



soberton inc.

# SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1308



Release | Revision: B/2024

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

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## Dynamic Speaker Electroacoustic Characteristics

### Sound Pressure Level

90±3dB at 0.8 Watt 0.1 meter (1cc)(Mounted in free air without baffle)  
Average on @ 1000, 1200, 1500, 2000Hz

### Resonance Frequency

400 ±15% Hz @1 V, input in free air

### Rated Frequency Range

F0~ 20,000Hz

### Frequency Response

See Figure 1

### Rub & Buzz

A sine sweep among 100Hz ~ 1.5KHz at rated noise power with 0.5cc back cavity will not result in any buzzing or extraneous sound.

### Voice Coil Impedance

6±15% Ω@2KHz

### Input Power (Nominal & Maximum)

Rated Noise Power: 0.8W (1cc)

Short Term Max Power: 1.0W (1cc)

### Dimension

13.0 x 8.0 x H2.5mm

### IP Level

No rating

## Requirements

### Distortion

15% Max, at 1000Hz, 0.1 Watt

### Abnormal Sound Test

Must be tested normal, 2.19 Volts in Free air



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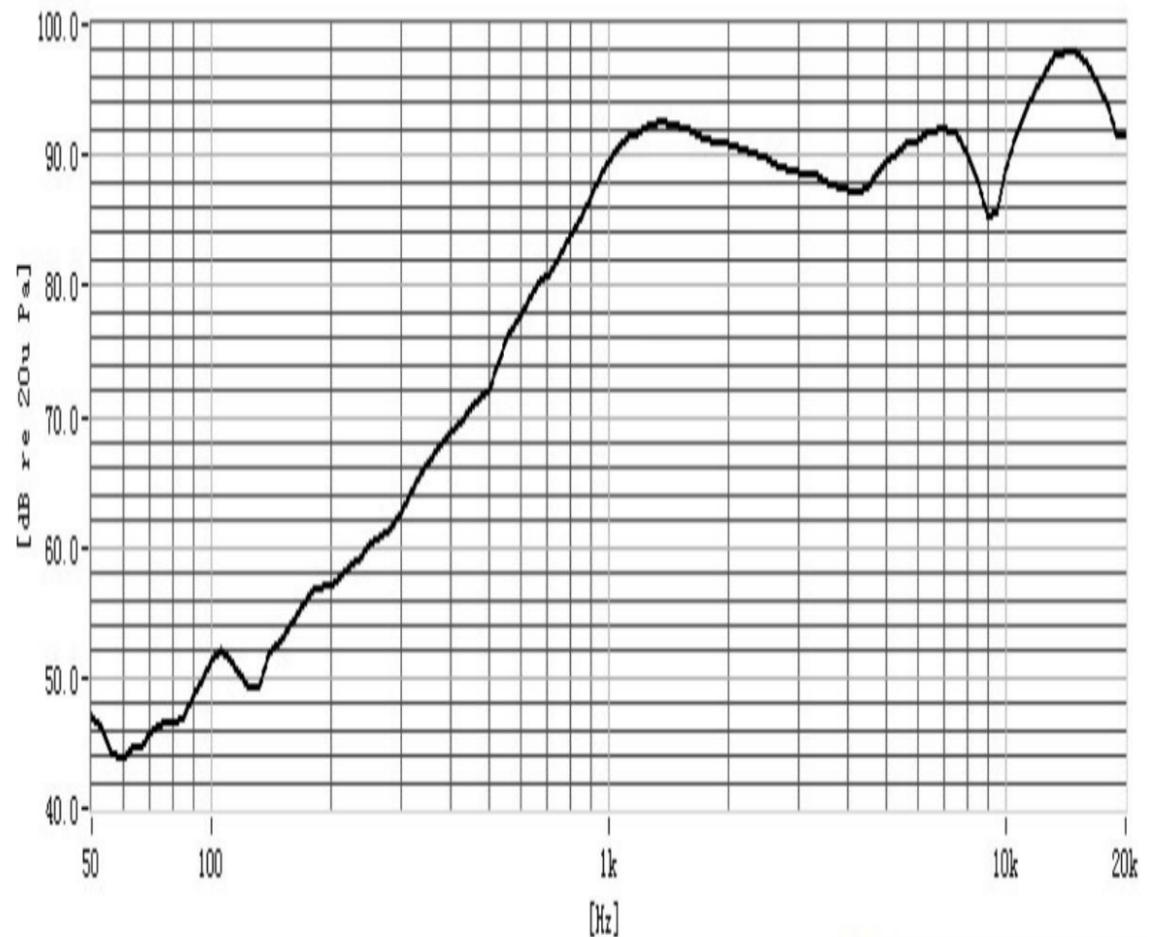
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## Typical Frequency Response (Fig. 1)

Test condition: 0.8W/0.1M

XY Graph 8



## Test Climatic Condition

### Ambient Temperature

15°C ~ 35°C, preferably 20°C

### Relative Humidity

45% to 85%

### Air Pressure

86kPa - 106kPa



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## Measuring Method (Speaker Mode)

