

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

Product	DYNAMIC SPEAKER
Part No.	HDK-381304ZA-1(RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 MAR-16-2023	曹丽萍 MAR-16-2023	LILY MAR-16-2023

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1. Specification

HDK-381304ZA-1 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 30 mm	
03	Rated Input Power	2.0W	
04	Impedance	4 ohm $\pm$ 15% at 1500Hz.	
05	Resonance Frequency (Fo)	600Hz $\pm$ 10% at Fo, 2.83V	
06	Sensitivity (S.P.L.)	100dB(2.0W/0.1m) $\pm$ 3dB	at 2.0KHz
07	Frequency Range	Fo – 20KHz	
08	Total Harmonics Distortion	Max 10% at 1 KHz, 2.0W.	
09	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
10	Operation Test	Must be normal at program source – 2.0W	
11	Buzz, Rattle, etc.	Should not be audible at 2.83V sine Wave between Fo to 10KHz	
12	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
13	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
14	Temperature	Operating temperature: -20°C to +70°C Storage temperature: -40°C to +85°C	

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

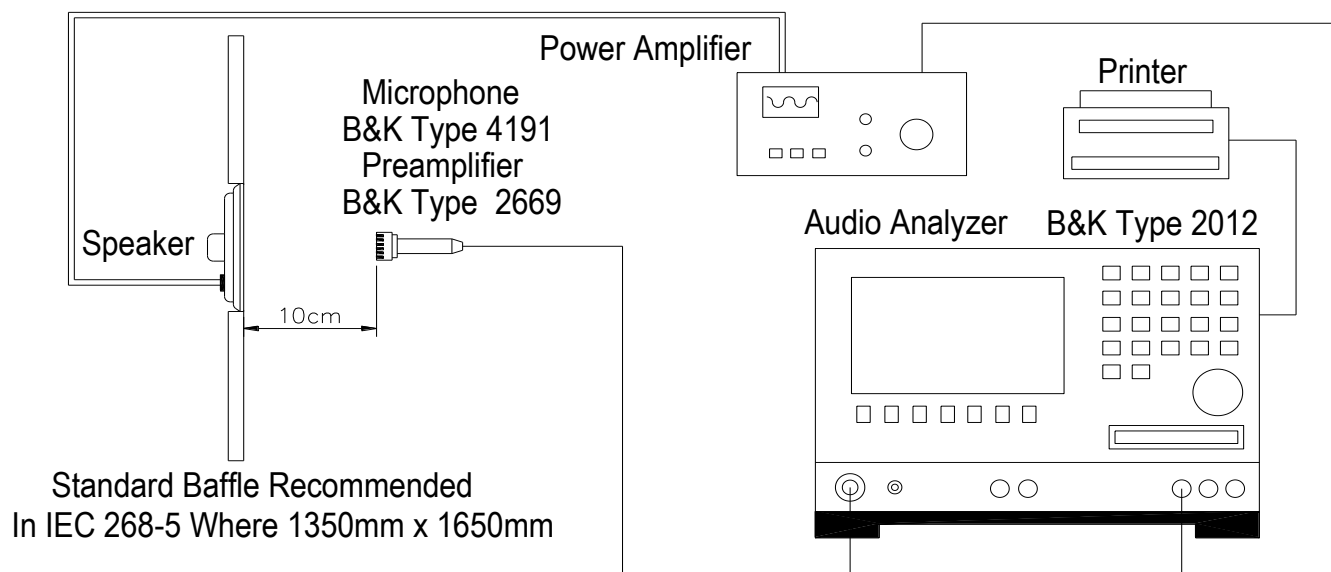
1.Input Power : 2.0W (2.83V)

