

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:	
PART NO. 产品型号:	HDK-1008RA-5W13
FUNCTION. 产品功能	SPEAKER
SPEC. NO. 规格书号:	

Drawn by 制作	Checked by 审核	Approved by 批准	Customer approved 客户承认
Lily 2015-4-13	曹丽萍 2015-4-13	王台平 2015-4-13	

Our products meet the latest RoHS compliance

我司生产产品均符合欧盟 RoHS 最新要求



ISO 9001 Certified

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二厂：江苏省常州市溧阳市社渚经济开发区社农路 1 号

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Approval 承認內容:

1. History change record 变更记录
2. Characteristics 技术参数
3. Typical Frequency Response Curve 频率曲线
4. Dimension 外观尺寸
5. Reliability Test 可靠性测试
6. Packing 包裝

1. History change record

Change Items	Date	Note	Drawn by	Checked by

2. Characteristics

2.1 Electrical and Mechanical Characteristics

2.2. MEASURING METHOD

Test Condition

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 10 mm	
03	Rated Input Power	0.3W (Long Time)	
04	Max. Input Power	0.5W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 1500Hz.	
06	Resonance Frequency (Fo)	1000Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	88dB (0.1W / 0.1m) $\pm$ 3 dB	atAVE1.0K, 1.2K, 1.5K, 2.0KHz.
		92dB (0.3W / 0.1m) $\pm$ 3 dB	
08	Frequency Range	Fo - 6KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz,0.3W.	
10	Voice Coil	Diameter 5.7mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 5.2 x0.8mm	
12	Weight	0.6g $\pm$ 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 - 0.3W	
15	Buzz, Rattle, etc.	Should not be audible at 2.0V sine Wave between Fo to 20KHz	
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 +60°C	
		Storage temperature: -30°C to +70°C	

A. STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

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B. BASIC

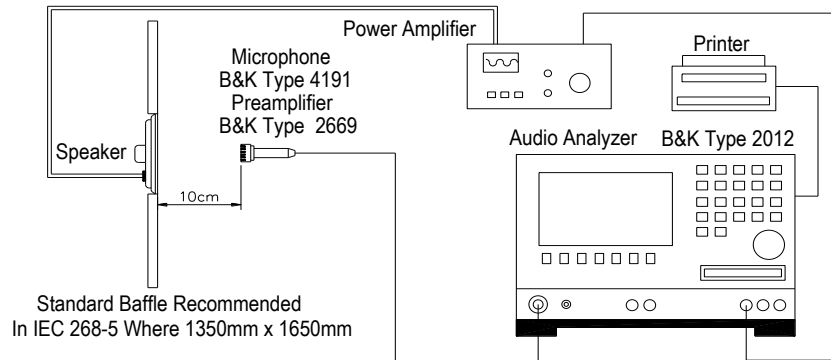
Temperature : 20 $\pm$ 3°C

Relative humidity : 60% ~ 70%,

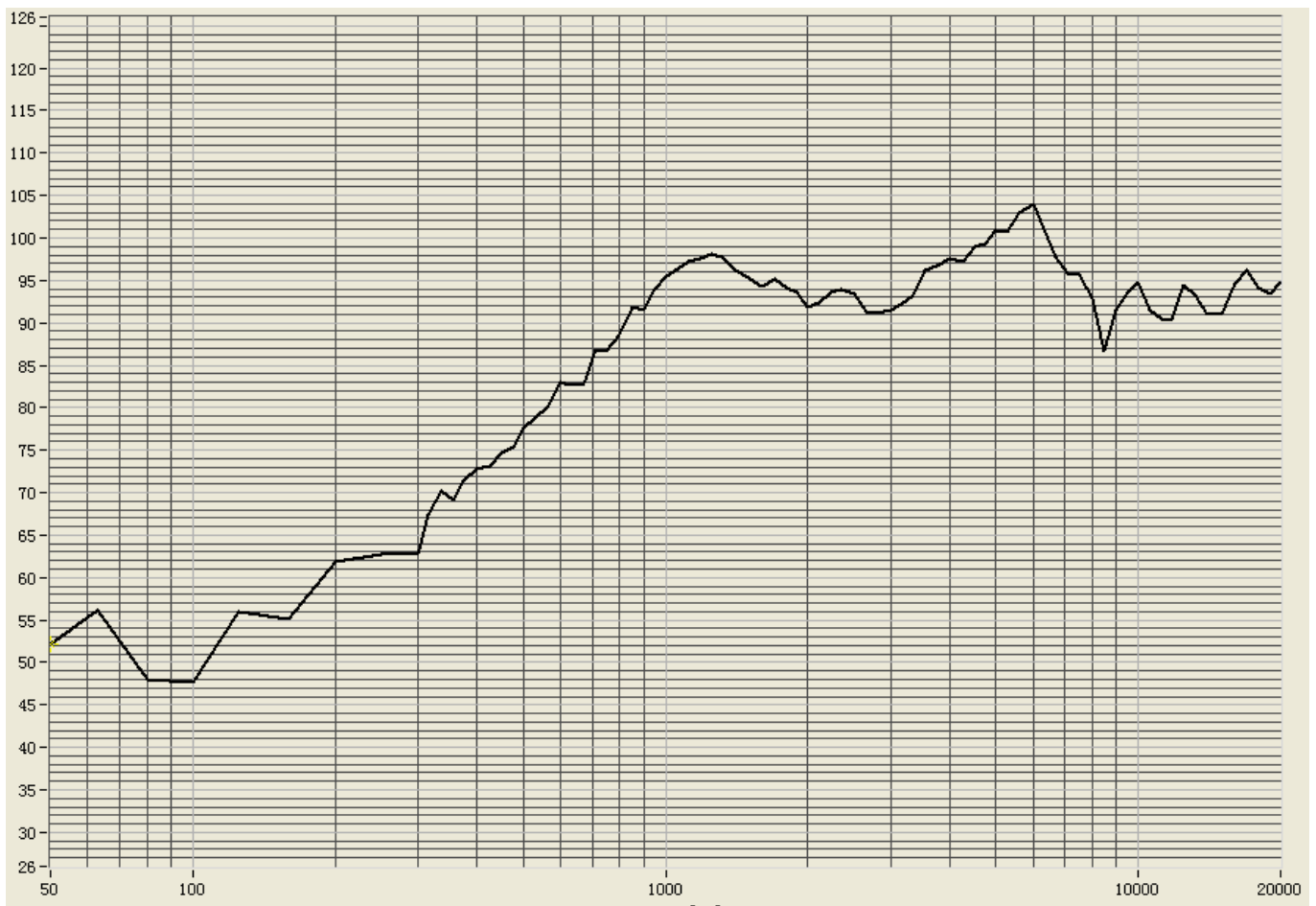
Atmospheric pressure : 860mbar to 1060mbar

