

常州华龙电子有限公司

SPECIFICATION FOR APPROVAL

规格承认书

Customer 客户:	
Customer Part No. 客户型号:	Muses (318000600597)
PART NO. 产品型号:	HDK-150806ZA-2C
FUNCTION. 产品功能	SPEAKER
SPEC. NO. 规格书号:	DSS103-2018

Drawn by 制作	Checked by 审核	Approved by 批准	Customer approved 客户承认
LILY 2018-11-23	曹丽萍 2018-11-23	王台平 2018-11-23	

Our products meet the latest RoHS compliance
我司生产产品均符合欧盟 RoHS 最新要求



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Approval 承認內容:

1. History change record 變更記錄
2. Characteristics 技術參數
3. Typical Frequency Response Curve 頻率曲線
4. Dimension 外觀尺寸
5. Reliability Test 可靠性測試
6. Packing 包裝

1. History change record

Change Items	Date	Note	Drawn by	Checked by
	2018-11-14	First Issue	Lily	王台平 2018-11-14
外径公差修正	2018-11-23	Second Issue	Lily	王台平 2018-11-23

2.Characteristics

2.1 Electrical and Mechanical Characteristics

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 15*08 mm
03	Rated Input Power	0.5 W In free air
04	Max. Input Power	0.8W In free air For 1 Minute
05	Impedance	6 ohm $\pm$ 15% at 2000Hz 1V input
06	Resonance Frequency (Fo)	800Hz $\pm$ 20% (in free air)
07	Sensitivity (S.P.L.)	87 $\pm$ 3 dB SPL /1.73V/10CM at 1000Hz in free air
08	Frequency Range	Fo - 20KHz
09	Total Harmonics Distortion	Max 15% at 1 KHz, 0.5W. In free air
12	Weight	0.8g $\pm$ 0.3g
13	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
14	Operation Test	Must be normal at program source - 0.5W
15	Buzz, Rattle, etc.	Should not be audible at 1.73V sine Wave between 300Hz to 5K Hz In free air
16	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
17	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
18	Temperature	Operating temperature: -20°C to +70°C Storage temperature: -40°C to +85°C

2.2. Measuring Method

Test Condition

A. STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

B. BASIC

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

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

C. Standard Test Fixture

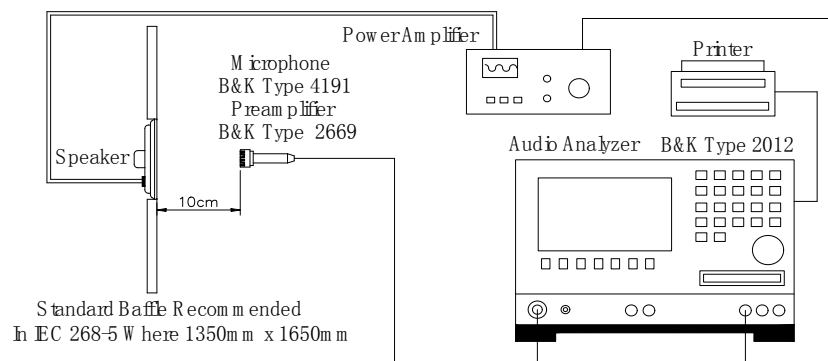
1. Input Power : 0.5W (1.73V)

