

*MESSRS.*SPECIFICATION FOR APPROVAL
承 認 书

Product	DYNAMIC SPEAKER
Part No.	HDK-1508EA-9W5 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
王台平 MAY-08-2018	曹丽萍 MAY-08-2018	LILY MAY-08-2018

常 州 华 龙 电 子 有 限 公 司

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EDITION:1. 1

1. Specification

HDK-1508EA-9W5 (RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 15 mm	
03	Rated Input Power	1.0W	
04	Max. Input Power	1.1W for 1 minute	
05	Impedance	8 ohm \pm 15% at 2000Hz.	
06	Resonance Frequency (Fo)	1000Hz \pm 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	93dB (0.5W / 0.1m) \pm 3 dB	at AVE 1.0K, 1.2K, 1.5K, 2.0KHz
		95.5dB (1.0W / 0.1m) \pm 3 dB	
08	Frequency Range	Fo - 20KHz	
09	Total Harmonics Distortion	Max 8 % at 1 KHz, 0.5W.	
10	Voice Coil	Diameter 8.4mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 7.9x 1.0mm	
12	Weight	1.6g \pm 0.3g	
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 - 1.0W	
15	Buzz, Rattle, etc.	Should not be audible at 2.83V 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°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 : $20 \pm 3^{\circ}\text{C}$

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2-2. Standard Test Fixture

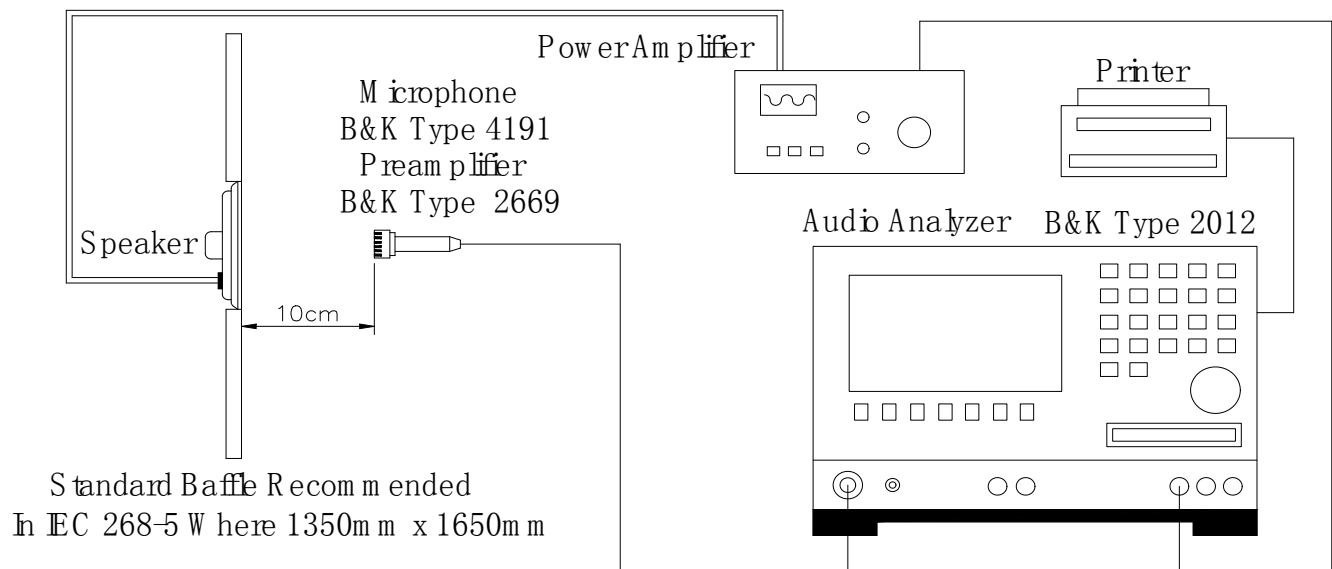
1. Input Power : 0.5W (2.0V)

