



# SPECIFICATION

## FOR APPRONAL

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

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

Model Name : VS4028R8F450P2 \_\_\_\_\_

Drawing No. : VS20140923018 \_\_\_\_\_

### Signature of Voise

| Approved by | Checkde by | Issued by | Date |
|-------------|------------|-----------|------|
|             |            |           |      |



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|                                   |                | Revision No. | 1.0           |
| Model No.:                        | VS4028R8F450P2 | Drawing No.  | VS20140923018 |

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### 1. Revision

| Rev.No | Date      | Page | Description of Revision |
|--------|-----------|------|-------------------------|
| 1.0    | 2014/9/23 |      | 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 : 40x28 mm
- 2.2 Height : 12 mm
- 2.3 Weight : 11.5 g
- 2.4 Operating Temperature : -30~+70°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 0.6KHz)  |
| 2  | Sound Pressure Level    | 89 dB ± 3dB (0.1m/0.1w at 0.6,0.8,1.0,1.2KHZ Average)  |
| 3  | Resonance Frequency(fo) | 450 Hz ± 20% at 1V   |
| 4  | Frequency Range         | fo ~20KHz  |
| 5  | Input Power             | Rated 2 W / Max. 3 W   |
| 6  | Distortion              | Less than 5% at 1kHz 1.0W  |
| 7  | Buzz and Rattle         | Should not be audible buzzes,rattles when the 4V 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

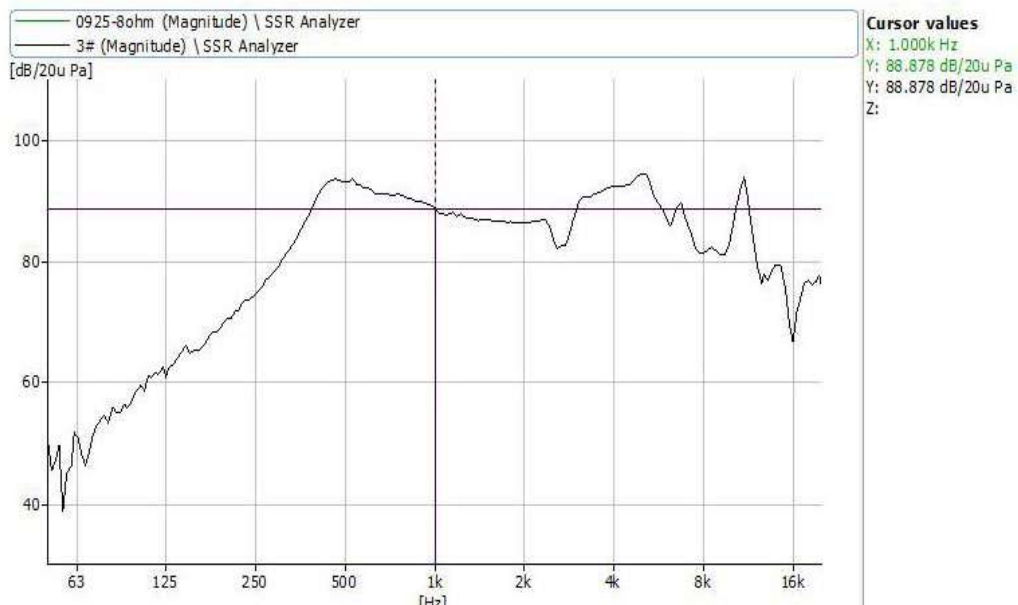
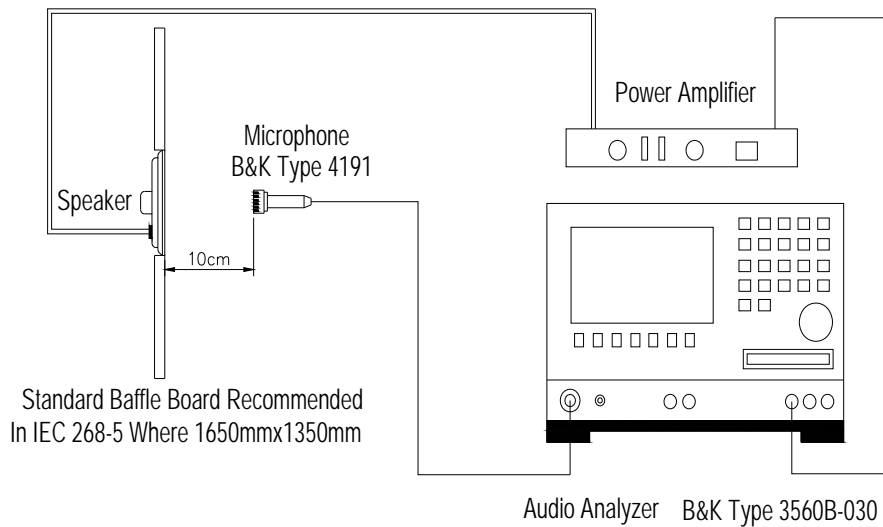
After test(1~7item), the speaker S.P.L . difference shall be within  $\pm 3\text{dB}$ , and the appearance not exist any change to be harmful to normal operation