2. Zero Level : -dB

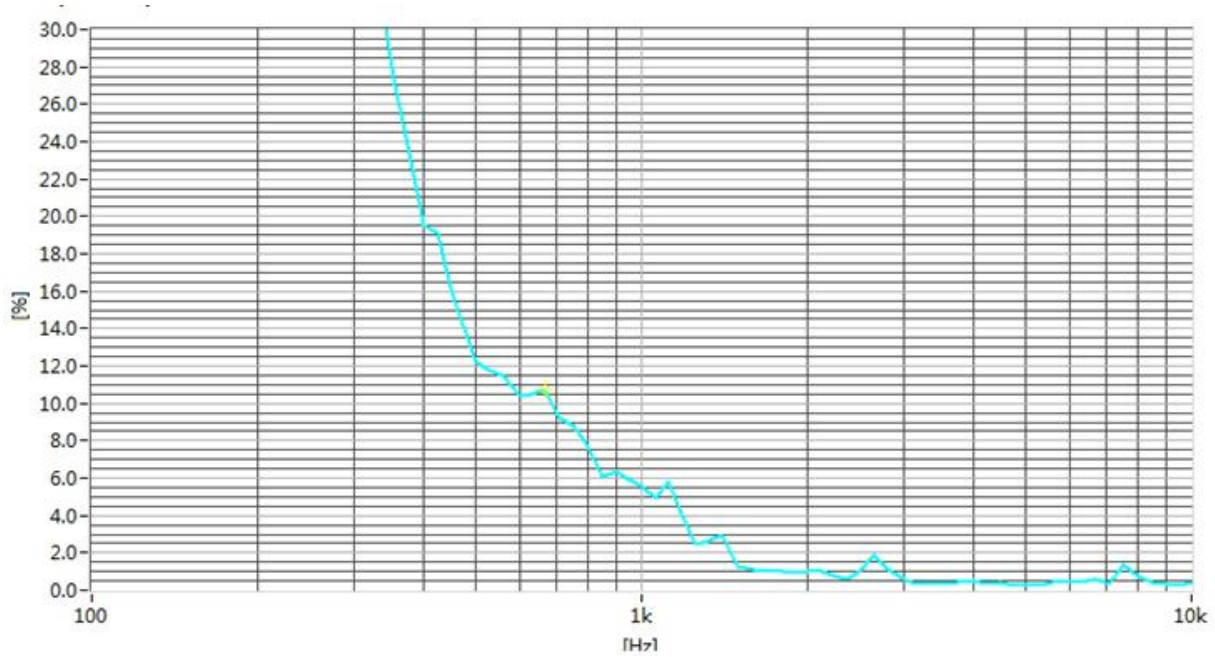
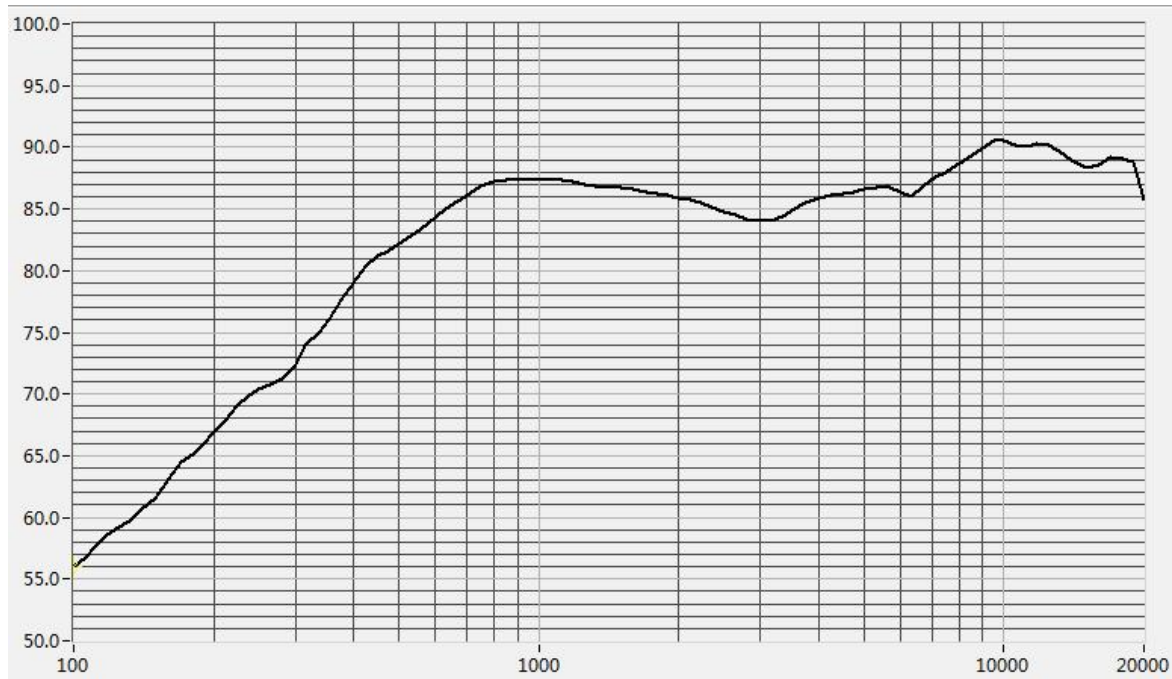
3. Mode : SPEAKER

