

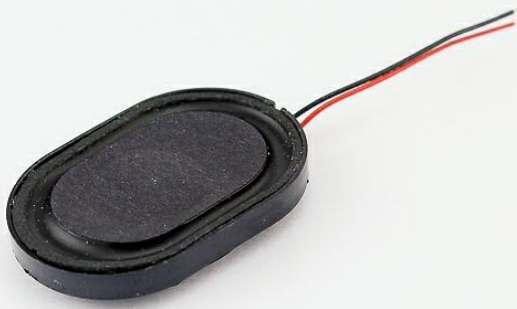


soberton inc.

SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-3020



Release | Revision: B/2018

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Dynamic Speaker Electroacoustic Characteristics

Sound Pressure Level

85±3dB SPL @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 2

Response Frequency

500±20%Hz @ 1V (Without Baffler)

Input Power (Nominal and Maximum)

Rated Noise Power 1.5W

Short Term Max Power: 2.0W
must be normal at a white noise, (1.0W, F0 ~ 20KHz) for one minute

Operation Test

Must be free audible noise (buzzes and rattles)
(300 ~ 8KHz frequency range, input level up to 3.46Vrms)

Distortion

Less than 10% @1KHz, 0.1M, 0.1W, frequency range, input level up to 3.46Vrms

General Specifications

Operating Temperature Range

-20°C~+55°C

Standard Test Conditions

Temperature 17°C ~ 25°C
Relative Humidity 45% ~ 80% (RH)

AC Impedance

8±15%Ω(@2KHz 1V without baffler.

DC Resistance

7.4±10%Ω

Dimension

30.0 x 20.0 x H5.2mm
Wire 30mm (UL1571 / AWG32#)

IP Level

No rating

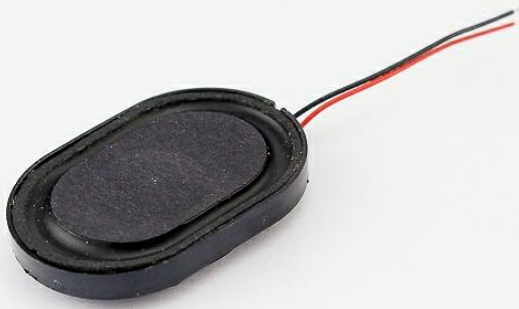


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Reliability Tests

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 $+55\pm 2^\circ\text{C}$

Duration 96 hours

Low Temperature Test

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

Duration 96 hours

Heat Shock Test

High Temperature $+55\pm 2^\circ\text{C}$

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 $+55^\circ\text{C}$

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 @ 1.5W input power

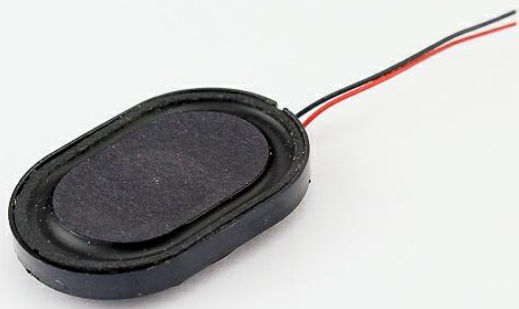


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Measuring Method (Speaker Mode)

Standard Test Condition

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar.

Standard Test Fixture

Input Power 0.1W

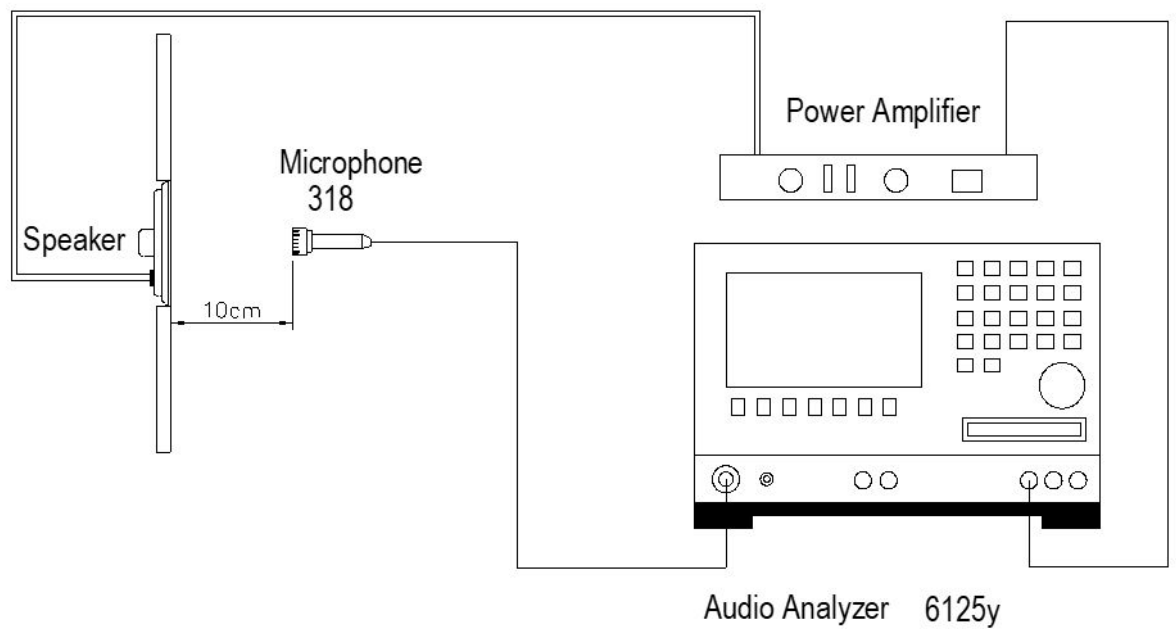
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)



