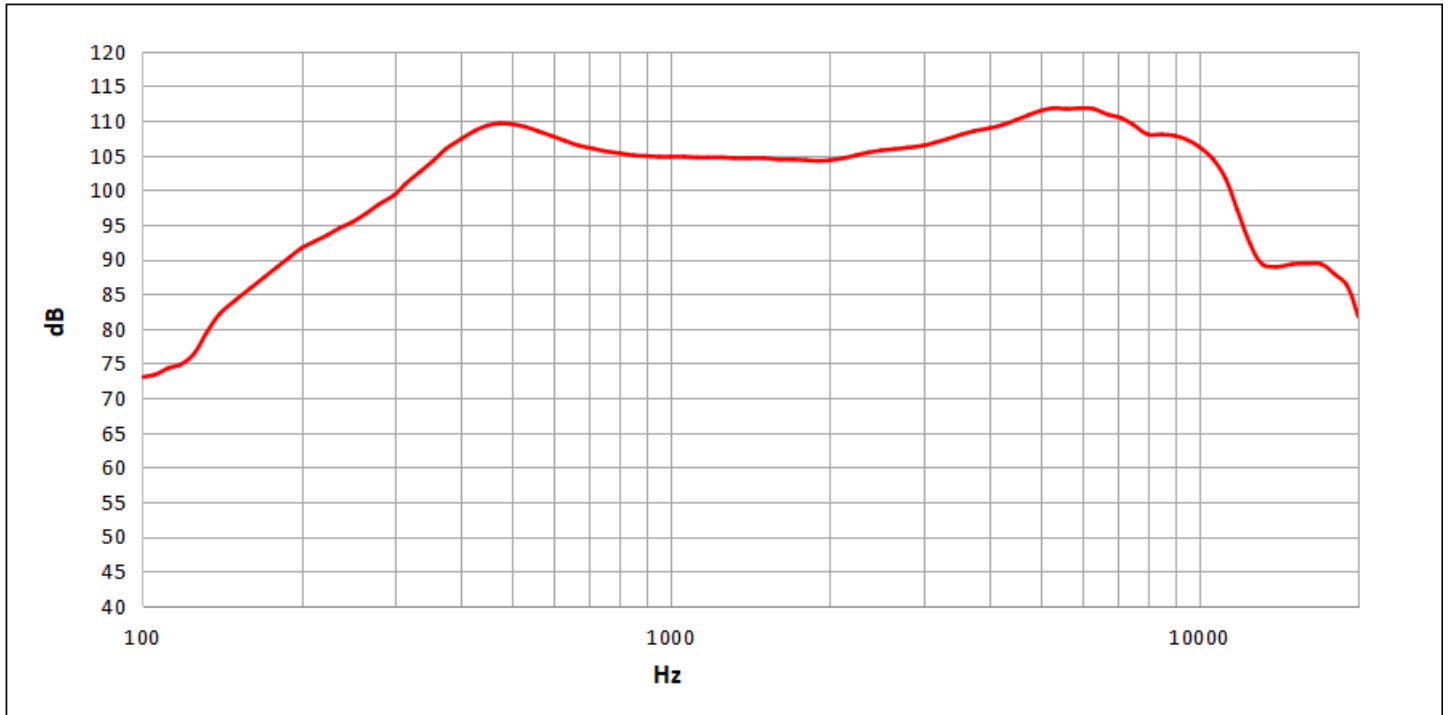
Atmospheric pressure : 860mbar to 1060mbar

