

# SPECIFICATION FOR DYNAMIC SPEAKER

Customer	
Customer P/N	
BeStar Model Name	SMS1515-08H04 LF
Product No.	138700
Issue No.	BS/TES01.529A
Issue Date	06/01/03

## Approval:

- 1.Characteristics
- 2.Drawing
- 3.Reliability Test
- 4.Reflow condition
- 5.Tape on Reel Packing
- 6.MSL rating and Notice
- 7.History change record

Drawn by	Checked by	Approved by	Customer approved
周庆阳	王善梅	郭敏	

For conform to the European Union Directive on the Restriction of Hazardous Substances(RoHS), this type of productions forbid use all the hazardous substances as follow:

Lead  
Cadmium  
Mercury  
Hexavalent chromium  
Polybrominated biphenyls (PBB)  
Polybrominated diphenyl ethers (PBDE)



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# SMS1515-08H04 LF

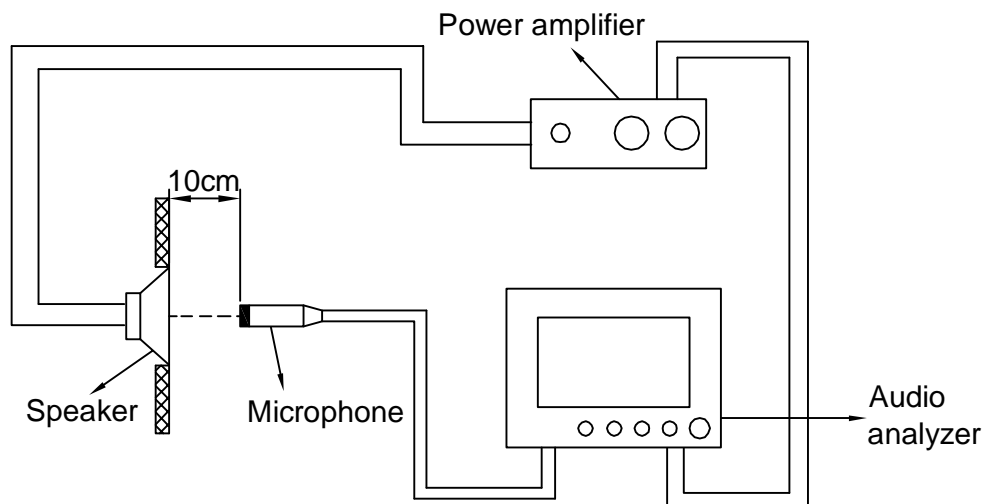


## 1. Characteristics

### 1.1 Electrical and Mechanical Characteristics

No.	Item	Specifications
1.	Dimensions	Please refer to profile drawing
2.	AC Impedance	8 ohm±20% at 2KHz
3.	Resonance Frequency	800±15%Hz
4.	Rated Power	0.5W(2Vrms)
5.	Maximum Power	0.8W(2.53Vrms)
6.	Sound Pressure Level	87±3dB/0.5W/10cm at 1k,1.6k,2k,3.2kHz average
7.	Buzzes&Rattles	Must be normal at sine wave 2Vrms
8.	Total Harmonics Distortion	Max.5%
9.	Frequency Response	Refer to the attached figure
10.	Operating Temperature	-30~+85°C
11.	Storage Temperature	-40~+105°C
12.	Weight	~1.5g

