soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-2040

Release | Revision: B/2017

CONTENTS

This document contains the technical specifications for the dynamic speaker unit.

Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

86dB(1W/0.5m) ±3dB at AVE 0.8KHz, 1.0KHz, 1.2KHz, 1.5KHz
Measuring conditions and procedures shown in Fig 1 & Fig 2

Frequency Response Curve

As shown in Figure 3

Resonance Frequency (F0)

650 ±20%Hz

Input Power (Nominal and Maximum)

Rated Noise Power: 1.0W

Short Term Max Power: 2.0W

Frequency Range

F0 ~ 6KHz.

Buzz, Rattle, Etc

Not audible from 650Hz to 20KHz with 2.83V Sine Wave Input

Polarity

When positive voltage is applied to the terminal marked (+), diaphragm should be moved to the front.

Magnet

Rare earth permanent (NdFeB) magnet φ11x2mm

AC Impedance

8Ω ±15%

Distortion

Input Rated Power to 1.0W

Dimension

20x40x8.4mm

General Specifications

Operating Temperature Range

-30℃~+80℃

Storage Temperature Range

-40˚C ~ +85˚C

Standard Test Conditions

Temperature 5℃~35℃

Relative Humidity 45%~80%(RH)

Air Pressure 860 mbar ~ 1060 mbar

IP Level

No rating

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Reliability Tests

The sound pressure as specified will neither deviate more than ±3dB from the initial value, nor have any significant damage after any of following testing.

High Temperature Test

High Temperature +85±3℃

Duration 96 hours

Low Temperature Test

Low Temperature -40±3℃

Duration 96 hours

Humidity Test

Temperature +40±3℃

Relative Humidity 92%~95%

Duration 96 hours

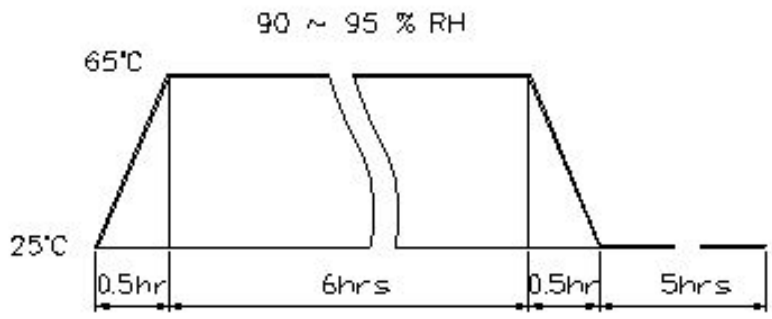
Vibration

10Hz ~ 55Hz ~ 10Hz sine wave sweep 15 minute 5G(constant)

X, Y, Z 3 directions, 2 hours each, total 6 hours

Temperature Cycle Test

The part will be subjected to 5 cycles. One cycle shall be 12 hours and consist of:



Drop Test

Free drop from 100cm height to the concrete floor
X,Y, Z 6 directions 1 time each, total 6 times

Load Test

Rated Power White noise is applied for 96 hours at room temp.

Max Power Test

Max power 1 minute on - 2 minutes off, 10 cycles

Terminal Strength Test

Capable of withstanding 1kg load for 30 seconds without resulting in any damage or rejection

