



soberton inc.

SP DYNAMIC
SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1308



Release | Revision: B/2024

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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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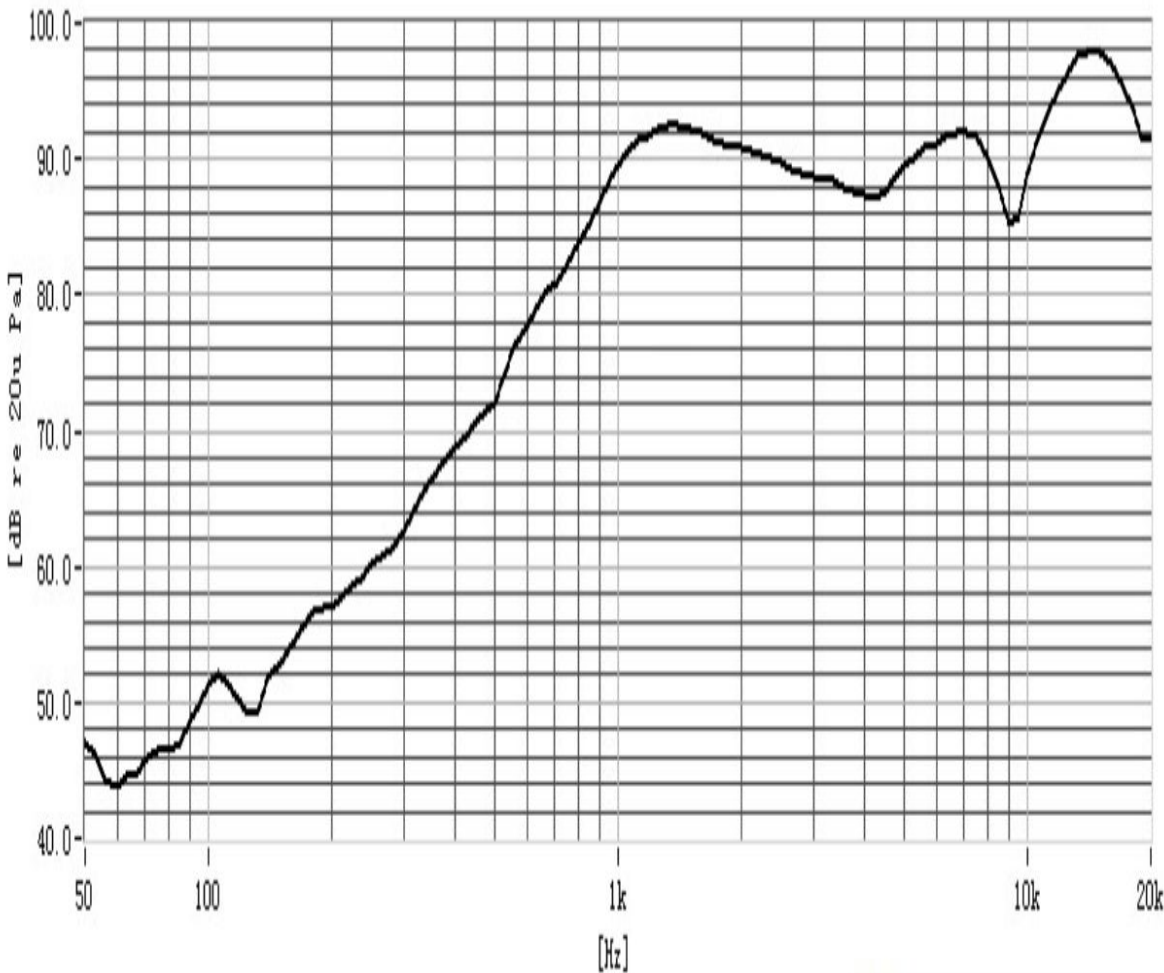
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Typical Frequency Response (Fig. 1)