### 1.2 Test Method



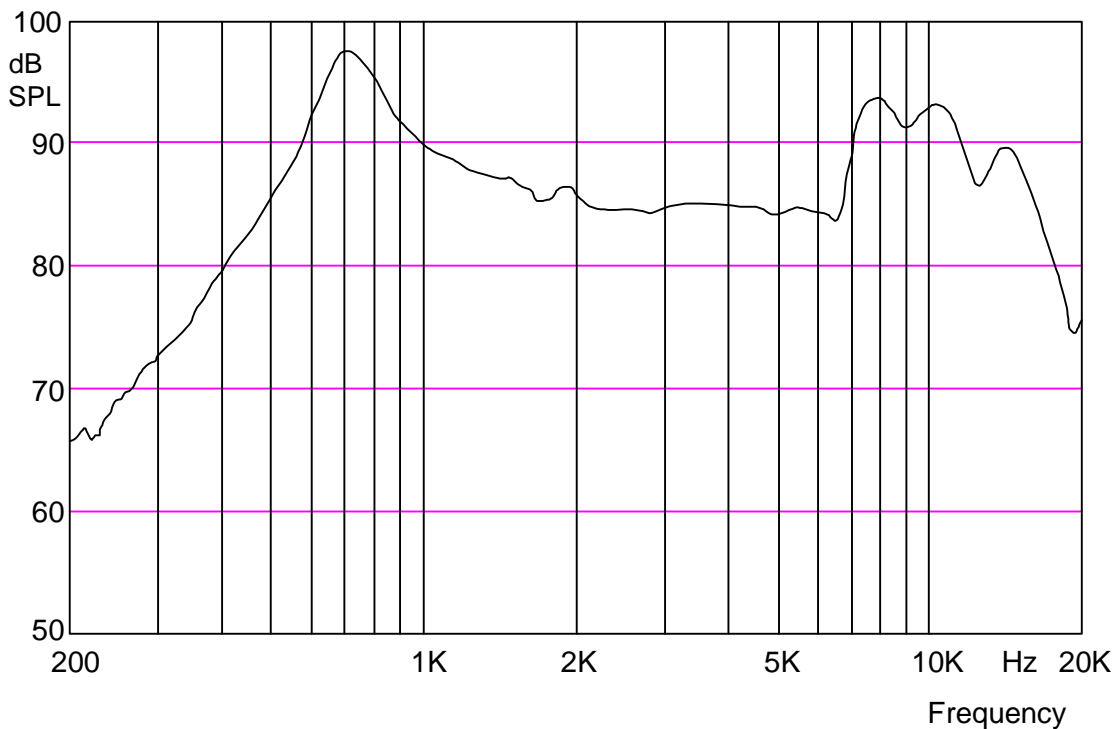
Digital Audio Analysis System

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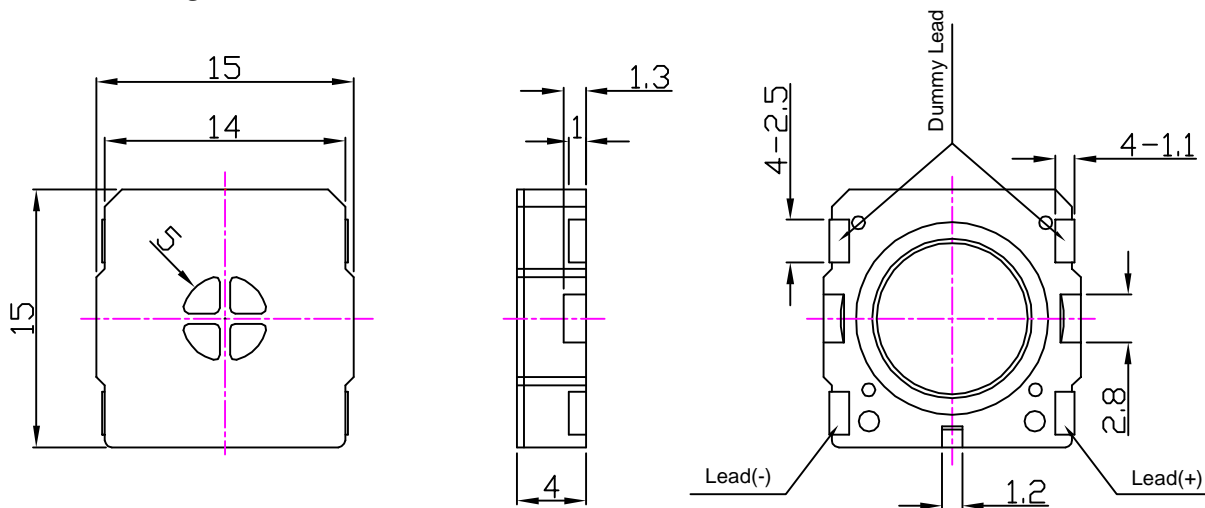
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## 1.3 Frequency response