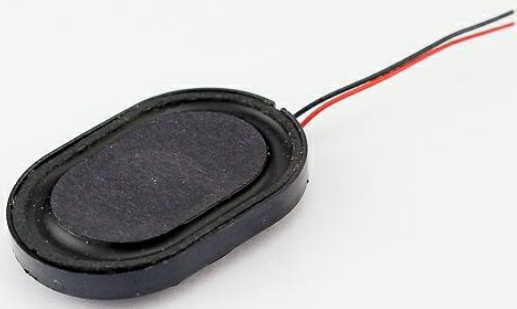


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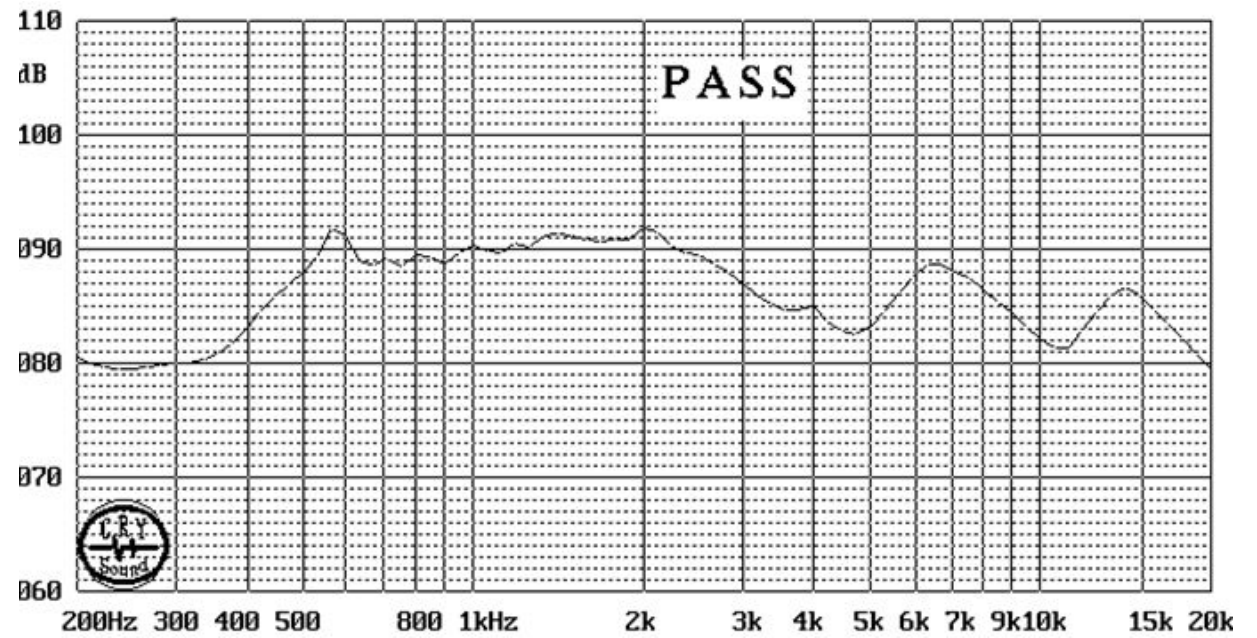
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Frequency Response Curve (Fig. 2)

