

MESSRS.

SPECIFICATION FOR APPROVAL**承 认 书**

Product	DYNAMIC SPEAKER
Part No.	HDK-4004VC-1 (RoHS)
Customer Approval	

Approved By	Checked By	Made By
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1. Specification
HDK-4004VC-1(RoHS)

ITEM		SPECIFICATIONS	
01	Type	Dynamic speaker	
02	Dimension	External diameter 40 mm	
03	Rated Input Power	2.0W	
04	Max. Input Power	3.0W for 1 minute	
05	Impedance	4 ohm \pm 15% at 800Hz.	
06	Resonance Frequency (Fo)	210Hz \pm 20% at Fo, 1V	
07	Sensitivity (S.P.L.)	88dB (0.1W / 0.1m) \pm 3dB	at AVE 0.6K,0.8K,1.0K,1.2KHz
08	Frequency Range	Fo – 15KHz	
09	Total Harmonics Distortion	Max 5% at 1 KHz,3.0W.	
10	Voice Coil	Diameter 13.3mm	
11	Magnet	Rare earth permanent (Nd-Fe-B) magnet Φ 35*28*6	
12	Weight	43.5g \pm 8%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 – 2.0W	
15	Buzz, Rattle, etc.	Should not be audible at V sine 2.83Wave 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: -30°C to +50°C Storage temperature: -40°C to +60°C	

2. Measuring Method

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

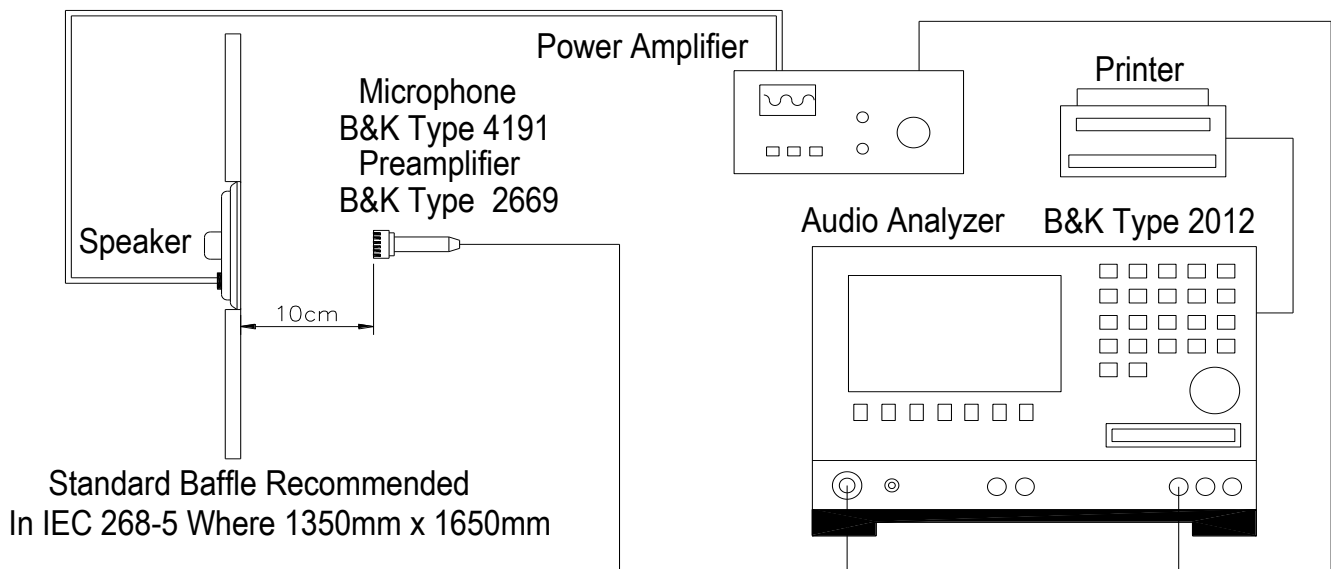
1. Input Power : 0.1W (0.63V)

