

MESSRS.

SPECIFICATION FOR APPROVAL**承 认 书**

Product	WATERPROOF TYPE SPEAKER
Part No.	HDK-151108ZA-6 (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 SEP-06-2017	曹丽萍 SEP-06-2017	LILY SEP-06-2017

常 州 华 龙 电 子 有 限 公 司**DRAGONSTATE ELECTRONIC CORPORATION**

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1. Specification

HDK-151108ZA-6(RoHS)

ITEM		SPECIFICATIONS
01	Type	Dynamic speaker
02	Dimension	External diameter 15*11 mm
03	Rated Input Power	1.0W In 1cc Box
04	Max. Input Power	1.2W must be normal Pink noise for 1 minute in 1.0cc box
05	Impedance	8 ohm $\pm$ 15% at 1000Hz.
06	Resonance Frequency (Fo)	600Hz $\pm$ 20% (in free air)
	Resonance Frequency (Fo)	900Hz $\pm$ 20% (in 1cc box)
07	Sensitivity (S.P.L.)	84 $\pm$ 3 dB SPL /1V/10CM at 0.8,1.0,1.2,1.5KHz
08	Frequency Range	Fo- 10KHz
09	Dustproof and waterproof	IP67 (1metre 30 minutes)
10	Total Harmonics Distortion	Max 10% at 1 KHz,1W.
11	Weight	1.5g $\pm$ 5%g
12	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
13	Operation Test	Must be normal at program source – 1.0W
14	Buzz, Rattle, etc.	Must be normal at sine wave 1Vrms (in free air) /2.83Vrms(in 1.0cc box) from 300~5KHz
15	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
16	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
17	Temperature	Operating temperature: -20°C to +60°C Storage temperature: -30°C to +70°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

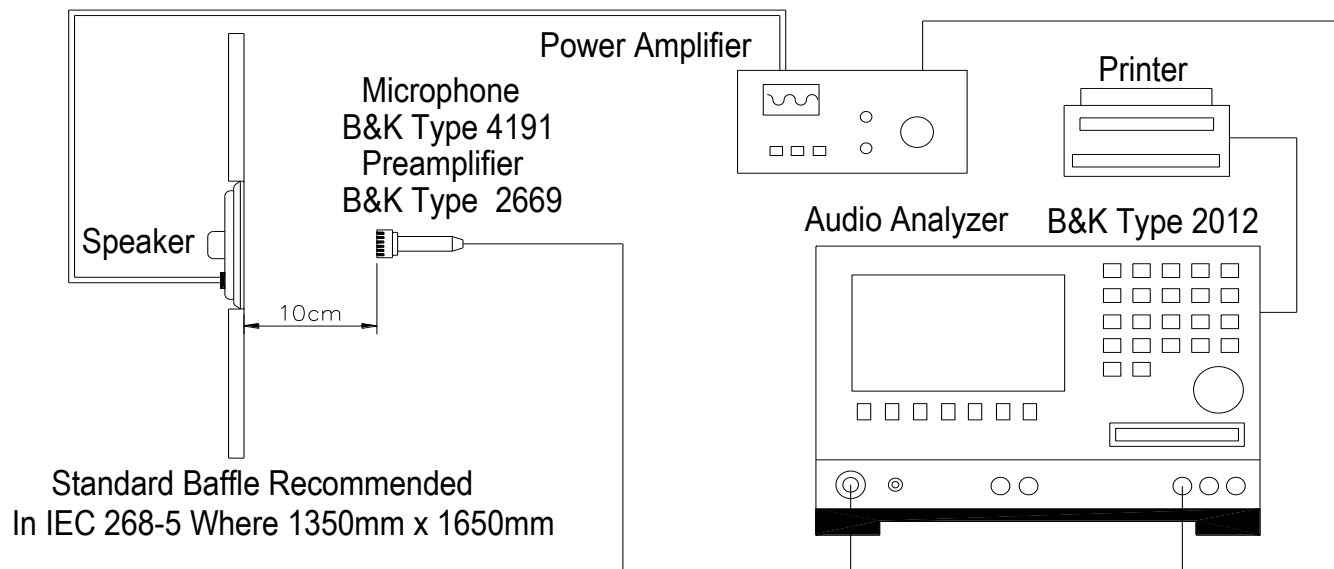
1.Input Power : 0.1W (1V)

