# SPECIFICATION
# FOR PIEZO ELECTRIC SOUNDER

| | |
|---|---|
| Customer | |
| Customer P/N | |
| BeStar Model Name | BSP1010-05H03 LF |
| Product No. | 055600 |
| DIssue No. | BS/TEP01.244B |
| Issue Date | 07/08/16 |

## Approval:

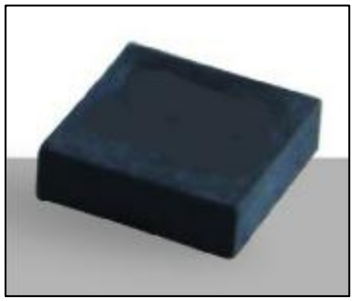
1.Characteristics
2.Dimension
3.Reliability Test
4.Tape on Reel Packing
5.Notice
6.History change record

| Drawn by | Checked by | Approved by | Customer approved |
|---|---|---|---|
| | | | |

For conform to the European Union Directive on the Restriction of Hazardous Substances(RoHS), this type of productions forbid use all the hazardous substances as follow:
Lead
Cadmium
Mercury
Hexavalent chromium
Polybrominated biphenyls (PBB)
Polybrominated diphenyl ethers (PBDE)

Bestar Acoustic
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# BSP1010-05H03 LF



Colour: Black

## 1. Characteristics

### 1.1 Features

1. SMD;thinner , smaller size
2. High S.P.L.; and clear sound
3. Reflowable;RoHS complant
4. Tape & Reel supply
5. Minimum quantity (one reel): 1000 pcs.

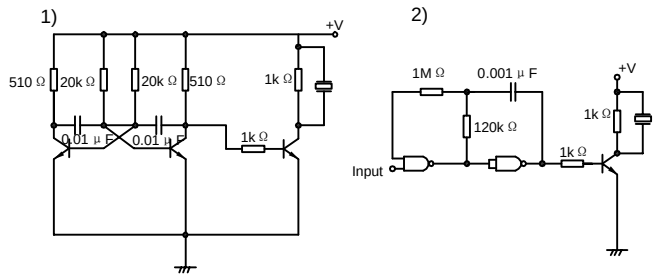
### 1.2 Electrical and Mechanical Characteristics

| No. | Item | Specification |
|---|---|---|
| 1. | Rated Voltage(Square Wave) | 5 Vp-p |
| 2. | Operating Voltage | 1...25Vp-p |
| 3. | a)Rated Current | max.2.5mA |
| 4. | Capacitance at 120Hz | 10± 30%nF |
| 5. | a)Sound Output at 5.2KHz,10cm | Min.70dB(after reflow no changes) |
| 6. | Resonant Frequency | 5.2± 0.5KHz |
| 7. | Operating Temperature | -20...+70 °C |
| 8. | Storage Temperature | -40...+85 °C |
| 9. | Weight | 1.0g ±25% |
| | a)Value applying at rated voltage.(5Vp-p square wave,1/2duty) | |

### 1.3 Test method:

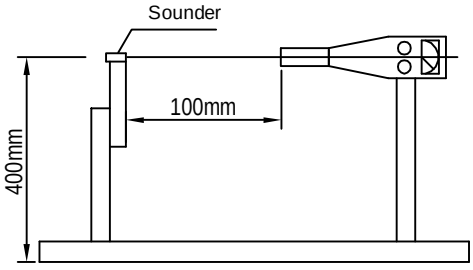
#### 1.31.Recommended Circuit

the following are examples of externally driven circuits.
1) Unstable multi-vibrator using Tr.
2) Circuits using inverters or NAND gates.