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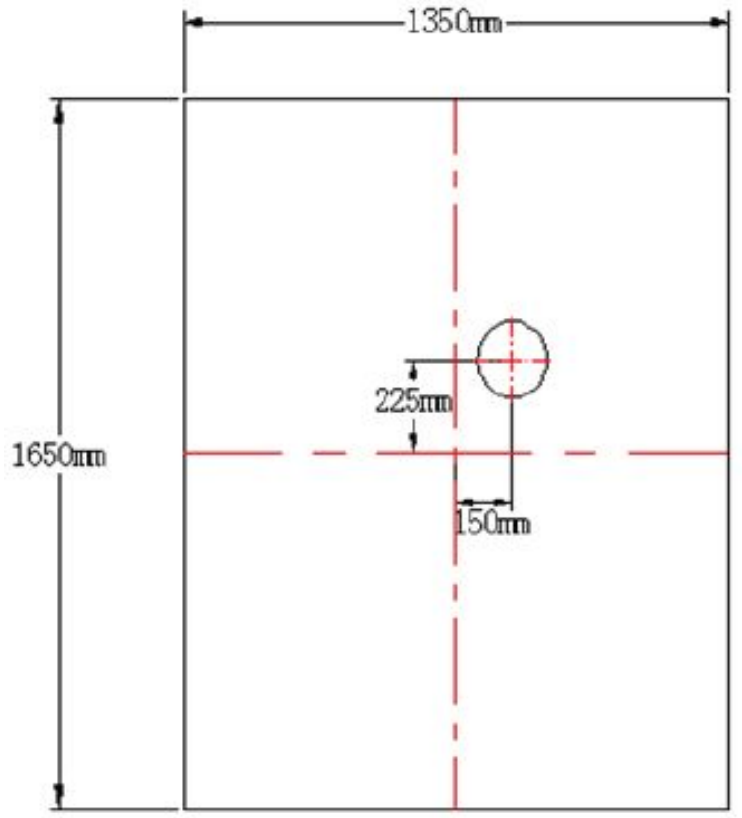
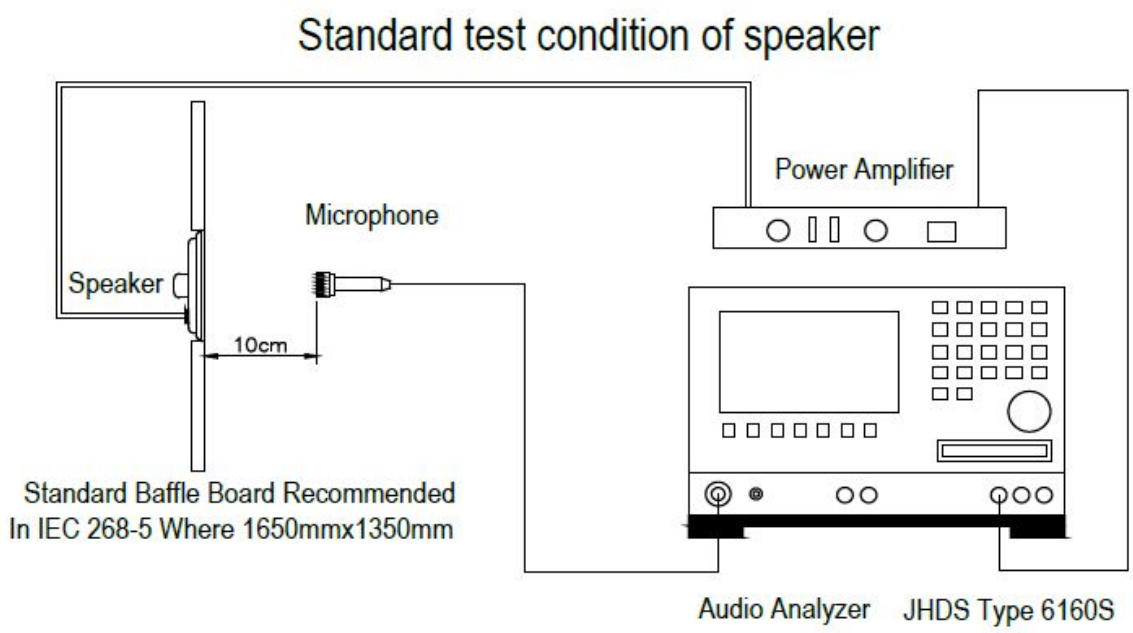
Measuring Method (Speaker Mode) (Fig. 1)



Block Diagram for Measurement Method (Fig. 2)



