soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3215

Release | Revision: B/2018

CONTENTS

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

Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

83dB at 10cm at AVE 0.8KHz, 1.0KHz, 1.2KHz, 1.5KHz

Typical Frequency Response Curve

Shown in Fig. 3

Resonance Frequency

1200 ±20%Hz

Frequency Range

F0 ~ 20KHz.

Buzz, Rattle, Etc.

Not audible from F0 to 20KHz with 1.26V Sine Wave Input

Input Power (Nominal and Maximum)

Rated Noise Power: 0.2W (In 1CC Box)

Short Term Max Power: 0.3W (In 1CC Box)

Test Setup

Measuring conditions and procedures shown in Fig 1 & Fig 2

Distortion

Less than 5% @ 1 KHz, input rated power

AC Impedance

8Ω±15%

Magnet

Rare earth permanent (Ferrite) magnet φ16x7x5mm

Polarity

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

Dimensions

Ø 31.7x15.0mm

General Specifications

Operating Temperature Range

-20℃ ~ +60℃

Storage Temperature Range

-30˚C ~ +70˚C

IP Rating

No rating

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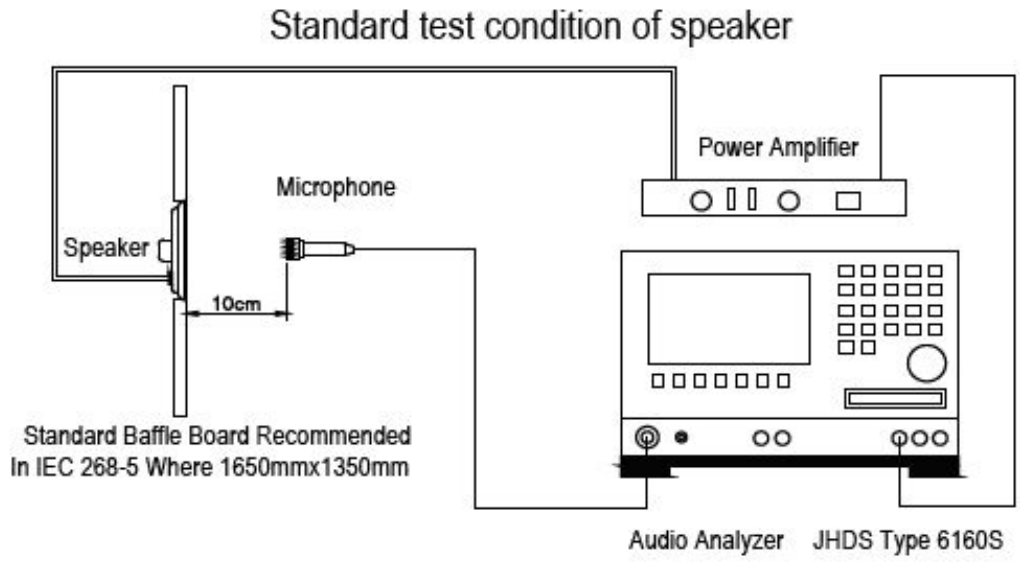
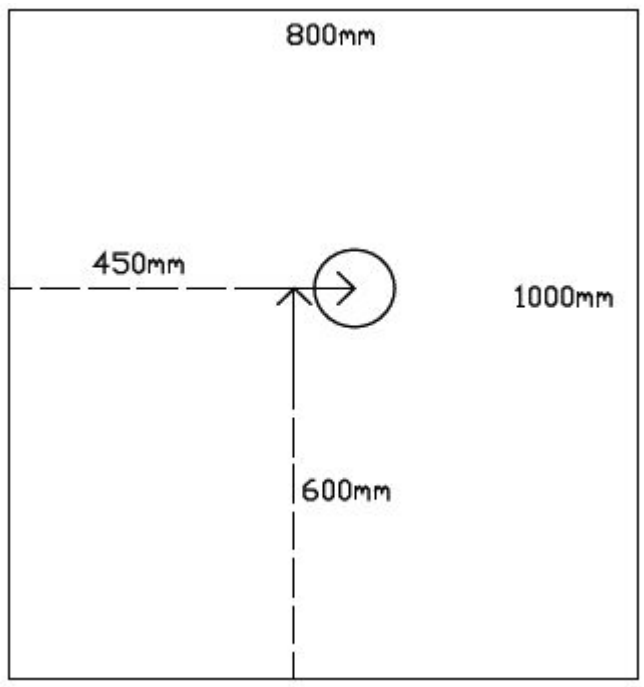
Measuring Method - Speaker Mode (Fig. 1)



