



# SPECIFICATION FOR DYNAMIC SPEAKER

TOTAL PAGE 09

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RoHS

## Preliminary Specification For The Acoustic Characteristics of Dynamic Speaker

Customer		Model Name	SMS2020-08H4.5 LF
Customer P/N		Product No.	138707
Date	20Nov. 2012	Issue No.	BS/TES01.990B
Page	01 of 09	Issue Date	2012/11/20

### Approval:

- 1.Description
- 2.Characteristics
- 3.Drawing
- 4.Reliability Test
- 5.Reflow Condition
- 6.MSL rating and notice
- 7.Tape on Reel Packing
- 8.History Change Record

Drawn by	Checked by	Approved by	Customer approved

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# SMS2020-08H4.5 LF

## 1. Description

- 1.1 Upper sound port
- 1.2 Reflowable(Conforms to EIAJ ED-4702)
- 1.3 Flat frequency response with a greater sound volume
- 1.4 Excellent durability in severe environment(storage temperature: -40°C to +105°C)

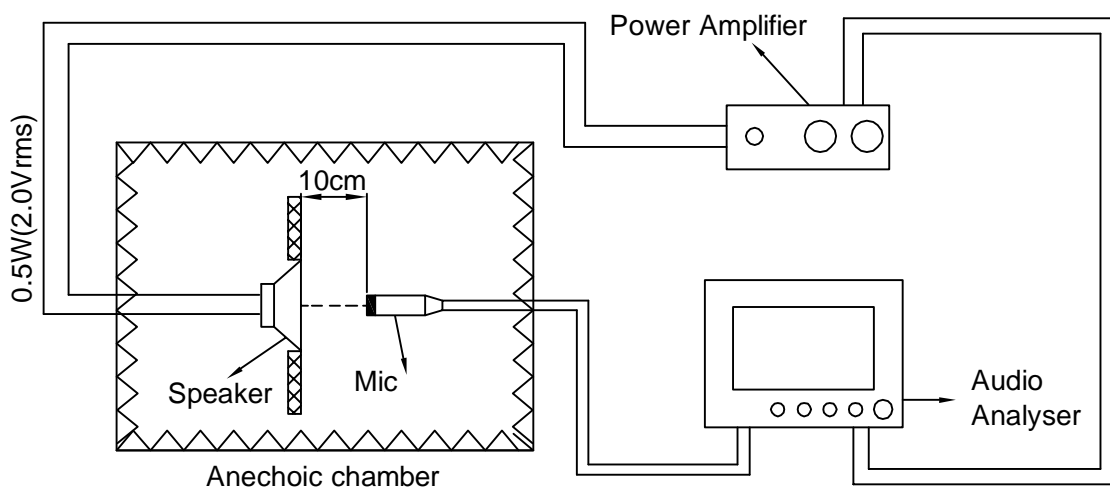


## 2.Characteristics

### 2.1 Electrical and Mechanical Characteristics

No.	Item	Specification
1.	Dimension	20 x 20 x 4.5 (square)
2.	AC Impedance	8 Ω±20% ( at 2KHz,0.5V)
3.	Rated Input Power	0. 5W(2.0Vrms)
4.	Max Input Power	1.0W(2.83Vrms)
5.	Resonance Frequency	850 ±100Hz
6.	S.P.L	93±3dB/0.5W/0.1m at 0.8 ~3.0KHz average
7.	THD	800Hz≤10%,800-1.5KHz slope from 10%, 1.5K-8KHz≤10%
8.	Buzzes & Rattles	Must be normal at sine wave 2. 0Vrms
9.	Polarity	Positive voltage to (+),Diaphragm moves forward
10.	Operating Temperature	-40~+ 85°C
11.	Storage Temperature	-40~+ 105°C
12.	Weight	~3 .0g

