

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

Product	WATERPROOF TYPE SPEAKER
Part No.	HDK-201408EA-2C4 (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 APR-12-2018	曹丽萍 APR-12-2018	LILY APR-12-2018

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EDITION:1.1

1.Specification

HDK-201408EA-2C4 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 20*14 mm	
03	Rated Input Power	1.0W.	
04	Max. Input Power	1.2W.	
05	Impedance	8 ohm $\pm$ 15% at 2000 Hz	
06	Resonance Frequency (Fo)	1100 Hz $\pm$ 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	94dB(1.0W/0.1m) $\pm$ 3 dB	at AVE 0.8K,1.0K,1.2K,1.5K Hz.
08	Frequency Range	Fo – 20K Hz	
09	Waterproof Standards	IP65	
10	Total Harmonics Distortion	Max. 10% at 1K Hz ,1.0W.	
11	Voice Coil	Diameter 8.5 mm	
12	Magnet	Rare earth permanent (Ferrite) magnet Φ 8.0 x 1.0 mm	
13	Weight	1.5g $\pm$ 0.3g	
14	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.	
15	Operation Test	Must be normal at program source 0.8W	
16	Buzz, Rattle, etc.	Should not be audible at 2.53V sine Wave between Fo to 20KHz	
17	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.	
18	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.	
19	Temperature	Operating temperature: -20°C to +60°C Storage temperature: -30°C to +70°C	

2.Measuring Method

2-1 .Test Condition

Standard

Temperature : 15 ~ 35°C

Relative humidity : 45% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Judgement

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

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2 . Standard Test Fixture

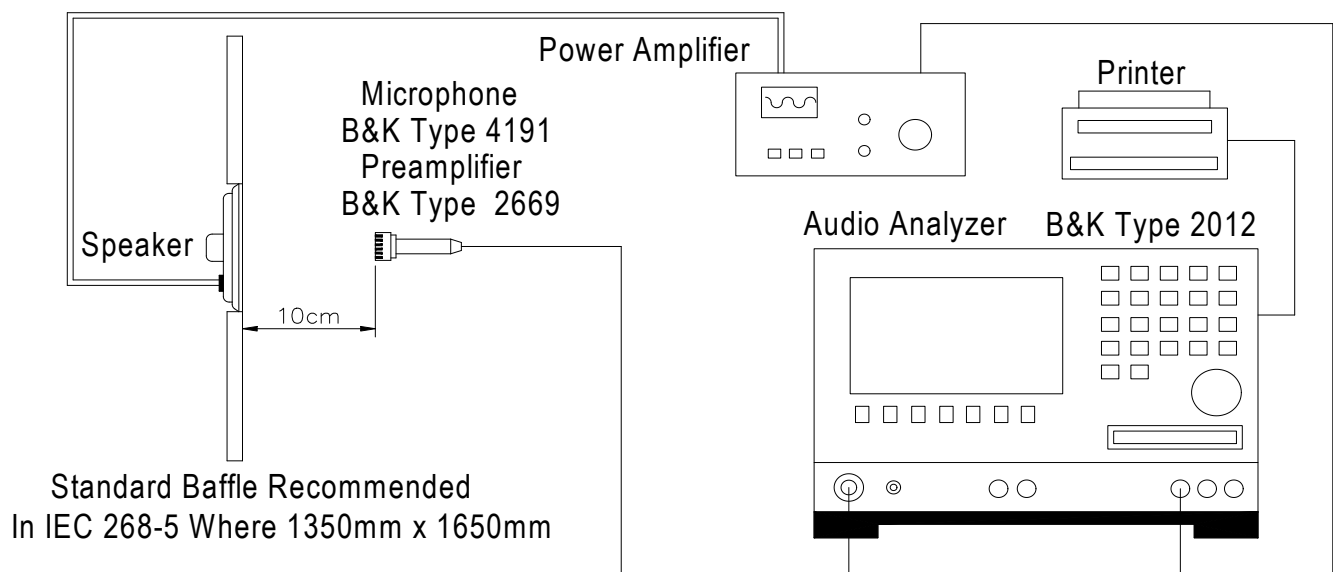
1.Input Power : 1.0W(2.83V)

