soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1504-18

Release | Revision: B/2018

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

93±3dB SPL @0.8, 1.0, 1.5 and 2.0KHz in average
Measuring Condition: 1W (Sine wave) 10cm measured with baffler shown in Fig.1

Frequency Response Curve

As shown in Figure 2

Response Frequency

1000±20%Hz @ 1V (without baffler)

Input Power (Nominal and Maximum)

Rated Noise Power 1.0W

Short Term Max Power: 1.2W must be normal at a white noise for one minute

Operation Test

Must be free audible noise (buzzes and rattles)

(300 ~ 8KHz frequency range, input level up to 2.83Vrms)

Distortion

Less than 10%@1KHz, 0.1M, 1W

General Specifications

Operating Temperature Range

-20℃~+65℃

Storage Temperature Range

-30℃~+70℃

Standard Test Conditions

Temperature 17℃~25℃

Relative Humidity 45%~80%(RH)

AC Impedance

8±15%Ω (@1KHz 1V) without baffler

Dimension

Ø15.0x5.7mm WIRE 35mm UL1571 / AWG28#
CONNECTOR: JST XHP-2 or equivalent: XH2.5-2P

IP Level

IP50

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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 +65±3℃

Duration 96 hours

Low Temperature Test

Low Temperature -20±3℃

Duration 96 hours

Humidity Test

Temperature + 40±2℃

Relative Humidity 90%~95%

Duration 96 hours

Temperature Cycle Test

Temperature -20℃ +65℃

Duration 2 hours 2 hours

Cycle 5

Drop Test

Height 1.5 m

Cycle 12

Vibration Test

Vibration 10Hz～55Hz～10Hz Oct/min

Amplitude 1.5mm

Duration 2 hours in each of 3 axis

Load Test

Speaker mode: White Noise (EIA filter) for 96 hours@1W input power

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Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 17 ~ 25℃

Relative humidity 45% ~ 85%

Atmospheric pressure 860hpa to 1060hpa

Standard Test Fixture

Input Power 1W

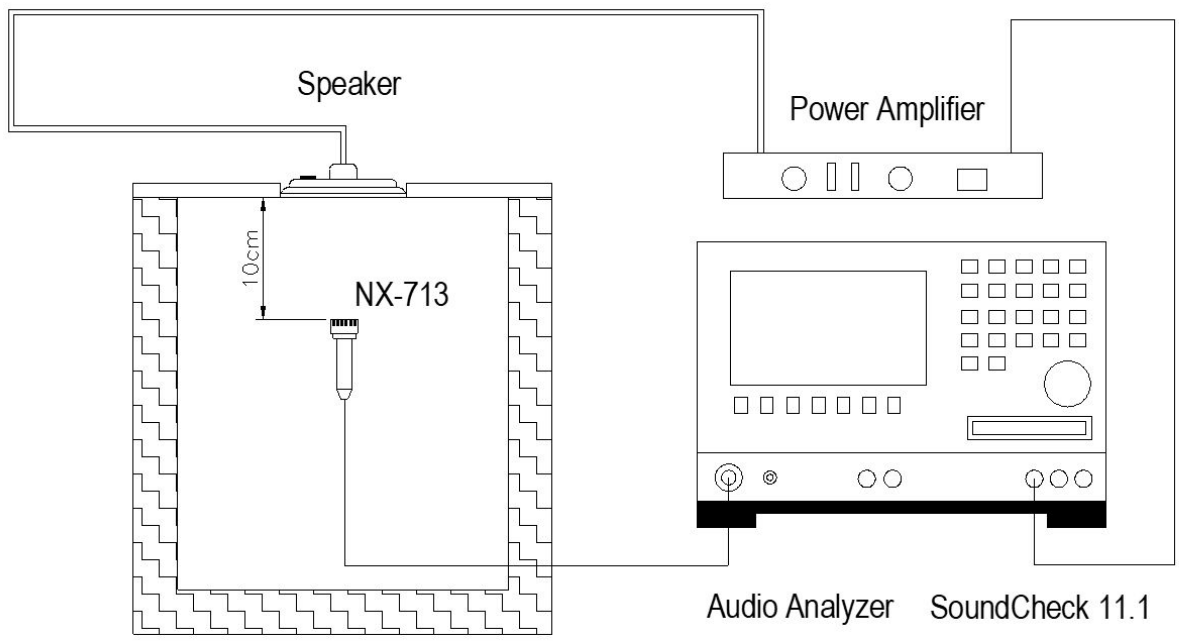
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)