### 2.2 Test Method



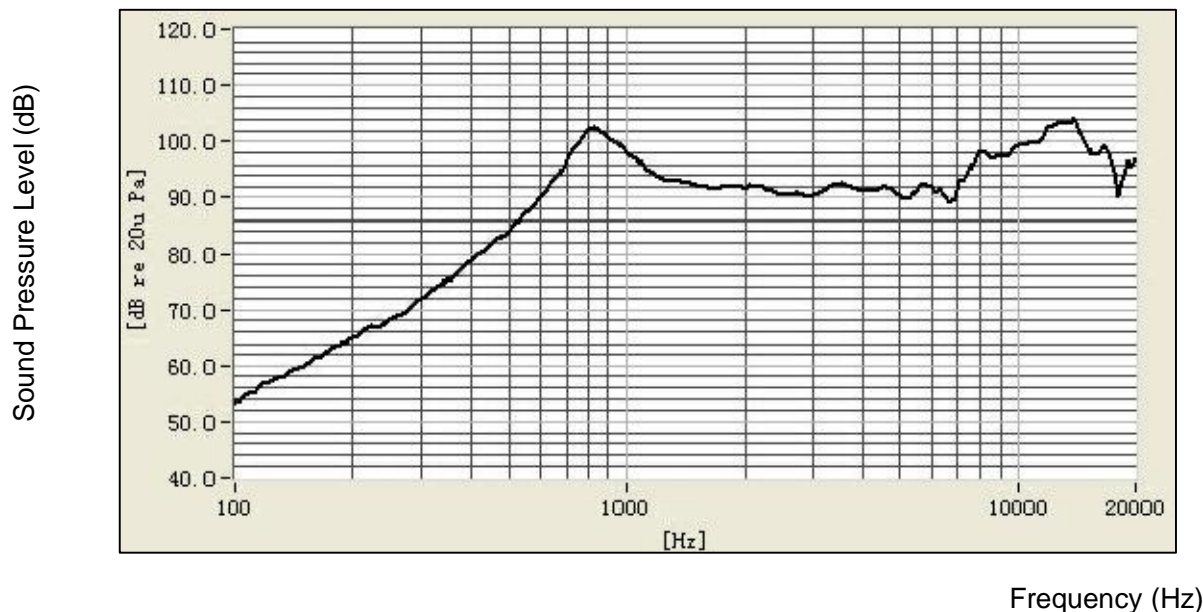
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A	2012/02/01	王文邦		Checked by:	汪凤声	Speaker
Rev.	Date	Drawn	Note	Approved by:	王 平	
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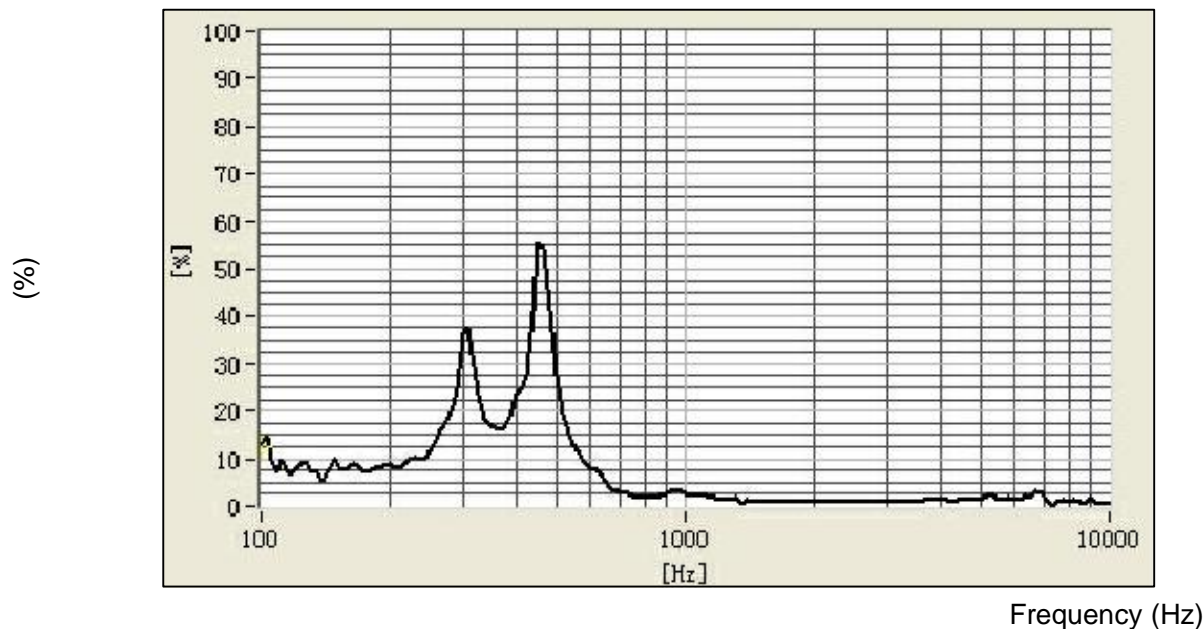
# SMS2020-08H4.5 LF