2. Zero Level : -dB

3. Mode : SPEAKER

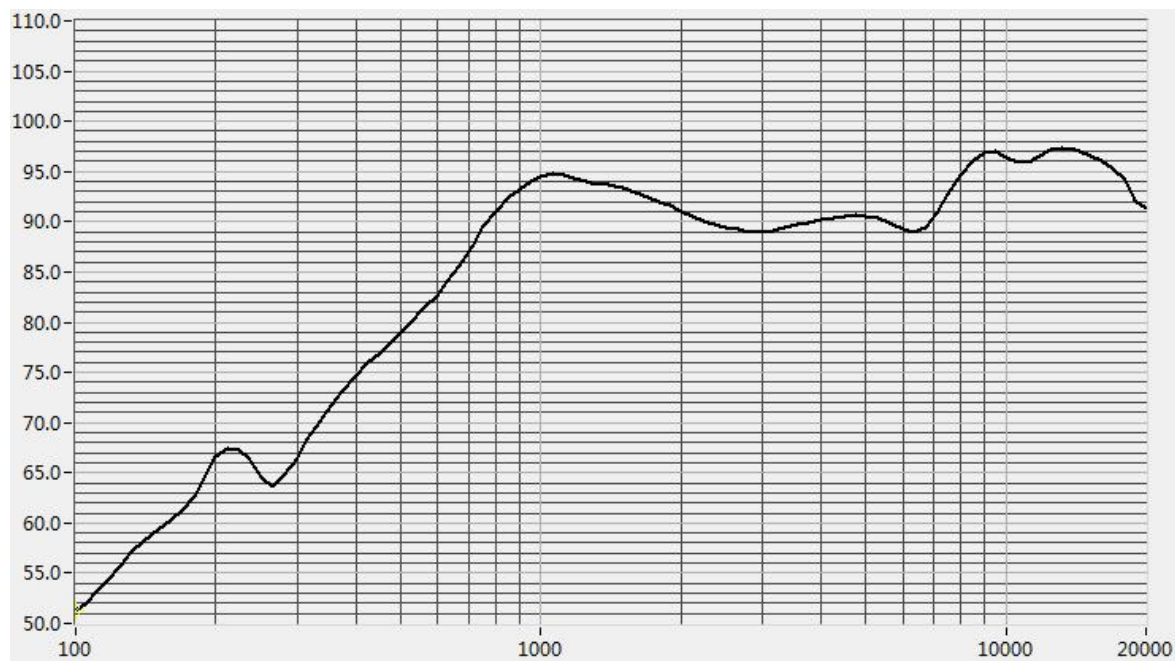
4. potentiometer Range : 50dB

5. Sweep Time : 0.5sec

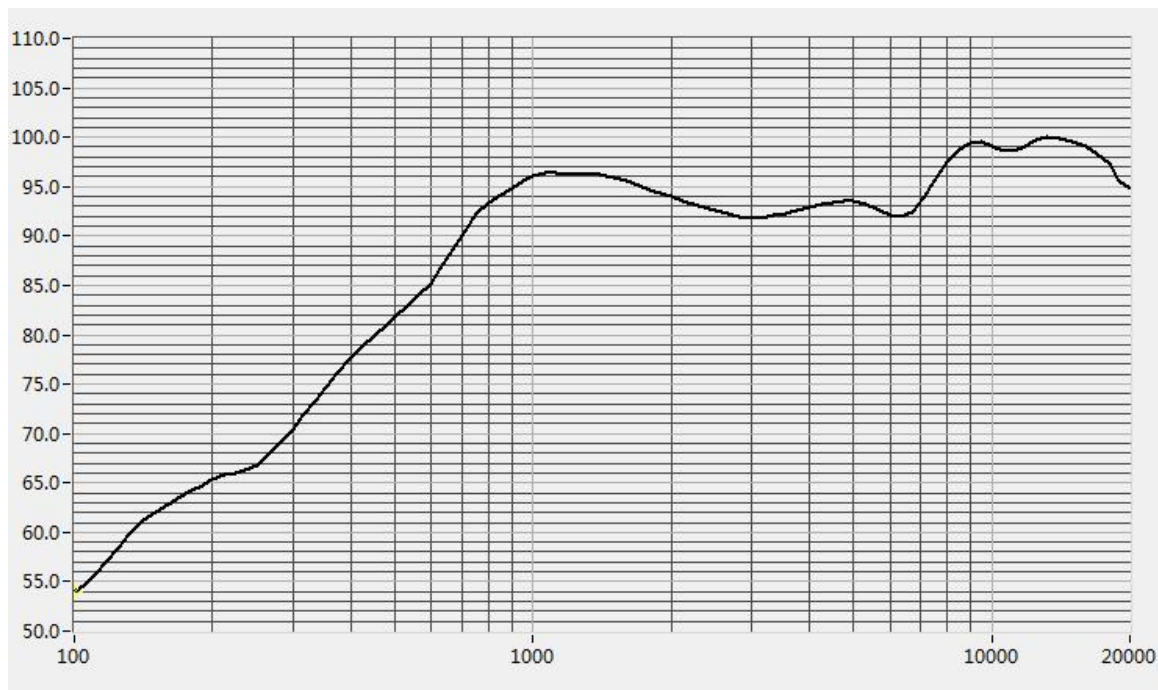


2-3. Frequency Response Curve

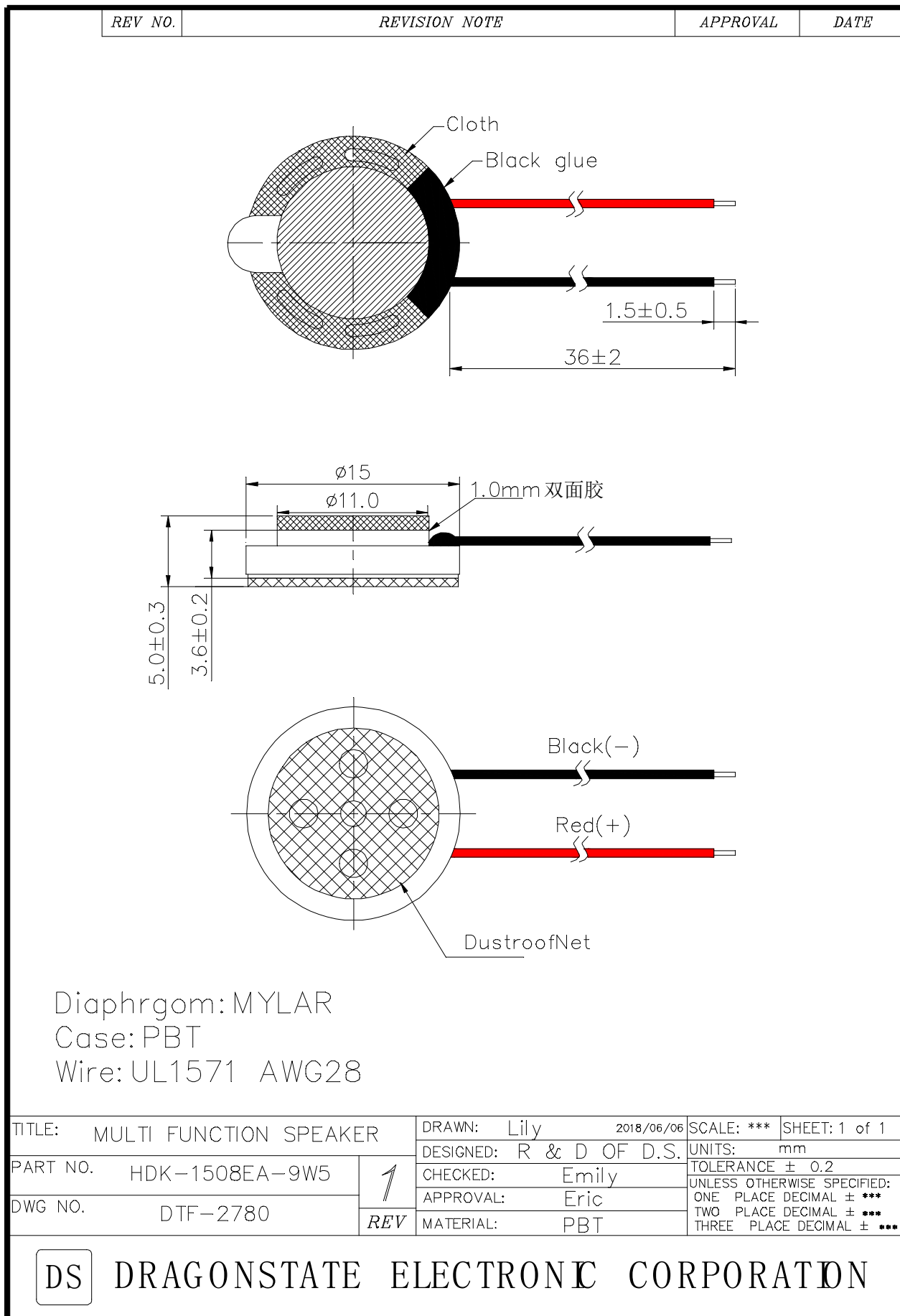
FR 0.5W/10cm



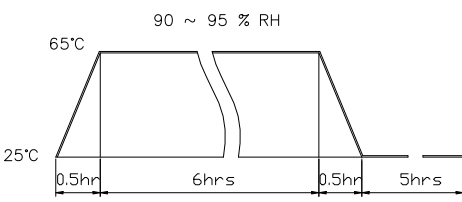
FR 1.0 W/10cm



3. Dimension




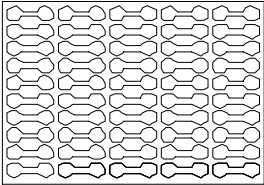
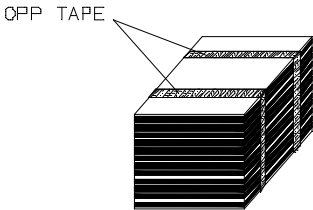
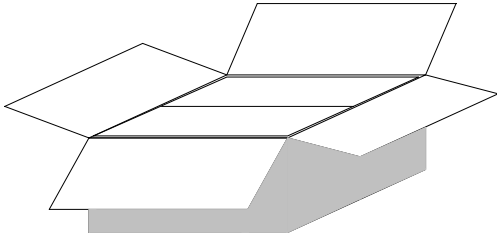
4. Reliability Tests

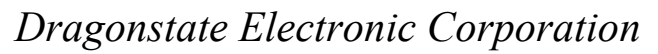
Items.		Specifications
01	High temp. Test	Keep 96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	Humidity 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 .		