#### 1.32.Standard test Fixture

No reaction in space with in 400mm in all direction




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| | | | | Drawn by: | 杨红烨 |
| | | | | Date: | 07/08/16 |
| | | | | Approved by: | 程久生 |

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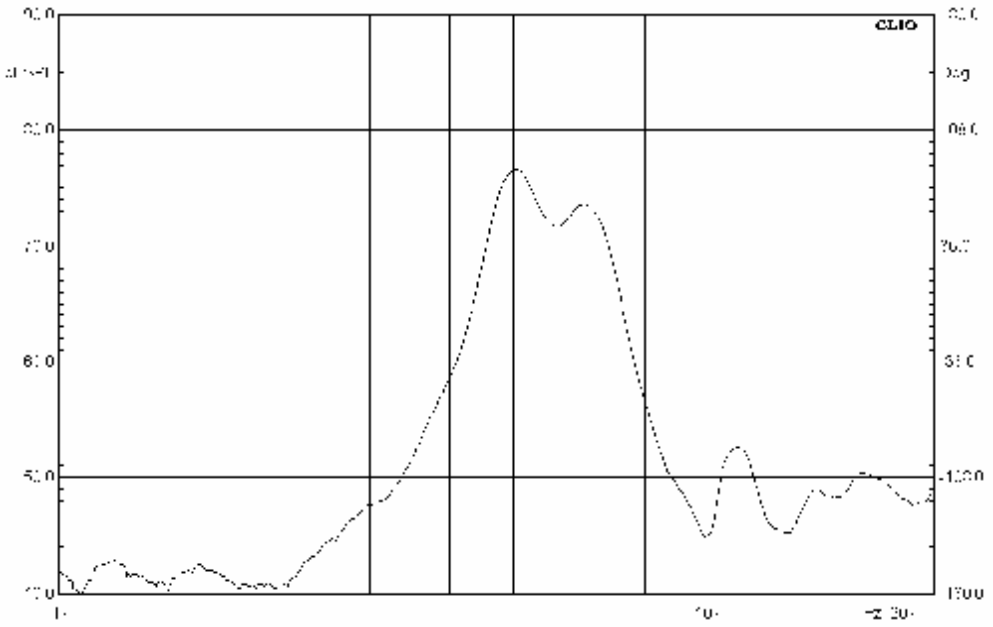
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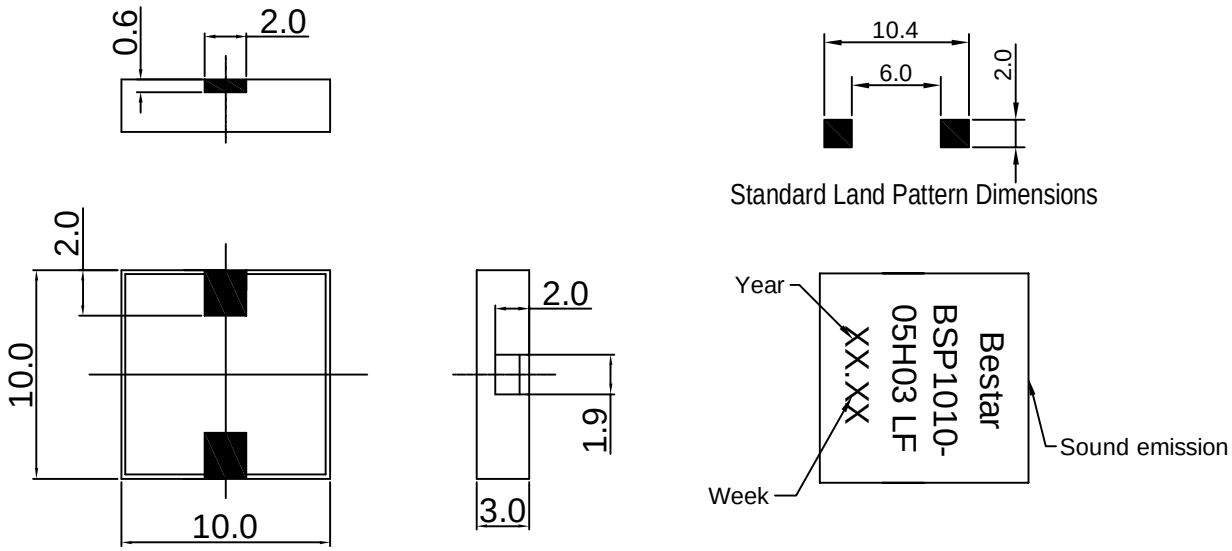
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1.4 Frequency Response(Square wave 5Vp-p 10cm)