## 2.3 Frequency Response Curve (only for reference)

A: Frequency Response Magn 0 dB re 20.00  $\mu$  Pa/V 1/12Oct



## 2.4 Total Harmonic Distortion (only for reference)



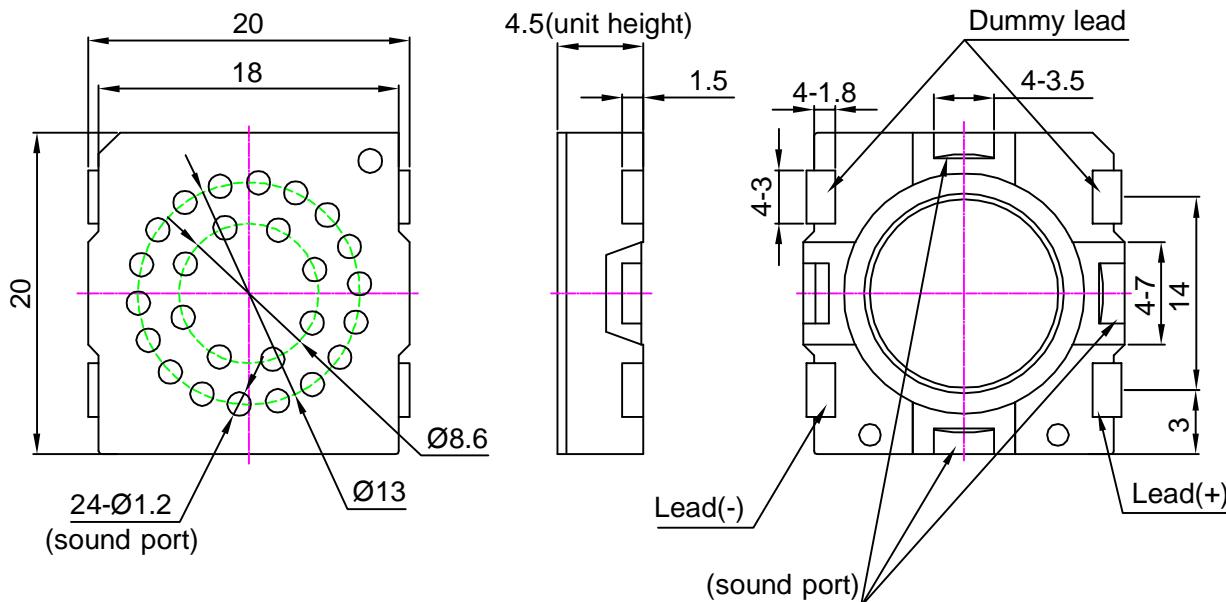
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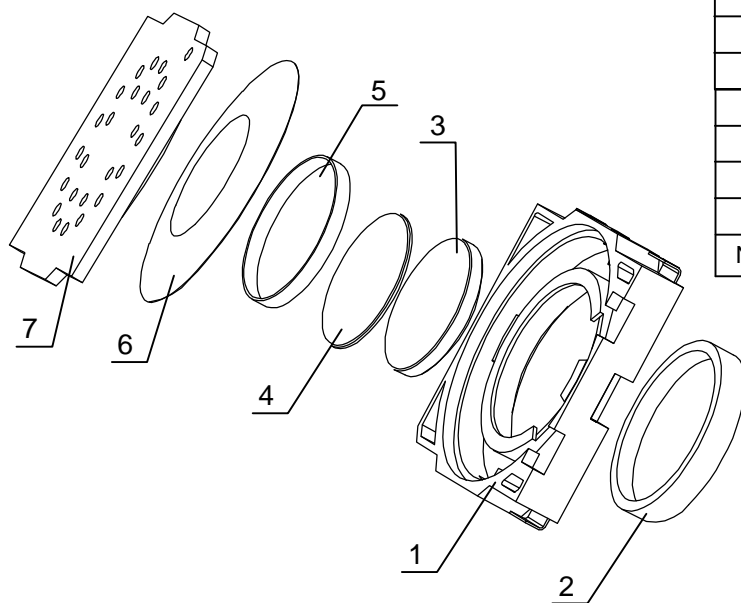
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## 3. Drawing

Unit:mm  
Tolerance:±0.2



## ☆ 3D drawing



No	Part Name	Material	Num
7	Grill	LCP	1
6	Diaphragm	PI	1
5	Voice Coil	Copper	1
4	Plate	Spcc	1
3	Magnet	SmCo	1
2	Yoke	Spcc	1
1	Frame	LCP	1

