



Preliminary SPECIFICATION  
FOR ELECTRO-MAGNET TRANSDUCER

TOTAL PAGE	10	<a href="http://www.be-star.com">www.be-star.com</a>	RoHS
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Customer		Model Name	SMT1010-3.6H3.2 LF
Customer P/N		Product No.	056503
Date	30 Jun. 09	Issue No.	BS/TET01.588A
Page	01 of 10	Issue Date	09/07/30

Approval:

- 1.Characteristics
- 2.Dimension
- 3.Reliability Test
- 4.Surface Mounting Condition
- 5.Packing
- 6.Notice
- 7.History change record

Drawn by	Checked by	Approved by	Customer approved
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# SMT1010-3.6H3.2 LF

## 1.Characteristics

### 1.1 Features

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



### 1.2 Electrical and Mechanical Characteristics

No.	Item	Specifications
1	Rated Voltage	3.6Vo-p
2	Operating Voltage	2...5Vo-p
3	a)Rated Current	max.100mA
4	a)Sound Output (at 10cm)	min.93dB
5	Resonance Frequency	2830Hz
6	Coil Resistance	18±3ohm
7	Operating Temp.	-40...+85 °C
8	Storage Temp.	-40...+85 °C
9	Weight	Max0.9 g
11	Pin Material	Tin Plated Red Copper
a)value applying rated voltage (2830Hz,3.6Vo-p,1/2 duty,square wave)		

### 1.3 Test method:

**1.3.1.Recommended Circuit**

the following are examples of externally driven circuits.

**1.3.2.Standard test Fixture**

No reaction in space with in 400mm in all direction

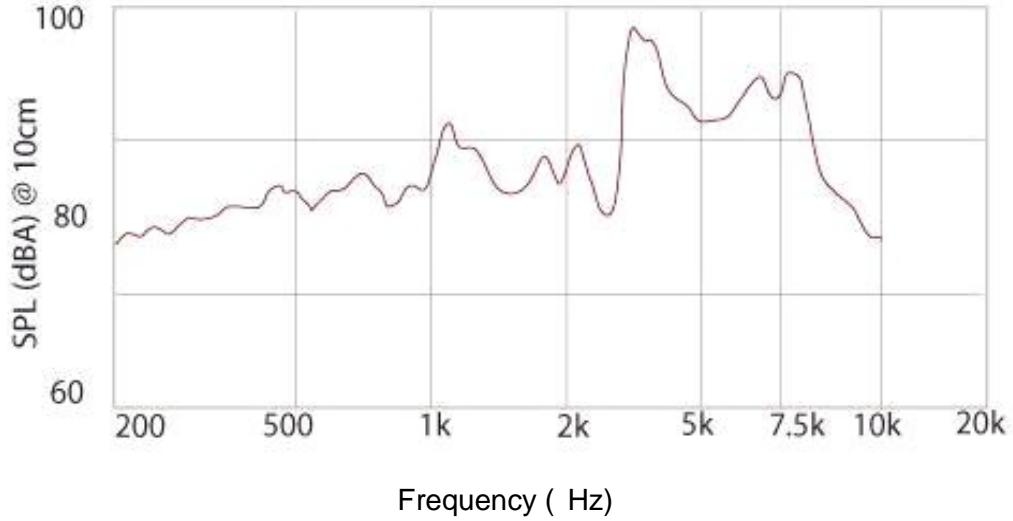
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1.4 Frequency Response (Square wave, 3.6Vo-p 10cm)