0.1W/10cm, in free air





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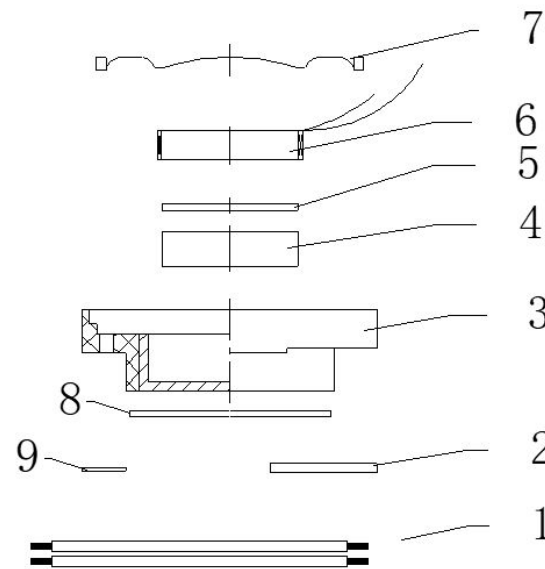
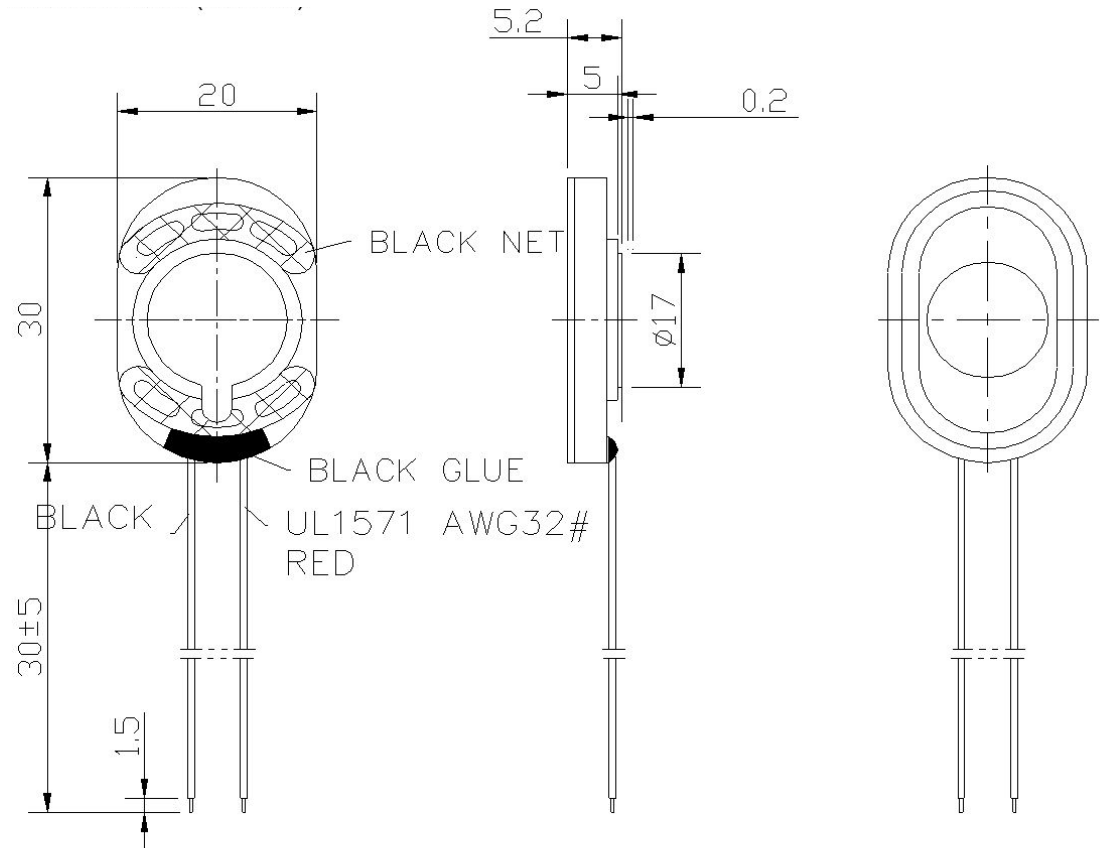
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Dimensions

Tolerance: ± 0.5 (unit: mm)



| No. | Part Name | Material | Quantity |
|-----|-------------|----------------|----------|
| 1 | Wire (30mm) | UL 1571/AWG32# | 2 |
| 2 | PCB | FR-4 | 1 |
| 3 | Frame | PBT | 1 |
| 4 | Magnet | Nd Fe B-N40 | 1 |
| 5 | Plate 1 | SPCC | 1 |
| 6 | Voice Coil | KSV-7.4Ω | 1 |
| 7 | Diaphragm | PU + Paper | 1 |
| 8 | Gasket | 16 x 0.1 | 1 |
| 9 | Screen | Black Net | 1 |

