

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

Product	WATERPROOF TYPE SPEAKER	
Part No.	HDK-2308AA-2P3 (RoHS)	
Customer Approval		
Approved By	Checked By	Made By
王台平 DEC-20-2017	曹丽萍 DEC-20-2017	LILY DEC-20-2017

常 州 华 龙 电 子 有 限 公 司

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EDITION:1. 1

1. Specification

HDK-2308AA-2P3 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 23 mm	
03	Rated Input Power	1.0W	
04	Max. Input Power	1.2W for 1 minute	
05	Impedance	8 ohm \pm 15%	
06	Resonance Frequency (Fo)	700Hz \pm 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	94dB (1.0W / 0.1m) \pm 3 dB	atAVE 0.8K, 1.0K, 1.2K, 1.5 KHz.
08	Frequency Range	Fo - 20KHz	
09	Dustproof and Waterproof	IP67 (1 metre 30 minutes)	
10	Total Harmonics Distortion	Max 8 % at 1 KHz, 0.8W.	
11	Voice Coil	Diameter 10.25 mm	
12	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 9.7 x 1.4 mm	
13	Weight	3.6g \pm 0.2g	
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 - 1.0W	
16	Buzz, Rattle, etc.	Should not be audible at 2.83V 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	

2-1. Test Condition

Standard

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2. Standard Test Fixture

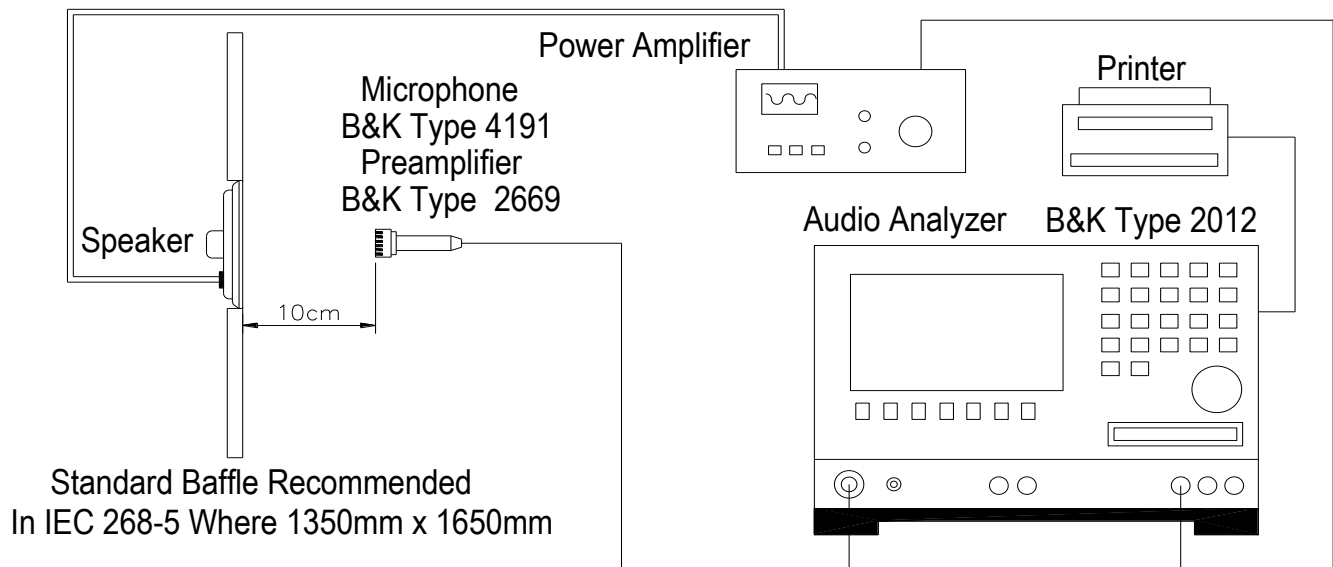
1. Input Power : 0.8W (2.53V)

