

MESSRS.

SPECIFICATION FOR APPROVAL

承 认 书

Product	DYNAMIC SPEAKER
Part No.	HDK-2008EA-1P (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 MAR-26-2016	曹丽萍 MAR-26-2016	LILY MAR-26-2016

常州华龙电子有限公司

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EDITION:1.1

1. SPECIFICATION

HDK-2008EA-1P (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 20 mm	
03	Rated Input Power	0.8W	
04	Max. Input Power	1.0W for 1 minute	
05	Impedance	8 ohm \pm 15% at 1500Hz.	
06	Resonance Frequency (Fo)	800Hz \pm 20% at Fo, 1V	
07	Resonance Frequency in Box(f0)	1500 Hz \pm 20% at Fo, 1V	
08	Sensitivity (S.P.L.)	86dB(0.1W/0.1m) \pm 3 dB	at AVE 1.0K 1.2K 1.5K 2.0KHz.
		92dB (0.8W / 0.1m) \pm 3 dB	
09	Frequency Range	Fo - 10KHz	
10	Total Harmonics Distortion	Max 8 % at 1 KHz, 0.8W.	
11	Voice Coil	Diameter 8.95 mm	
12	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 8.2 x 1.4 mm	
13	Weight	2.2g \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 - 0.8 W	
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. TEST CONDITION

STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

BASIC

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

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

Standard Test Fixture

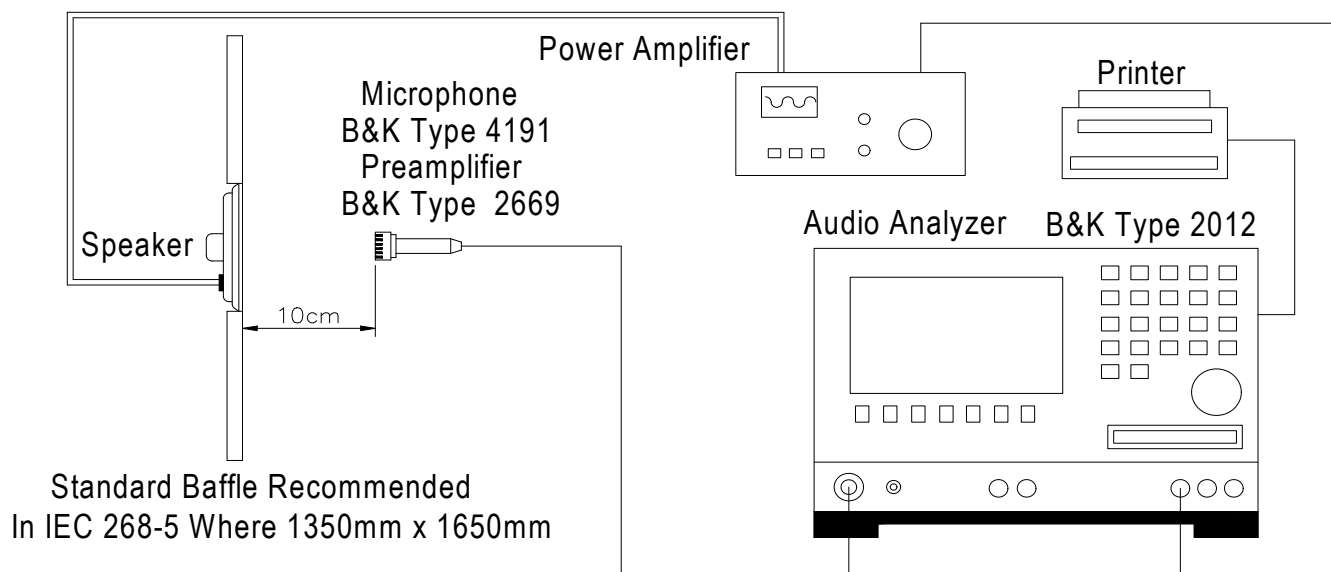
1. Input Power : 0.8W (2.53V)

