



soberton inc.

ST BUZZER

Acoustic Product Specification

Product Number: ST-1411



Release | Revision: D/2018

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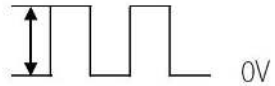
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Specifications

| Item | Unit | Specification | Condition |
|-------------------------------------|------|--------------------------|--|
| Rated Voltage | Vo-p | 3.0 | Vo-p  |
| Operating Voltage | Vo-p | 2.0 ~ 4.0 | |
| Mean Current | mA | 80 Max. | At rated voltage, 3200 Hz square wave, 1/2 duty |
| Coil Resistance | Ω | 18 ±3 | |
| Sound Output | dB | 87 | At 10cm(A-weight free air), at rated voltage 3200Hz, square wave, 1/2 duty |
| Rated Frequency | Hz | 3200 | |
| Operating Temp | °C | -30 ~ +80 | |
| Storage Temp | °C | -40 ~ +85 | |
| Dimension | mm | L14.0×W11.0 × H3 | See attached drawing |
| Weight | gram | 1.0 | |
| Material | | LCP (Black) | |
| Terminal | | SMD type (Plating Sn) | See attached drawing |
| Environmental Protection Regulation | | RoHS | |

Test Condition

Temperature : +25±2 °C Relative Humidity: 65±5% Air Pressure: 86-106KPa

Mechanical Characteristics

| Item | Test condition | Evaluation standard |
|------------------------------|---|--|
| Solderability | Lead terminals are immersed in the solder bath at +250±5°C for 3±1 seconds. | 90% min. lead terminals shall be wet with solder No interference in operation. |
| Soldering Heat Resistance | The product follows the reflow temperature curve to test its reflow thermal stability. | |
| Terminal Mechanical Strength | Lead pads shall be soldered on the pc board, and the force of 9.8N (1.0Kg) shall be applied to the part for 10 seconds. | No damage and cutting off |
| Vibration | The part shall be subjected to a vibration cycle of 10Hz to 55Hz to 10Hz in a period of 1 minute. Total peak amplitude shall be 1.52mm(9.3G). The vibration test shall consist of 2 hours per axis in each three axes (X,Y,Z). Total 6 hours. | After the test, the part shall meet specifications without any damage in appearance and performance except SPL. The SPL should be in ±10dBA compared with initial one. |
| Drop Test | The part is dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes (X,Y,Z). Total of 9 times. | |



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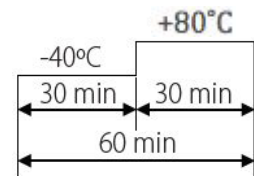
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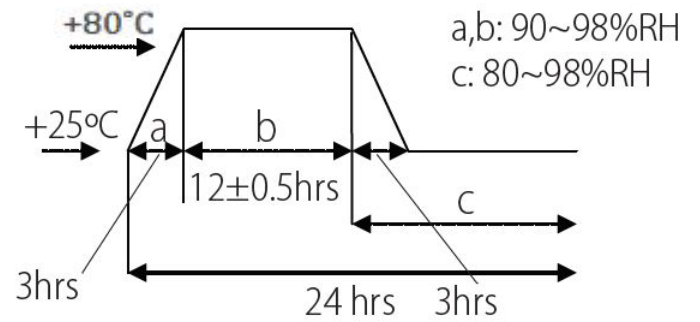
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Environment Test

| Item | Test condition | Evaluation standard |
|-----------------|---|---|
| High Temp. Test | The part is placed in a chamber at +80°C for 48 hours | After the test, the part shall meet specifications without any degradation in appearance and performance except SPL. After 4 hours at +25°C, the SPL will be in ±10dBA compared with initial one. |
| Low Temp. Test | The part is placed in a chamber at -40°C for 48 hours | |
| Thermal Shock | The part shall be subjected to 10 cycles. Each cycle shall consist of:  | |

Temp./Humidity Cycle

The part shall be subjected to 10 cycles. One cycle shall be 24 hours and consist of:



Reliability Test

| Item | Test condition | Evaluation standard |
|---------------------|--|--|
| Operating Life Test | Ordinary Temperature The part shall be subjected to 96 hours of continuous operation at +25°C±10°C. | After the test, the part shall meet specifications without any degradation in appearance and performance except SPL. After 4 hours at +25°C, the SPL should be in±10dBA compared with initial one. |
| | High Temperature The part shall be subjected to 72 hours of continuous operation at +80°C at 3.0V, 3200Hz applied. | |
| | Low Temperature The part shall be subjected to 72 hours of continuous operation at -30°C at 3.0V, 3200Hz applied. | |

Standard test condition:

- a) Temperature: +5~+35°C
- b) Humidity: 45~85%
- c) Pressure: 86~106KPa



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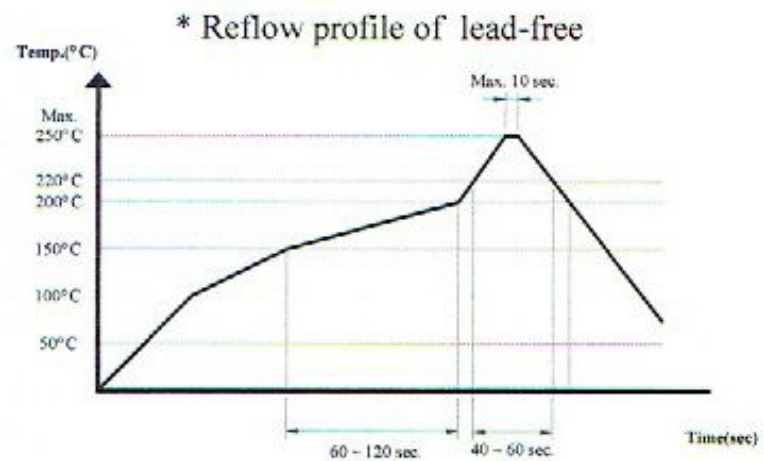
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Recommended Temperature Profile for Reflow Oven

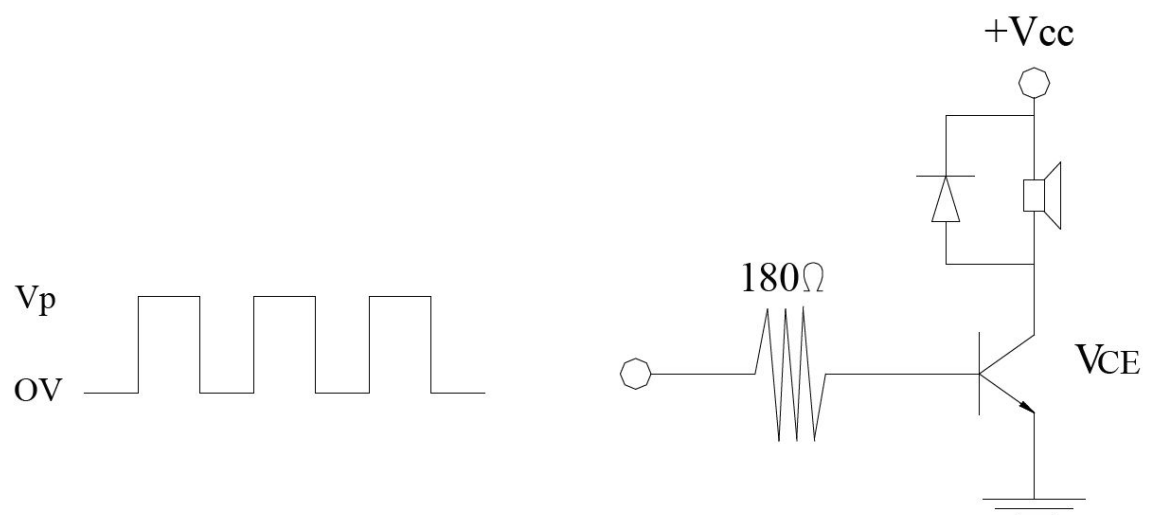
Recommendable wave soldering condition is as follows:

Note 1: It is requested that reflow soldering should be executed after heat of product goes down to normal temperature.