2.Zero Level : -dB

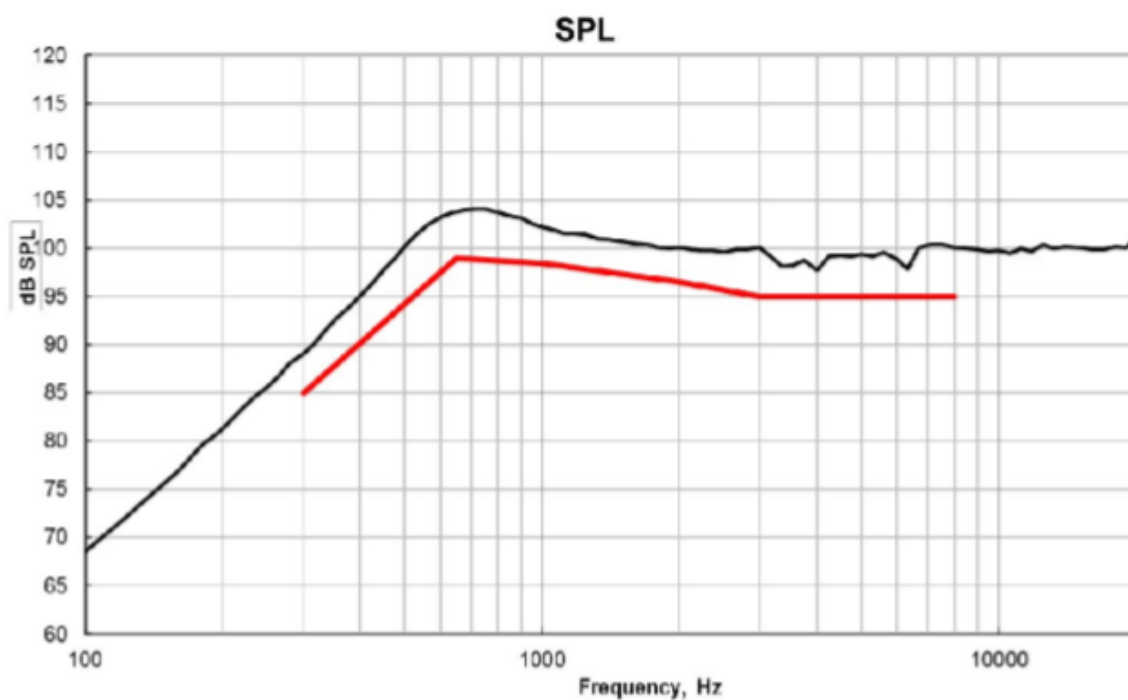
3.Mode : SPEAKER

4.potentiometer Range : 50dB

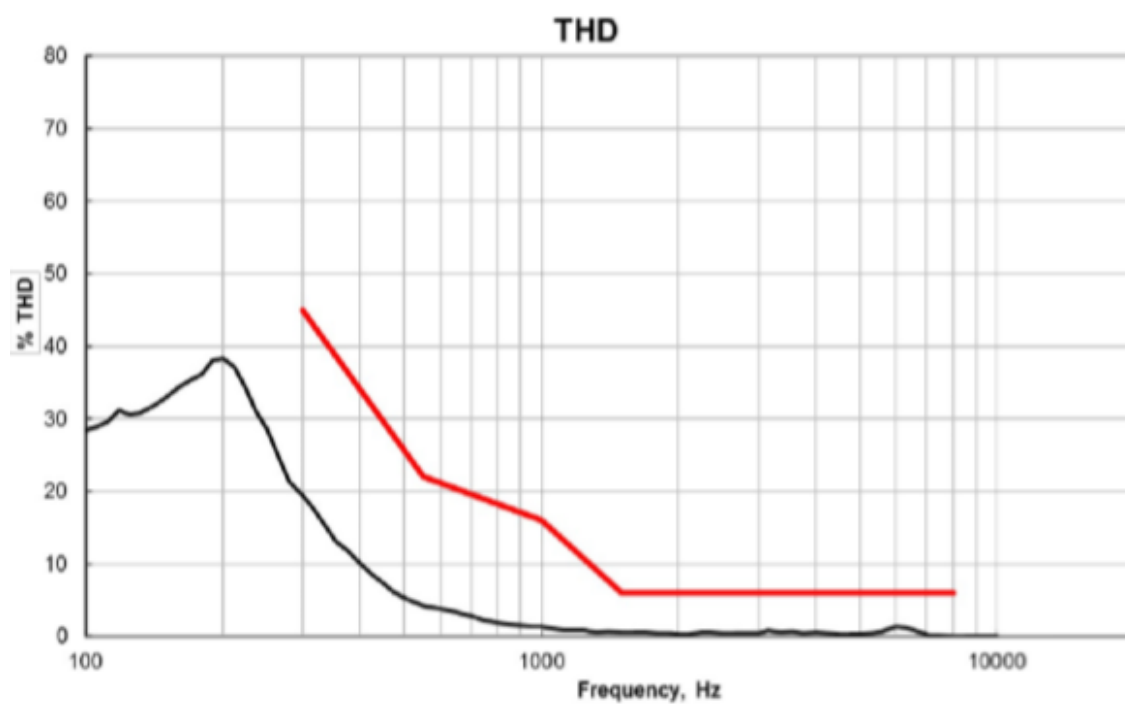
5.Sweep Time : 0.5sec



2-3. Frequency Response Curve

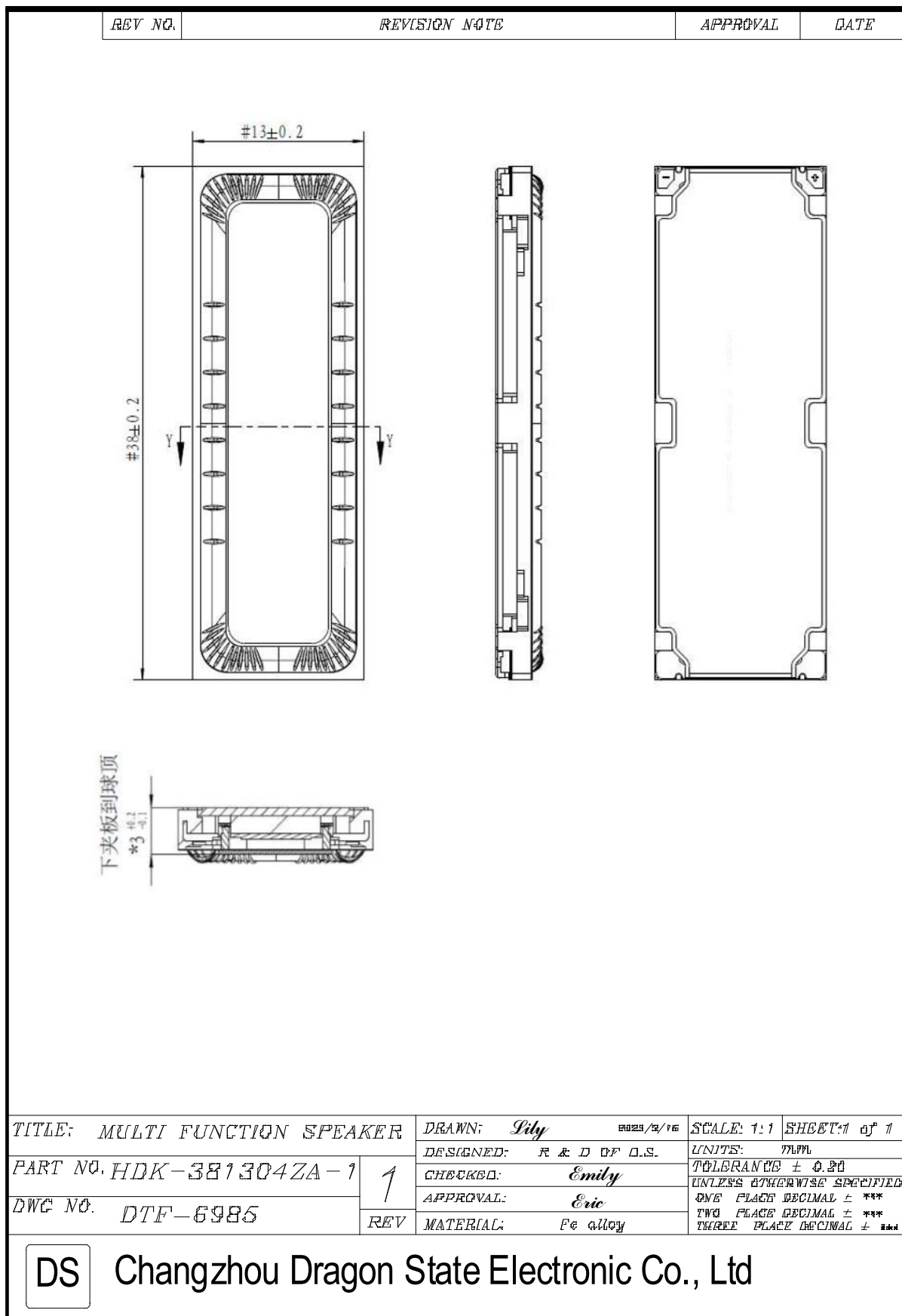


	Limit
300	85
650	99
1000	98.5
2000	96.5
3000	95
8000	95

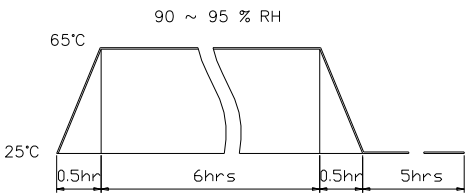


	Limit
300	45
550	22
1000	16
1500	6
8000	6

3.Dimension



4. Reliability Test

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+85^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 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 $+60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ relative humidity 90% 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: $+85^{\circ}\text{C}\pm 3^{\circ}\text{C}$, 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.

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.

5. Packing