2.Zero Level : -dB

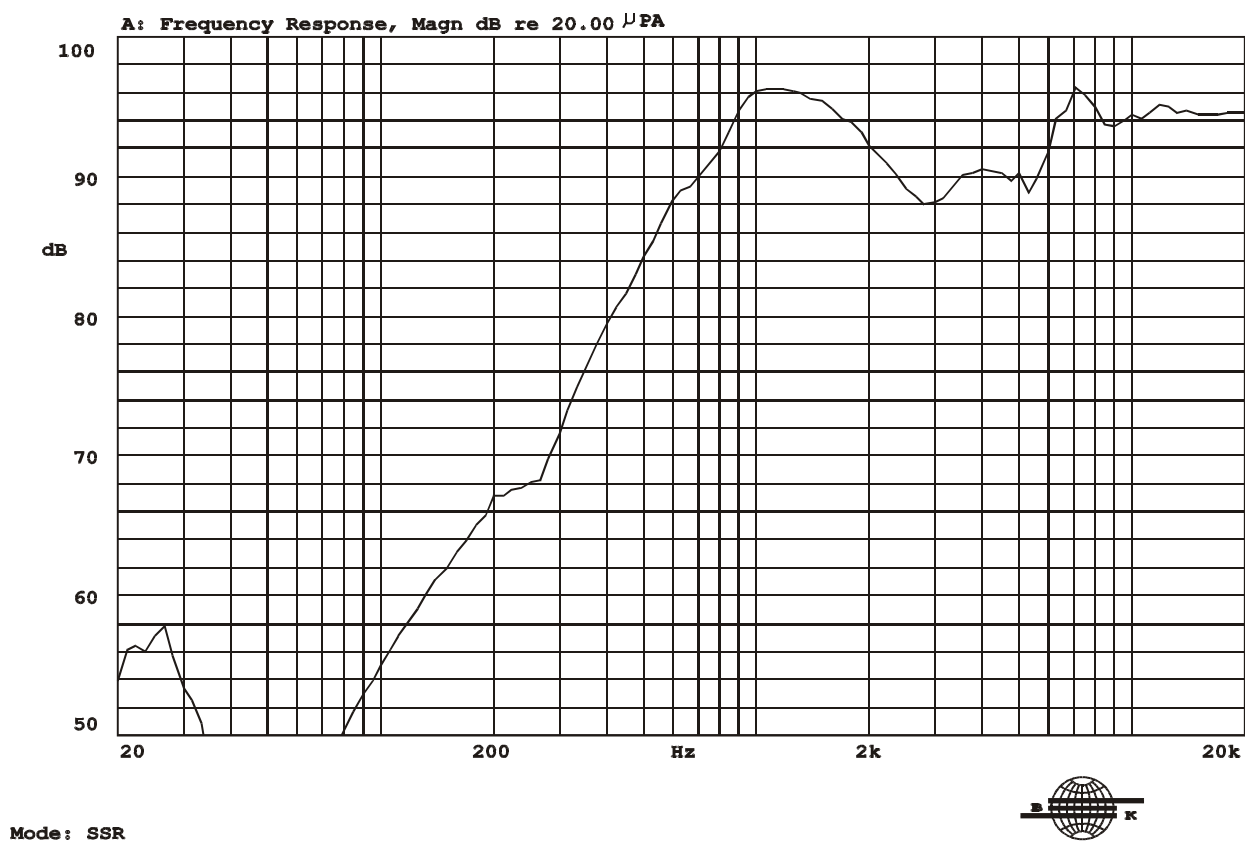
3.Mode : SPEAKER

4.potentiometer Range : 50dB

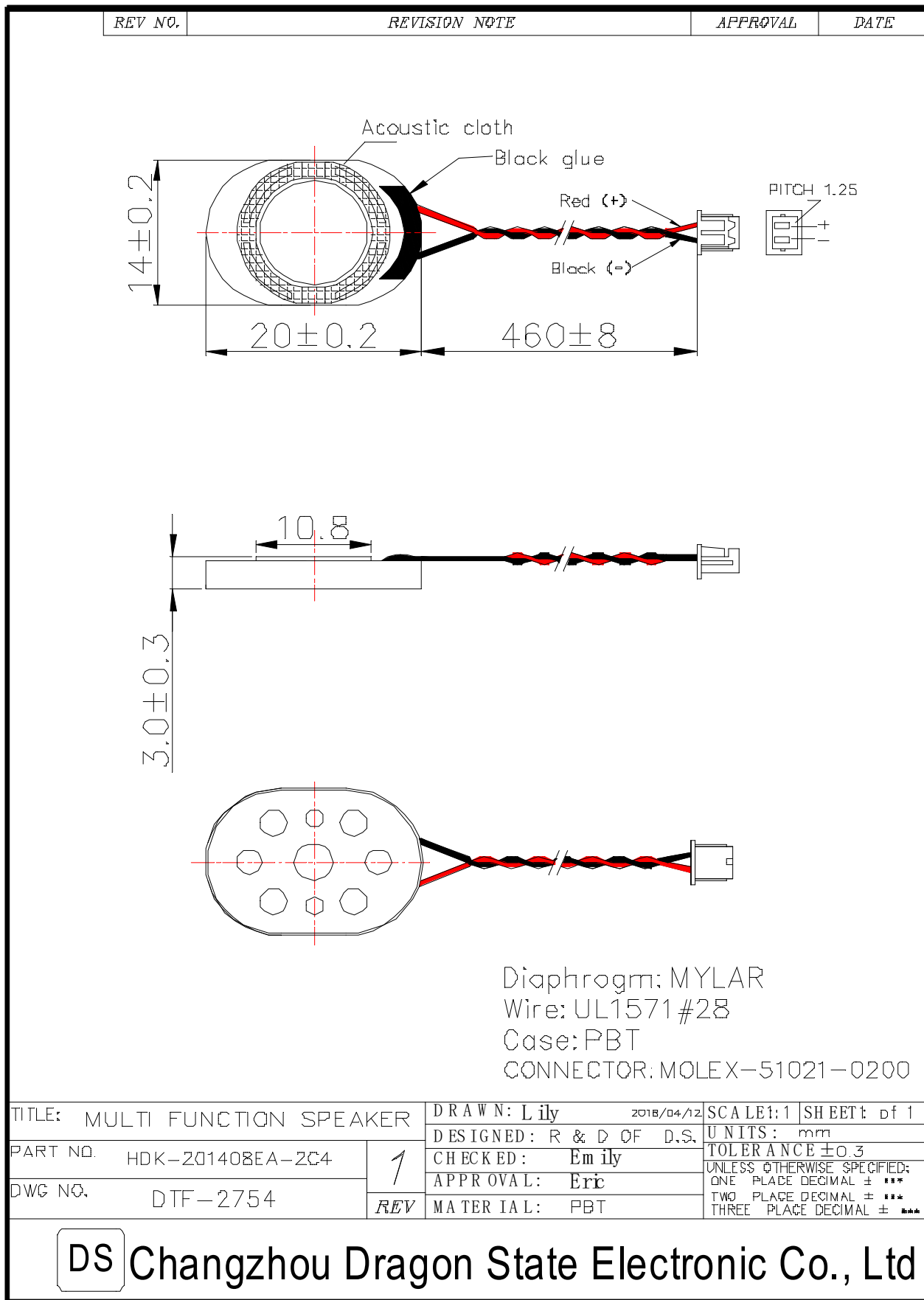
5.Sweep Time : 0.5sec



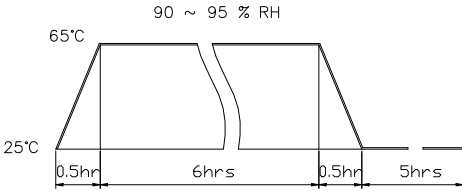
2-3. Frequency Response Curve 0.8W/10CM



3.Dimension



4. Reliability Tests

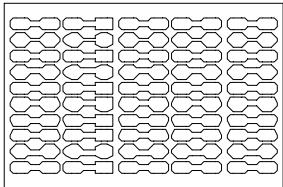
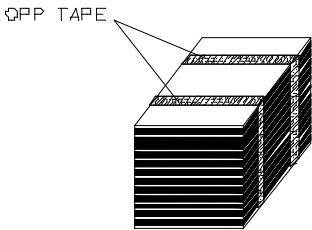
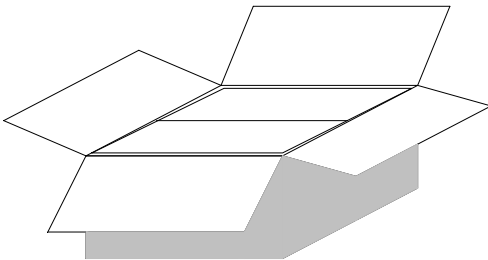
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity 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	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	Load test	Rated Power White noise is applied for 96 hours
10	Protection against liquids	Low pressure injection of 1-3mins at any angle has no effect
11	Max Power test	Max power 1 min. on - 2 min. off 10 cycles.
12	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 **$350 \pm 10^{\circ}\text{C}$** .

Soldering time **2** seconds

5.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
 ↓  ↓  ↓  Cover(320*220*5mm) Material: Paper Box(320*220*10mm) 100pcs Material: Paper+Epe Middle(320*220*120mm) 1000pcs(10*100pcs) Material: Paper+Epe Outer Box(490*360*350mm) 4000pcs(4*1000pcs) Material: Paper			
单位: mm			
TITLE: packing		DRAWN: L ily 2013/12/06	
PART NO.		DESIGNED: R&D OF D.S.	
DWG NO.		CHECKED: Em ily	
		APPROVAL: Eric	
		MATERIAL: ***	
REV		SCALE: 2:1	SHEET: 1 of 1
		UNITS: mm	
		TOLERANCE	
		20~11	± 0.3
		10~5	± 0.2
		<4	± 0.1

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