Note 2: Peak reflow temperature of 250°C maximum of 10 seconds, with a maximum duration of 40-60 seconds between 220°C and 250°C



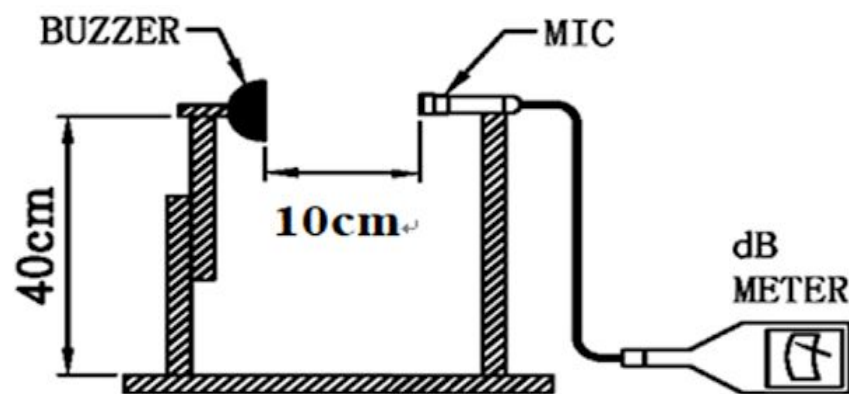
Measurement Test Circuit



Measurement Method

S.P.L Measuring Circuit

Input Signal: 3.0 Vo-p, square wave, 1/2 duty, 3200Hz



Mic: RION S.P.L meter UC30 or equivalent

S.G: Hewlett Packard 33120A Function Generator or equivalent



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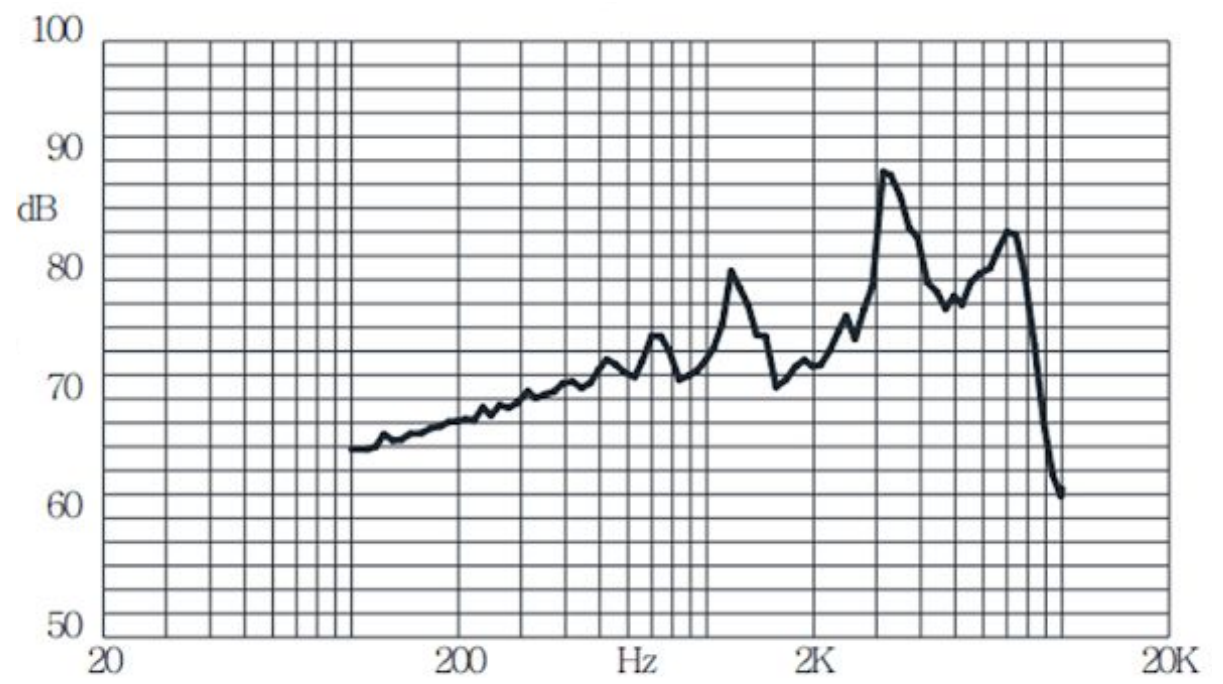
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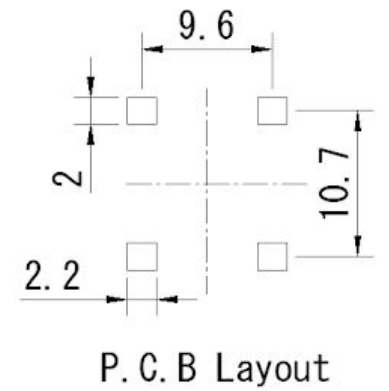