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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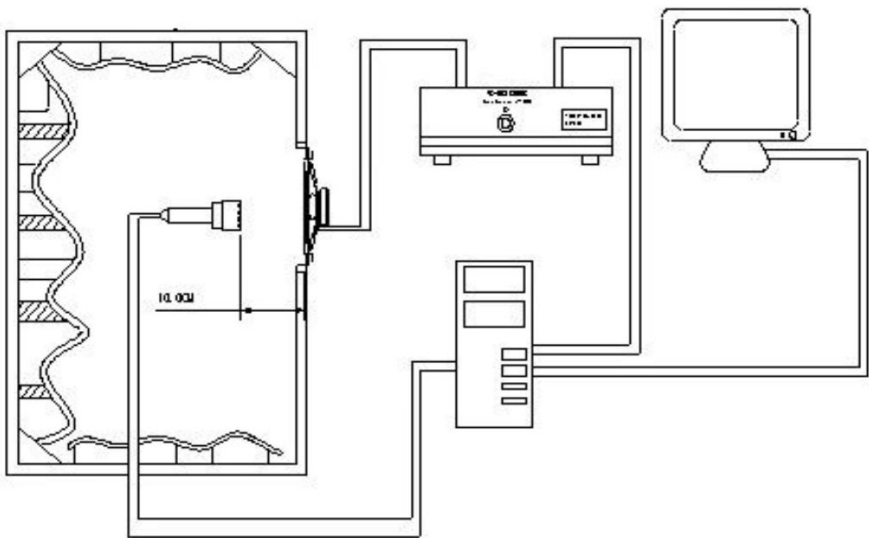
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Measuring Method (Speaker Mode)

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℃	+70℃
Duration	45 minutes	45 minutes
Temperature Gradient	1~3℃/min.	
Cycle	5	

Drop Test

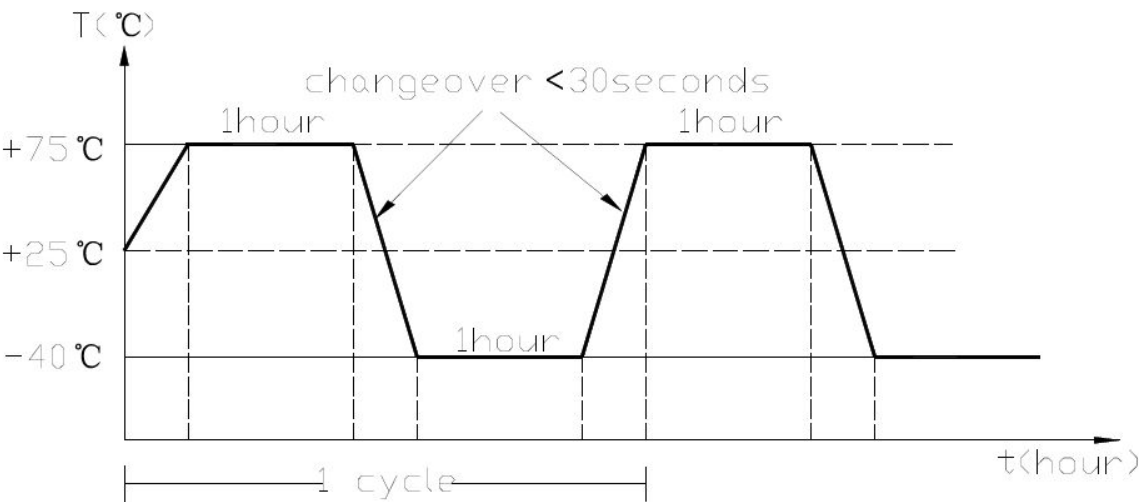
Mounted with dummy set mass	100 g
Height	0.75m
Cycle	6 (1 each plain) On to the concrete board

Load Test

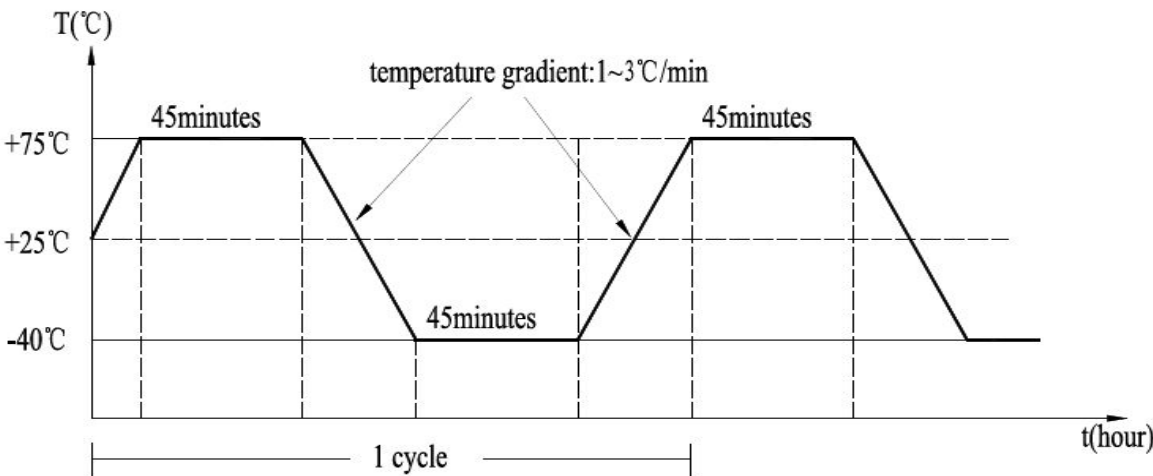
Noise Signal	White noise (EIA filter)
Input Power	0.8W
Duration	96 hours