## 2. Drawing



Unit:mm  
tolerance:±0.2

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## 3. Reliability test

- 3.1 Low Temperature Test
    - Temperature -40°C
    - Duration 240hrs
  - 3.2 High Temperature Test
    - Temperature +105± 2°C
    - Duration 240hrs
  - 3.3 Damp Heat
    - Temperature 40± 2°C
    - Relative Humidity 90%-95%RH
    - Duration 240hrs
  - 3.4 Room temperature life test
    - Temperature 15~35°C
    - Relative Humidity 25%-85%RH
    - Voltage 2Vrms
    - Duration 240hrs
  - 3.5 Temperature Cycle
    - Temperature -20°C / +40°C
    - Temperature Change 1± 2 /min
    - Duration at +65°C 2h(each cycle)
    - Duration at -25°C 2h(each cycle)
    - Duration for one cycle 8h
    - Cycles 10
- All these tests above should be measured after leaving normal temperature for 2hrs.
- 3.6 Drop Test
    - Height 1m(on the concrete floor)
    - Direction of drop 1 each corner, 3 each sides, 6 plain
    - Notice: sensitivity difference at 1kHz shall be within ± 3dB from initial value after test.

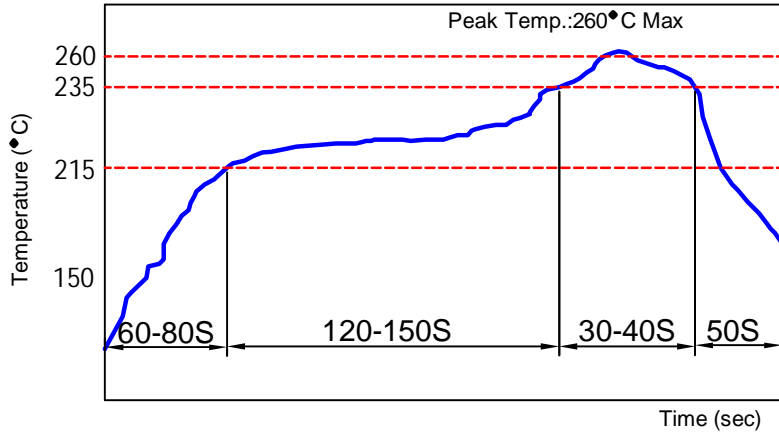
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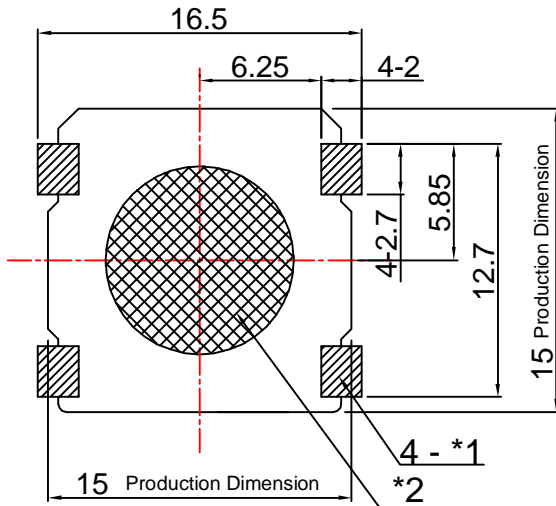
## 4.Reflow condition

### 4.1 reflow soldering



Preheating: 215°C for 120-150 seconds  
 Soldering Temperature: 235°C for 30-40 seconds  
 Peak Soldering Temperature: 260°C max for 10 seconds

