



soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1511L-1



Release | Revision: B/2018

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

82±3dB SPL @1.0,1.2,1.5 and 2.0KHz in average (0dB SPL=20µPa)
Measuring Condition: 0.1W (Sine wave) 10cm measured with baffler refer to figure.1

Frequency Response Curve

As shown in Figure 2

Response Frequency

850±20%Hz @1V in free air

Input Power (Nominal and Maximum)

Rated Noise Power 0.5W (in 1cc box)

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

Operation Test

Must be free audible noise (buzzes and rattles)

(300 ~ 8KHz frequency range, input level up to 0.2Vrms)

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

Storage Temperature Range

-30°C~+70°C

Standard Test Conditions

Temperature 17°C~25°C

Relative Humidity 45%~80%(RH)

AC Impedance

8±15%Ω (@ 2 KHz 1V) without baffler

Dimension

15.0 x 11.0 x H3.1mm

WIRE 113mm (UL1571 / AWG 32#)

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

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.

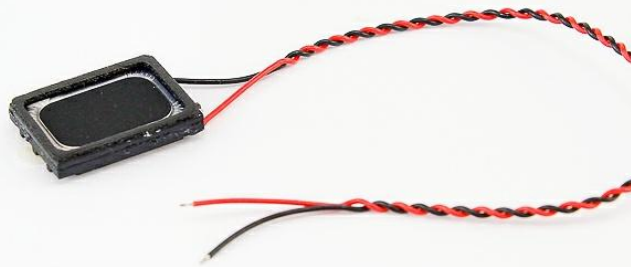


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Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar

Standard Test Fixture

Input Power 0.1W (0.89V)

Zero Level -dB

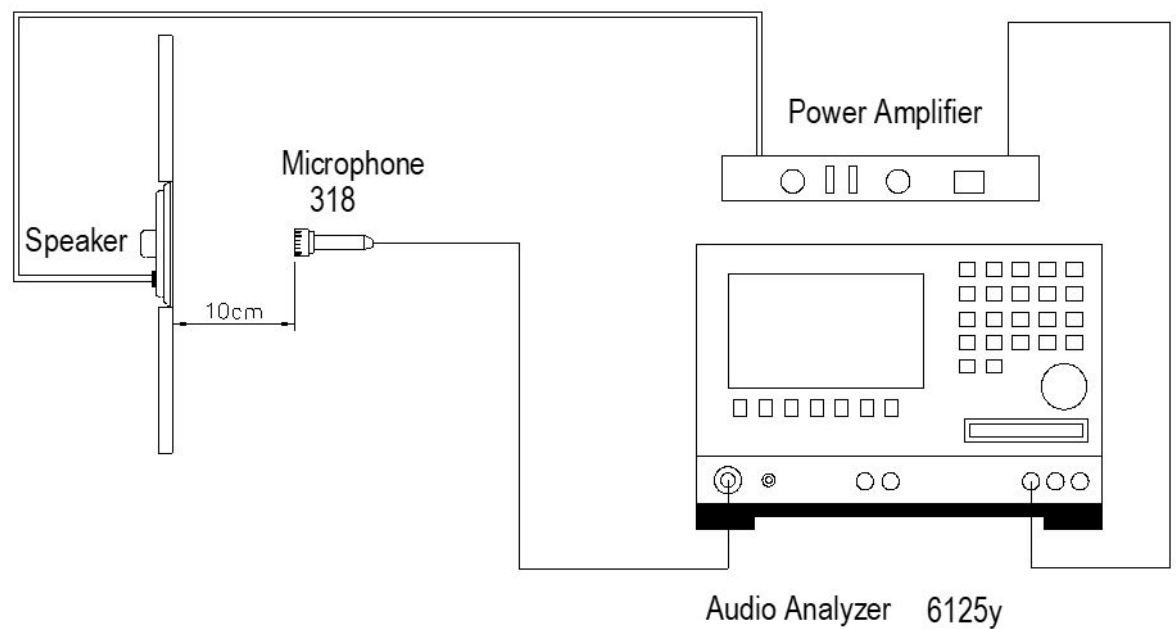
Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)