Block Diagram For Measurement Method (Fig. 2)



Standard Test Conditions

Standard Test Condition

Temperature 5 ~ 35℃

Relative humidity 45% ~ 85%

Atmospheric pressure 860 mbar ~ 1060 mbar

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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 +70±3℃

Duration 96 hours (leave 3 hours in normal temperature and then check)

Low Temperature Test

Low Temperature -30±3℃

Duration 96 hours (leave 3 hours in normal temperature and then check)

Humidity Test

Temperature +40±3℃

Relative Humidity 92%~95%

Duration 96 hours

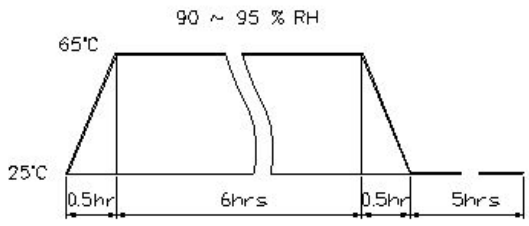
Vibration Test

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

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

Temp/Humidity Cycle Test

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



Thermal Cycle Test

Low temperature : -30˚C±3˚C

High temperature: +70˚C±3˚C

Cycle: one hour/cycle each, the keep 5 cycles in a room temperature

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

Terminal Strength Test

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

Max Power Test

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

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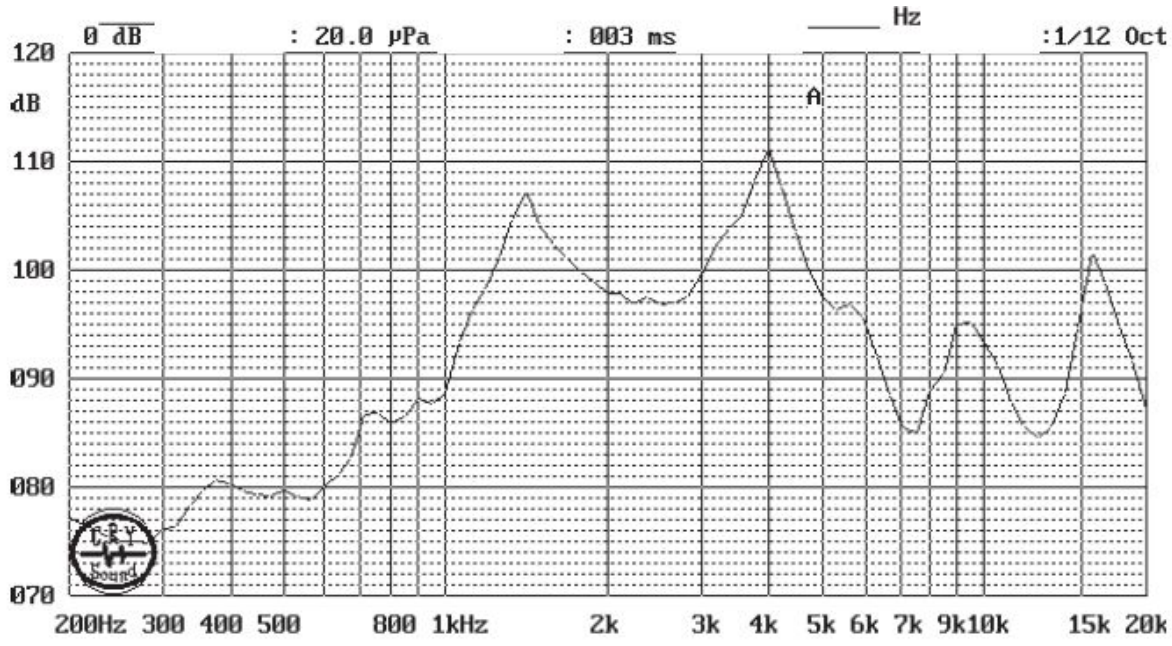
Frequency Response Curve (Fig. 3)