### 4.2 Recommended Land Pattern Dimensions



Unit:mm

#### Note

- 1) Land pattern\*1
  - 2) Avoid any pattern on the shade area
- \*2 of PC board is highly recommended

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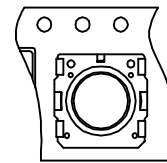
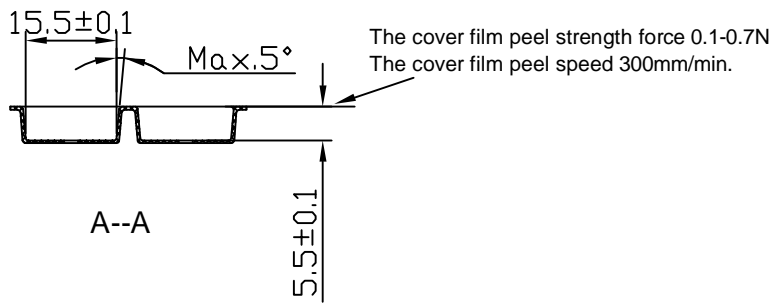
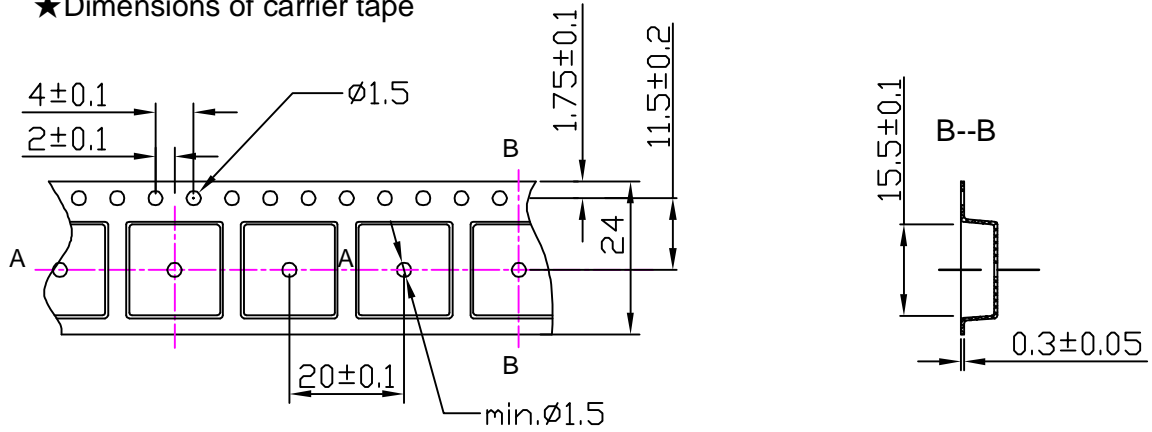
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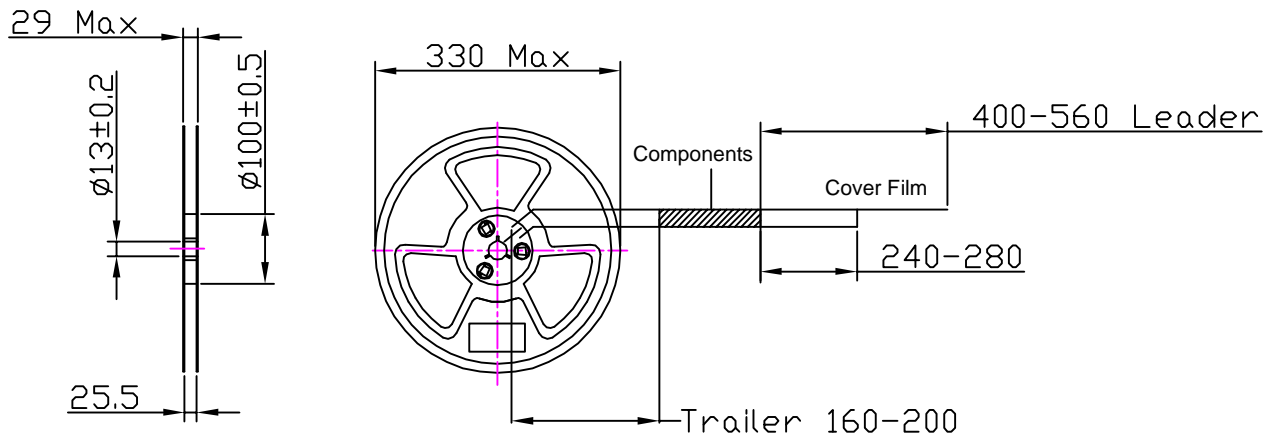
## 5. Tape on Reel Packing

