

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

Product	WATERPROOF TYPE SPEAKER
Part No.	HDK-3208BB-2A (RoHS)
Customer	
Customer Part No.	

Approved By	Checked By	Made By
王台平 MAR-27-2018	曹丽萍 MAR-27-2018	LILY MAR-27-2018

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1. Specification

HDK-3208BB-2A (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 32 mm	
03	Rated Input Power	2.0W	
04	Max. Input Power	2.5 W for 1 minute	
05	Impedance	8 ohm \pm 15% at 800Hz.	
06	Resonance Frequency (Fo)	750Hz \pm 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	100dB (2.0W / 0.1m) \pm 3 dB	at AVE 0.6K, 0.8K, 1.0K, 1.2KHz
08	Frequency Range	Fo – 5KHz	
09	Dustproof and waterproof	IP68 (2 metres 1 hour)	
10	Total Harmonics Distortion	Max 10 % at 1 KHz, 0.1W.	
11	Voice Coil	Diameter 13.3 mm	
12	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 12.5x2.0 mm	
13	Weight	8.4g \pm 0.5g	
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 – 2.0W	
16	Buzz, Rattle, etc.	Should not be audible at 4.0V sine Wave between Fo to 5KHz	
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℃

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

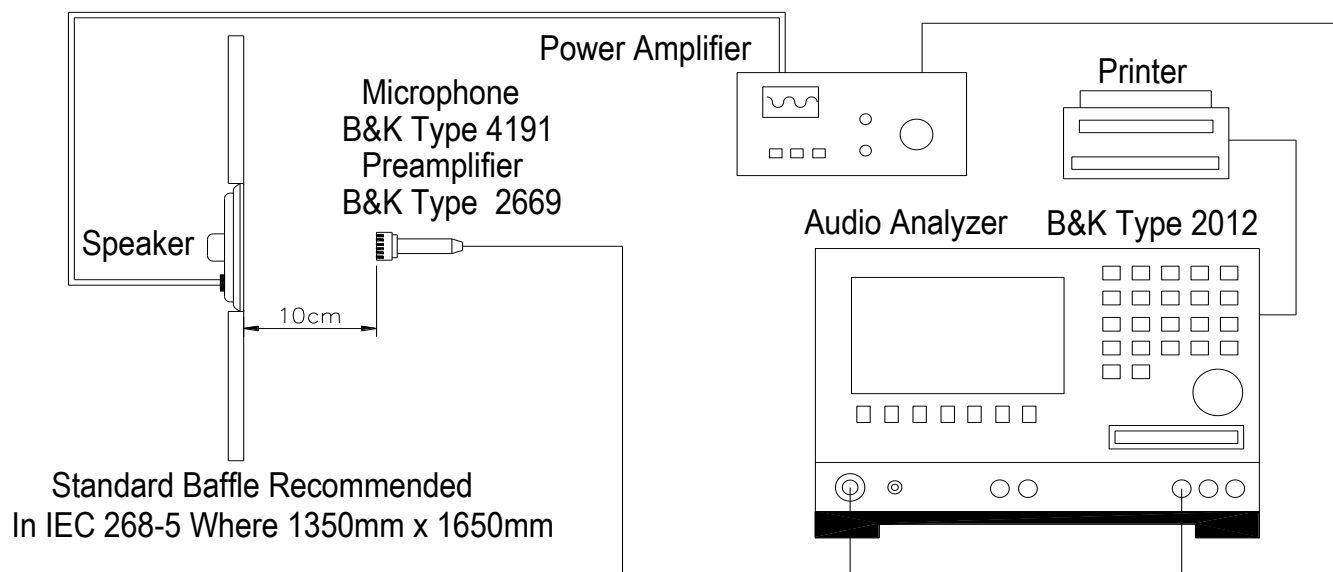
1. Input Power : 1.0W (2.83V)

