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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# SPECIFICATION

## FOR

### APPROVAL

<b>CUSTOMER</b>	
<b>PRODUCT</b>	<b>SPEAKER</b>
<b>MAKER'S NO.</b>	<b>SP-1813-2</b>
<b>ESTABLISH</b>	<b>08-01-24</b>

<b>DESIGN ENGINEER</b>	<b>ENG DIRECTOR</b>	<b>QA DIRECTOR</b>	<b>APPROVED</b>

### CUSTOMER CONFIRMATION

**SIGNATURE :** \_\_\_\_\_

**DATE :** \_\_\_\_\_

**Soberton Inc.**

211 N. First Street  
Minneapolis, MN. 55401

MODEL NUMBER	CUSTOMER NUMBER	PRODUCT TYPE	REVERSION	DATE	PAGE NUMBER
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**1 . SCOPE**

This specification covers our product of dynamic speaker unit for mobile telephone use.

**2 . MECHANICAL LAYOUT&DIMENSIONS:**

Shown in page3/5

**3 . GENERAL REQUIREMENTS :**

**3.1 OPERATING TEMPERATURE RANGE : -30°C~+70°C**

**3.2 STANDARD TEST CONDITIONS :**

Temperature: 17°C~25°C

Relative Humidity: 45%~80%(RH)

**3.3 JUDGEMENT CONDITIONS:**

Temperature: 20±2°C

Relative Humidity: 60%~70%(RH)

**4 . SPEAKER MODE:**

**4.1 SOUND PRESSURE LEVEL:**

90±3dB spl @1.0,1.2,1.5,2.0KHz in average

Measuring condition :0.1W(Sine wave)0.1m measured with baffler shown in Fig.1.

**4.2 IMPEDANCE: 8±15% Ω /1KHz/1V**

**4.3 MEASURING DIAGRAM:**Shown in Fig.1.

**4.4 TYPICAL FREQUENCY RESPONSE CURVE:** Shown in Fig.2.

**4.5 RATED POWER:0.8W. MAX POWER:1.1W**

**4.6 RESONANCE FREQUENCY(F0):850±20% Hz/ 1V**

**4.7 DISTORTION:**less than 10% at 1KHz,0.5W

**4.8 WEIGHT: 2.1g**

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**5 . RELIABILITY TESTS :**

The sound pressure as specified shall neither devide more than  $\pm 3\text{dB}$  form the initial value,nor any significant damage after any of following testing.

**5.1 HIGH TEMPERATURE TEST:**

High temperature:  $+70\pm 2^{\circ}\text{C}$   
Duration: 96 hours

**5.2 LOW TEMPERATURE TEST:**

Low temperature:  $-30\pm 2^{\circ}\text{C}$   
Duration: 96 hour

**5.3 HEAT SHOCK TEST :**

High temperature:  $+70\pm 2^{\circ}\text{C}$   
Low temperature:  $-30\pm 2^{\circ}\text{C}$   
Changeover time:  $<30$  seconds  
Duration: 1 hours  
Cycle: 100

**5.4 HUMIDITY TEST:**

Temperature:  $+ 40\pm 2^{\circ}\text{C}$   
Relative Humidity: 90%~95%  
Duration: 96 hour

**5.5 TEMPERATURE CYCLE TEST:**

Temperature:  $-30^{\circ}\text{C}$   $+70^{\circ}\text{C}$   
Duration: 45minutes 45minutes  
Temperature gradient:  $1\sim 3^{\circ}\text{C}/\text{min}$   
Cycle: 25

**5.6 DROP TEST:**

Mounted with dummy set mass: 100 g  
Height: 1.5 m  
Cycle: 6(1 each plain)  
Onto the concrete board

**5.7 LOAD TEST:**

**Speaker mode:white noise(EIA filter)for 96 hour@0.5W input power.**

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## 6.MEASURING METHOD(SPEAKER MODE)

### 6-1 .Test Condition

#### STANDARD

Temperature : 15 ~ 35°C

Relative humidity : 45% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

#### JUDGEMENT

Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

### 6-2 . Standard Test Fixture

1.Input Power : 0.1W(0.89V)