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Page:04 of 09

# SMS2020-08H4.5 LF

## 4. Reliability Test

4.1 Load Test	Power (Nom)	0 .5W(sine wave)
	Duration	120hrs
4.2 High Temperature Test	Temperature	+105±3°C
	Duration	120hrs
4.3 Low Temperature Test	Temperature	-40±3°C
	Duration	120hrs
4.4 Temperature Cycle Test	Temperature	-40°C/+85°C
	Temperature Change	1±2/min
	Duration at +85°C	2h(each cycle)
	Duration at -40°C	2h(each cycle)
	Duration for one cycle	8h
	Cycle	10
4.5 Drop Test	Height	1.0m
	Drop face	Free drop on concrete floor
	Times	3 (X,Y,Z direction 1 time each, total 3 times)

**Notice:**

- 1.All these tests above should be measured after leaving normal temperature for 2hrs.
- 2.After the test the part shall meet specifications without any degradation in appearance and performance except SPL.SPL difference at 0.8- 3.0kHz shall be within ± 3dB from initial value after test.

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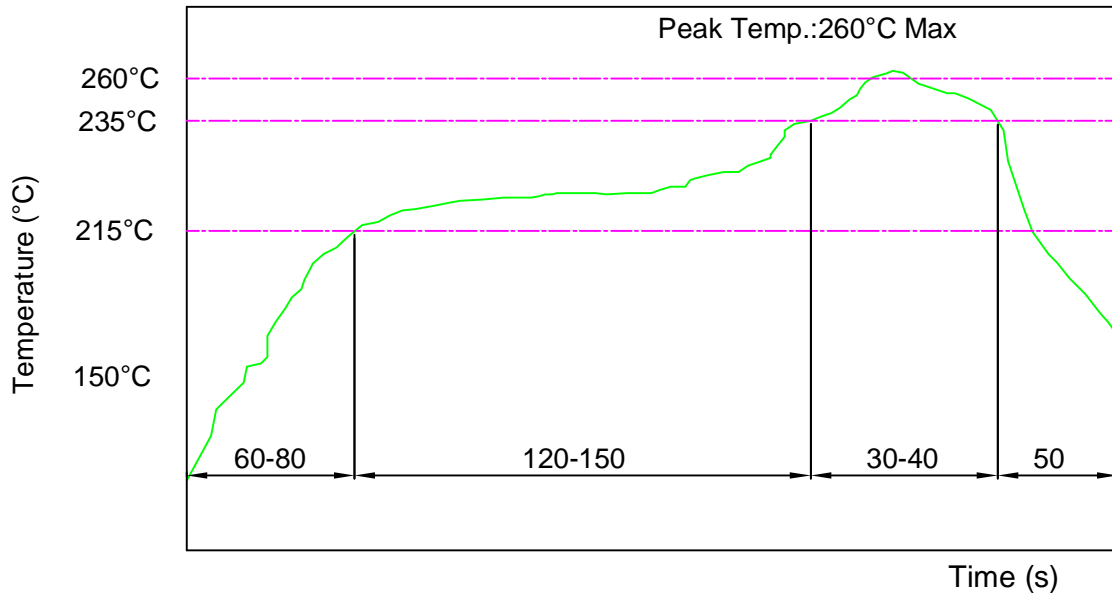
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# SMS2020-08H4.5 LF

## 5.Reflow Condition

Preheating: 215°C for 60-150 seconds  
 Soldering Temperature: 235°C for 20-40 seconds  
 Peak Soldering Temperature: 260°C max for 10 seconds

### 5.1 reflow soldering



## 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

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

(2) 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.