2. Zero Level : -dB

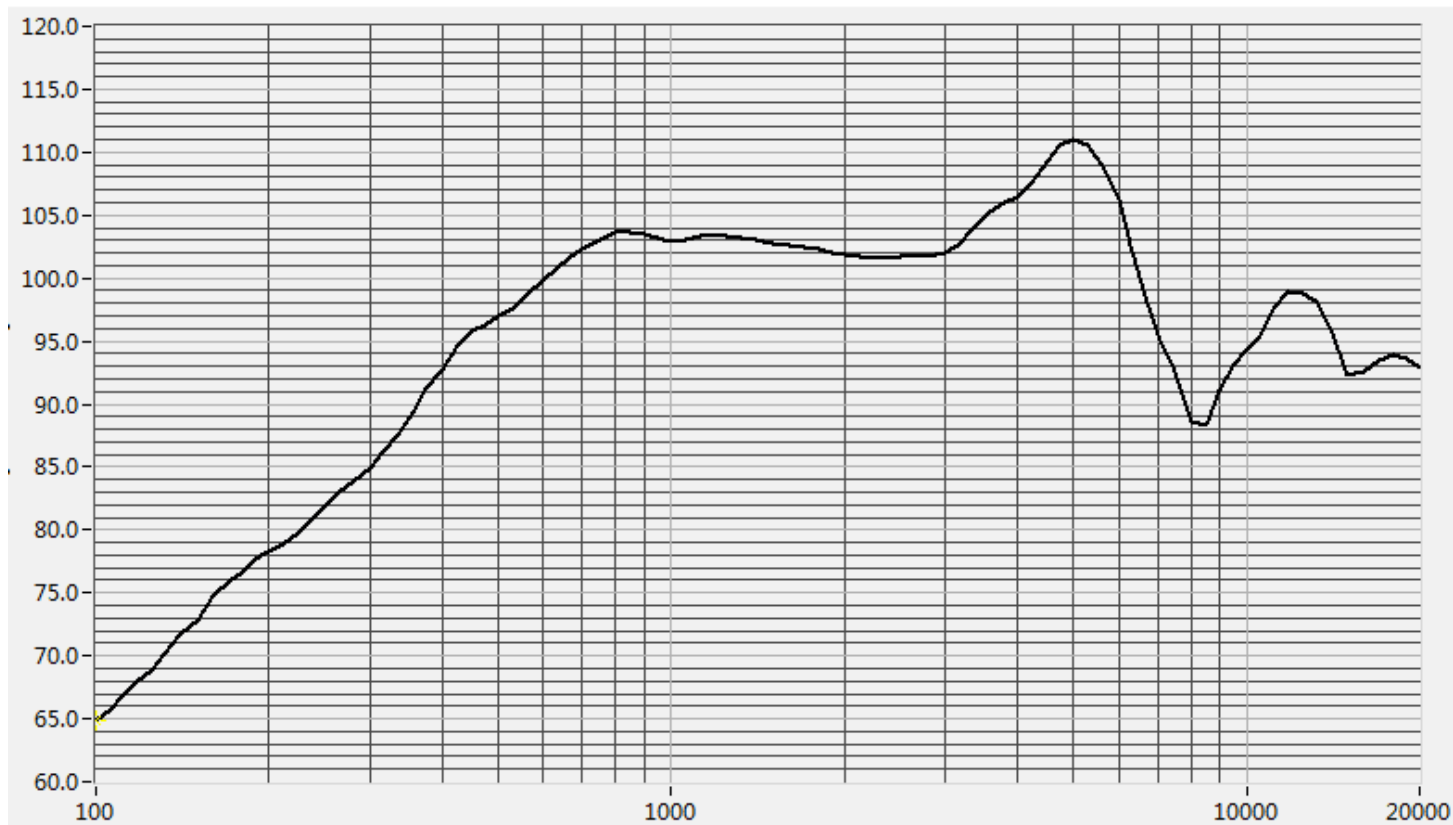
3. Mode : SPEAKER

4. potentiometer Range : 50dB

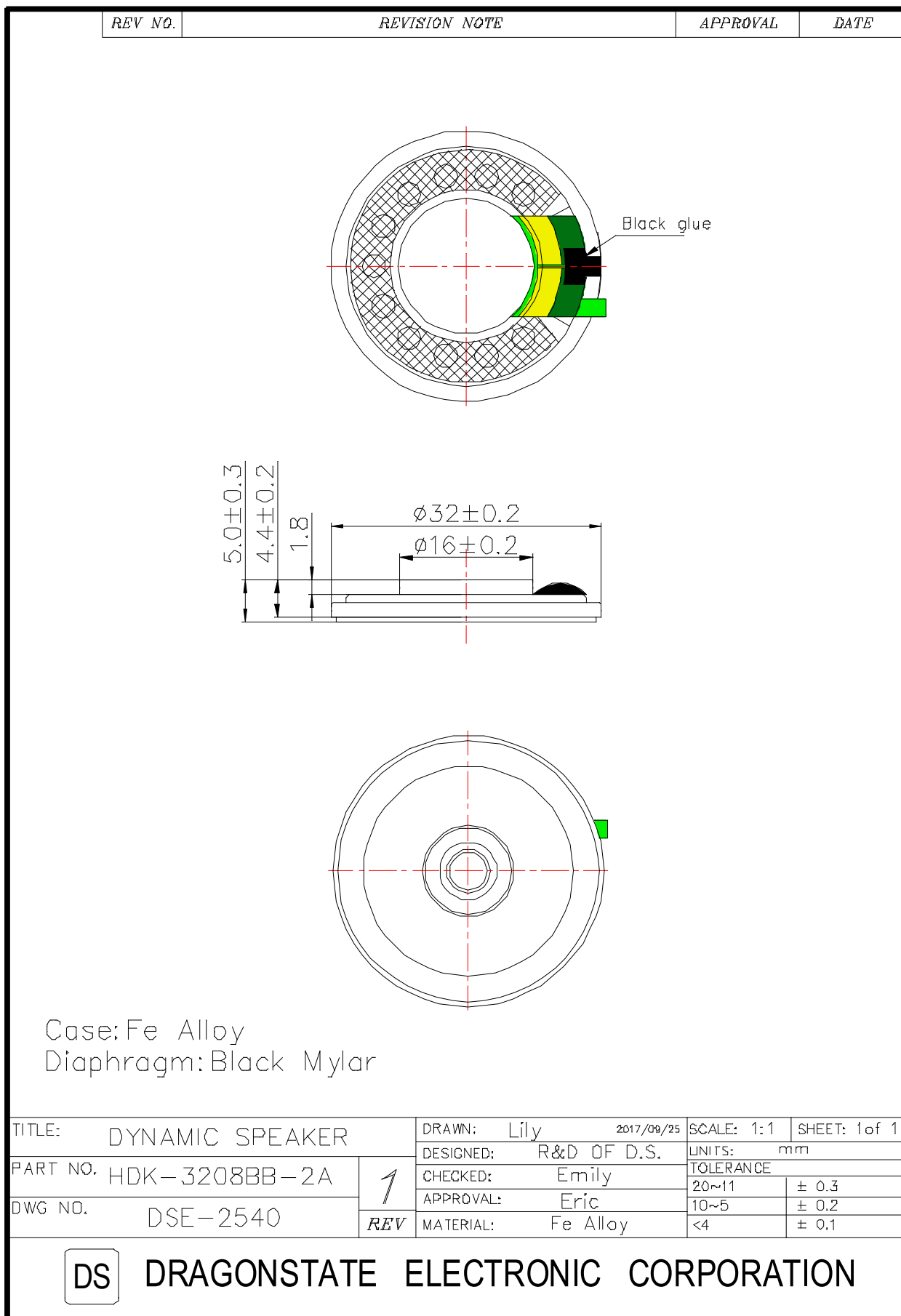
5. Sweep Time : 0.5sec



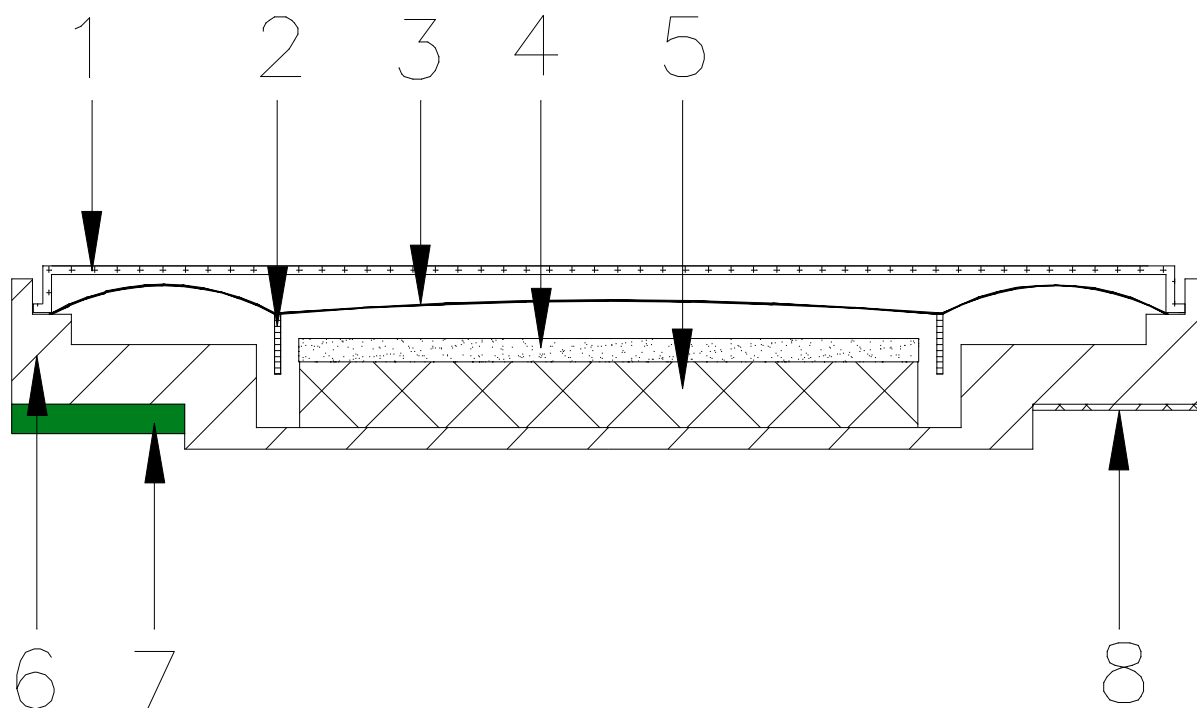
2-3.Frequency Response Curve



3.Dimension

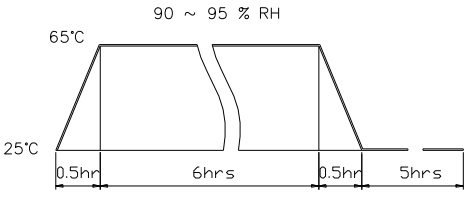


Material and Structure



NO	PART NAME	MATERIAL	Q`TY
1	CAP	SUS 304	1
2	VOICE COIL	COPPER	1
3	DIAPHRAGM	MYLAR	1
4	PLATE	SPCC	1
5	MAGNET	Nd-Fe-B	1
6	FRAME	SPCC	1
7	TERMINAL	AU-PLATED	1
8	GASKET	DUSTROOF NET	1

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 $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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	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.
12	Protection against liquids	Protected against 1 hour of immersion under 2metres 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