| No | Items              | Specification  |
|----|--------------------|--|
| 1  | High Temp.Test     | Keep 100 hours at $+70\pm 3\text{ }^\circ\text{C}$ ,and leave 2 houres in normal temperature and then check.   |
| 2  | Low Temp.Test      | Keep 100 hours at $-30\pm 3\text{ }^\circ\text{C}$ ,and leave 2 houres 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 2 houres 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 $+70\pm 3\text{ }^\circ\text{C}$ ,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 M $\Omega$   |

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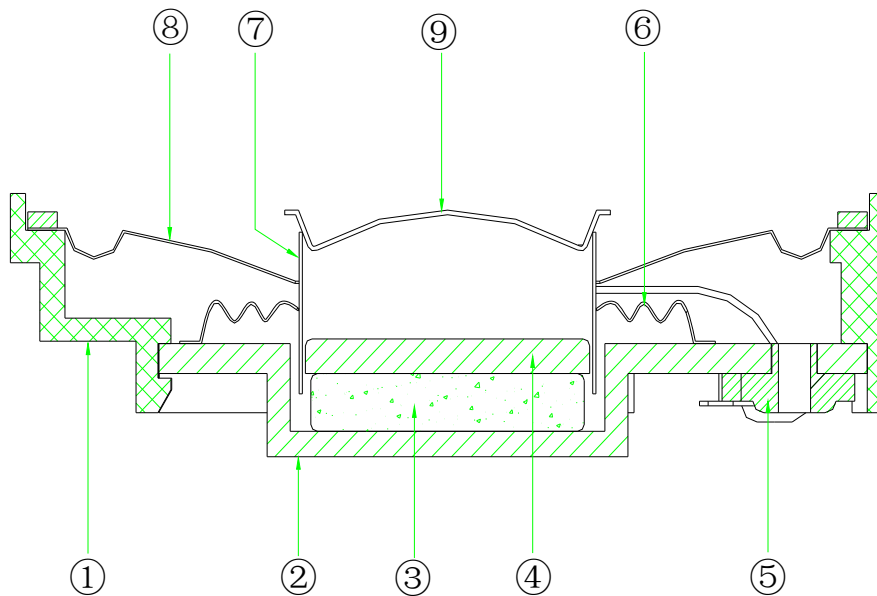
## 6. Measurement Method & Frequency Response curve