2. Zero Level : -dB

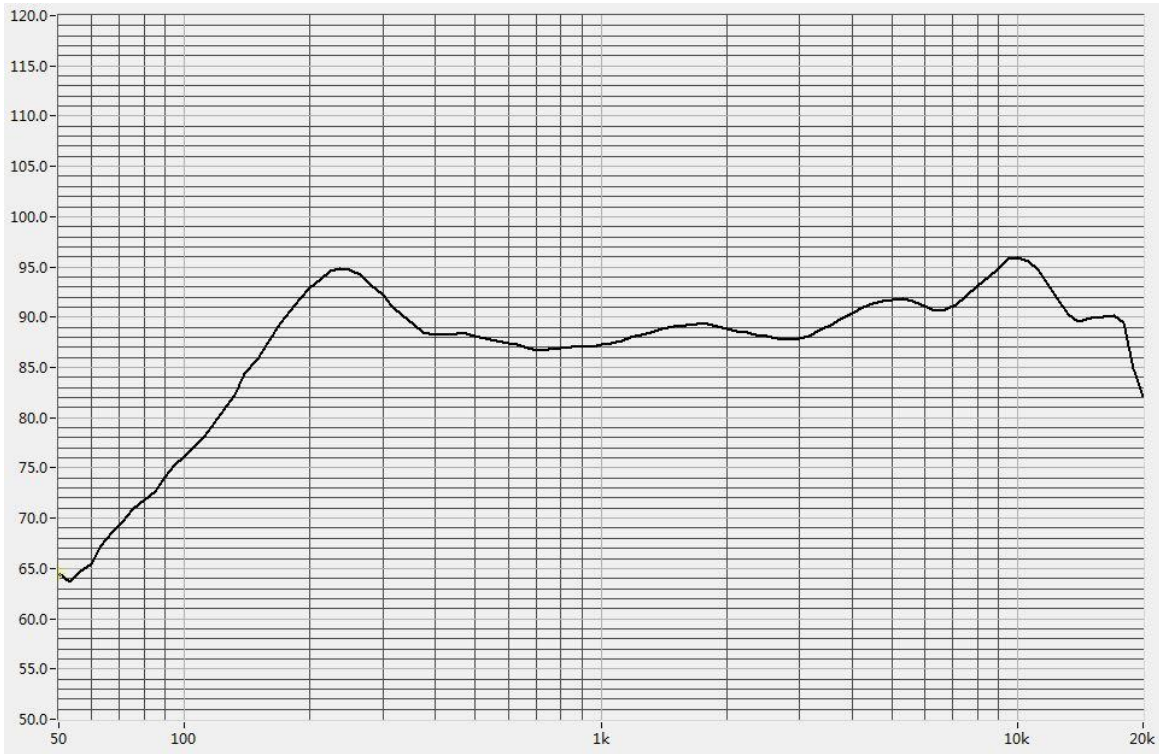
3. Mode : SPEAKER

4. potentiometer Range : 50dB

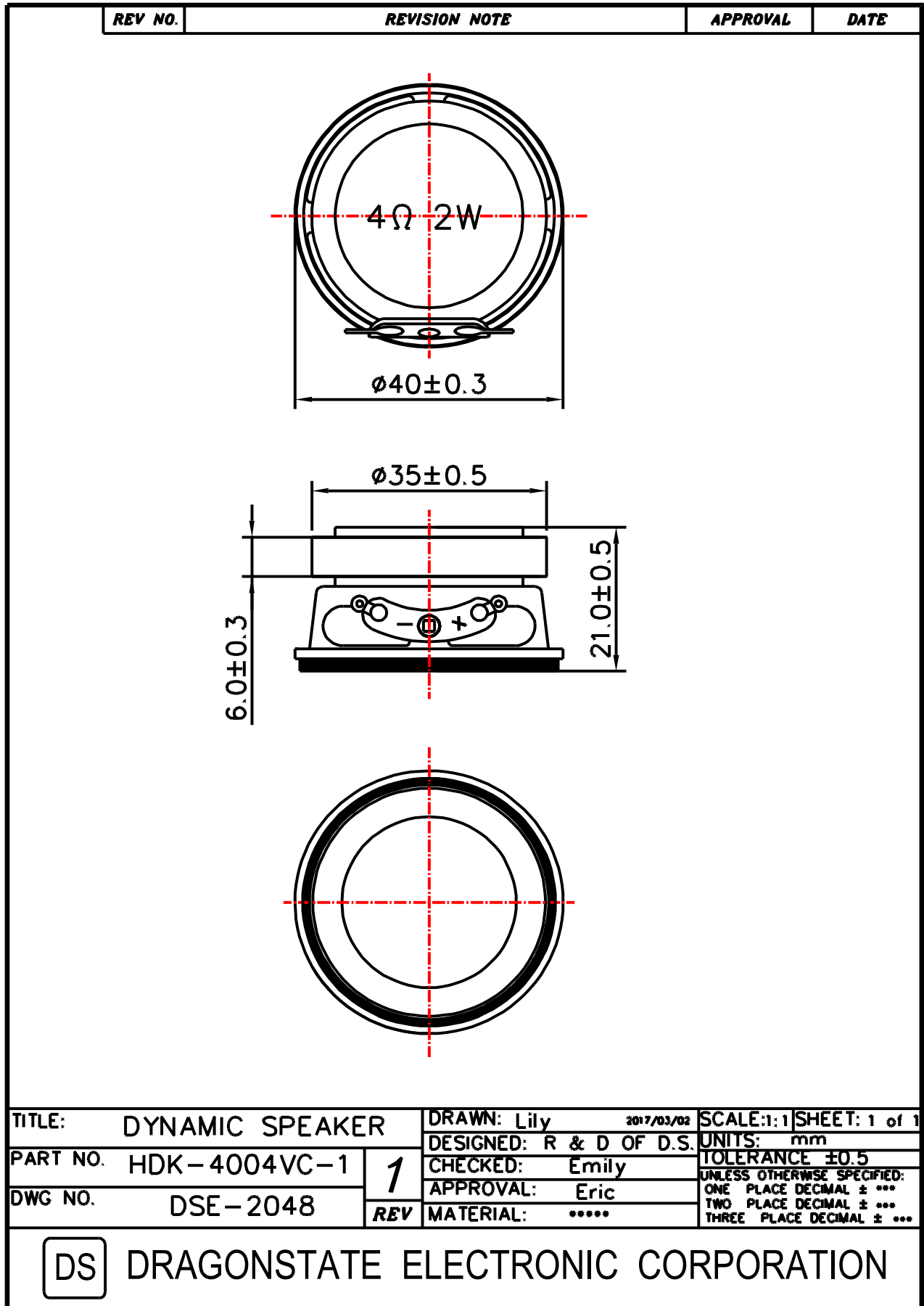
5. Sweep Time : 0.5sec



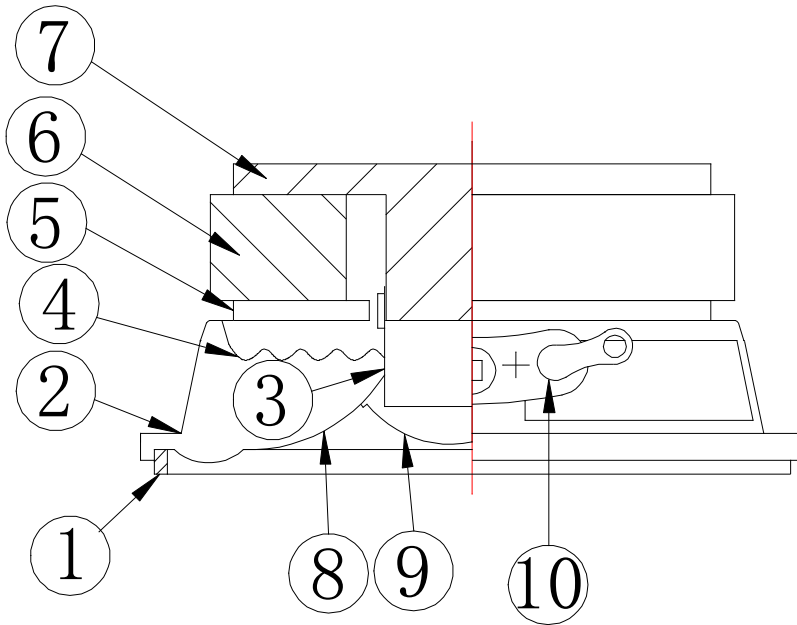
2.3 Frequency Response Curve



3.Dimension

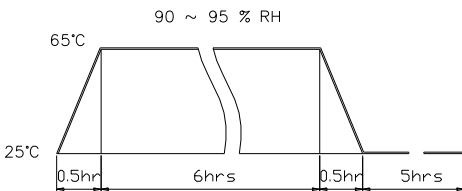


4. Material and Structure



NO	零件 Component	材质 Material
1	压边 Gasket	纸 Paper
2	盆架 Frame	冷轧钢板 SPCC
3	音圈 Voice coil	胶管 KSV+CU
4	弹波 Damper	布 Cloth
5	华司 Washer	冷轧钢板 SPCC
6	磁铁 Magnet	铁氧体 Ferrite
7	T铁 T-yoke	冷轧钢板 SPCC
8	鼓纸 Cone	泡边纸盆 Foam+Paper
9	帽子 Dust cap	白亮帽 Paper
10	接线板 Terminals	纸板+铁 Paper+Steel

5. Reliability Tests

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+60^{\circ}\text{C}\pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-40^{\circ}\text{C}\pm 3^{\circ}\text{C}$ 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: $-40^{\circ}\text{C}\pm 3^{\circ}\text{C}$, temperature: $+85^{\circ}\text{C}\pm 3^{\circ}\text{C}$, 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.
<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 **$350 \pm 10^{\circ}\text{C}$** .

Soldering time not over **3** seconds.