Standard test condition of speaker



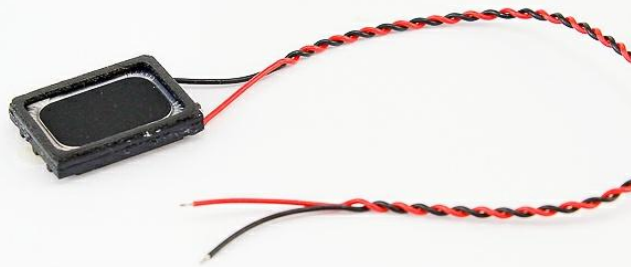


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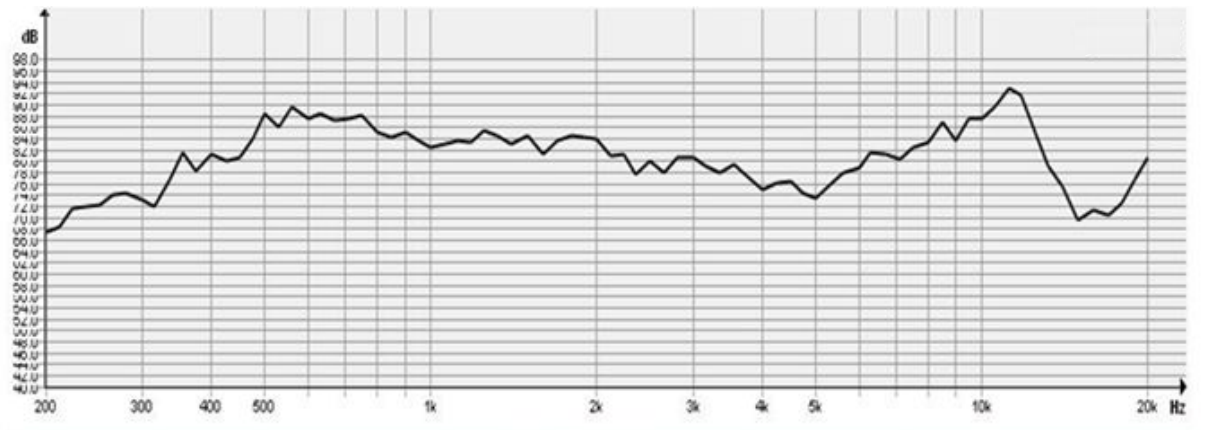
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Frequency Response Curve (Fig. 2)