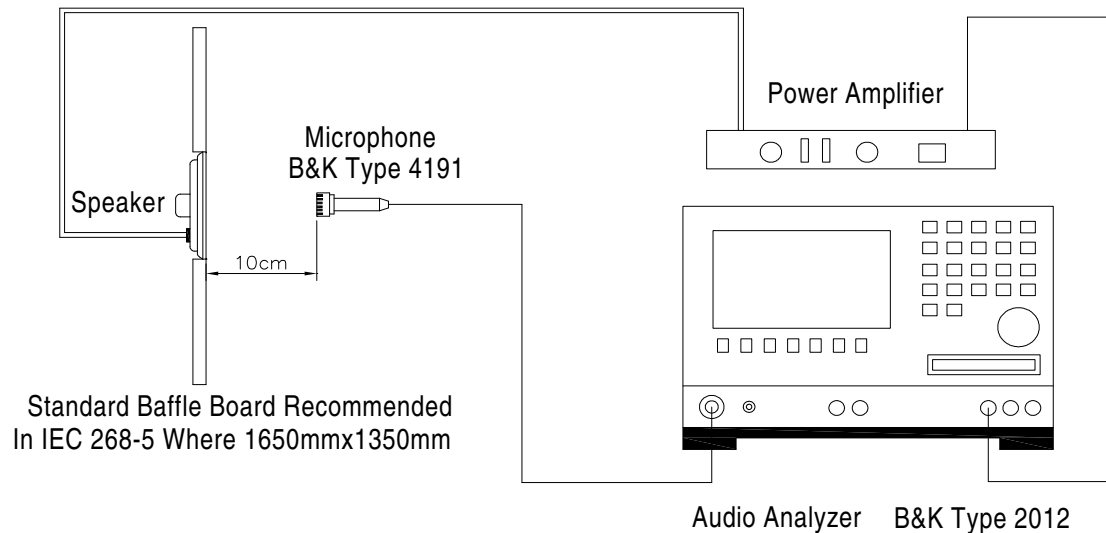
2.Zero Level : -dB

3.Mode : TSR

4.potentiometer Range : 50dB

5.Sweep Time : 0.5sec

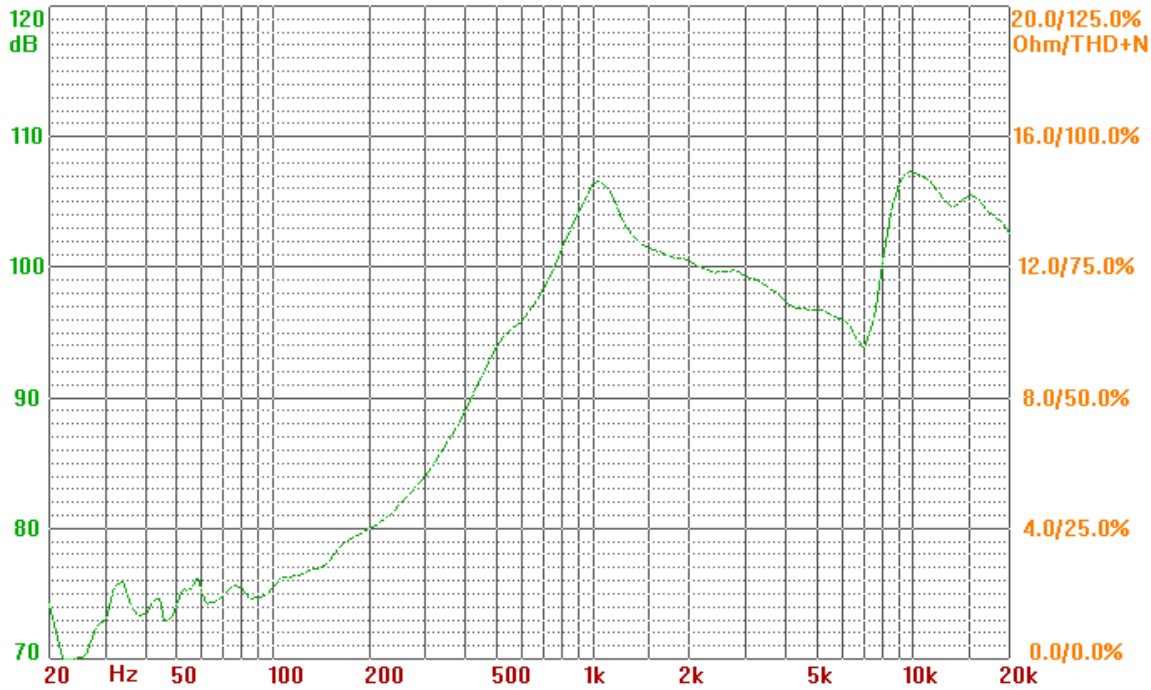
### Standard test condition of speaker



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## 7.FREQUENCY RESPONSE CURVE