4. potentiometer Range : 50dB

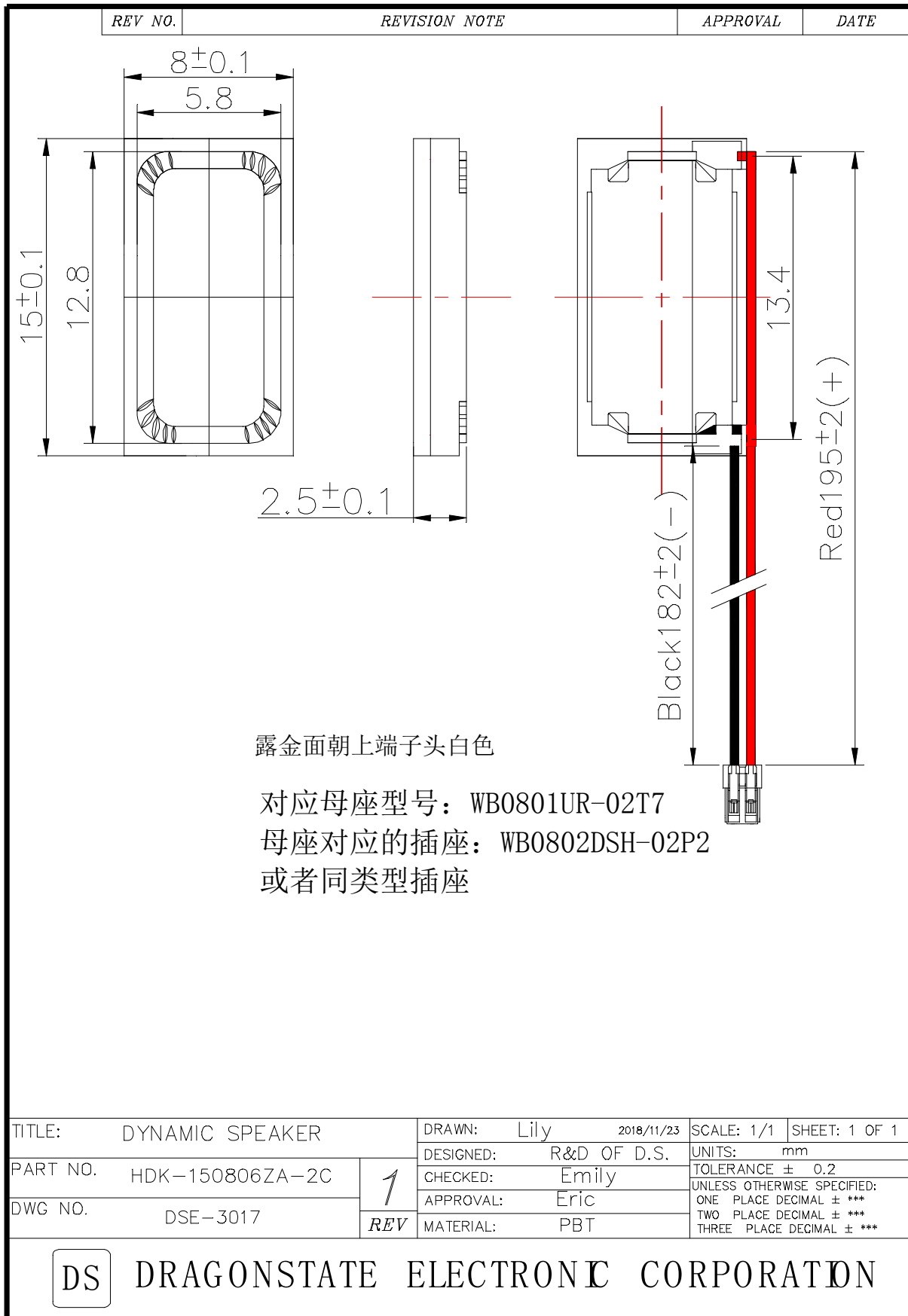
5. Sweep Time : 0.5sec



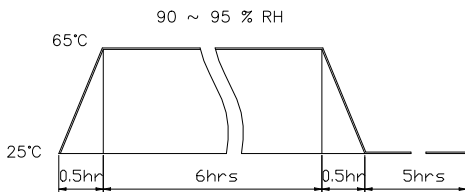
3. Frequency Response Curve



4.Dimension



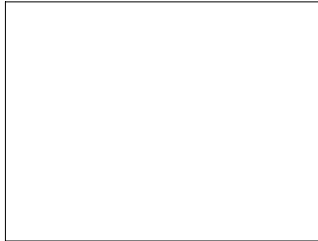
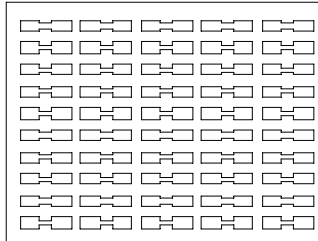
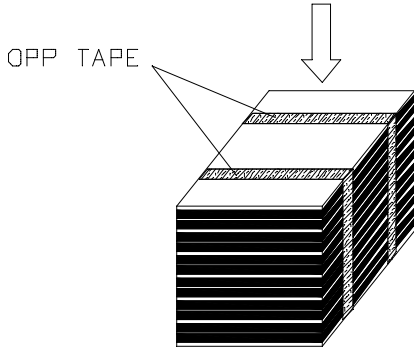
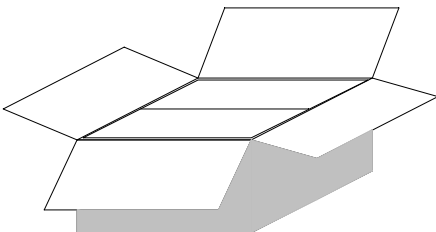
5. Reliability test

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 $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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: $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$, 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	10~55~10Hz sin-wave sweep 15min. Amplitude:1.5mm 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 In lcc Box
10	Max Power test	Max power 1 min on - 2 min off 10 cycles In lcc Box
11	Terminal strength test	Capable of withstand 1kg load for 15 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 15 ~ 30W, and in temperature range $350 \pm 10^{\circ}\text{C}$. Soldering time not over 3 seconds.

6.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Cover(290*225*3mm) Material: Paper		
	 Box(290*225*10mm) 100pcs Material: Paper+Epe		
	 Middle(290*225*135mm) 1000pcs(10*100pcs) Material: Paper+Epe		
	 Outer Box(515*320*280mm) 4000pcs(4*1000pcs) Material: Paper		
单位: mm			
TITLE: Packing		DRAWN: Lily	2012/10/17
PART NO.		DESIGNED: R&D OF D.S.	SCALE: 2:1
DWG NO.		CHECKED: Emily	SHEET: 1 of 1
1 REV		UNITS: mm	
		TOLERANCE	
		APPROVAL: Eric	20~11 ± 0.3
		MATERIAL:	10~5 ± 0.2
			<4 ± 0.1
DS DRAGONSTATE ELECTRONIC CORPORATION			