

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

Product	DYNAMIC SPEAKER
Part No.	HDK-1508EA-9W3(RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 NOV-16-2017	曹丽萍 NOV-16-2017	LILY NOV-16-2017

供应商名称	常 州 华 龙 电 子 有 限 公 司
联系人	宋海燕
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邮箱	Song@dshualong.com

1. Specification

HDK-1508EA-9W3 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 15 mm	
03	Rated Input Power	0.7W	
04	Max. Input Power	1.0W for 1 minute	
05	Impedance	8 ohm $\pm$ 15% at 2000Hz.	
06	Resonance Frequency (Fo)	1000Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	93dB (0.5W / 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 8 % at 1 KHz, 0.5W.	
10	Voice Coil	Diameter 8.4mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 7.9x 1.0mm	
12	Weight	1.6g $\pm$ 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 – 0.5W	
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: -40°C to +75°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

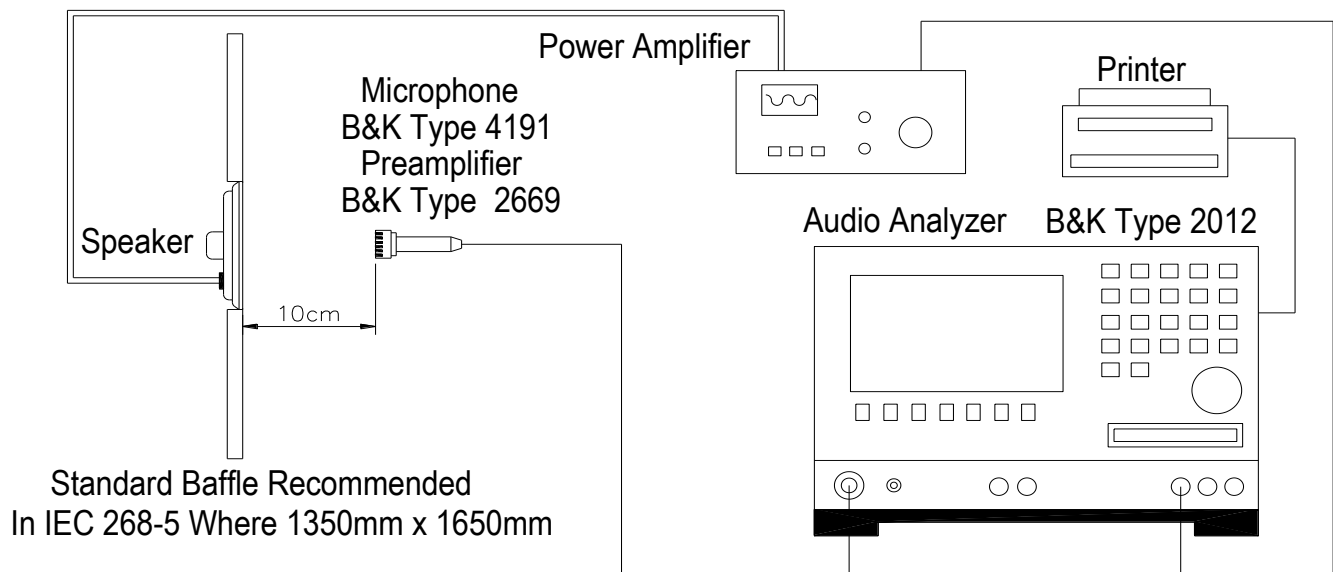
1. Input Power : 0.5W (2.0V)