2. Zero Level : -dB

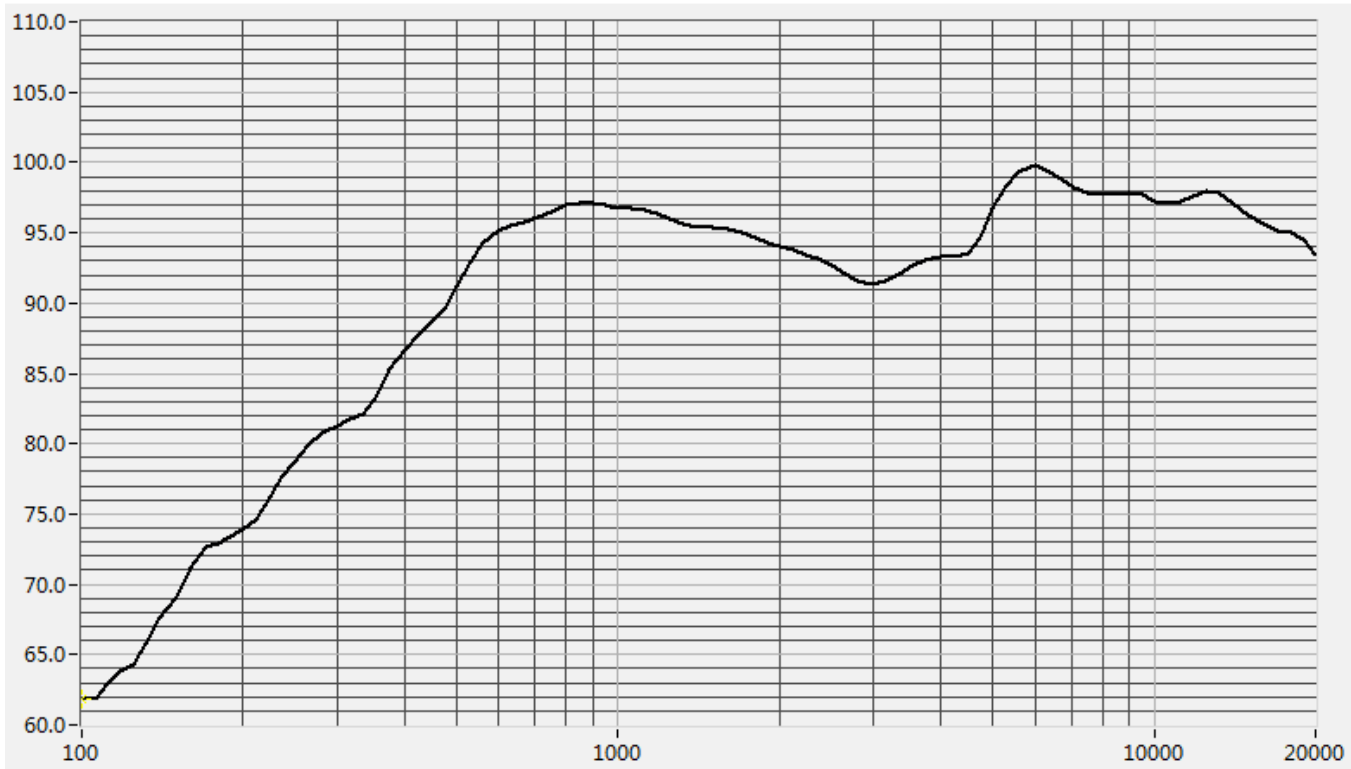
3. Mode : SPEAKER

4. potentiometer Range : 50dB

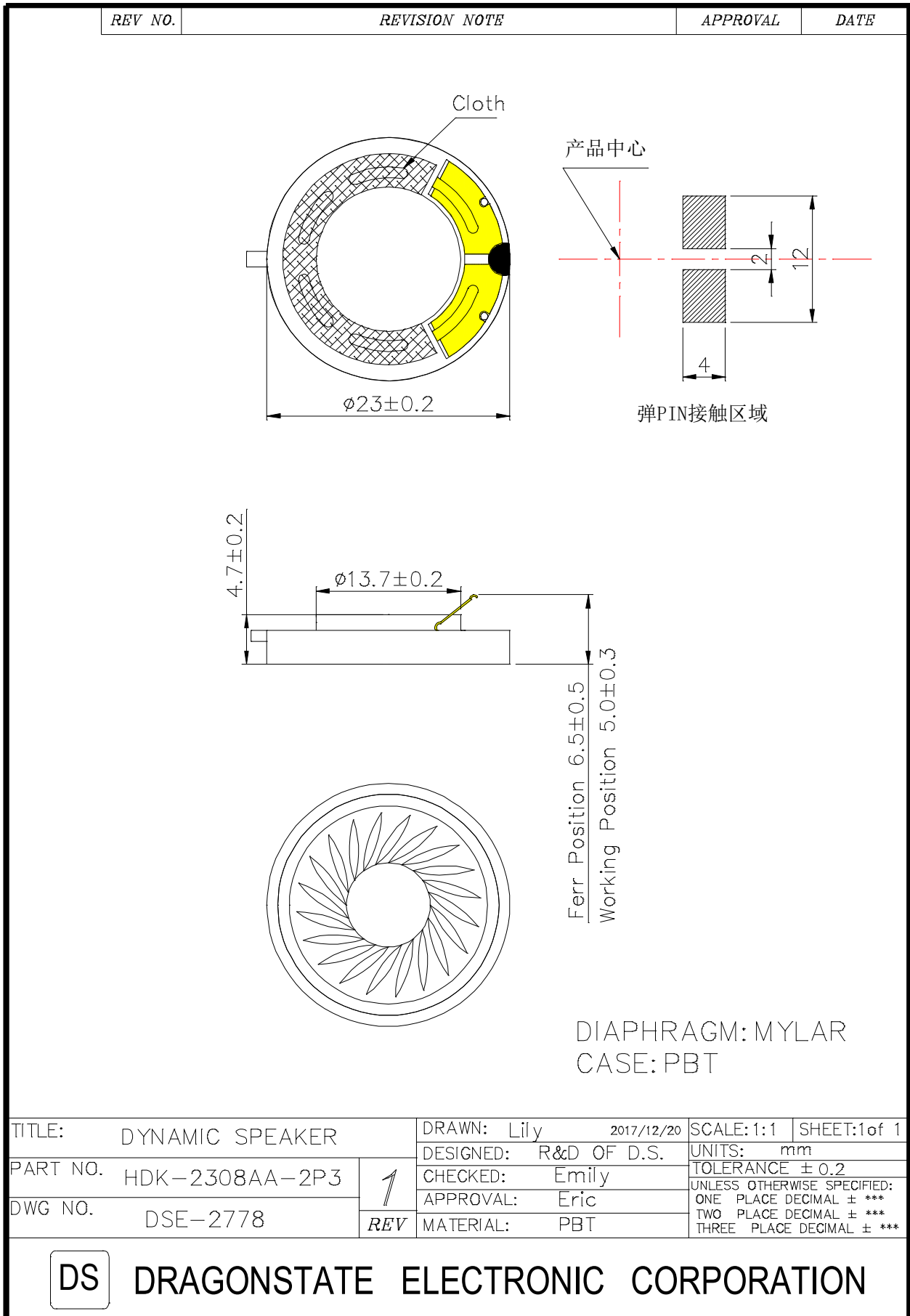
5. Sweep Time : 0.5sec



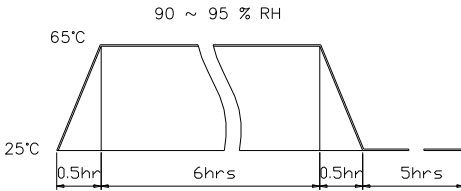
2.3 Frequency Response Curve



3. Dimension



4. Reliability Test


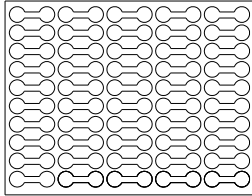
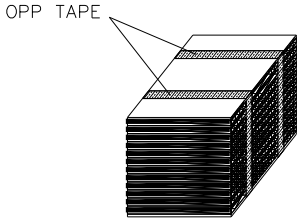
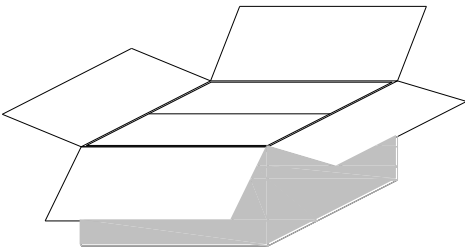
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity test	Keep 96 hours at $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	<p>The part shall be subjected 5 cycles. One cycle shall be 12 hours and consist of;</p> 
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	Protection against liquids	Protected against 30 minutes of immersion under 1M pressure product without leakage
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.
<p>Criterion: After these test , the change of S.P.L shall be within ± 3 dB .</p>		

Soldering Condition

Recommend using constant branding iron in 15 ~ 30W, and in temperature range 350°C .

Soldering time not over 3 seconds.

5. Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
			
		Cover(350*290*5mm) Material: Paper	
	↓		
			
		Box(350*290*15mm) 100pcs Material: Paper+Epe	
			
		Middle(350*290*180mm) 1000pcs(10*100pcs) Material: Paper+Epe	
	↓		
			
		Outer Box(490*360*350mm) 5000pcs(5*1000pcs) Material: Paper	
		单位: mm	
TITLE: packing		DRAWN: <i>Lily</i> 2013/12/06	SCALE: 2:1 SHEET: 1 of 1
PART NO.	1	DESIGNED: R&D OF D.S.	UNITS: mm
DWG NO.		CHECKED: <i>Emily</i>	TOLERANCE
		APPROVAL: <i>Eric</i>	20~11 ± 0.3
		MATERIAL: ***	10~5 ± 0.2
	REV		<4 ± 0.1
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">DS</div> DRAGONSTATE ELECTRONIC CORPORATION </div>			