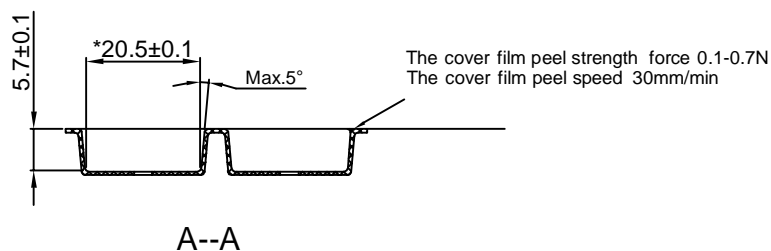
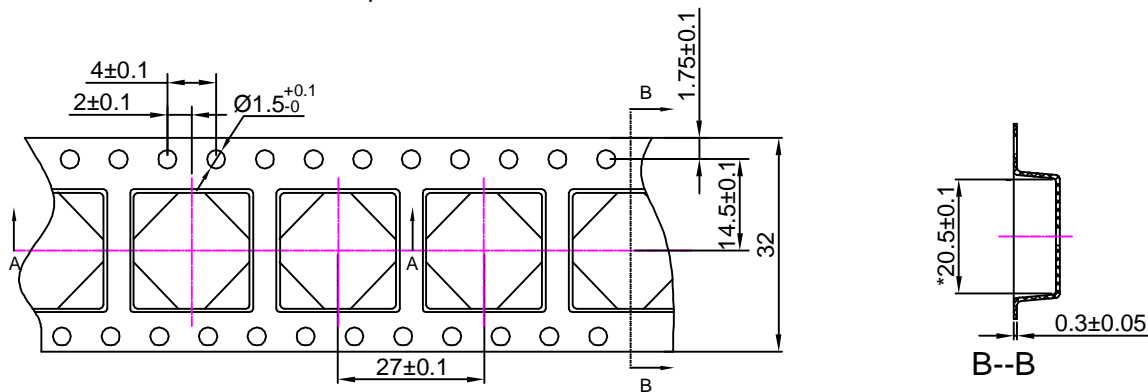
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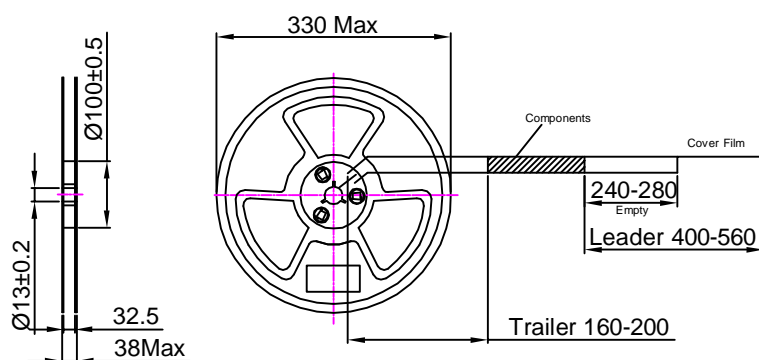
## 7. Tape on Reel Packing

### 7.1 packing drawing

★Dimensions of carrier tape



★Dimensions of reel

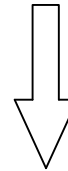
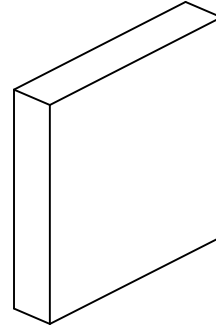
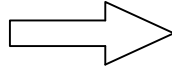
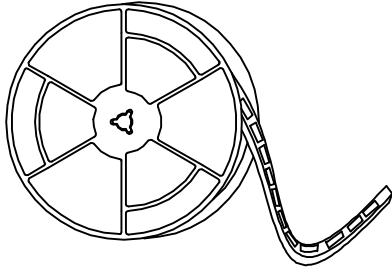


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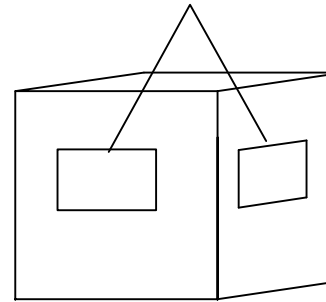
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7.2 packing quantity



label about order info

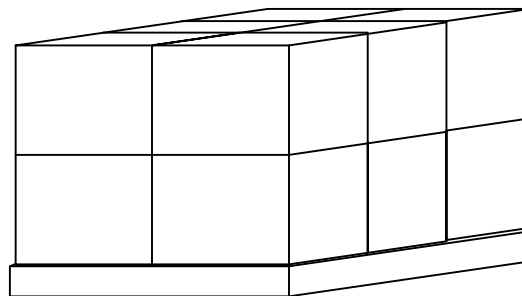


label

<b>BeStar</b>	
Type:	
P/O:	
Qty:	
Date code:	

7.3 packing quantity

- 7.3.1 300 pcs/reel
- 7.3.2 5 reel/carton
- 7.3.3 1500 pcs/carton in total
- 7.3.4 carton size 38x28x37cm
- 7.3.5 12 carton/tray
- 7.3.6 tray size 85x77x74cm



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## 8. History Change Record

version No.	Change Items		Date	Drawn	Approved
	Before	After			
A			2012/02/01	王文邦	郭敏
B	850Hz $\pm$ 20%;8 $\Omega$ $\pm$ 20% (at 2KHz)	850 $\pm$ 100Hz ;8 $\Omega$ $\pm$ 20% (at 2KHz,0.5V);Drawing	2012/11/20	袁凯旋	王平

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