Standard Test Fixture

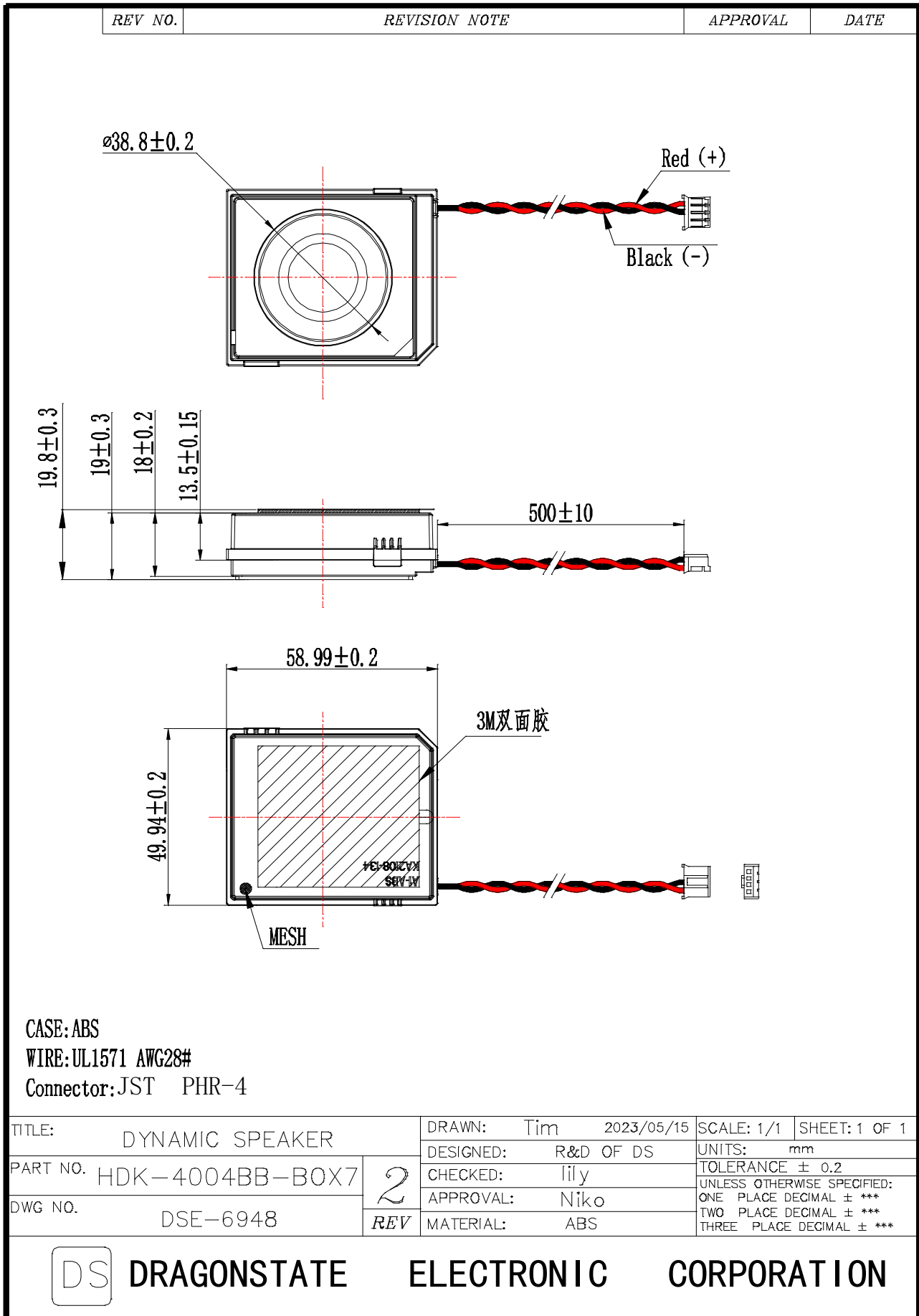
1. Input Power : 2.0W (2.83V)
2. Zero Level : -dB
3. Mode : SPEAKER
4. potentiometer Range : 50dB
5. Sweep Time : 0.5sec



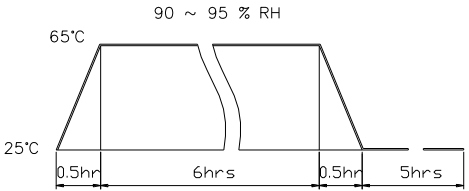
2. Frequency Response Curve



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	Rated Power 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.
<p>Criterion: After these test , the change of S.P.L shall be within ± 3 dB .</p>		