### Standard Test Fixture

Input Power: 0.8W / 2.19V

Zero Level: -dB

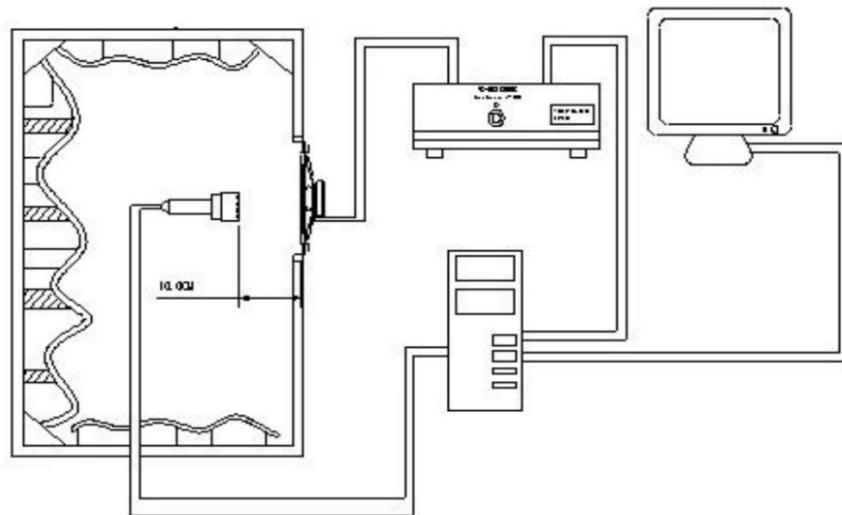
Mode: TSR

Potentiometer Range: 50dB

Sweep Time: 0.5 Sec

d:10cm

## Test Setup -Speaker Measurement Circuit



## Reliability Tests

The sound pressure as specified shall 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  $+70\pm 2^\circ\text{C}$

Duration 96 hours

### Low Temperature Test

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

Duration 96 hours

### Heat Shock Test (See in Fig. 4)

High Temperature  $+75\pm 2^\circ\text{C}$

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

Changeover Time < 30 seconds

Direction 1 hour

Cycle 10

### Humidity Test

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

Relative Humidity 90% ~ 95%

Duration 48 hours



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## Reliability Tests (continued)

### Temperature Cycle Test (See in Fig.5)

Temperature -40°C +70°C

Duration 45 minutes 45 minutes

Temperature Gradient 1~3°C/min.

Cycle 5

### Drop Test

Mounted with dummy set mass 100 g

Height 0.75m

Cycle 6 (1 each plain) On to the concrete board

### Load Test

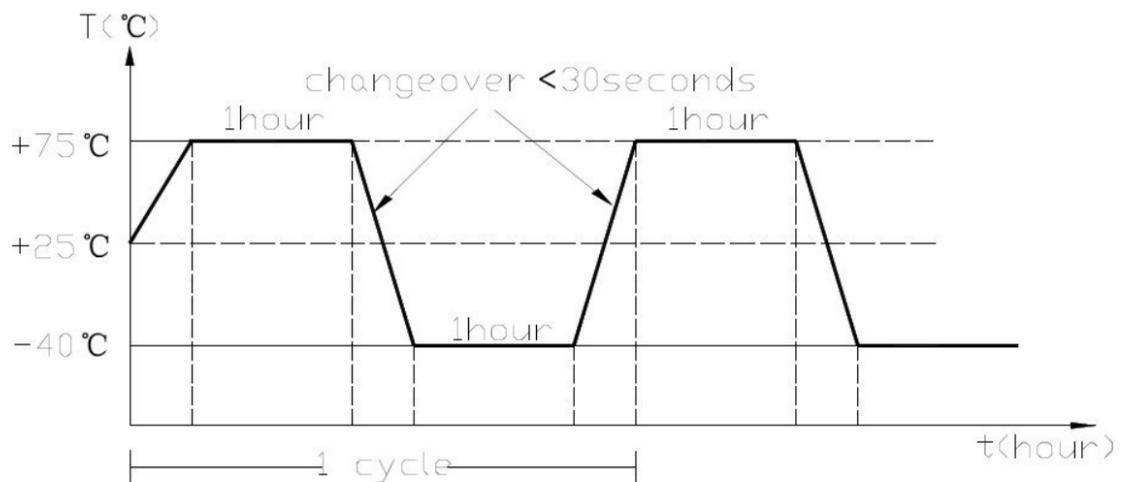
Noise Signal White noise (EIA filter)

