## Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions</td>
<td>$15.0 \times 2.8\text{ mm}$</td>
</tr>
<tr>
<td>Impedance</td>
<td>8 Ohm ± 15% at 1.5 KHz 1 V</td>
</tr>
<tr>
<td>Resonant frequency</td>
<td>900 Hz ± 20% at 1 V</td>
</tr>
<tr>
<td>Sound pressure level</td>
<td>92 dB/w ± 3 dB at 0.3 w 10 cm 1.0K, 1.2K, 1.5K, 2.0K Hz</td>
</tr>
<tr>
<td></td>
<td>88 dB/w ± 3 dB at 0.1 w 0.1 m 1.0K, 1.2K, 1.5K, 2.0K Hz</td>
</tr>
<tr>
<td>Response</td>
<td>Fo Hz ~ 20 KHz max.</td>
</tr>
<tr>
<td>Distortion</td>
<td>10% max. at 1.5 KHz 0.3 W</td>
</tr>
<tr>
<td>Input power</td>
<td>Nominal 0.3 W Handling capacity 0.5 W</td>
</tr>
<tr>
<td>Operation</td>
<td>must be normal at program source 0.3 W</td>
</tr>
<tr>
<td>Buzz, rattle, etc.</td>
<td>must be normal at sine wave 1.55 V</td>
</tr>
<tr>
<td>Operating temp.</td>
<td>-20 ~ +85°C</td>
</tr>
<tr>
<td>Weight</td>
<td>1.2 g</td>
</tr>
<tr>
<td>Material</td>
<td>Metal</td>
</tr>
<tr>
<td>RoHS</td>
<td>yes</td>
</tr>
</tbody>
</table>

## Mechanical Drawing

Tolerance: ±0.2

The mylar will not exceed the metal frame when input is at the maximum power of 0.5W.
Frequency Response Curve

A Frequency Response. Magn $\text{d}B$ re $20.00\mu\text{PA} (0.3\text{w}/10\text{cm})$

![Frequency Response Curve](image1)

A Frequency Response. Magn $\text{d}B$ re $20.00\mu\text{PA} (0.1\text{w}/0.1\text{m})$

![Frequency Response Curve](image2)
Measurement Circuit

- Power Amplifier
  B&K Type 2716C

- Microphone
  B&K Type 4191

- Audio Analyzer
  B&K Type 2012

JIS C5531
940mm x 640mm x 1240mm
### Mechanical Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Test Condition</th>
<th>Evaluation Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solderability</td>
<td>Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of +270 ±5°C for 3 ±0.5 seconds.</td>
<td>90% min. stripped wires will be wet with solder. (Except the edge of the terminal.)</td>
</tr>
<tr>
<td>(Connector Excepted)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Wire Pull Strength</td>
<td>The pull force should be applied to double lead wire: Horizontal 3.0N (0.306kg) for 30 seconds Vertical 2.0N (0.204kg) for 30 seconds</td>
<td>No damage or cutting off.</td>
</tr>
<tr>
<td>Vibration</td>
<td>The speaker should be measured after applying a vibration amplitude of 1.5 mm with 10 to 55 Hz band of vibration frequency to each of the 3 perpendicular directions for 2 hours.</td>
<td>No obstacle will be harmful to normal operation; damage, cracks, rust, and distortions.</td>
</tr>
<tr>
<td>Drop Test</td>
<td>The part will be dropped, contained inside a normal box, from a height of 75 cm onto a 40 mm thick wooden board 10 times.</td>
<td>Should not be audible at 1.55 V sine wave between Fo ~ 20 KHz.</td>
</tr>
</tbody>
</table>

### Environment Test

<table>
<thead>
<tr>
<th>Item</th>
<th>Test Condition</th>
<th>Evaluation Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>High temp. test</td>
<td>After being placed in a chamber at 85°C for 8 hours.</td>
<td>The speaker will be measured after being placed at +25°C for 6 hours. No obstacle will be harmful to normal operation; damage, cracks, rust, and distortions. Should not be audible at 1.55 V sine wave between Fo ~ 20 KHz. The SPL should be within ±3dB when compared to the initial measurements.</td>
</tr>
<tr>
<td>Low temp. test</td>
<td>After being placed in a chamber at -20°C for 96 hours.</td>
<td></td>
</tr>
<tr>
<td>Humidity test</td>
<td>After being placed in a chamber at +60°C and 90% relative humidity for 240 hours.</td>
<td></td>
</tr>
<tr>
<td>Temp. cycle test</td>
<td>The part shall be subjected to 5 cycles. One cycle will consist of:</td>
<td></td>
</tr>
</tbody>
</table>
Reliability Test

<table>
<thead>
<tr>
<th>Item</th>
<th>Test Condition</th>
<th>Evaluation Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Test</td>
<td>0.3 W white noise, applied for 24 hours, at room temperature.</td>
<td>The speaker will be measured after being placed at +25°C for 1 hour. No obstacle will be harmful to normal operation; damage, cracks, rust, and distortions. Should not be audible at 1.55 V sine wave between F0 ~ 20 KHz. The SPL should be within ±3dB when compared to the initial measurements.</td>
</tr>
</tbody>
</table>

Test Conditions

<table>
<thead>
<tr>
<th>Standard Test Condition</th>
<th>a) Temperature: +5 ~ +35°C</th>
<th>b) Humidity: 45 - 85%</th>
<th>c) Pressure: 860-1060 mbar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Judgement Test Condition</td>
<td>a) Temperature: +25 ±2°C</td>
<td>b) Humidity: 60 - 70%</td>
<td>c) Pressure: 860-1060 mbar</td>
</tr>
</tbody>
</table>