Test Method

Heat Shock Test (Fig. 4)



Temperature Cycle Test (Fig. 5)





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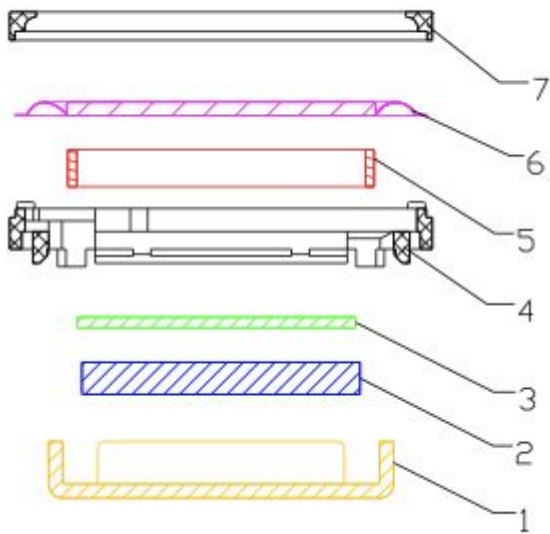
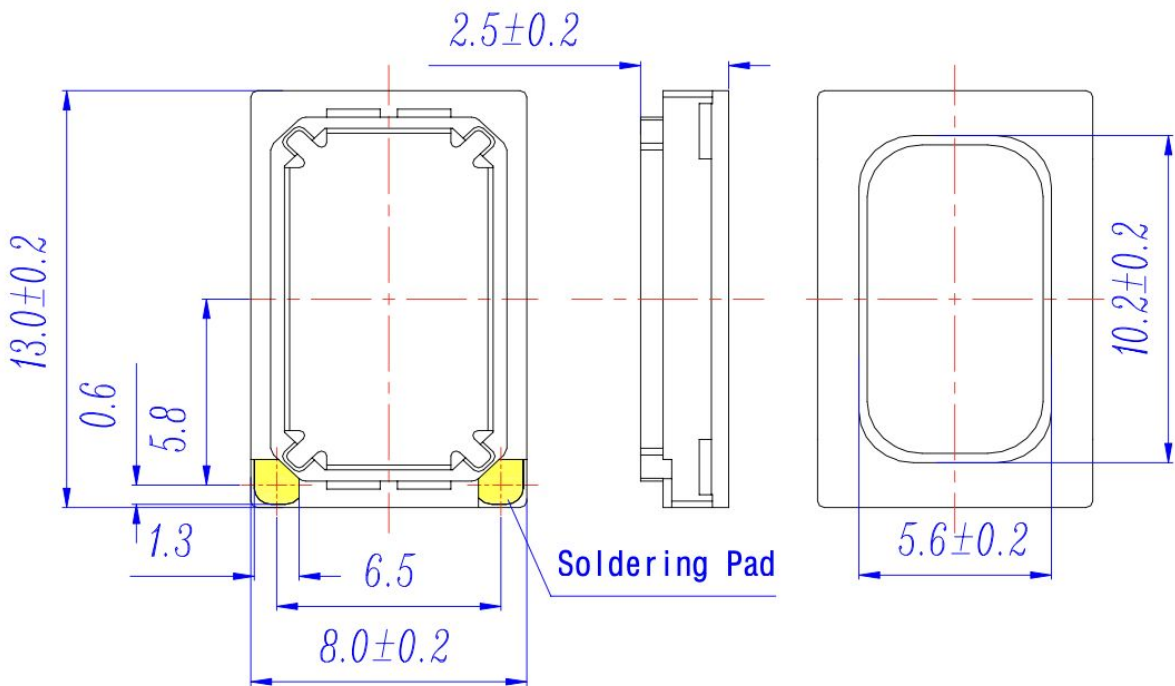
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Dimensions

Tolerance: ±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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