Input Power 0.8W

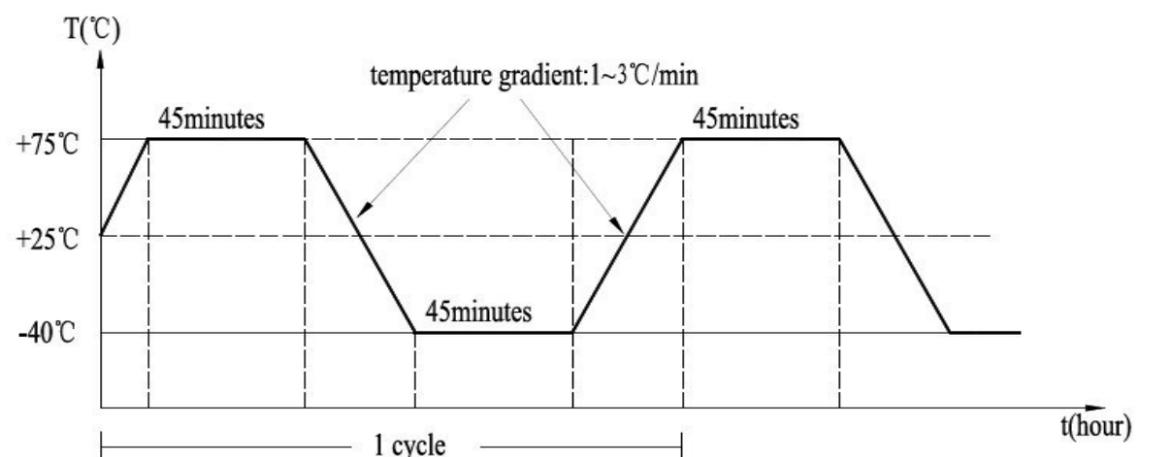
Duration 96 hours

## Test Method

### Heat Shock Test (Fig. 4)



### Temperature Cycle Test (Fig. 5)





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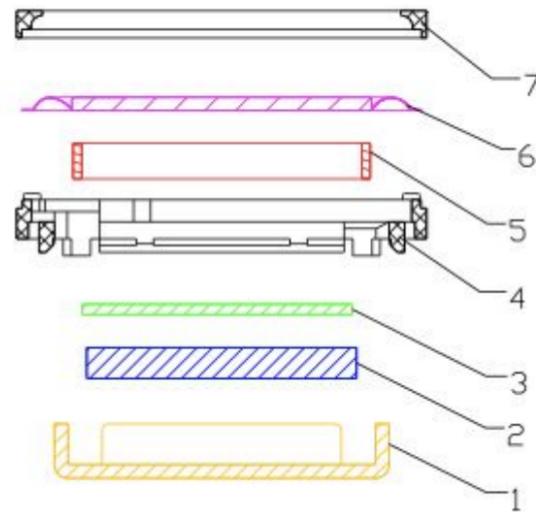
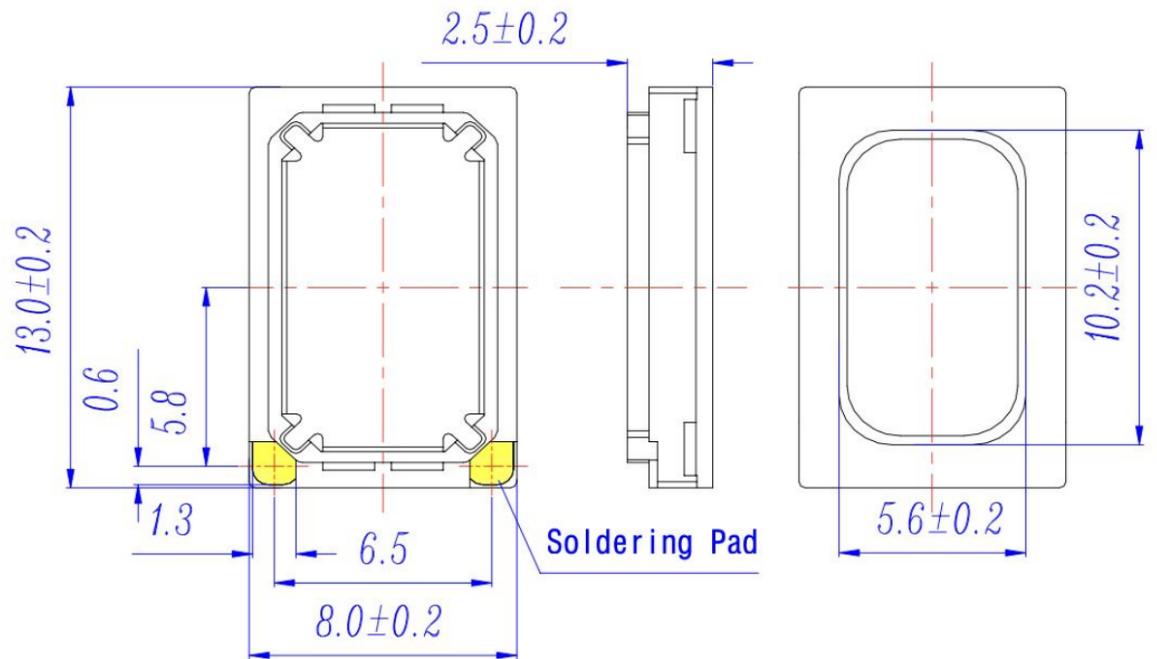
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## Dimensions

Tolerance:  $\pm 0.5$  (unit: mm)



No.	Part Name	Material	Quantity
1	Yoke U	SPCC	1
2	Magnet	N48	1
3	Plate	SPCC	1
4	Frame	PBT	1
5	Voice Coil	Cu	1
6	Diaphragm	PEEK + AL	1
7	Cap	PPA	1



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