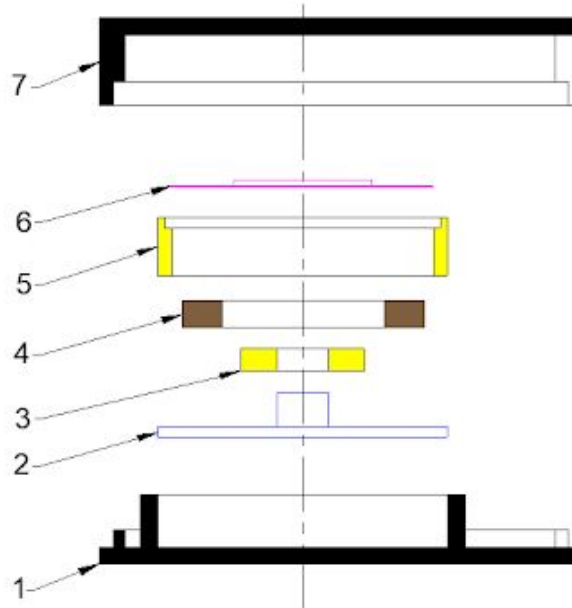
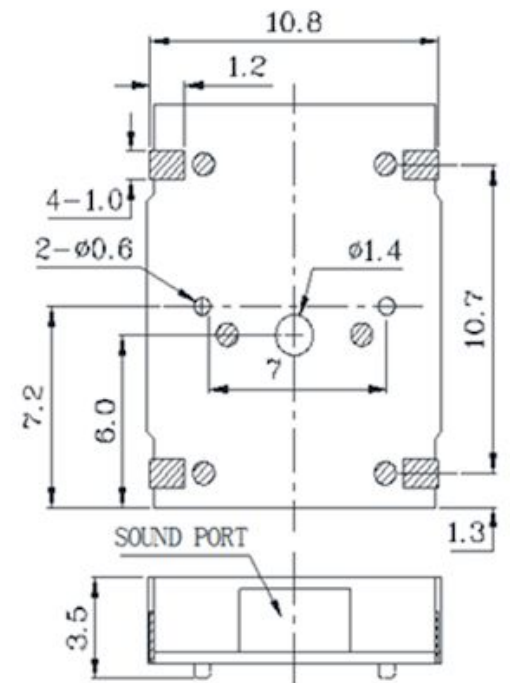
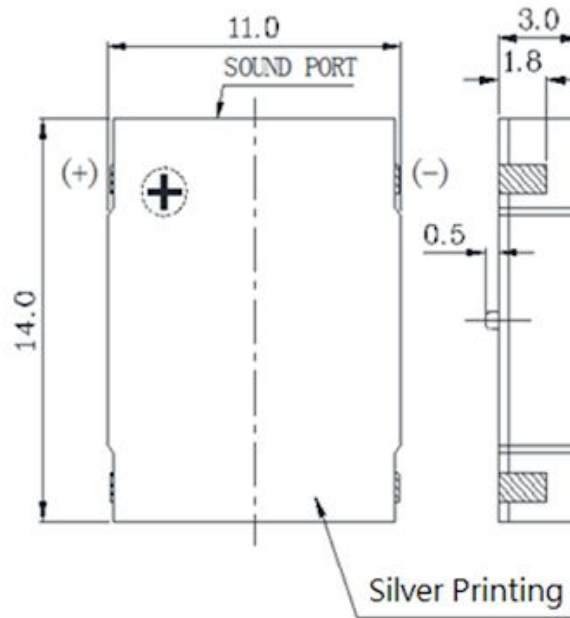
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Dimensions

Tolerance: ± 0.3 (unit: mm)



| No. | Part Name | Material | Quantity |
|-----|---------------|----------------|----------|
| 1 | Case | LCP | 1 |
| 2 | Frame | Ferrum | 1 |
| 3 | Coil | Copper | 1 |
| 4 | Magnet | Poly + Ferrite | 1 |
| 5 | Copper Collar | Copper | 1 |
| 6 | Diaphragm | Ferrum | 1 |
| 7 | Case | LCP | 1 |