## 2. Dimension

Tolerance: ±0.3 Unit:mm




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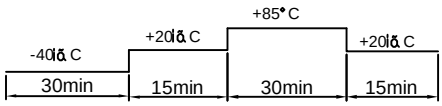
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| REV. | Date | Drawn | Note | Approved by: | 程久生 | |
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## 3. Reliability test

3.1 High temperature test
- Temperature: +85 ° C
- Duration: 96hrs

3.2 Low temperature test
- Temperature: -40 ° C
- Duration: 96hrs

3.3 Temperature cycle test




Cycles: 5

3.4 Humidity test
- Temperature: +40 ° C
- Relative Humidity: 90~95%
- Duration: 240hrs

3.5 Life test in normal temperature
- Power supply: Rated voltage
- Duration: 1000 hrs

all these tests above should be measured after leaving normal temperature for 2hrs.

3.6Vibration Test
- Vibration Frequency: 10~55Hz
- Amplitude: 1.52mm
- Duration: 2hrs each of 3 axis

3.7 Drop test
- Height (to 10mm thickness woodenboard): 100cm
- Direction: 3

3.8 Solderability
- Temperature: 255 ± 5° C
- Duration: 3 ± 0.5sec

3.9 Solder Heat Resistance
- Temperature: 250 ± 10° C
- Duration: 30sec

Notice: All specification must be satisfied in this condition.
SPL: allowable deviation ± 5dB of the initial value after testing

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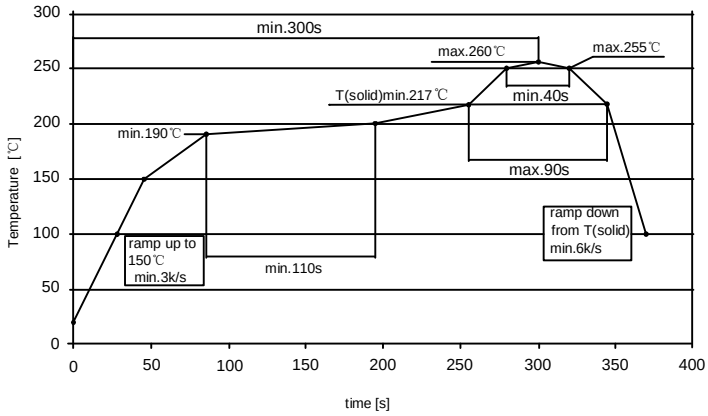
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### 3.10 Recommended Temp. Profile for Reflow Oven

