



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1511S-6



Release | Revision: D/2018

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Speaker Electroacoustic Characteristics

Sound Pressure Level

82±3dB SPL @0.7, 0.8 1.0, 1.5 and 2.0KHz in average (0dB SPL=20µPa)
Measuring condition: 0.1W (Sine wave) 10cm measured with baffler shown in Fig.1.

Frequency Response Curve

As shown in Figure 1

Response Frequency

750±20%Hz @ 1V in free air

900±20%Hz @ 1V in 1cc box

Input Power (Nominal and Maximum)

Rated Noise Power: 0.5W

Short Term Maximum Power: (in 1cc box) 0.8W

Operation Test

Must be free of audible noise (buzzes and rattles)

(300~5KHz frequency range, input level up to 2.0Vrms in 1cc box)

Distortion

Less than 10% @1KHz,0.1M,0.1W frequency range, input level up to 0.1W

General Specifications

Operating Temperature Range

-20°C~+60°C

Standard Test Conditions

Temperature 17°C~25°C

Relative Humidity 45%~80%(RH)

Impedance

8±15%Ω (@2KHz 1V) without baffler

Dimension

15.0 x 11.0 x 4.0mm

IP Level

No rating



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Reliability Tests

The sound pressure as specified will neither deviate more than $\pm 3\text{dB}$ from the initial value, nor have any significant damage after any of following testing.

High Temperature Test

High Temperature $+60\pm 2^\circ\text{C}$

Duration 96 hours

Low Temperature Test

Low Temperature $-20\pm 2^\circ\text{C}$

Duration 96 hours

Heat Shock Test

High Temperature $+60\pm 2^\circ\text{C}$

Low Temperature $-20\pm 2^\circ\text{C}$

Changeover Time < 30 seconds

Duration 1 hour

Cycle 100

Humidity Test

Temperature $+ 40\pm 2^\circ\text{C}$

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -20°C $+60^\circ\text{C}$

Duration 45 minutes 45 minutes

Temperature gradient $1\sim 3^\circ\text{C}/\text{min}$

Cycle 25

Drop Test

Mounted with dummy set mass 100 g

Height 1.5 m

Cycle 6 (1 each plain) onto the concrete board

Load Test

Speaker mode White noise (EIA filter) for 96 hours @ 0.5W input power.



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Measuring Method (Speaker Mode)

Test Condition Standard

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar

Standard Test Fixture

Input Power 0.1W

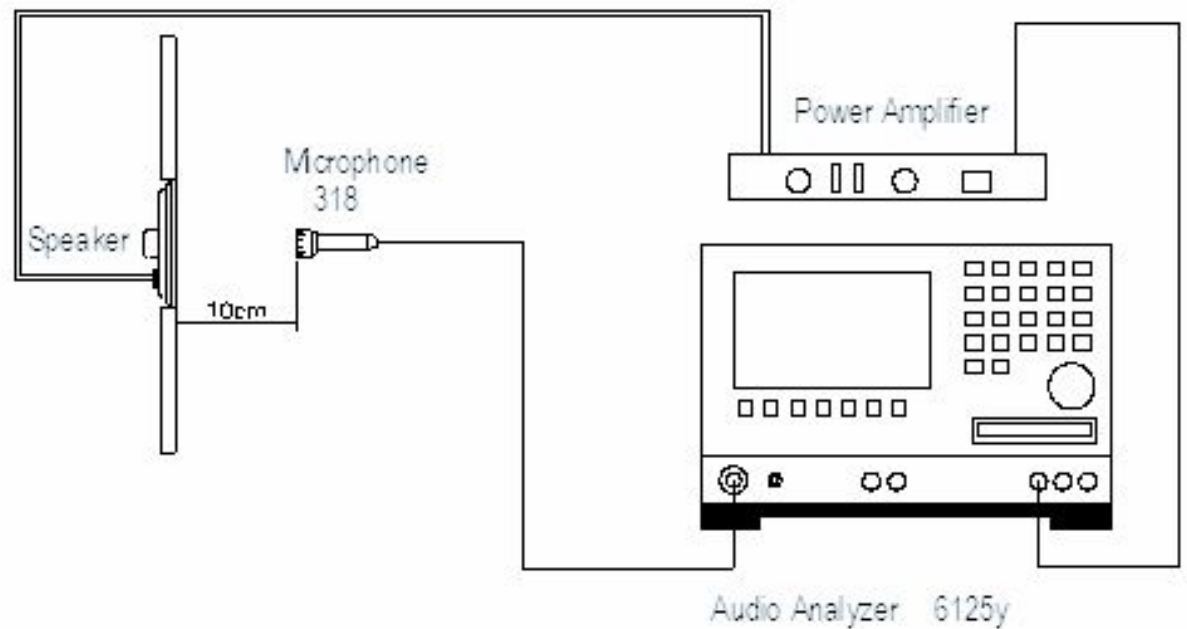
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker





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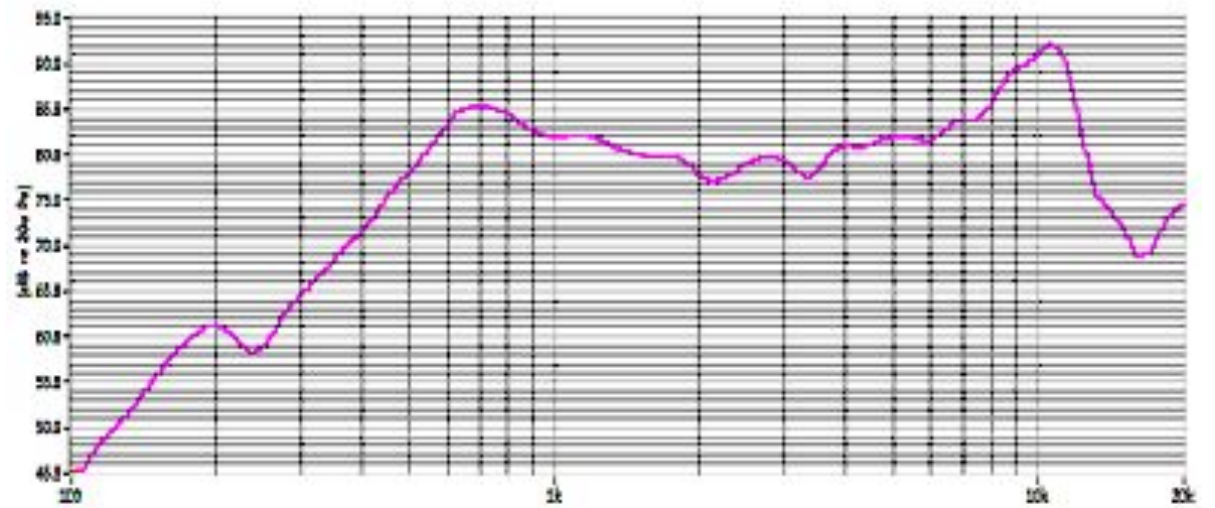
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Frequency Response Curve (Fig. 1)

