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SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1511L



Release | Revision: C/2018

CONTENTS

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

Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Speaker Electroacoustic Characteristics

Sound Pressure Level

83±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 baffle shown in Fig.1.

Frequency Response Curve

As shown in Figure 2

Response Frequency

600±20%Hz @ 1V in free air

850±20%Hz @ 1V in 1cc box

Input Power (Nominal and Maximum)

Rated Noise Power: 0.7W (in 1cc box)

Short Term Maximum Power: 1.0W (in 1cc box)

Operation Test

Must be free of audible noise (buzzes and rattles)

(300~5KHz frequency range, input level up to 2.36Vrms in 1cc box)

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)

Impedance

8±15%Ω (@2KHz 1V) without baffle

Dimension

15.0 x 11.0 wire (100mm)

IP Level

IP50



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Speaker Electroacoustic Characteristics

General Specifications

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Reliability Tests

Page 3

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Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

Page 6

Packing

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

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@0.7W input power.



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Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Measuring Method (Speaker Mode)

Test Condition Standard

Temperature 15 ~ 35°C

Relative humidity 45% ~ 85%

Atmospheric pressure 860mbar to 1060mbar

Standard Test Fixture

Input Power 0.1W

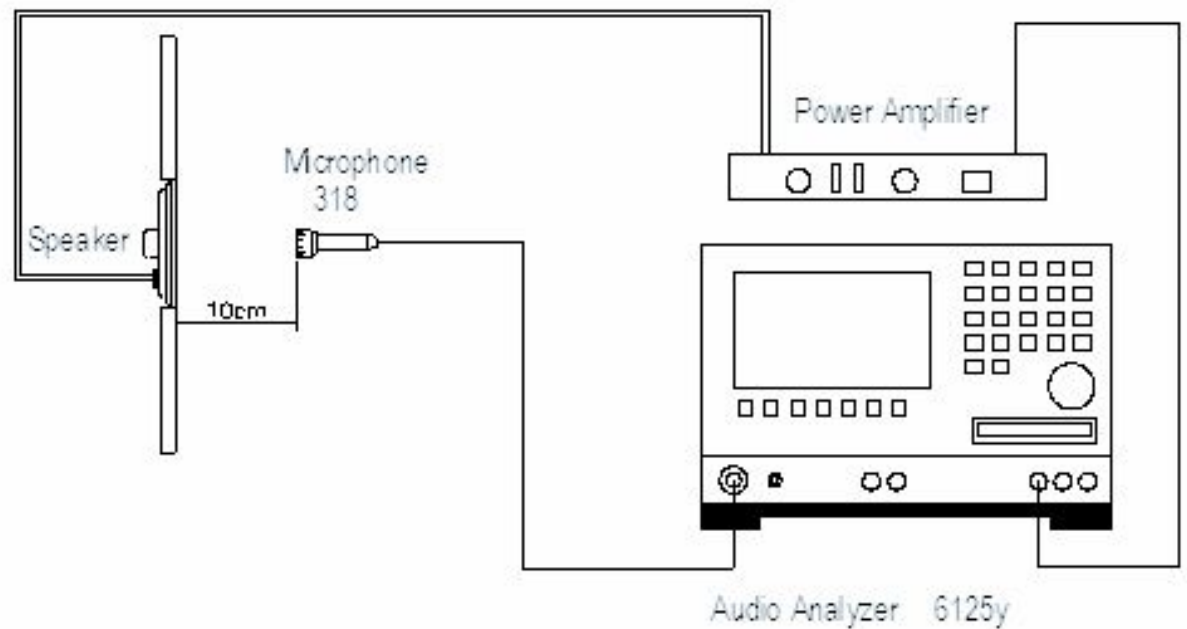
Zero Level -dB

Mode TSR

Potentiometer Range 50dB

Sweep Time 0.5sec

Standard Test Condition of Speaker (Fig. 1)





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Acoustic Product Specification

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Release | Revision: C/2018

CONTENTS

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

Page 1

Speaker Electroacoustic Characteristics

General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

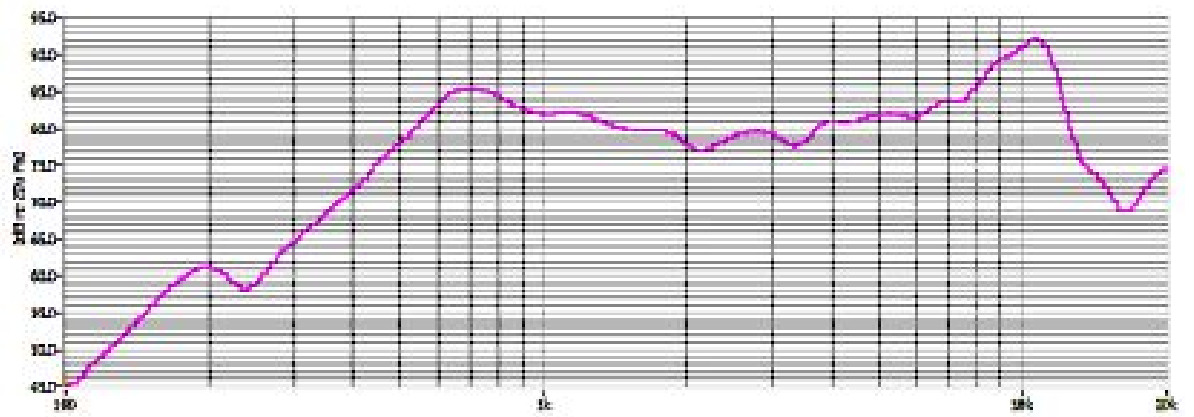
Page 5

Dimensions

Page 6

Packing

Frequency Response Curve (Fig. 2)