C. Standard Test Fixture

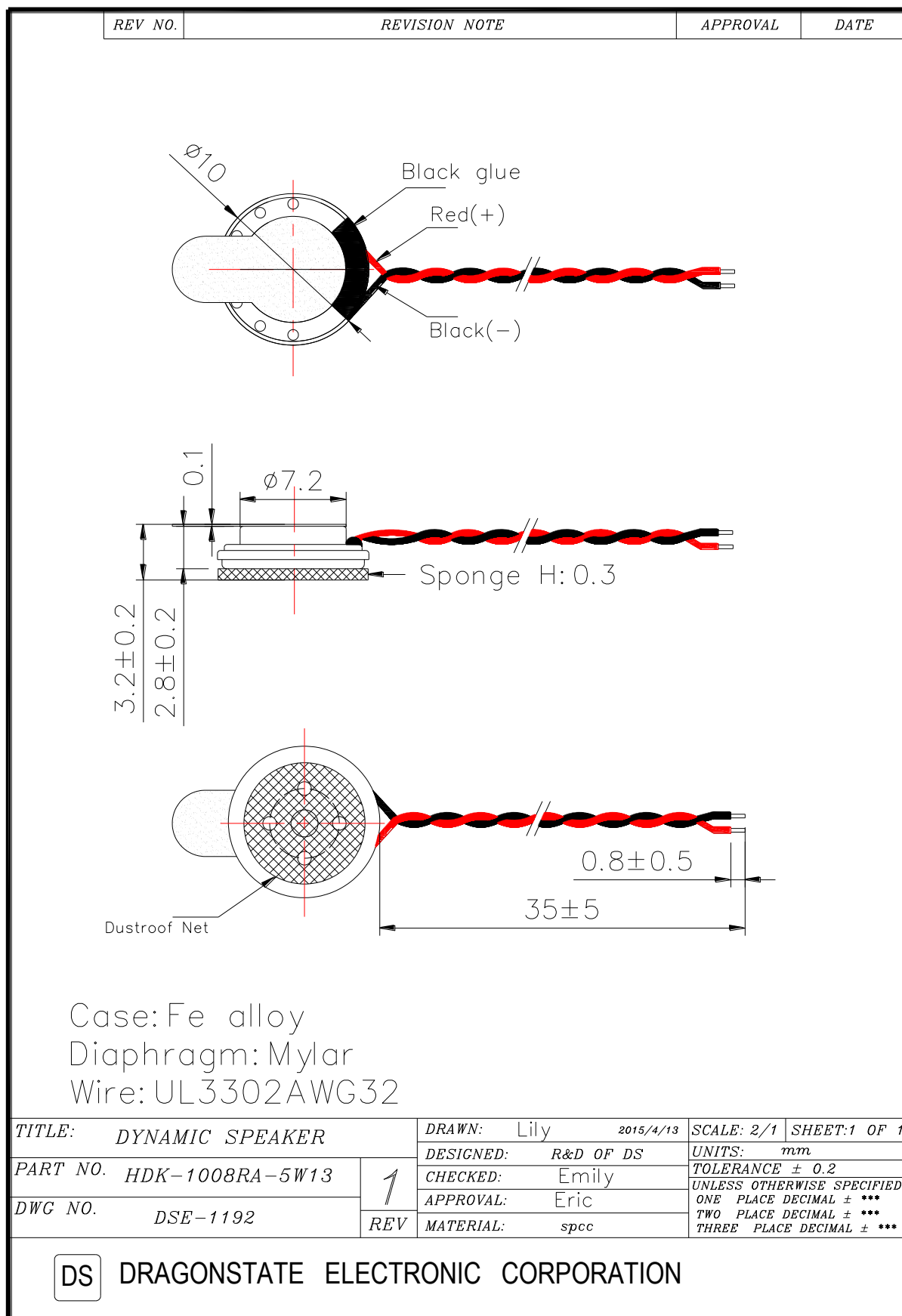
1. Input Power : 0.3W (1.55V)
2. Zero Level : -dB
3. Mode : SPEAKER
4. potentiometer Range : 50dB
5. Sweep Time : 0.5sec



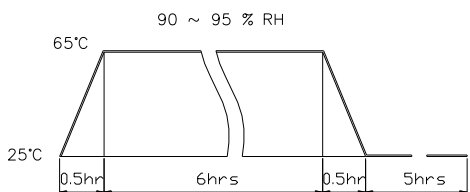
3. FrequencyResponse Curve



4. Dimension



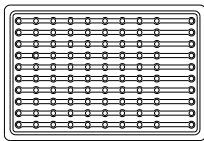
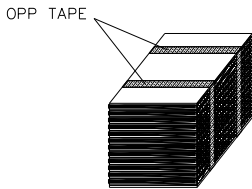
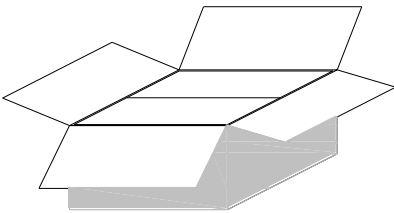
5. Reliability test

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 $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	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 .		

SOLDERING CONDITION

Recommend using constant branding iron in 30W, and in temperature range 350°C .
Soldering time not over 2 seconds.

6. Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
			
	Cover(350*240*10mm) Material: Pvc		
	↓		
			
	Box(350*240*10mm) 100pcs Material: Pvc		
			
	Middle(350*240*120mm) 1000pcs(10*100pcs) Material: Pvc		
	↓		
			
	Outer Box(490*360*350mm) 6000pcs(6*1000pcs) Material: Paper		
单位: mm			
TITLE: packing		DRAWN: Lily 2015/4/13	SCALE: 2:1 SHEET: 1 of 1
PART NO.	1	DESIGNED: R&D OF D.S.	UNITS: mm
DWG NO.		CHECKED: Emily	TOLERANCE
		APPROVAL: Eric	20~11 ± 0.3
		MATERIAL: ***	10~5 ± 0.2 <4 ± 0.1
DS DRAGONSTATE ELECTRONIC CORPORATION			