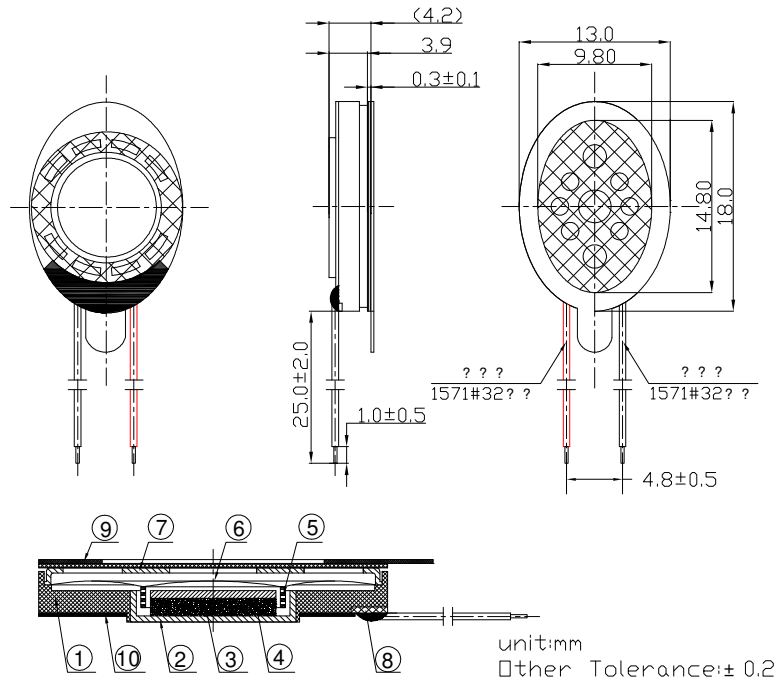


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### 8.DIMENSIONS

Unless otherwise specified,tolerance:±0.3 (unit:mm)



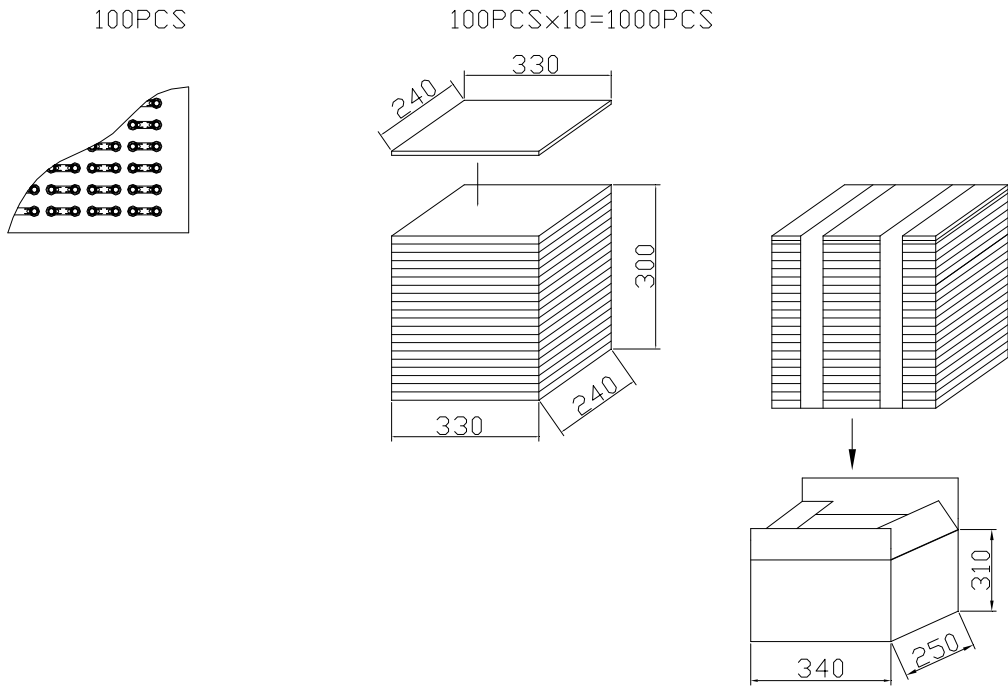
11	LEAD WIRE	UL1571 AWG#32	2		RED/BLAC K
10	DAMPER		1		
9	ADHESIVE TAPE	17.5X 12.5XH0.3mm (PORON)	1		
8	TERMINAL BASE	d 0.3mm ( FI4)	1		
7	COVER	d 0.15 mm SUS	1		
6	DIAPHRAGM	17.15 X 12.15 X 25μ (PEN)	1		
5	VOICE COIL	Ø6.55 mm Copper	1		
4	POLE PIECE	Ø6.1 X 0.4mm (SPCC)	1		
3	MAGNET	N40 (Nd-Fe-B)	1		
2	U YOKE	Ø7.1X1.9mm (SPCC)	1		
1	FRAME	18 X 13 X 3.75mm (PBT)	1		
NO.	PART NAME	MATERIAL	Q'TY	TREATMENT	REMARK

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## 9.PACKING



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