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SP DYNAMIC SPEAKER UNIT

Acoustic Product Specification

Product Number: SP-1511L



Release | Revision: C/2018

CONTENTS

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

Page 1
Speaker Electroacoustic Characteristics

General Specifications

Page 2
Reliability Tests

Page 3
Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

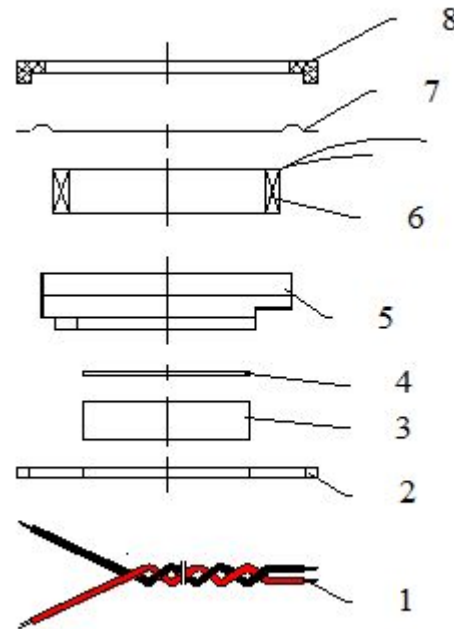
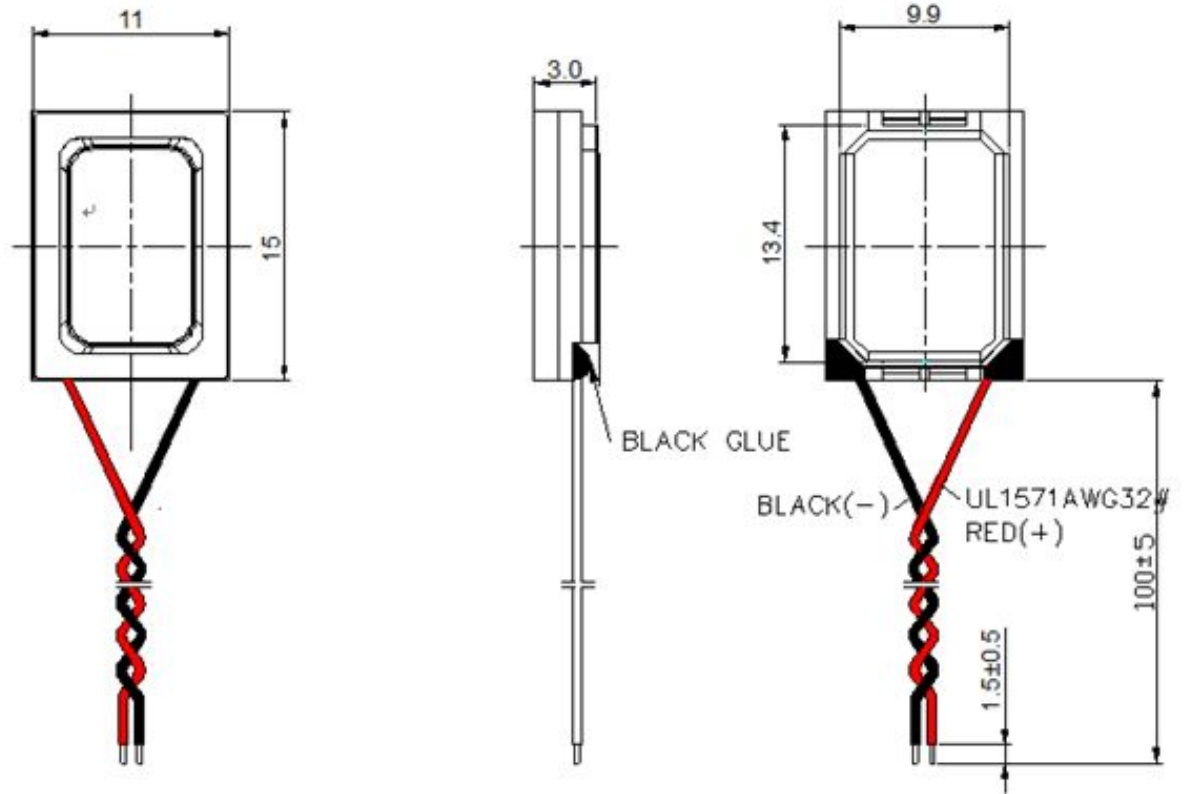
Page 4
Frequency Response Curve

Page 5
Dimensions

Page 6
Packing

Dimensions

Tolerance: ± 0.5 (unit: mm)



No.	Part Name	Material	Quantity
1	Wire	UL1571 / AWG32#	1
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



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General Specifications

Page 2

Reliability Tests

Page 3

Measuring Method (Speaker Mode)

Standard Test Condition of Speakers

Page 4

Frequency Response Curve

Page 5

Dimensions

Page 6

Packing

Packing