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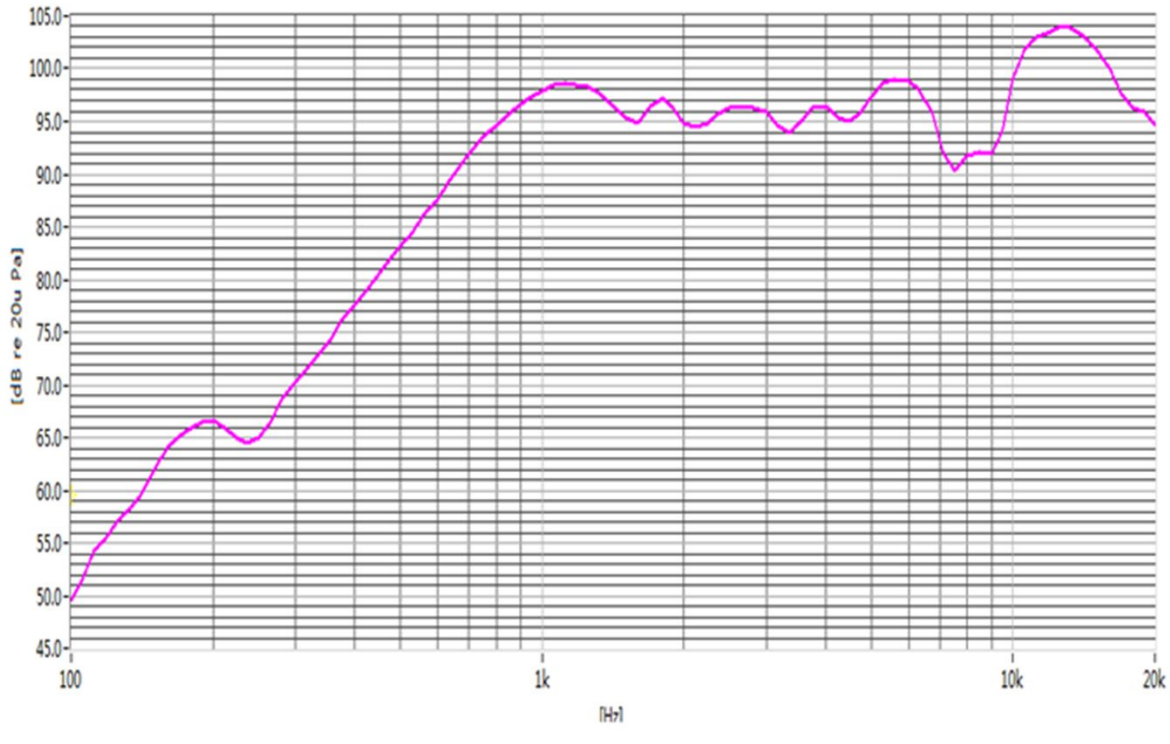
Frequency Response Curve (Fig. 2)