0.1W/10cm, in free air





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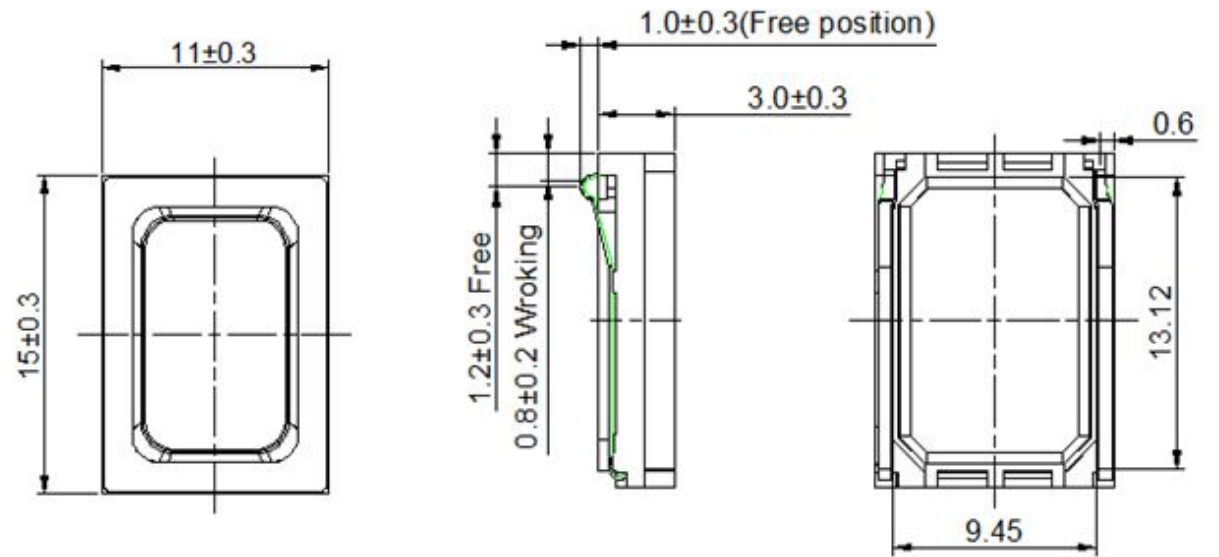
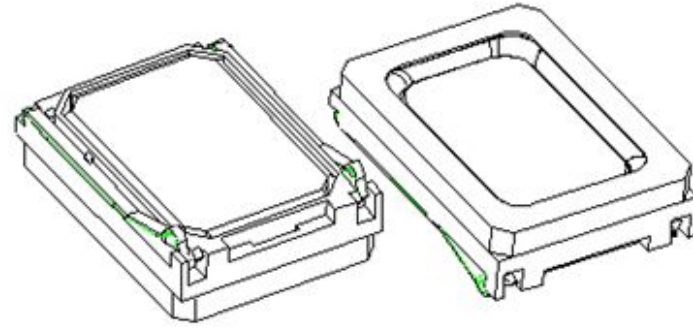
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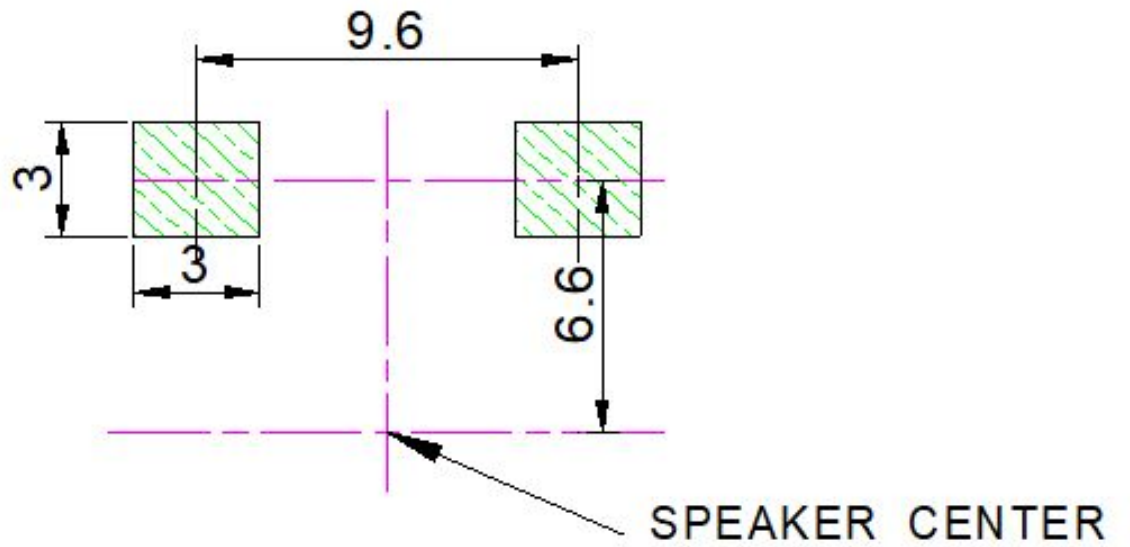
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Tolerance: ± 0.5 (unit: mm)



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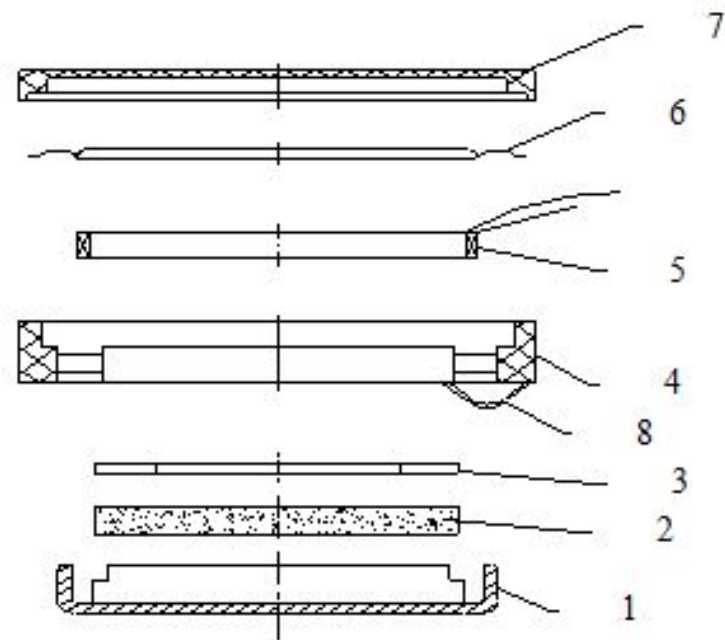
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No.	Part Name	Material	Quantity
1	U Yoke	SPCC	1
2	Magnet	Nd Fe B	1
3	Plate	SPCC	1
4	Frame +PIN	PPA+SUS	1
5	Voice Coil	Copper wire	1
6	Diaphragm	PEEK	1
7	Cap	PPA	1
8	Spring Terminal	SUS	2



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