



# SPECIFICATION

## FOR APPRONAL

Customer : \_\_\_\_\_

Product Name : Dynamic Speaker \_\_\_\_\_

Model Name : VS1609SL1-YS30 \_\_\_\_\_

Drawing No. : VS20131213015 \_\_\_\_\_

### Signature of Voise

Approved by	Checkde by	Issued by	Date



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### 1. Revision

Rev.No	Date	Page	Description of Revision
1.0	2013/12/13		Preliminary

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## 2. Scope

This document contains required environmental, electrical, acoustic, mechanical, package and reliability test requirement

## 3. General Characteristics

- 2.1 Out-Diameter : 16x09 mm
- 2.2 Height : 3 mm
- 2.3 Weight : 1.2 g
- 2.4 Operating Temperature : -20~+60°C without loss of function
- 2.5 Store Temperature : -30~+70°C without loss of function

## 4. Electrical and Acoustic Characteristics.

Test condition : 15 ~ 35 °C Temp., 25% ~ 75% RH, 86~106 kPa Refer to IEC60268-1

No	Items	Specification
1	Impedance	8 Ω ± 15% (1Vrms at 2KHz)
2	Sound Pressure Level	80 dB ± 3dB at 1Vrms/10cm at 1kHz.
3	Resonance Frequency(fo)	600 Hz ± 20% at 1V in free air
4	Frequency Range	fo ~10KHz
5	Input Power	Rated 0.5 W / Max. 0.8 W In 1cc Box
6	Distortion	<15% 700Hz, <8% 1000Hz, <4% 3KHz~10KHz, 1Vrms input
7	Buzz and Rattle	Should not be audible buzzes, rattles when the 2V sine wave signal swept at frequency range.
8	Polarity	When a positive DC current is applied to the voice coil terminal marked (+), the diaphragm shall move to forward.



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## 5. Reliability Test

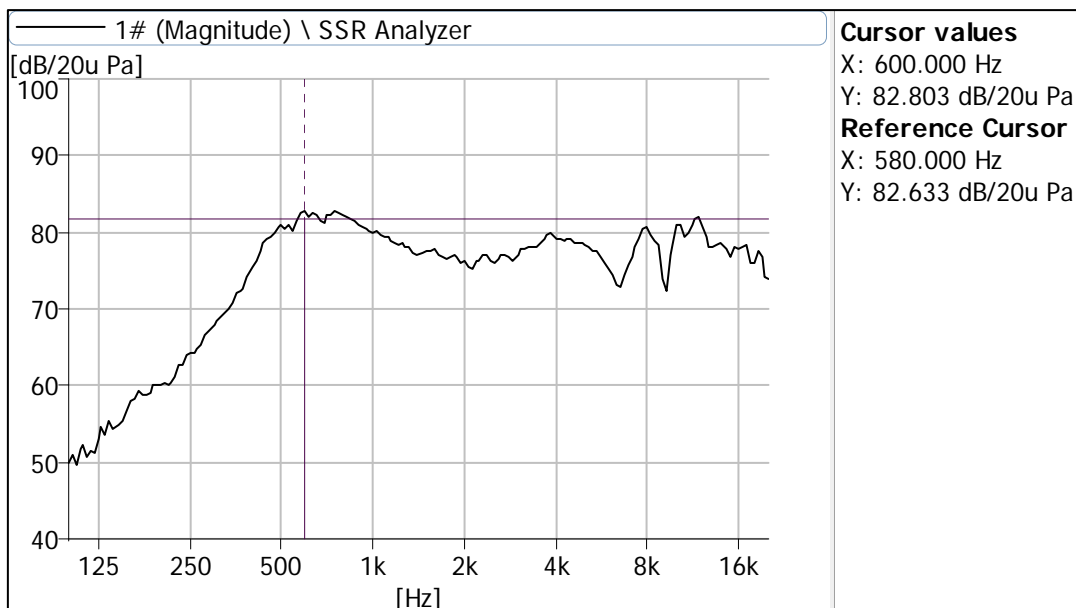
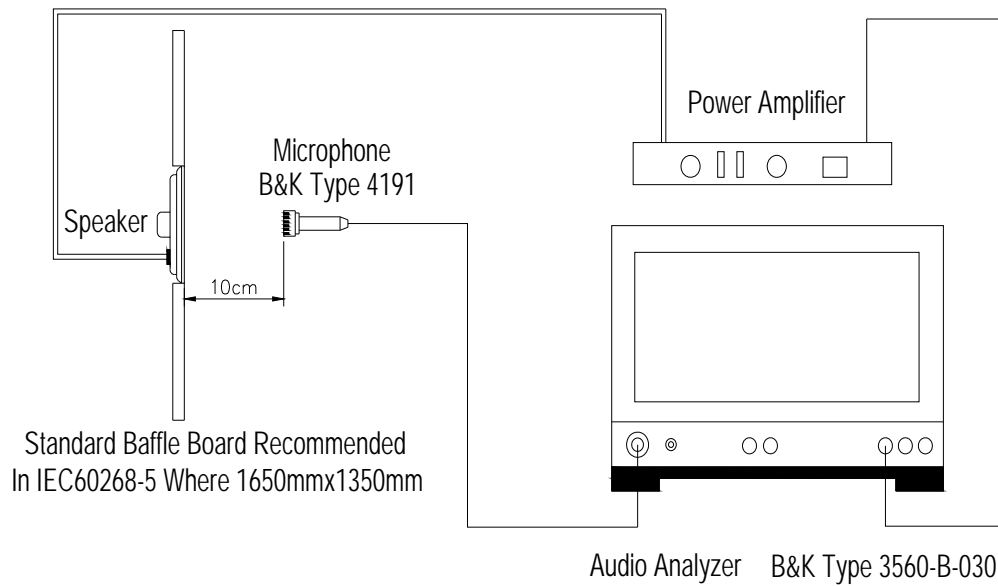
After test(1~7item), the speaker S.P.L . difference shall be within  $\pm 3\text{dB}$ , and the appearance not exist any change to be harmful to normal operation

