Electret Condenser Microphone

| Customer |  |
| Customer P/O |  |
| BeStar Model Name | BCM9765P-44 |
| Product No. | 190505 |
| Issue No. | BS/TEM01.046A |
| Issue Date | 03/10/20 |

Approval:
1. Characteristic
2. Appearance
3. Environment Test
1. Characteristics

Test Condition (Vs=4.5V    RL=2.2Kohm  Ta=20° C  R.H.=65%)

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sensitivity</td>
<td>-44±2dB(0dB=1V/Pa,1kHz)</td>
</tr>
<tr>
<td>2</td>
<td>Impedance</td>
<td>2.2±30%kohm at 1KHz</td>
</tr>
<tr>
<td>3</td>
<td>Current Consumption</td>
<td>0.8mA Max.</td>
</tr>
<tr>
<td>4</td>
<td>Standard operation voltage</td>
<td>1.5-10V</td>
</tr>
<tr>
<td>5</td>
<td>Directional</td>
<td>Omnidirectional</td>
</tr>
<tr>
<td>6</td>
<td>S/N Ratio</td>
<td>more than 60dB(0dB=1V/Pa,1kHz)</td>
</tr>
<tr>
<td>7</td>
<td>Max. Input Sound Level</td>
<td>100dB S.P.L</td>
</tr>
<tr>
<td>8</td>
<td>Frequency Response</td>
<td>20Hz~16kHz</td>
</tr>
<tr>
<td>9</td>
<td>Decreasing Voltage Characteristic</td>
<td>-3dB(Vs=4.5V-3V)</td>
</tr>
<tr>
<td>10</td>
<td>Weight</td>
<td>Less than 1.3g</td>
</tr>
</tbody>
</table>

**Frequency Resonse Curve**

![Relative Response Curve](image)

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>Sound Pressure Level (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>-20</td>
</tr>
<tr>
<td>50</td>
<td>-10</td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>200</td>
<td>10</td>
</tr>
<tr>
<td>500</td>
<td>20</td>
</tr>
<tr>
<td>1000</td>
<td>30</td>
</tr>
<tr>
<td>2000</td>
<td>40</td>
</tr>
<tr>
<td>5000</td>
<td>50</td>
</tr>
<tr>
<td>10000</td>
<td>60</td>
</tr>
<tr>
<td>20000</td>
<td>70</td>
</tr>
</tbody>
</table>

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Microphone

DRG NO
BS/TEM01.046A
2. Appearance

BCM9765P-44

Measurement Circuit:

Terminal 1 Output

Terminal 2 Ground

$\text{BCM9765P-44}$

Terminal 1 Output

5.0

6.5 ± 0.2

9 ± 0.2

2.5 ± 0.2

Unit: mm

FET impedance

Converter

Terminal 1

$C_1 \mu F$

Output

Power Supply $Vs$

Terminal 2

Earth

Shield Case

RL

ECM unit

Terminal 1 Output

Terminal 2 Ground

$\text{BCM9765P-44}$
**BCM9765P-44**

### 3. Environment Test

#### 3.1 High temp. life test
- **Temperature**: +70°C
- **Duration**: 200hrs

#### 3.2 Low temp. life test
- **Temperature**: -25°C
- **Duration**: 200hrs

#### 3.3 Temperature cycle test
- **Cycles**: 5
- Temperature cycles:
  - -5°C → +20°C → 70°C → +20°C → 30mins → 10mins → 30mins → 10mins

#### 3.4 Humidity Test
- **Temperature**: +60°C
- **Relative Humidity**: 90~95%
- **Duration**: 200hrs

Tests above should be measured after leaving normal temperature for 6hrs.

#### 3.5 Vibration Test
- **Vibration Frequency**: 10~55Hz
- **Amplitude**: 1.52mm/min
- **Direction**: 3(x,y&z)
- **Duration**: 2hrs each cycle (total 6 hrs)

#### 3.6 Drop test
- **Height**: 1m
  - (Dropped to 20mm thick hardwood board without packing.)
- **Direction**: 3

#### 3.7 Soldering Heat Shock
- **Temperature**: 260 ± 5°C
- **Duration**: 10 ± 1 sec

#### 3.8 Terminal Mechanical Strength
- **Strength**: 1kg
- **Duration**: 1 min

#### 3.9 Storage Temperature:
- **Temperature**: -20~+60°C

**Notice:**

All specifications must be satisfied in this condition.

**Sensitivity:** Allowable deviation within ±3dB from initial sensitivity.