

MESSRS.

SPECIFICATION FOR APPROVAL

承 認 书

Product	DYNAMIC SPEAKER
Part No.	HDK-1308DA-13C (RoHS)
Customer Approval	

Approved By	Checked By	Made By
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EDITION: 1. 1

1. Specification

HDK-1308DA-13C (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 13.0 mm	
03	Rated Input Power	0.5W	
04	Max. Input Power	1.0W for 1 minute	
05	Impedance	8 ohm \pm 15% at 2000Hz.	
06	Resonance Frequency (Fo)	950Hz \pm 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	88dB(0.1W/0.1m) \pm 3 dB	at AVE 1.0 - 2.0KHz.
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz, 0.8W.	
10	Voice Coil	Diameter Φ 7.4 mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 6.9 x 1.2mm	
12	Weight	0.65g \pm 5%g	
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: -20℃ to +60℃ Storage temperature: -30℃ to +70℃	

2. Measuring Method

2-1 .Test Condition

STANDARD

Temperature : 15 ~ 35℃

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

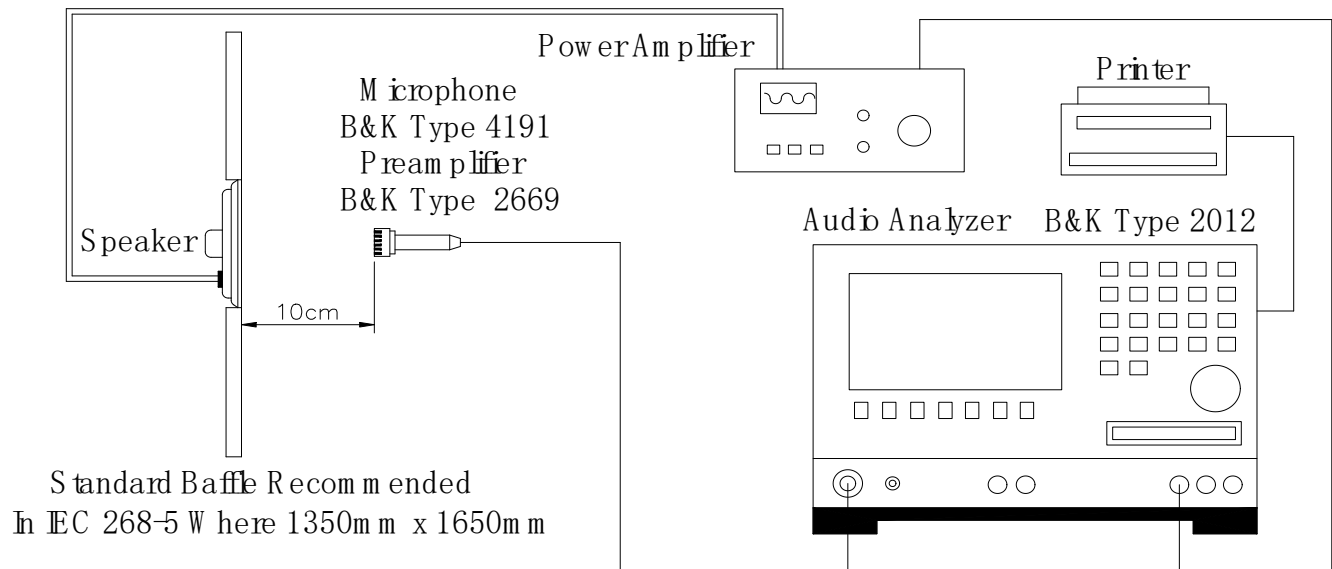
1. Input Power : 0.1W (0.89V)