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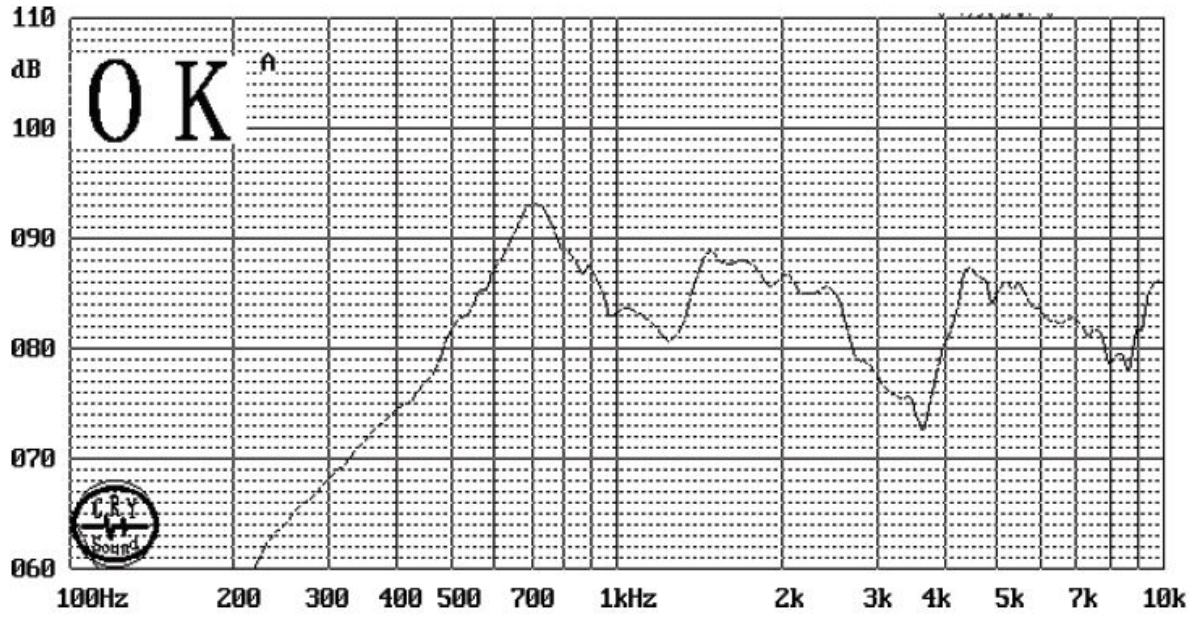
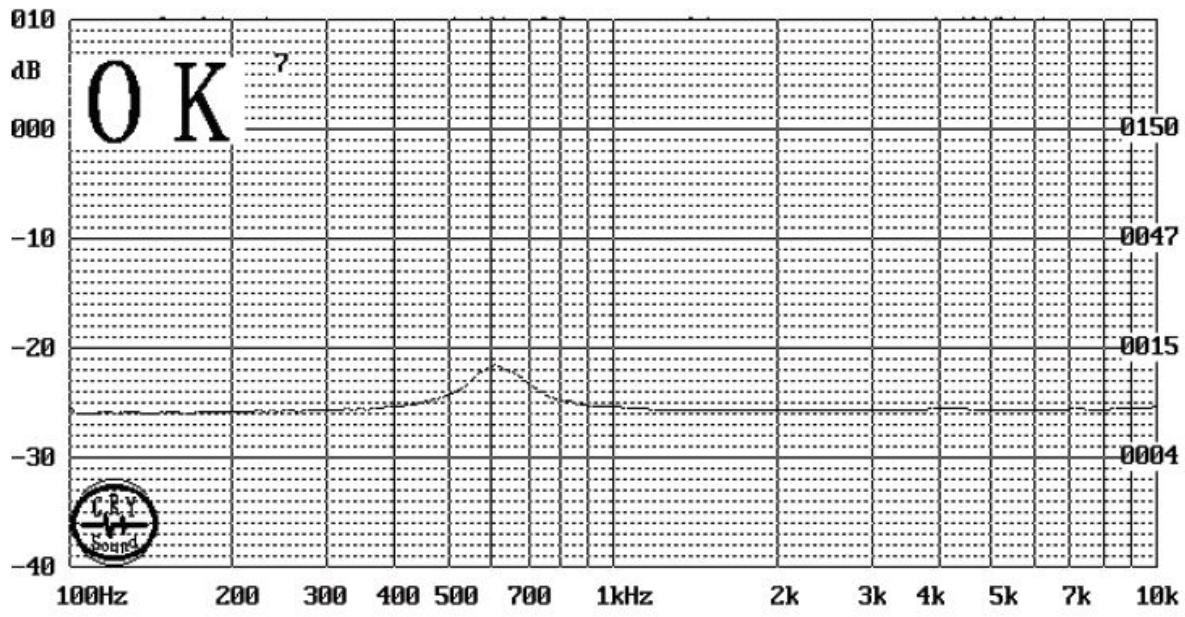
Frequency Response Curve (Fig. 3)

The swept sine-wave frequency response of a loudspeaker should ideally not deviate more than indicated.