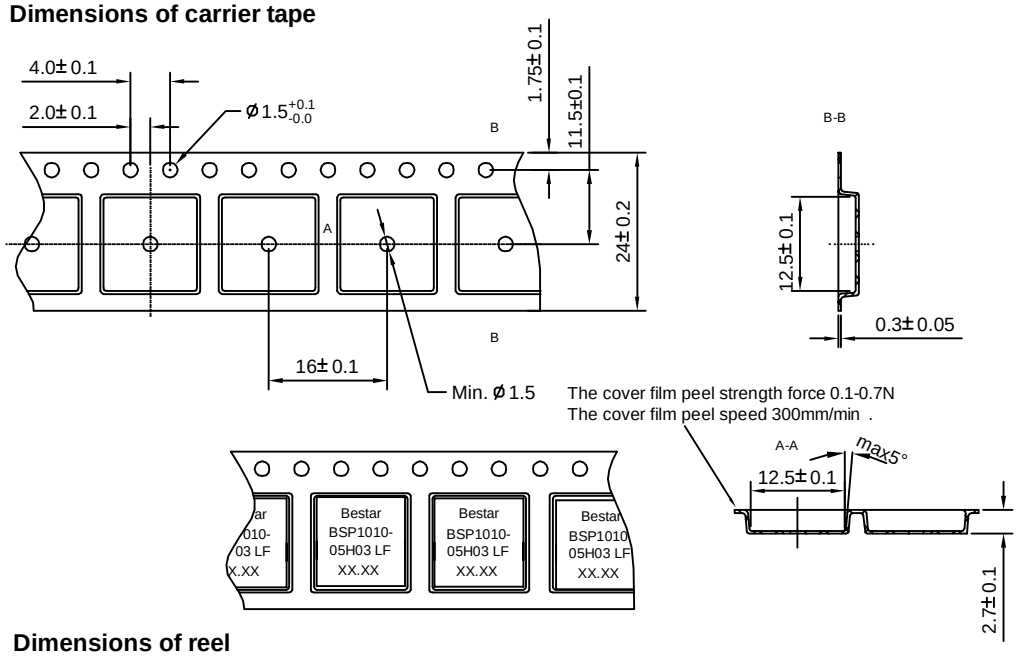
Temperature profile for a lead-free reflow process



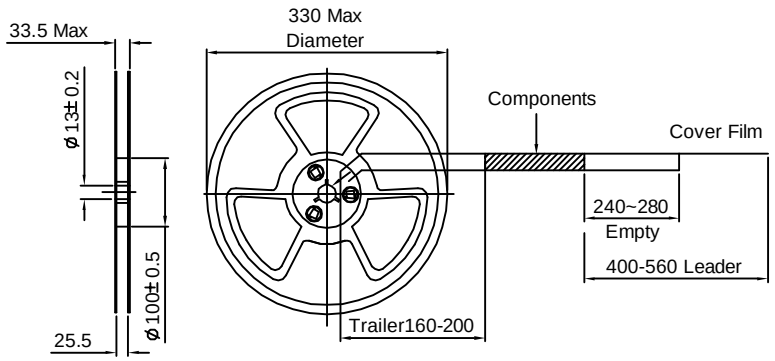

## 4. Tape on Reel Packing

### 4.1 packing drawing

**Dimensions of carrier tape**




**Dimensions of reel**




Unit:mm

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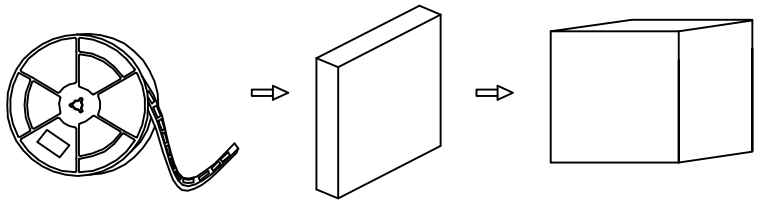
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4.2 packing quantity

4.21 1000pcs/reel
4.22 5reel/carton
4.23 5000 pcs/carton in total
4.24 carton size 38x28x37cm



## 5.Notice

5.1 The products mustn't be washed
5.2 **Storage Condition**
The products should be stored in the room ,where the temperature/humidity is stable. And avoid such
places where there are large temperature changes. Please store the products at the following conditions:
Temperature: -10 to + 40°C Humidity: 15 to 85% R.H.
5.3 **Expire Date on Storage**
Expire date (Shelf life) of the products is six months after deliveried under the conditions of a sealed and an unopened package. Please use the products within six months after deliveried.
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.
5.4 **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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| REV. | Date | Drawn | Note | Approved by: | 程久生 | |

# BSP1010-05H03 LF

## 6. History change record

| version No. | Change Items | | Date | Drawn | Approved |
|---|---|---|---|---|---|
| | Before | After | | | |
| A | | | 04/01/31 | 王善梅 | 查红红 |
| B | | RoHS | 07/08/16 | 杨红烨 | 程久生 |
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