Soldering Condition

Recommend using constant branding iron in 15 ~ 30W, and in temperature range $350 \pm 10^{\circ}\text{C}$.
 Soldering time not over 2 seconds.

5. Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>Cover(325*245*5mm) Material: Paper</p> </div> <div style="text-align: center;">  <p>Box(325*245*13mm) 100pcs Material: Paper+Epe</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  <p>OPP TAPE</p> </div> <div style="text-align: center;"> <p>Middle(325*245*155mm) 1000pcs(10*100pcs) Material: Paper+Epe</p> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;"> <p>Outer Box(490*360*350mm) 5000pcs(5*1000pcs) Material: Paper</p> </div> </div> <p style="text-align: center; margin-top: 20px;">单位：mm</p>			
TITLE: packing		DRAWN: Lily 2015/09/25	
PART NO.		DESIGNED: R&D OF D.S.	
		CHECKED: Emily	
DWC NO.		APPROVAL: Eric	
		MATERIAL: ***	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">DS</div> <div style="display: inline-block; vertical-align: middle;"> DRAGONSTATE ELECTRONIC CORPORATION </div>		SCALE: 2:1	
		SHEET: 1 of 1	
<div style="border: 1px solid black; padding: 5px; display: inline-block; font-size: 2em;">1</div> <div style="display: inline-block; vertical-align: middle;">REV</div>		UNITS: mm	
		TOLERANCE	
		20~11 ± 0.3	
		10~5 ± 0.2	
		<4 ± 0.1	

[illegible]