2. Zero Level : -dB

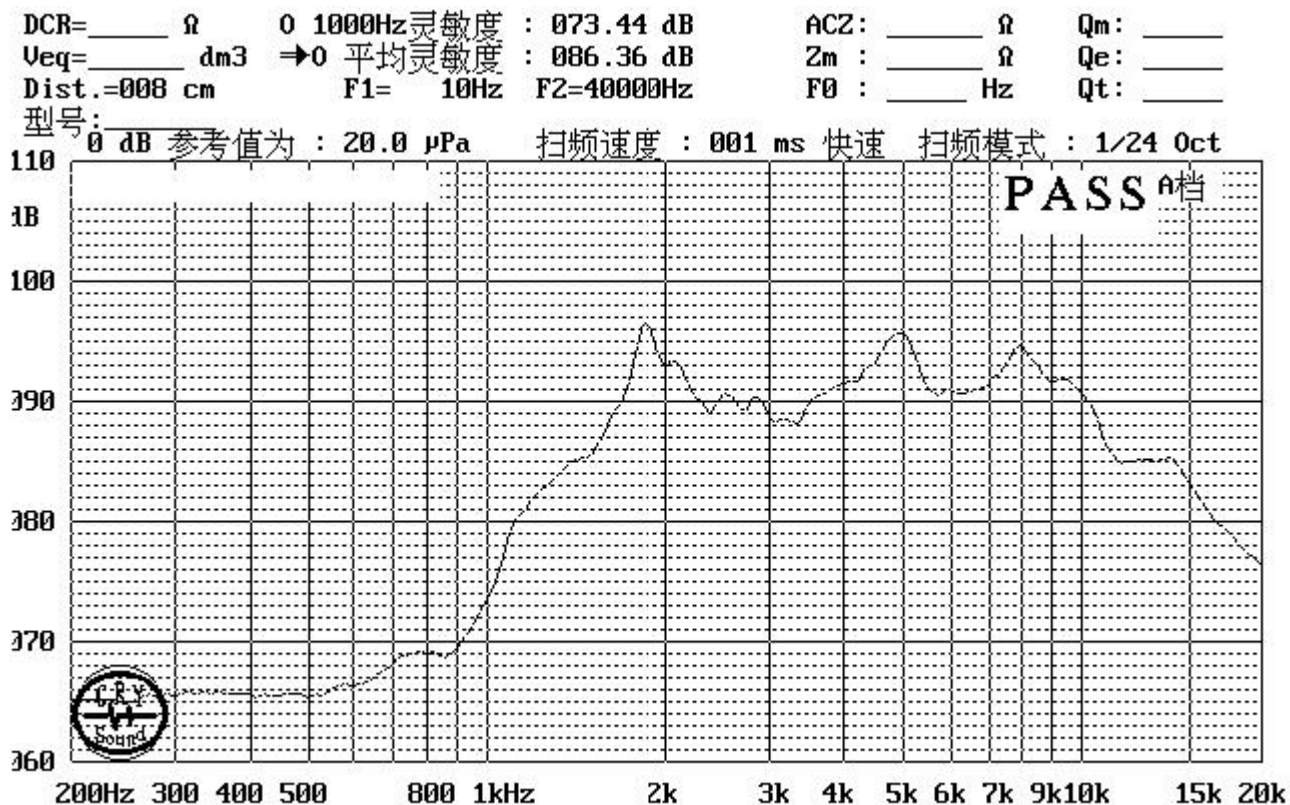
3. Mode : SPEAKER

4. potentiometer Range : 50dB

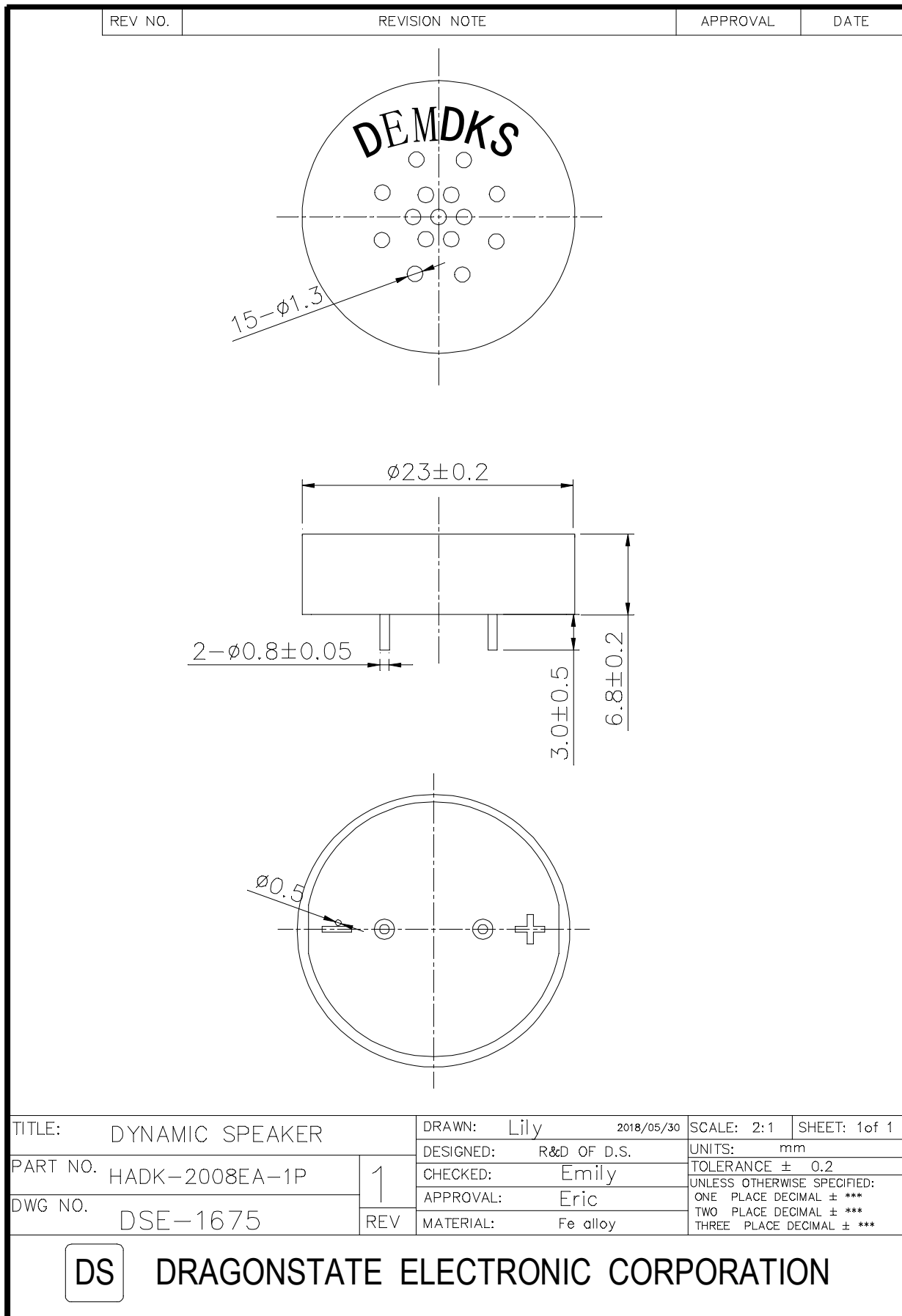
5. Sweep Time : 0.5sec



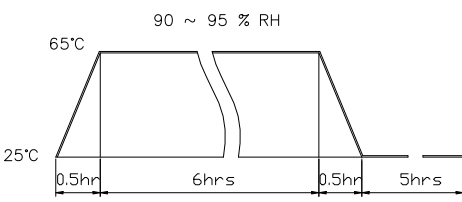
3. FREQUENCY RESPONSE CURVE



4. DIMENSION



5. 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:

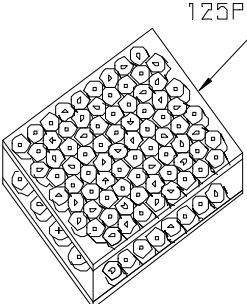
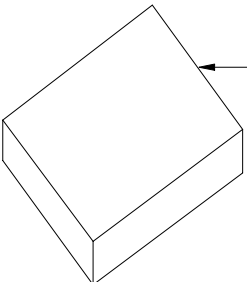
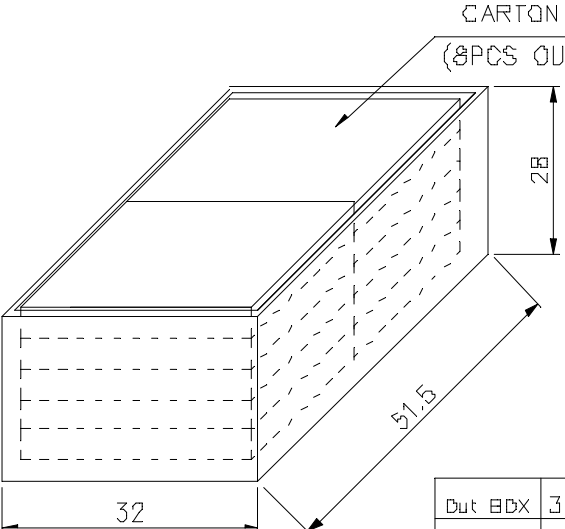
After these test , the change of S.P.L shall be within ± 3 dB .

SOLDERING CONDITION

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

Soldering time not over 3 seconds.

6. PACKING

REV NO.	REVISION NOTE	APPROVAL	DATE						
									
									
									
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Out BOX</td> <td style="width: 40%;">300*250*5mm</td> <td style="width: 40%;">250PCS</td> </tr> <tr> <td>Carton Box</td> <td>515*320*280mm</td> <td>2000PCS</td> </tr> </table>		Out BOX	300*250*5mm	250PCS	Carton Box	515*320*280mm	2000PCS
Out BOX	300*250*5mm	250PCS							
Carton Box	515*320*280mm	2000PCS							
TITLE: <i>PACKING</i>		DRAWN: Lily 2018/05/11							
PART NO.		DESIGNED: R&D OF D.S.							
<div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">1</div> <div style="text-align: right;">REV</div> </div>		CHECKED: Emily							
		APPROVAL: Eric							
		MATERIAL: *****							
		SCALE:	SHEET:						
		UNITS: cm							
		TOLERANCE ±0.5							
		UNLESS OTHERWISE SPECIFIED							
		ONE PLACE DECIMAL ± ***							
		TWO PLACE DECIMAL ± ***							
		THREE PLACE DECIMAL ± ***							
<div style="display: flex; align-items: center; justify-content: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">DS</div> <div>DRAGONSTATE ELECTRONIC CORPORATION</div> </div>									