Standard test condition of speaker



|                                   |                |              |               |
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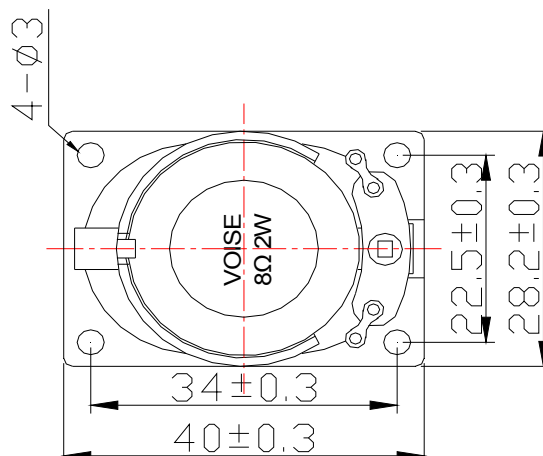
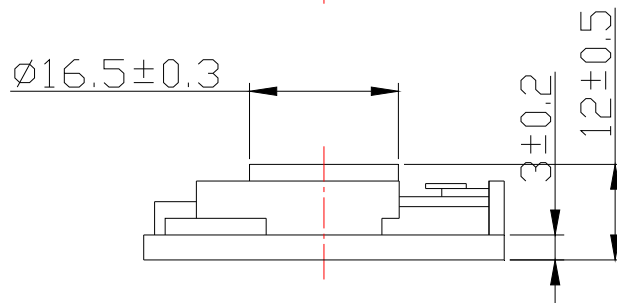
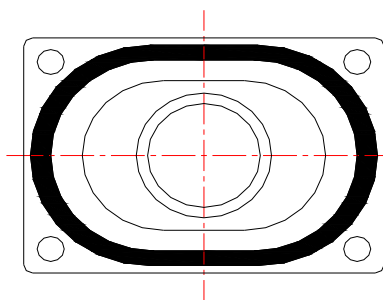
## 7. Mechanical layout



| 9   | Dust cap   | 1    | PAPER         |         |
|-----|------------|------|---------------|---------|
| 8   | Diaphragm  | 1    | Cloth + PAPER |         |
| 7   | Voice Coil | 1    | Paper+Copper  |         |
| 6   | Damper     | 1    | CLOTH         |         |
| 5   | Terminal   | 1    | MylarFe+PAPER |         |
| 4   | Plate      | 1+1  | SPCC          |         |
| 3   | Magnet     | 1    | Nd-Fe-B       |         |
| 2   | Yoke       | 1    | SPCC          |         |
| 1   | Frame      | 1    | ABS           |         |
| No. | Part Name  | Q'ty | Material      | Remarks |

|                                   |                |              |               |
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### 8. Dimensions



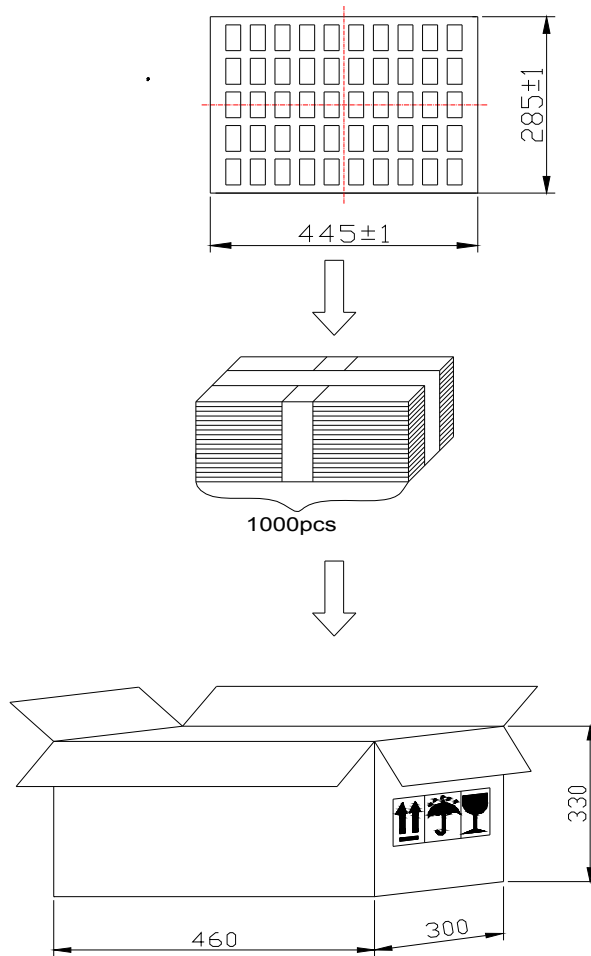
FIRST ANGLE PROJECTION



UNIT : mm  
 Tolerance :  $\pm 0.2$

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## 9. Packing



50 pcs per tray

20 trays for unit

Total:1000 pcs per carton

Size:46×30×33cm