### 5.1 packing drawing

#### ★Dimensions of carrier tape



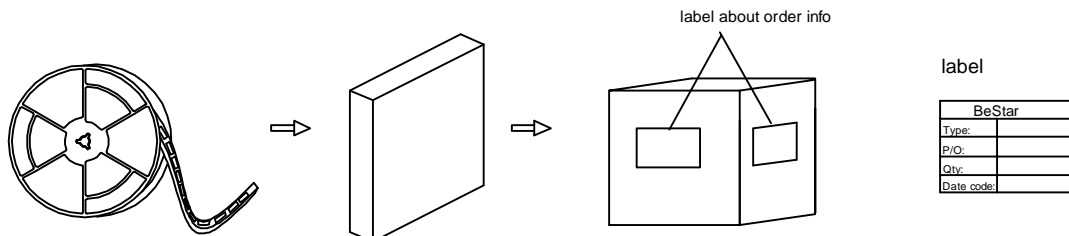
#### ★Dimensions of reel



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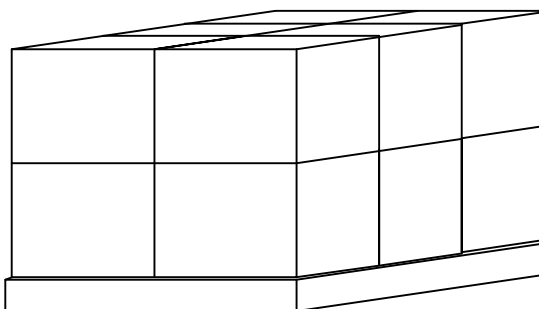
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## 5.2 packing quantity

- 5.21 600pcs/reel
- 5.22 5reel/carton
- 5.23 3000 pcs/carton in total
- 5.24 carton size 38x28x37cm
- 5.25 12carton/tray
- 5.26 tray size 85x77x74cm



## 6.MSL rating and Notice

### Moisture Sensitivity Level and Floor Life

Level	Floor Life(out of bag) at Factory Ambient $\leq 30^{\circ}\text{C}/85\% \text{RH}$ or as Stated
3	168 hours

### 6.1 The products mustn't be washed

### 6.2 Storage Condition

The products should be stored in the room ,where the temperature/humidity is stable. And avoid such places where there are large temperature changes.

Please store the products at the following conditions:

Temperature: -10 to + 40° C Humidity: 15 to 85% R.H.

### 6.3 Expire Date on Storage

Expire date (Shelf life) of the products is six months after delivered under the conditions of a sealed and an unopened package. Please use the products within six months after delivered.

If you store the products for a long time (more than six months), use carefully because the products may be degraded in the solderability and/or rusty.Please confirm solderability and characteristics for the products regularly.

### 6.4 Notice on Product Storage

(1) Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced at quality, and/or be degraded in the solderability due to the storage in a chemical atmosphere.

(2) Please use the products immediately after the package is opened, because the characteristics may be reduced at quality, and/or be degraded in the solderability due to storage under the poor condition.

(3) Please do not drop the products to avoid cracking of ceramic element.

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