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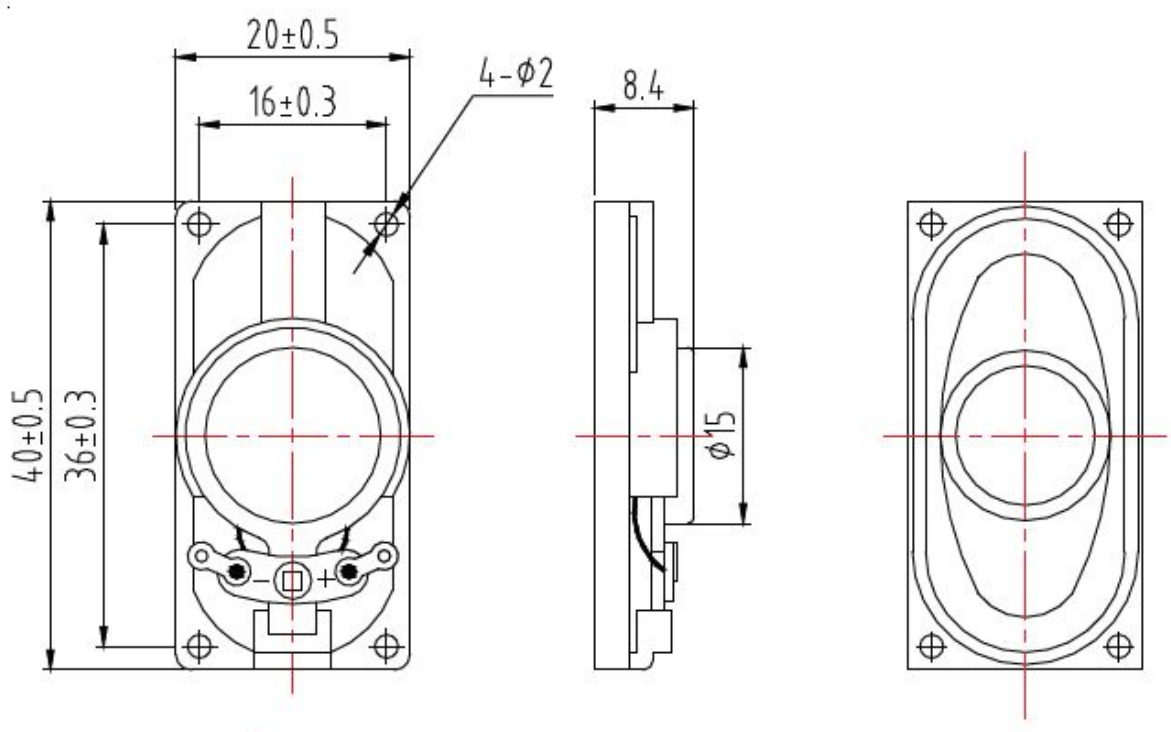
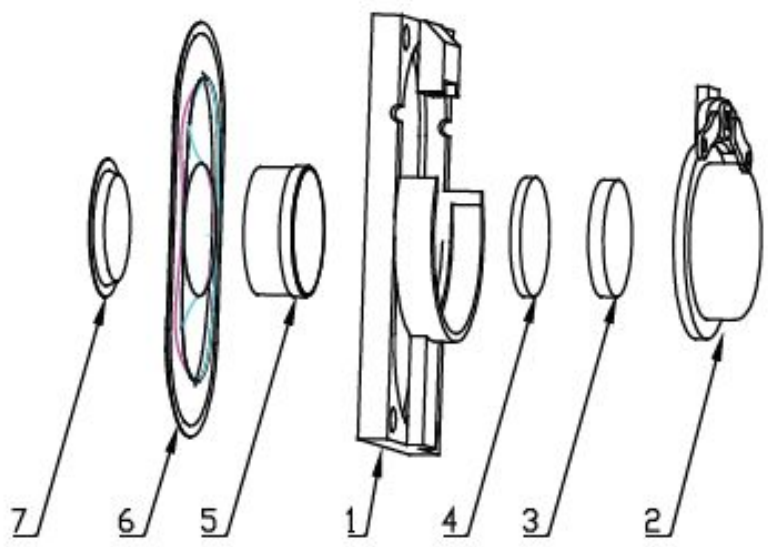
Dimensions

Tolerance: ±0.5 (unit: mm)





No.	Part Name	Material	Quantity
1	Frame	ABS	1
2	PCB Terminal	Paper Cu	1
3	Magnet	NdFeB	1
4	Plate	SPCC	1
5	Voice Coil	Paper Cu	1
6	Diaphragm	Cloth	1
7	CAP	Paper	1

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Packing

50pcs per tray
10 trays per units, 1 unit per carton
Total: 1000 pcs per box
Size:36.5 x 27 x 31.5cm