0.1W/10cm, in free air



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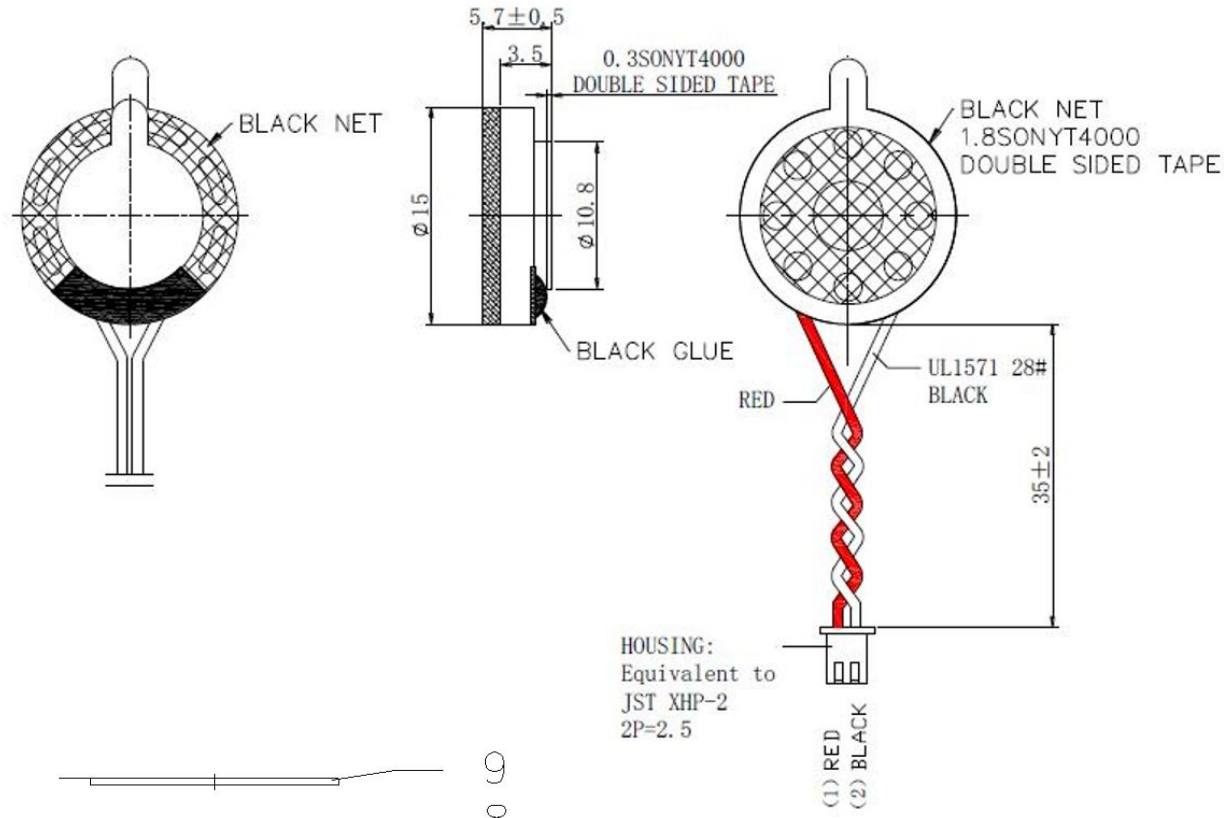
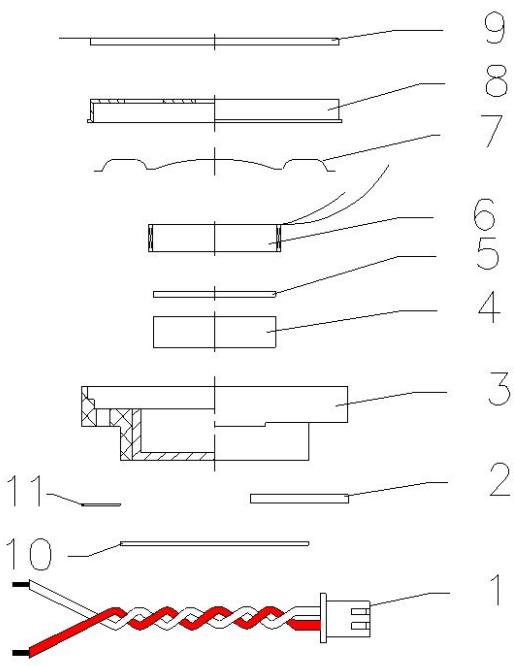
Dimensions

Tolerance: ±0.5 (unit: mm)





No.	Part Name	Material	Quantity
1	Wire (35mm) connector	UL1571/ AWG28# JST XHP-2 OR Equ. XH2.5-2P	2 1
2	PCB	FR-4	1
3	Frame	PBT	1
4	Magnet	NdFeB-N42	1
5	Plate	SPCC	1
6	Voice Coil	Copper	1
7	Membrane	PEN	1
8	Cap	SUS304	1
9	Screen Gasket	Black Net	1
10	Gasket	0.3SONYT4000 Double sided tape	1
11	Damping	BLACK CLOTH	1

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