2.Zero Level : -dB

3.Mode : SPEAKER

4.potentiometer Range : 50dB

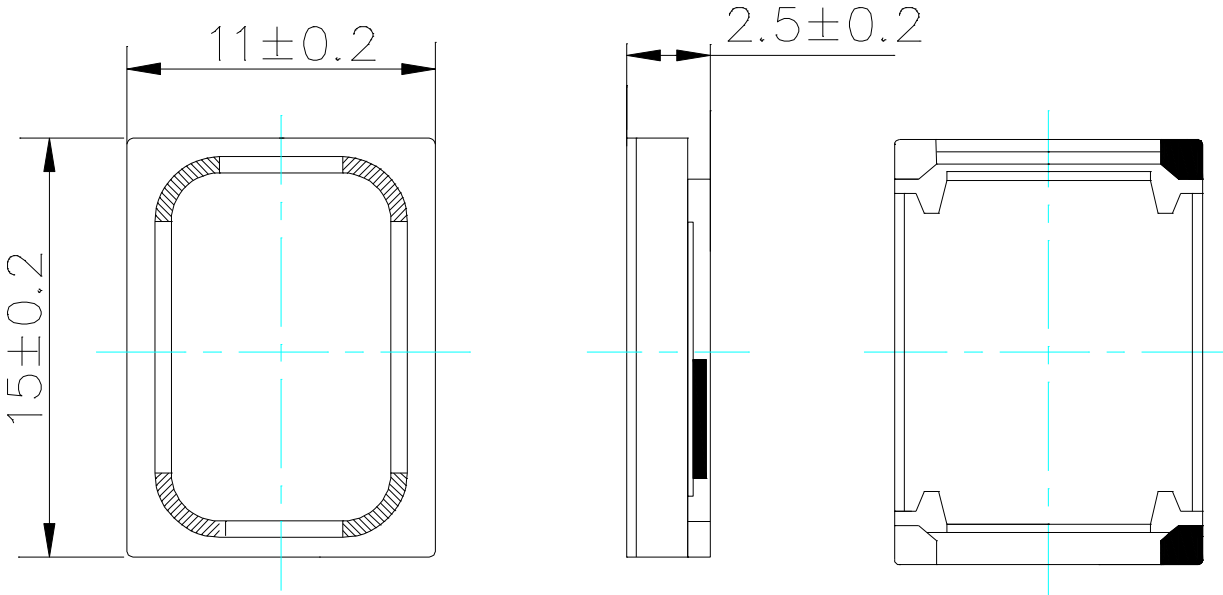
5.Sweep Time : 0.5sec



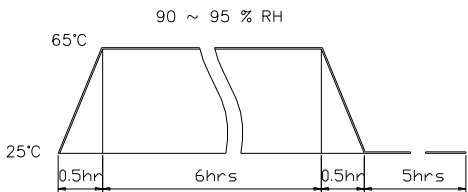
2-3.Frequency Response Curve



3.Dimension

REV NO.	REVISION NOTE	APPROVAL	DATE
			
TITLE: DYNAMIC SPEAKER		DRAWN: Lily 2017/09/06	SCALE: 2/1 SHEET: 1 OF 1
PART NO. HDK-151108ZA-6	1 REV	DESIGNED: R&D OF D.S.	UNITS: mm
DWG NO. DSE-2987		CHECKED: Emily	TOLERANCE ±0.2
		APPROVAL: Eric	UNLESS OTHERWISE SPECIFIED: ONE PLACE DECIMAL ± *** TWO PLACE DECIMAL ± *** THREE PLACE DECIMAL ± ***
		MATERIAL: PBT	
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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	Rated Power test	Rated Power Pink noise is applied for 96 hours in 1cc box
10	Max Power test	Max power 1 min on – 2 min off 10 cycles in 1cc box
11	Terminal strength test	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
12	Protection against liquids	Protected against 30 minutes of immersion under 1M pressure

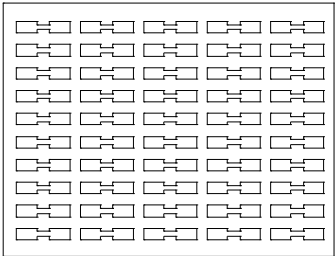
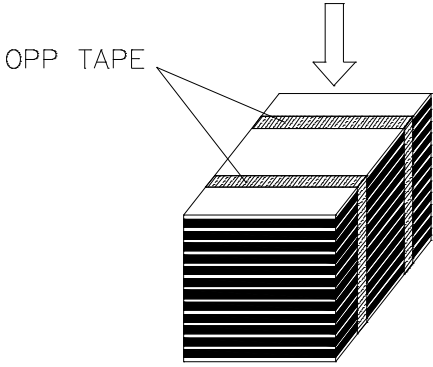
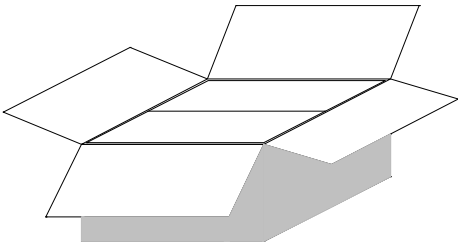
Criterion: After these test , the change of S.P.L shall be within ± 3 dB .

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.

5.Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
 Box(290*225*10mm) 100pcs Material: Paper+Epe  OPP TAPE 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	
		20~11	± 0.3
		10~5	± 0.2
		<4	± 0.1
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