No	Items	Specification
1	High Temp.Test	Keep 100 hours at $+60\pm 3\text{ }^{\circ}\text{C}$ ,and leave 3 hours in normal temperature and then check.
2	Low Temp.Test	Keep 100 hours at $-30\pm 3\text{ }^{\circ}\text{C}$ ,and leave 3 hours in normal temperature and then check.
3	Humidity Test	Keep 100 hours at $-30\pm 3\text{ }^{\circ}\text{C}$ ,relative humidity 85 to 90% and leave 4 hours in normal temperature and then check.
4	Thermal Shock Test	Each temperature cycle shall consist of 2 hours at $+25\pm 3\text{ }^{\circ}\text{C}$ followed by 2hours at $+60\pm 3\text{ }^{\circ}\text{C}$ ,and followed by 2hours at $-30\pm 3\text{ }^{\circ}\text{C}$ with a 20 to 40 minutes transition time between each 2 temperature extremes. The test duration is for 10 cycle.
5	Vibration Test	Being applied vibration of amplitude of 1.5mm with 10-55-10Hz band of vibration frequency,X.Y.Z.3 direction.2 hours each, total 6 hours.
6	Drop Test	Free drop fram 1.0 meter height to a board 20mm thick hard wood board. and be nothing mechanical damage. tatol 6 times.
7	Load test	Loading white noise with input rate power for 100 hours, then placed in natural condition for 1 hour and then check.
8	Insulation test	When they are measured with DC 100V the insulation resistance between v.c. terminal and frame must be more than $1\text{ M}\Omega$

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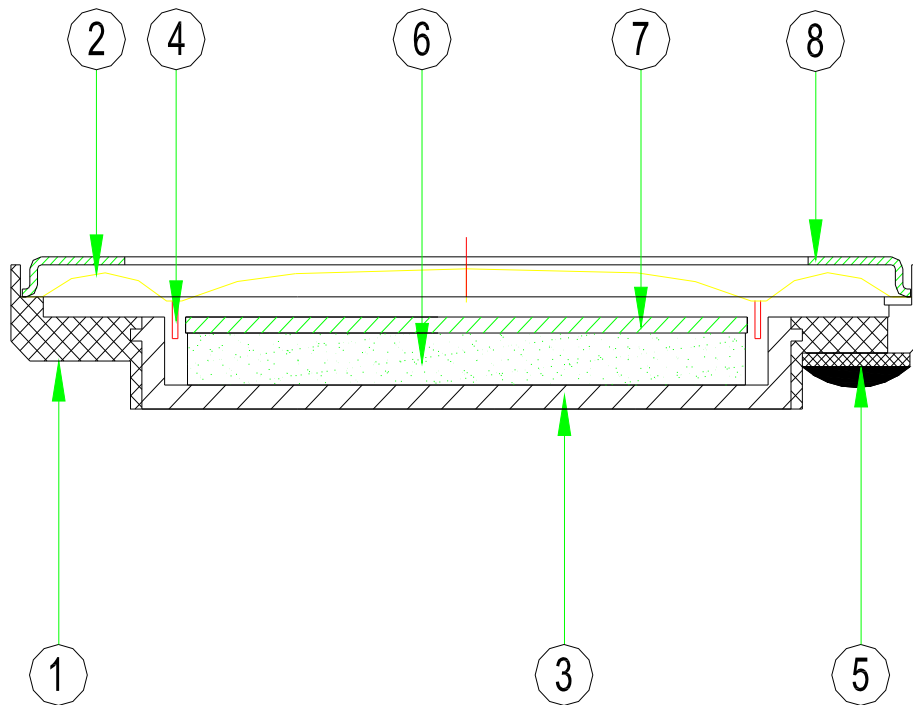
## 6. Measurement Method & Frequency Response curve

