Preliminary Specification For The Acoustic Characteristics of Dynamic Speaker

<table>
<thead>
<tr>
<th>Customer</th>
<th>Model Name</th>
<th>SMS2020-08H4.5 LF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer P/N</td>
<td>Product No.</td>
<td>138707</td>
</tr>
<tr>
<td>Date</td>
<td>Issue No.</td>
<td>BS/TES01.990A</td>
</tr>
<tr>
<td>Page</td>
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<td>2012/02/01</td>
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Approval:
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2. Characteristics
3. Drawing
4. Reliability Test
5. Reflow Condition
6. Tape on Reel Packing
7. History Change Record

<table>
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<tr>
<th>Drawn by</th>
<th>Checked by</th>
<th>Approved by</th>
<th>Customer approved</th>
</tr>
</thead>
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E-mail: wu@be-star.com  http://www.be-star.com
# 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

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dimension</td>
<td>20 x 20 x 4.5 (square)</td>
</tr>
<tr>
<td>2.</td>
<td>AC Impedance</td>
<td>8 Ω ±20%</td>
</tr>
<tr>
<td>3.</td>
<td>Rated Input Power</td>
<td>0.5W(2.0Vrms)</td>
</tr>
<tr>
<td>4.</td>
<td>Max Input Power</td>
<td>1.0W(2.83Vrms)</td>
</tr>
<tr>
<td>5.</td>
<td>Resonance Frequency</td>
<td>850Hz ±20%</td>
</tr>
<tr>
<td>6.</td>
<td>S.P.L</td>
<td>93±3dB/0.5W/0.1m at 0.8,1.0,1.5,2.0KHz average</td>
</tr>
<tr>
<td>7.</td>
<td>THD</td>
<td>800Hz≤30%,800-1.5KHz slope from 10%, 1.5K-8KHz≤10%</td>
</tr>
<tr>
<td>8.</td>
<td>Buzzes &amp; Rattles</td>
<td>Must be normal at sine wave 2.0Vrms</td>
</tr>
<tr>
<td>9.</td>
<td>Polarity</td>
<td>Positive voltage to (+), Diaphragm moves forward</td>
</tr>
<tr>
<td>10.</td>
<td>Operating Temperature</td>
<td>-40~+ 85°C</td>
</tr>
<tr>
<td>11.</td>
<td>Storage Temperature</td>
<td>-40~+ 105°C</td>
</tr>
<tr>
<td>12.</td>
<td>Weight</td>
<td>~3.0g</td>
</tr>
</tbody>
</table>

### 2.2 Test Method

- **Anechoic chamber**
  - Speaker
  - Mic
  - Power Amplifier
  - Audio Analyser

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2012/02/01

SMS2020-08H4.5 LF

Speaker Mic Audio

Power Amplifier

10cm

0.5W(2.0Vrms)

2.2 Test Method
2.3 Frequency Response Curve (only for reference)

A: Frequency Response  Magn 0 dB re 20.00 μ Pa/V  1/12Oct

2.4 Total Harmonic Distortion  (only for reference)
3. Drawing

Unit:mm
Tolerance:±0.2

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 Change
Duration at +85°C 1±2/min
Duration at -40°C 2h(each cycle)
Duration for one cycle 8h
Cycle 10

Rev. Date Approved by:
Checked by:
Drawn by:
Speaker:

2012/02/01
2012/02/01
郭敏 王文邦
王文邦 李红元
博士 达

BESTAR ELECTRONICS INDUSTRIE CO., LTD
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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 0.8-2kHz shall be within ± 3dB from initial value after test.

5. Reflow Condition

5.1 reflow soldering

Preheating: 215°C for 60-150 seconds
Soldering Temperature: 235°C for 20-40 seconds
Peak Soldering Temperature: 260°C max for 10 seconds
6. Tape on Reel Packing

6.1 packing drawing

★ Dimensions of carrier tape

The cover film peel strength force 0.1-0.7N
The cover film peel speed 300mm/min.

★ Dimensions of reel

Date: 2012/02/01

SMS2020-08H4.5 LF

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2012/02/01

A

王文邦

Checked by: 李红元

Rev. Date Drawn Note

SMS2020-08H4.5 LF

D

Drilled by: 郭敏

Drill Date Approved by:

Bestar Electronics Industry Co., Ltd.

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6.2 packing quantity

6.3 packing quantity
   6.3.1 300 pcs/reel
   6.3.2 5 reel/carton
   6.3.3 1500 pcs/carton in total
   6.3.4 carton size 38x28x37cm
   6.3.5 12 carton/tray
   6.3.6 tray size 85x77x74cm
### 7. History Change Record

<table>
<thead>
<tr>
<th>version No.</th>
<th>Change Items</th>
<th>Date</th>
<th>Drawn</th>
<th>Approved</th>
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<tbody>
<tr>
<td></td>
<td>Before</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>After</td>
<td>2012/02/01</td>
<td>王文邦</td>
<td>郭敏</td>
</tr>
</tbody>
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**SMS2020-08H4.5 LF**

**Speaker**

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