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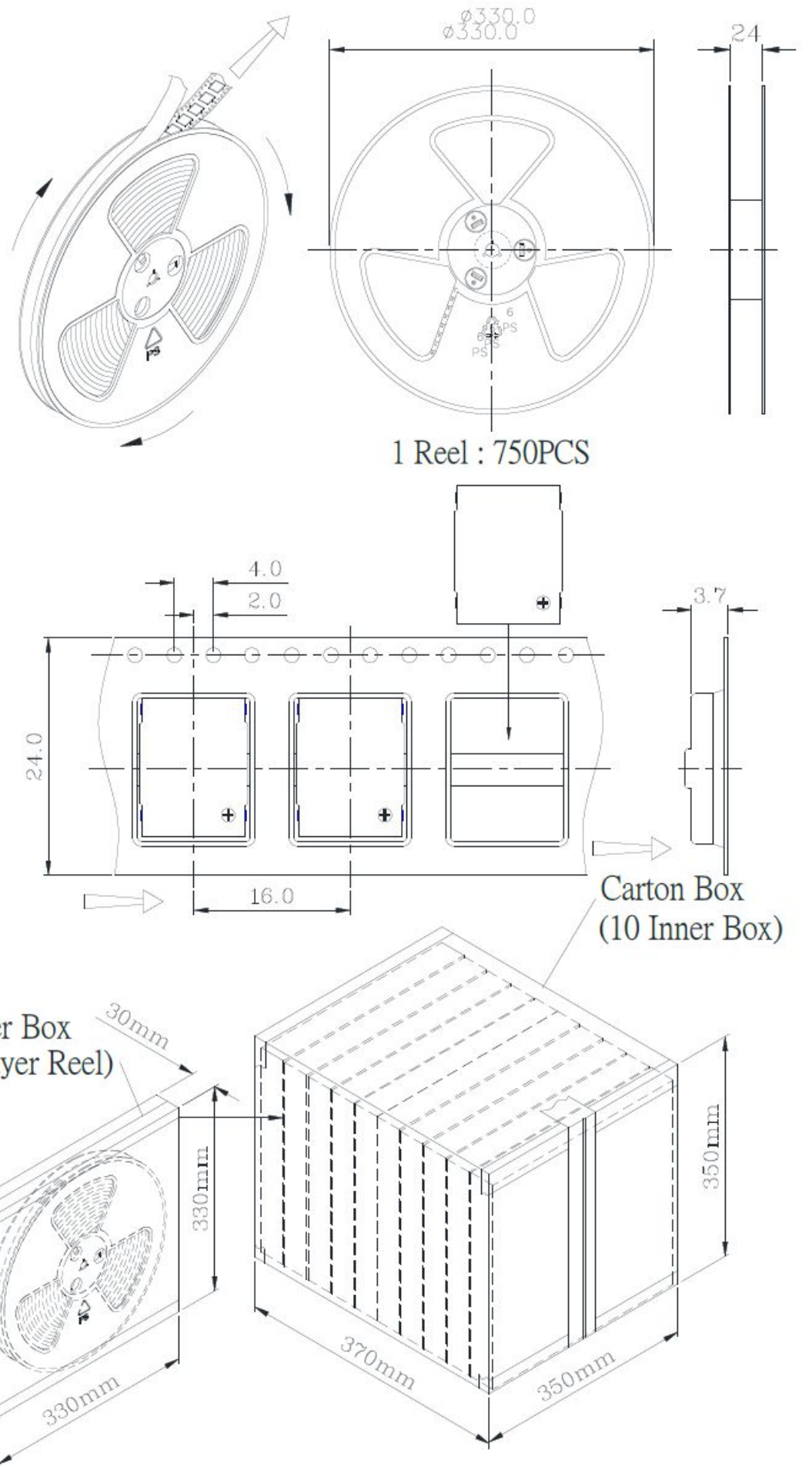
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Packing



| Packing Job | L x W x H (mm) | Pieces |
|-------------|-----------------|---------------------|
| Inner Box | 330 x 330 x 30 | 1 x 750 = 750pcs |
| Carton Box | 370 x 350 x 350 | 10 x 750 = 7,500pcs |