2. Zero Level : -dB

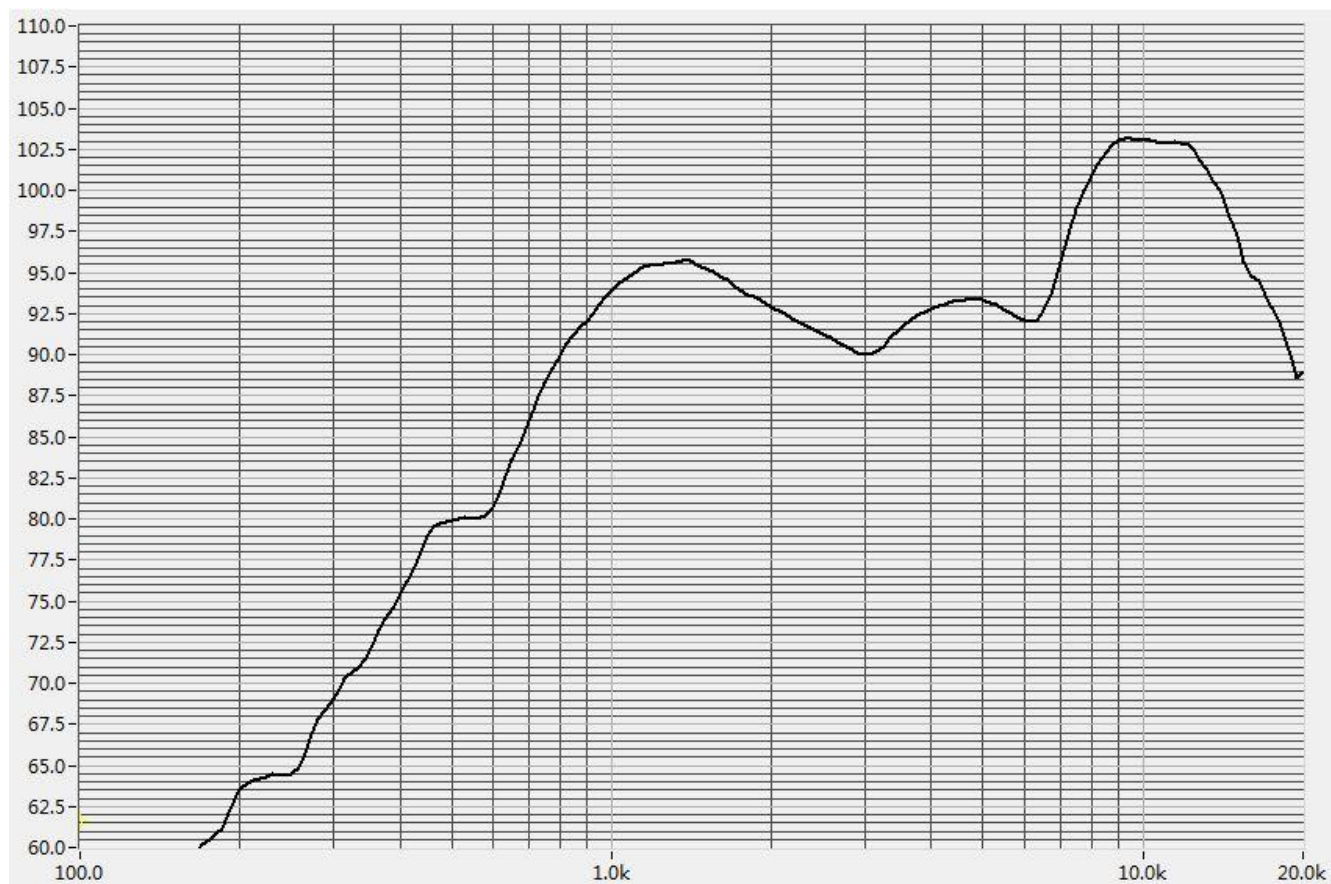
3. Mode : SPEAKER

4. potentiometer Range : 50dB

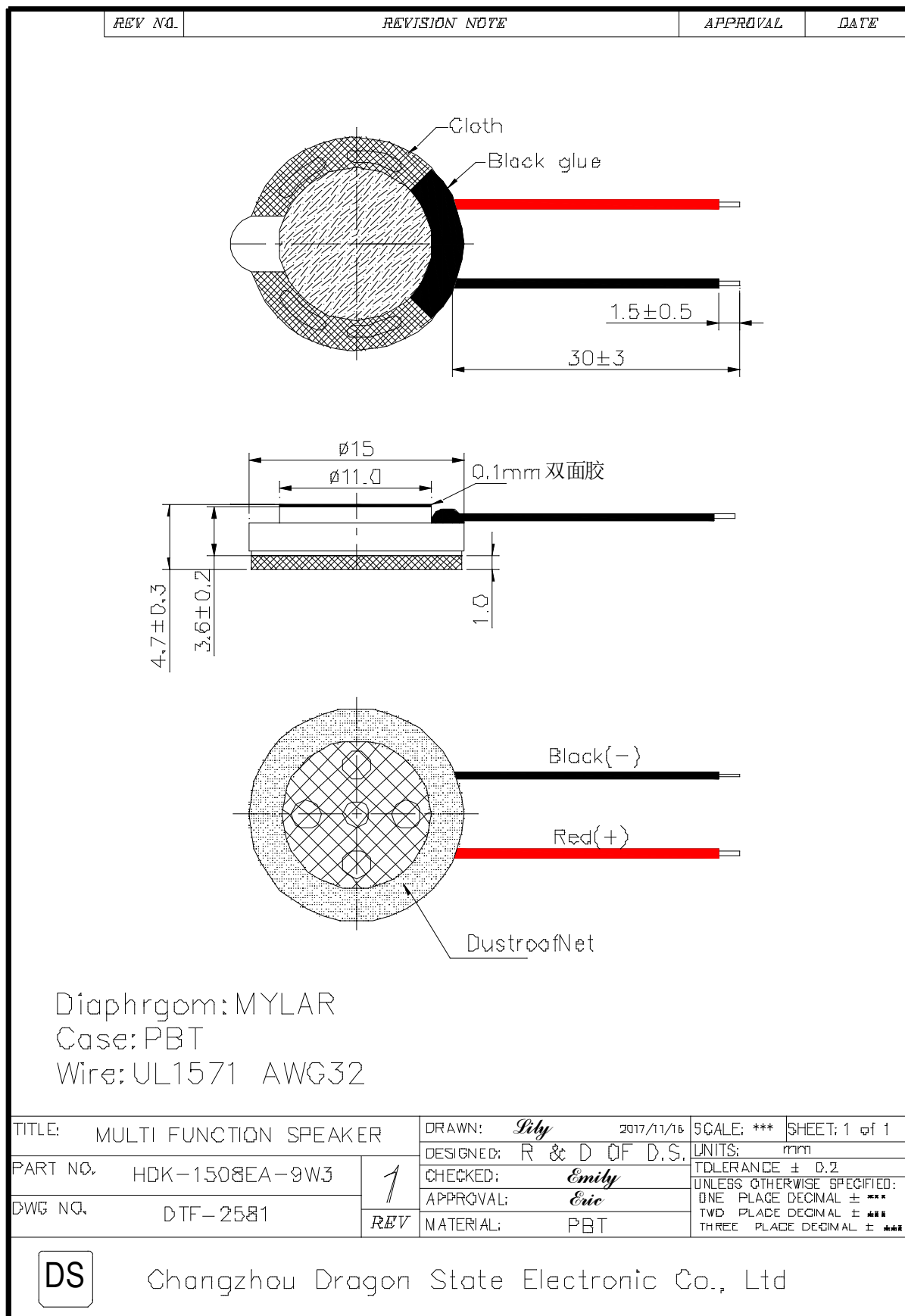
5. Sweep Time : 0.5sec



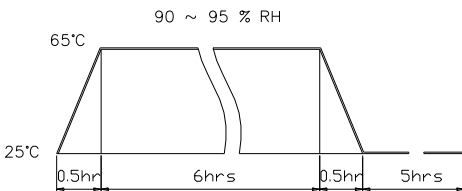
2-3.Frequency Response Curve



3.Dimension



4. Reliability Tests

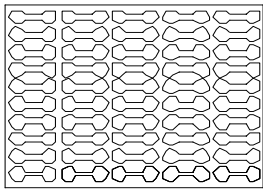
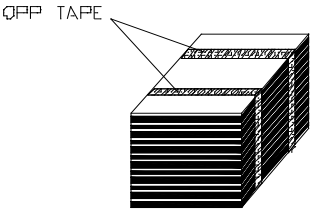
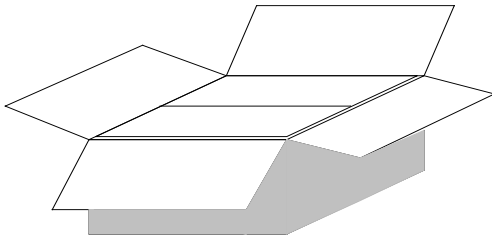
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+85^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity test	Keep 96 hours at $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 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	10~200~10Hz 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 **2** seconds.

5.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
 Cover(325*245*5mm) Material: Paper			
 Box(325*245*13mm) 100pcs Material: Paper+Epe			
 Middle(325*245*155mm) 1000pcs(10*100pcs) Material: Paper+Epe			
 Outer Box(490*360*350mm) 5000pcs(5*1000pcs) Material: Paper			
单位: mm			

TITLE: packing		DRAWN: Lily	2016/08/25	SCALE: 2:1	SHEET: 1 of 1
PART NO.	1	DESIGNED: R&D OF D.S.	UNITS: mm		
DWG NO.		CHECKED: Emily	TOLERANCE		
REV		APPROVAL: Eric	20~11	± 0.3	
		MATERIAL: ***	10~5	± 0.2	
			<4	± 0.1	

DS

Changzhou Dragon State Electronic Co., Ltd