2. Zero Level : -dB

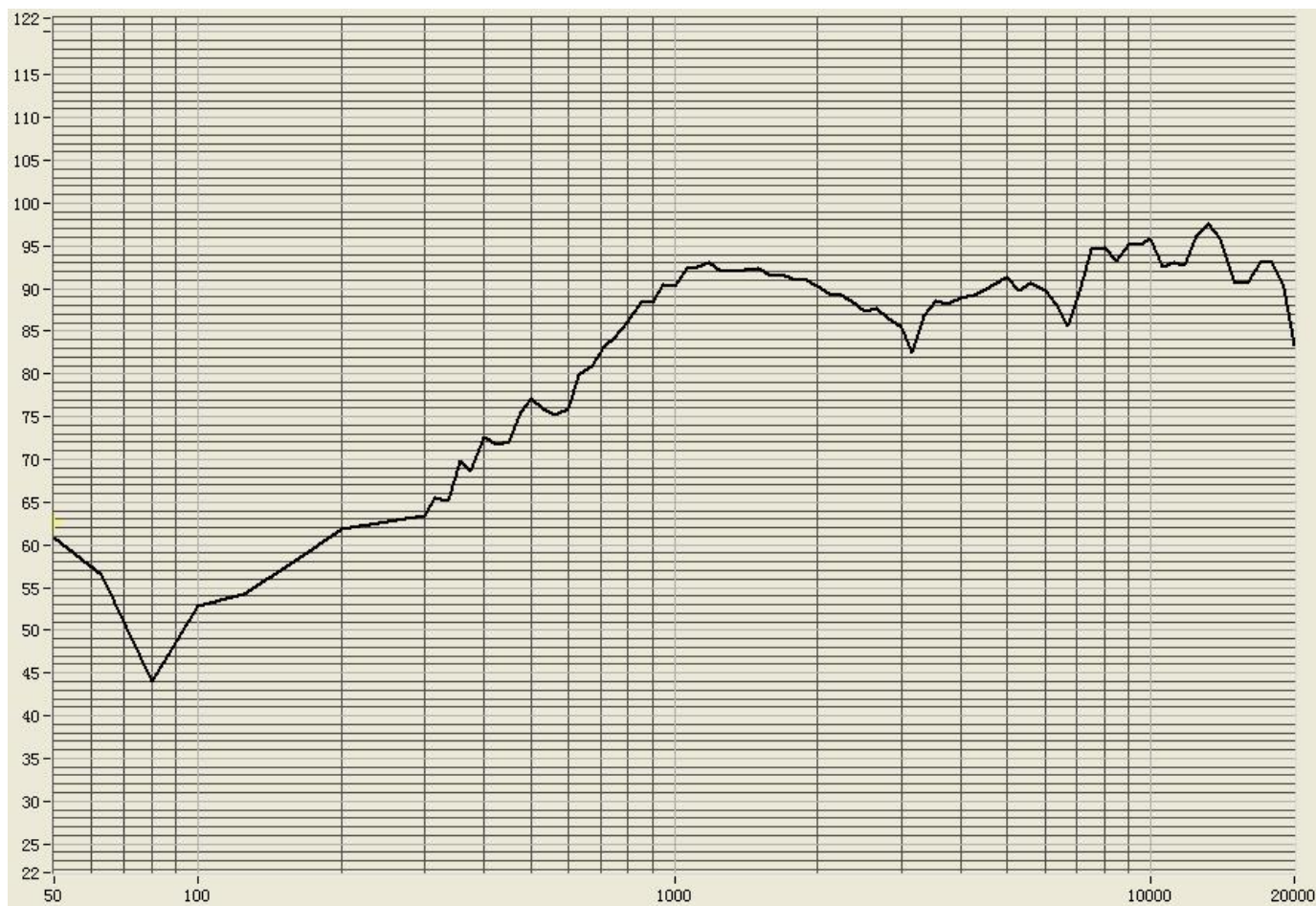
3. Mode : SPEAKER

4. potentiometer Range : 50dB

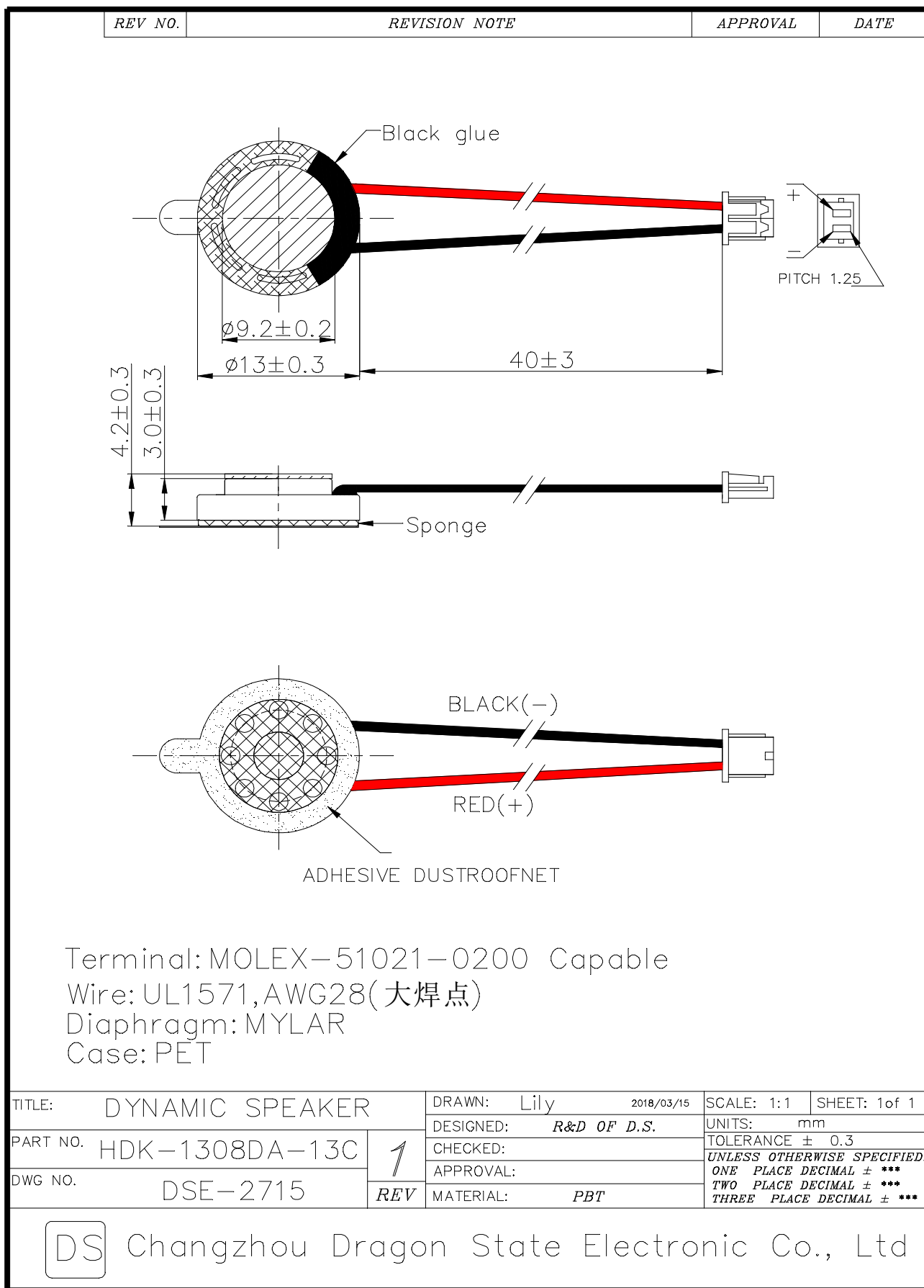
5. Sweep Time : 0.5sec



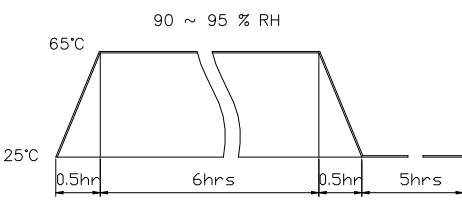
2-3. Frequency Response Curve



3. Dimension



4. Reliability Tests

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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	<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.
Criterion: After these test , the change of S.P.L shall be within ± 3 dB .		

5. SOLDERING CONDITION

Recommend using constant branding iron in 30W, and in temperature range $300 \pm 10^{\circ}\text{C}$. Soldering time 2 seconds.