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



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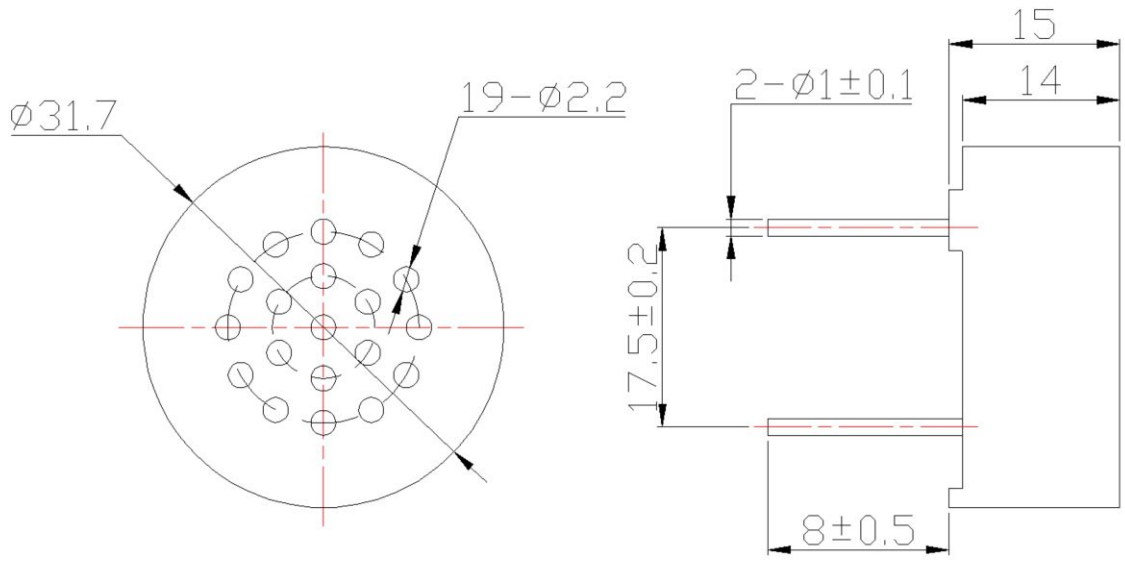
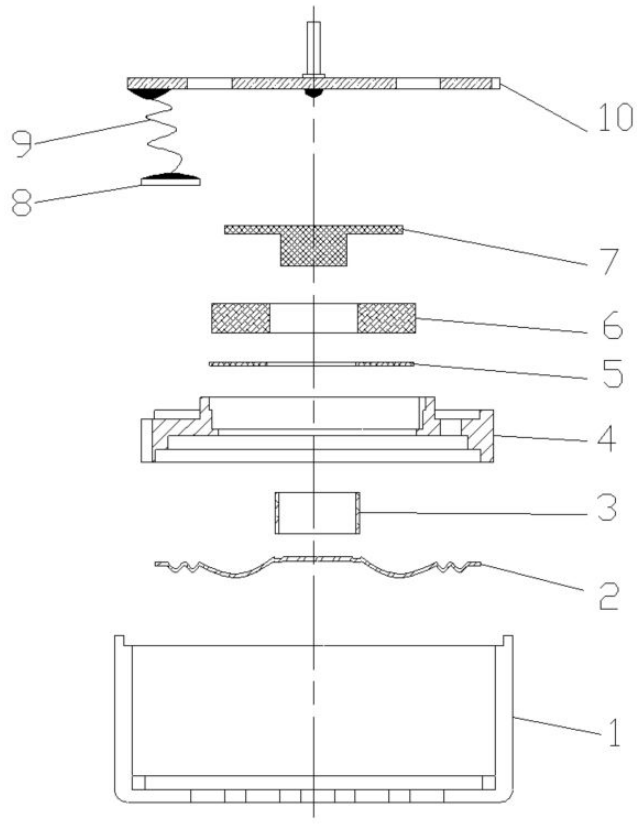
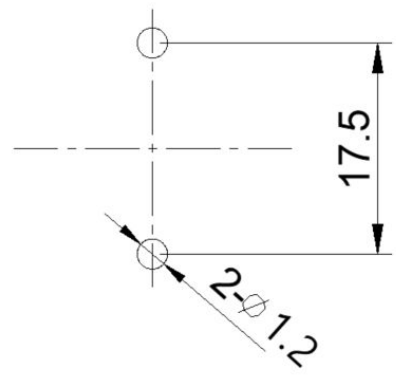
Dimensions

Tolerance: ±0.5 (unit: mm)







Pad Layout

No.	Part Name	Material	Quantity
1	Housing	PPO	1
2	Diaphragm	PET	1
3	Voice Coil	Cu	1
4	Plate	SPCC	1
5	Magnet	Ferrite	1
6	Frame	PPO	1
7	Yoke	SPCC	1
8	PCB	Fr4	1
9	Connect Wire	Cu	2
10	Plug Board	Epoxy	1

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Packing