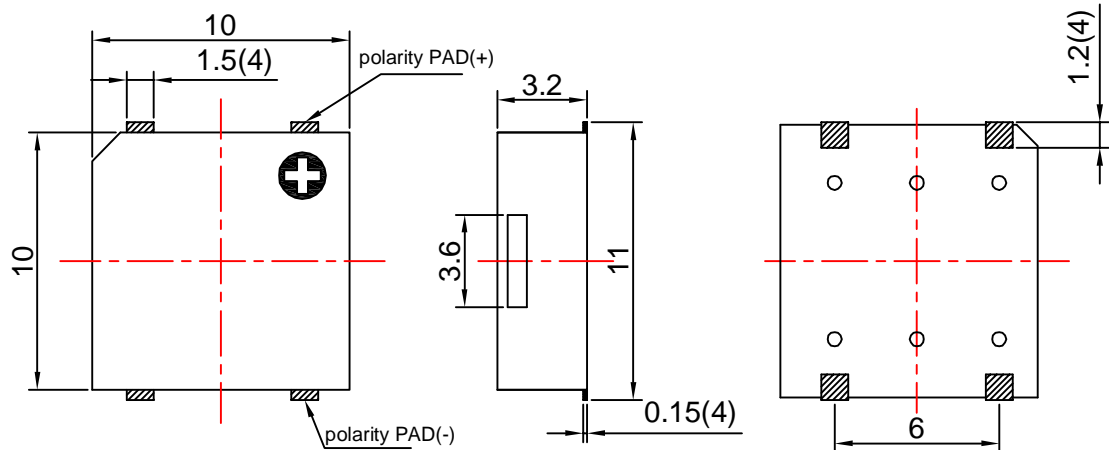
MLS-Frequency Response



## 2. Dimension

Tolerance: ± 0.3

Unit:mm



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## 3. Reliability Test

### 3.1 High temp. storage test

Temperature +85 °C  
Duration 96hrs

### 3.2 Low temp. storage test

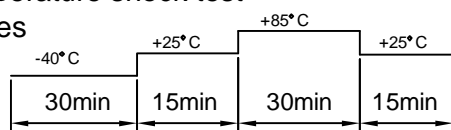
Temperature -40 °C  
Duration 96hrs

### 3.3 Life test in normal temperature

Power supply Rated voltage  
Duration 96hrs

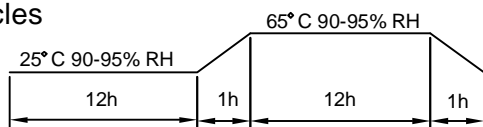
### 3.4 Temperature shock test

Cycles 14



### 3.5 Humidity cycle test

Cycles 10



### 3.6 High temp. life test

Power Supply 5Vo-p square wave(2830Hz/50%duty)  
Temperature +85°C  
Duration 96hrs

### 3.7 Low temp. life test

Power Supply 2.0Vo-p square wave(2830Hz/50%duty)  
Temperature -40°C  
Duration 96hrs

All these tests above should be measured after leaving normal temperature for 4hrs.

### 3.8 Vibration Test

Vibration Frequency 10~200~10Hz  
Time 15min  
Acceleration 5g  
Direction x.y & z 2h (total 6hrs)

### 3.9 Drop test

Height 70cm(drop to concrete floor)  
Direction one time in each 6 planes(total of 6 times)

### 3.10 Solderability

Temperature of soldering pot 255±5°C  
Duration 2 ±0.5sec

Notice: All specification must be satisfied in this condition except SPL. SPL shall be 90dB or more.

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## 4.Surface Mounting Condition

In automated mounting of The SMD Sound Transducers on printed circuit boards,any bending,expanding and pulling forces or shocks against the SMD Sound Transducers shall be kept minimum to preven them from electrical failures and mechanical damages of the devices.

### Soldering(Reflow)

- (1)Solderings of The SMD Sound Transducers shall conform to the soldering conditions in the individual specifications.
- (2)The SMD Sound Transducers are designed for"Reflow Solderings"
- (3)In the reflow solderings,too high soldering temperatures and too large tempearture gradient such as rapid heating or cooling may cause electrical failures and mechanical damages of the devices.

Follwing soldering conditions are recommend;Refer to Fig.1

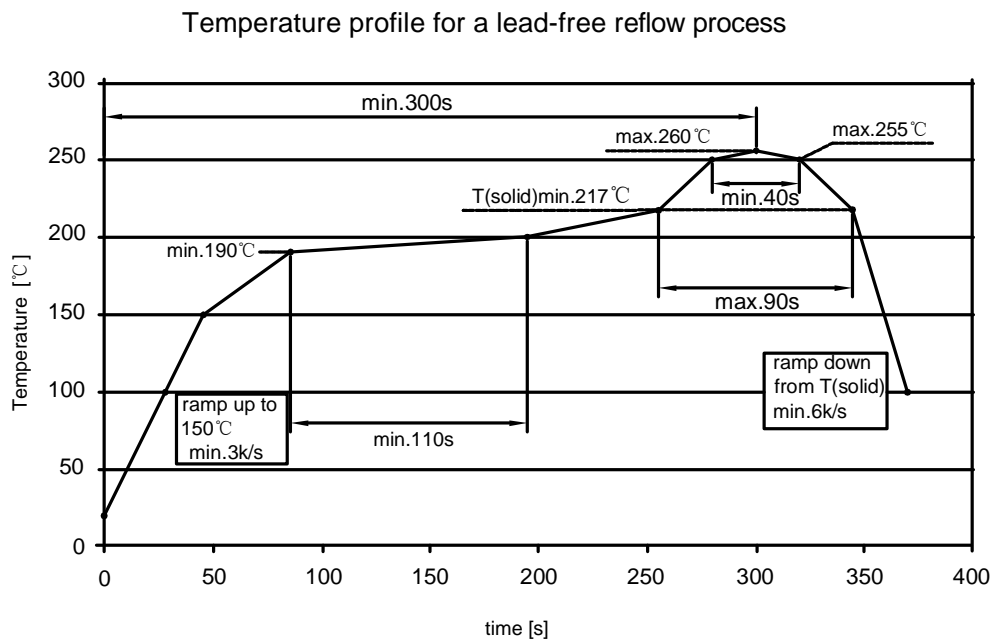


Fig. 1 Recommended soldering Temperature-Time profile (Reflow soldering)

Notice: All specification must be satisfied in this condition except SPL. SPL shall be 90dB or more.