### Standard test condition of speaker



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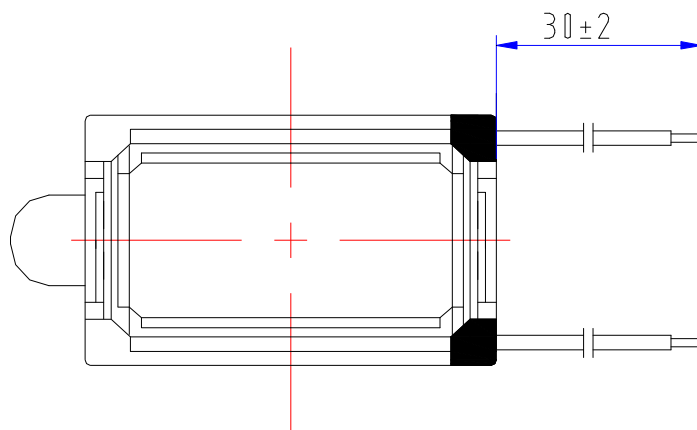
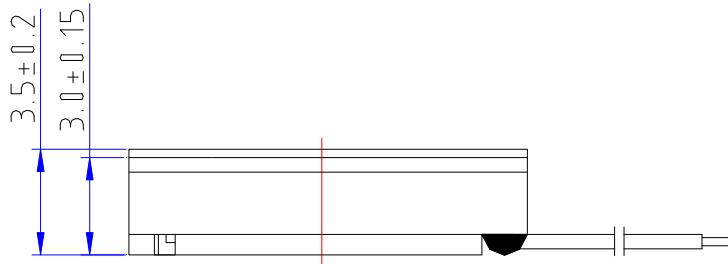
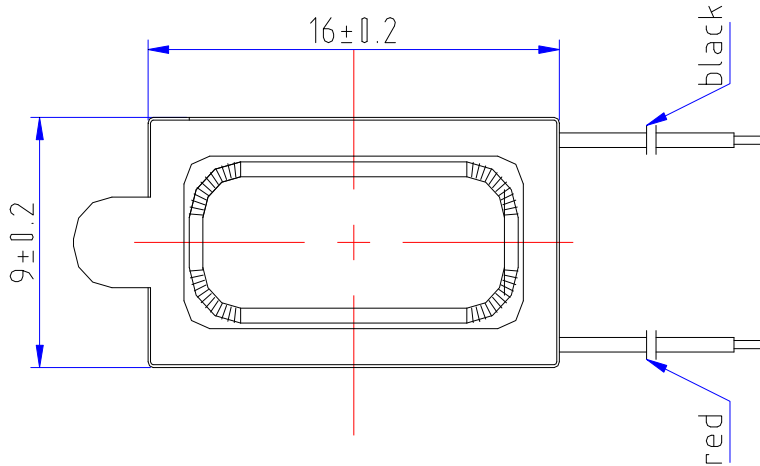
## 7. Mechanical layout



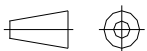
8	Cover	1	PBT	
7	Polarity Plate	1	SPCC	
6	Magnet	1	Nd-Fe-B	
5	PCB	1	CU	
4	Voice coil	1	CU	
3	Yoke	1	SPCC	
2	cone	1	AL+PEEK	
1	Frame	1	PBT	
No.	Part Name	Q'ty	Material	Remarks

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### 8. Dimensions



FIRST ANGLE PROJECTION

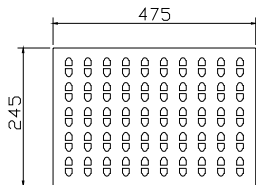


UNIT : mm

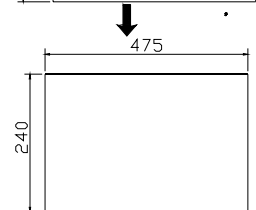
Tolerance :  $\pm 0.2$

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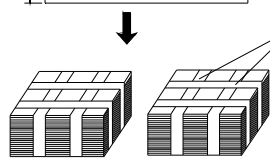
### 9. Packing



Foam Cardboard:288X348X17mm;  
50PCS/1PC

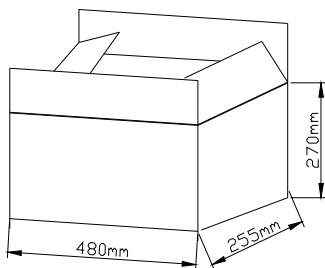


Cardboard:288X348X7mm;

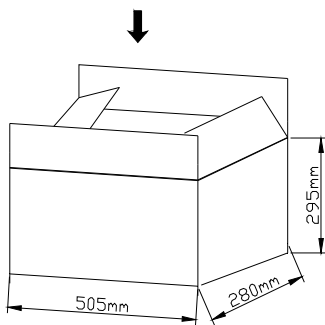


PVC Adhesive Tape

10PCS Foam Cardboard + 1PC Cardboard  
20PCS/Paper Carton



Size:480X255X270mm;  
Paper Carton/1:20X50=1000 PCS



Size:505X280X295mm;  
Paper Carton/1:1=1000 PCS