0.1W/10cm, in free air





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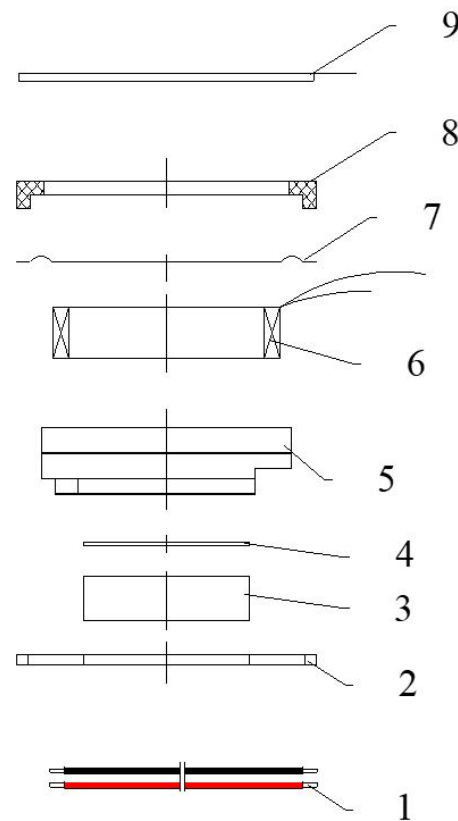
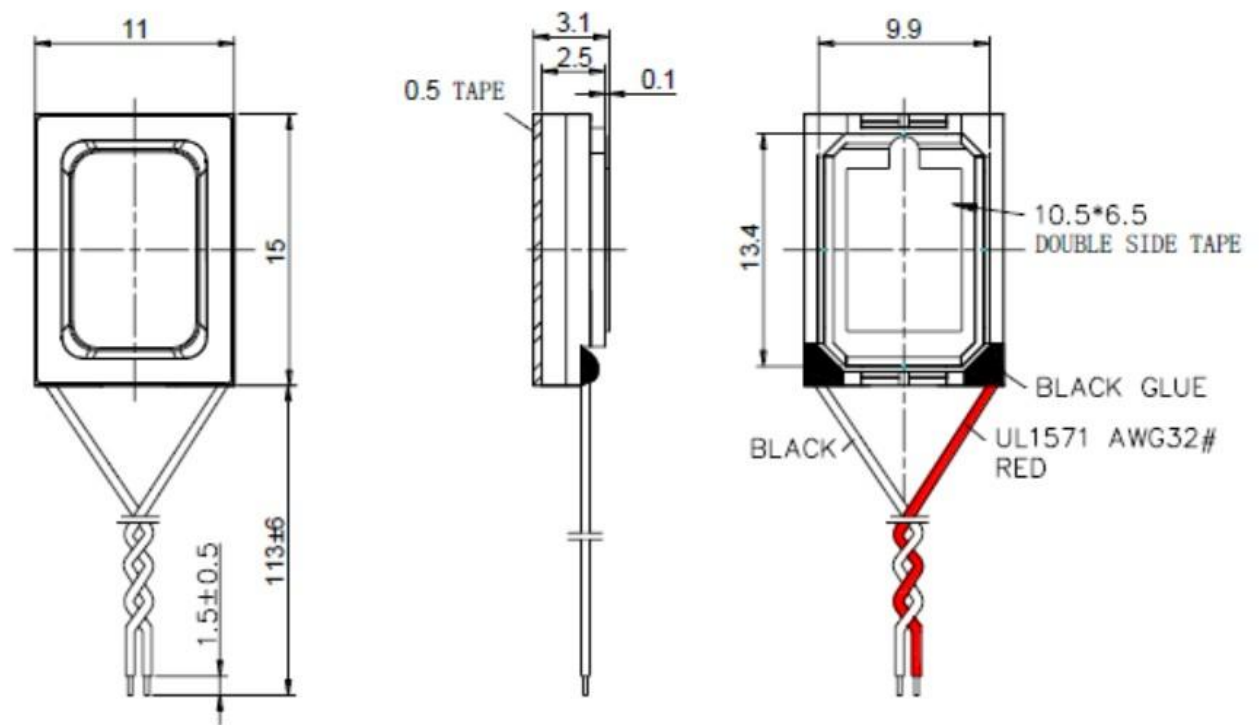
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Dimensions

Tolerance: ± 0.5 (unit: mm)



| No. | Part Name | Material | Quantity |
|-----|------------|-----------------|----------|
| 1 | Wire | UL1571 / AWG32# | 2 |
| 2 | U Yoke | SPCC | 1 |
| 3 | Magnet | Nd Fe B | 1 |
| 4 | Plate 3 | SPCC | 1 |
| 5 | Frame | Black PPA | 1 |
| 6 | Voice Coil | Copper Wire | 1 |
| 7 | Diaphragm | PEEK | 1 |
| 8 | Cap | Black PPA | 1 |
| 9 | Gasket | 1511-0.4 | 1 |

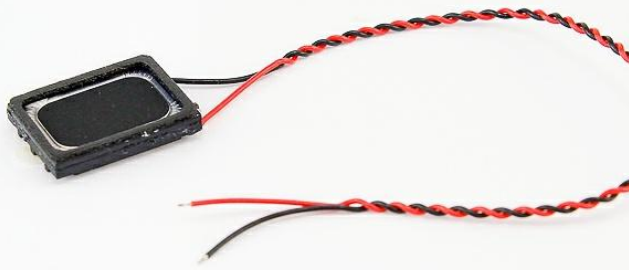


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