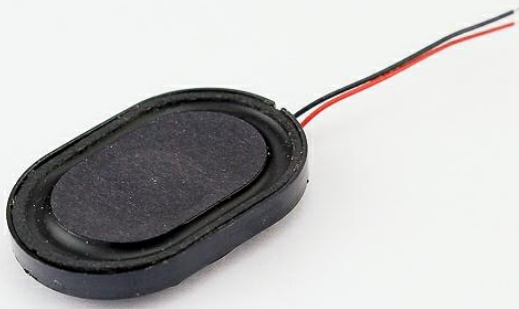


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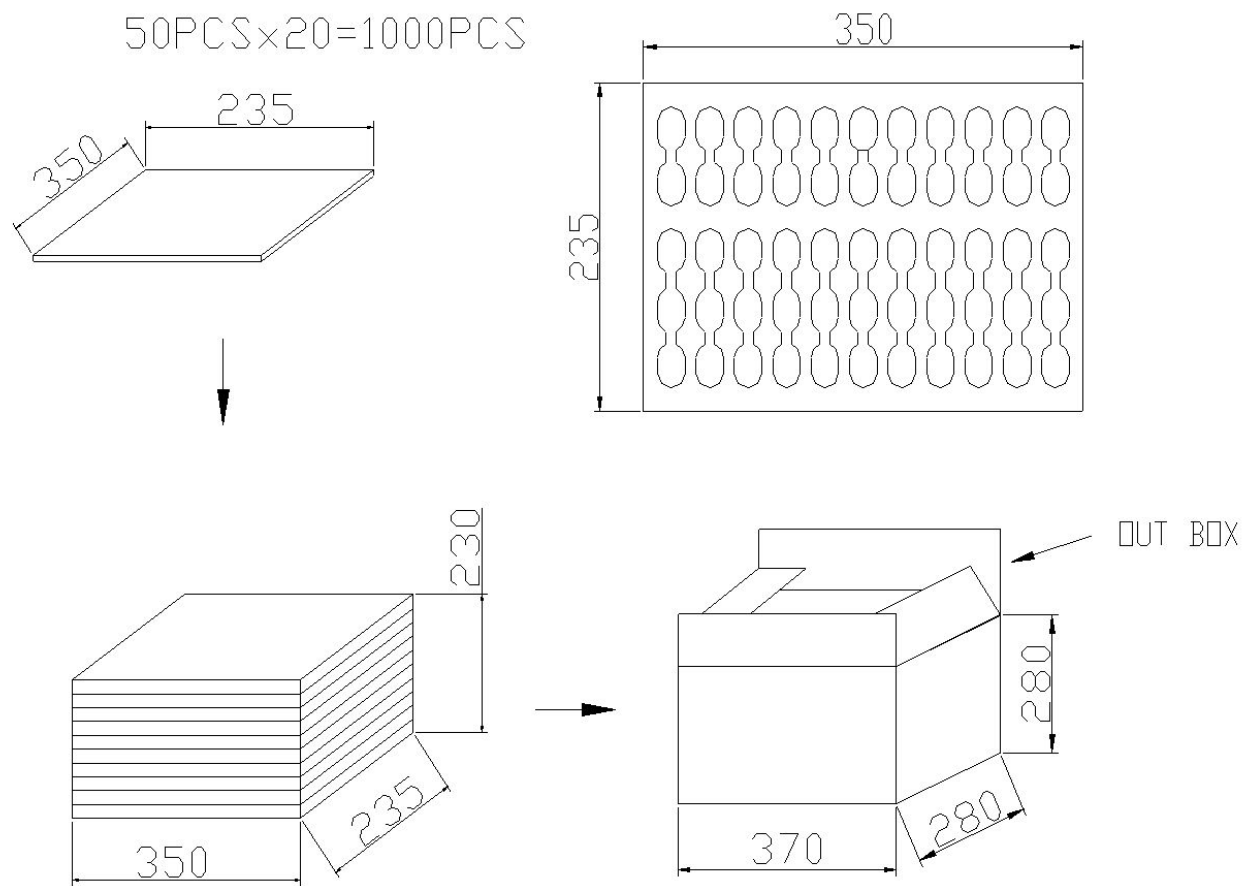
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| | | |
|------------|---------------|------------------|
| TRAY | 350X235X11mm | 1X50PCS=50PCS |
| CARTON BOX | 370X280X280mm | 20X50PCS=1000PCS |