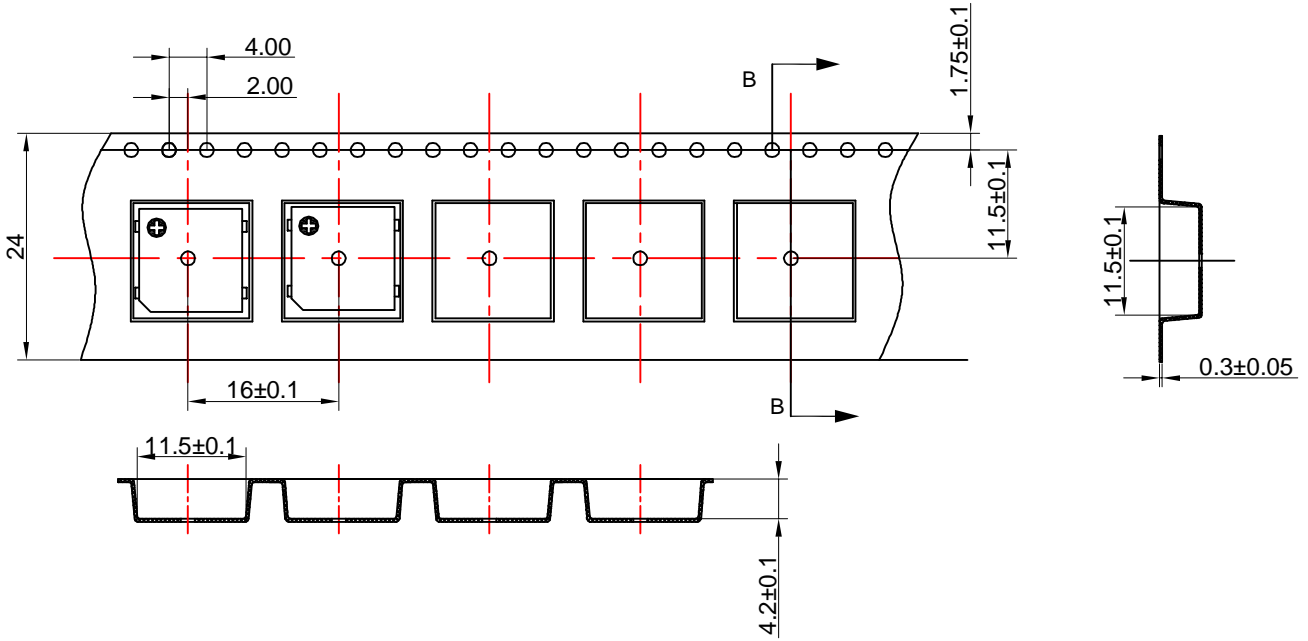
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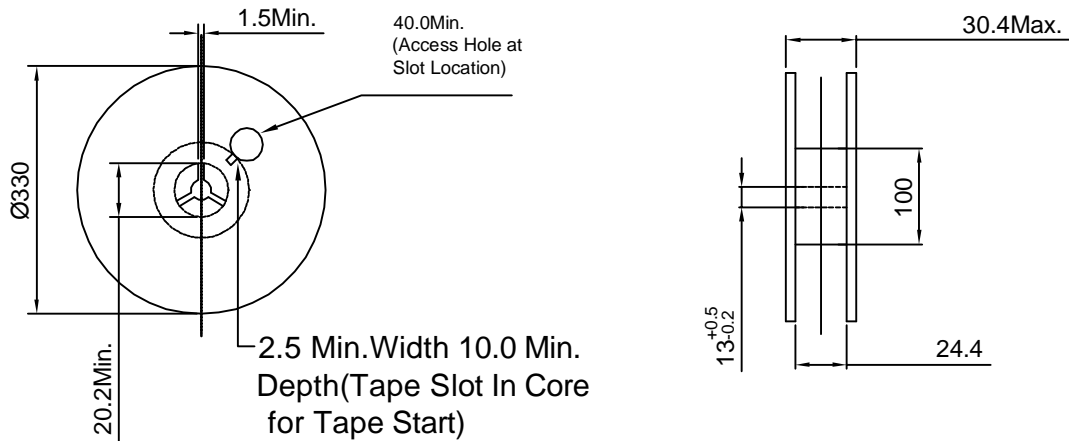
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## 5. Packing drawing

### Dimensions of carrier tape



### Dimensions of reel



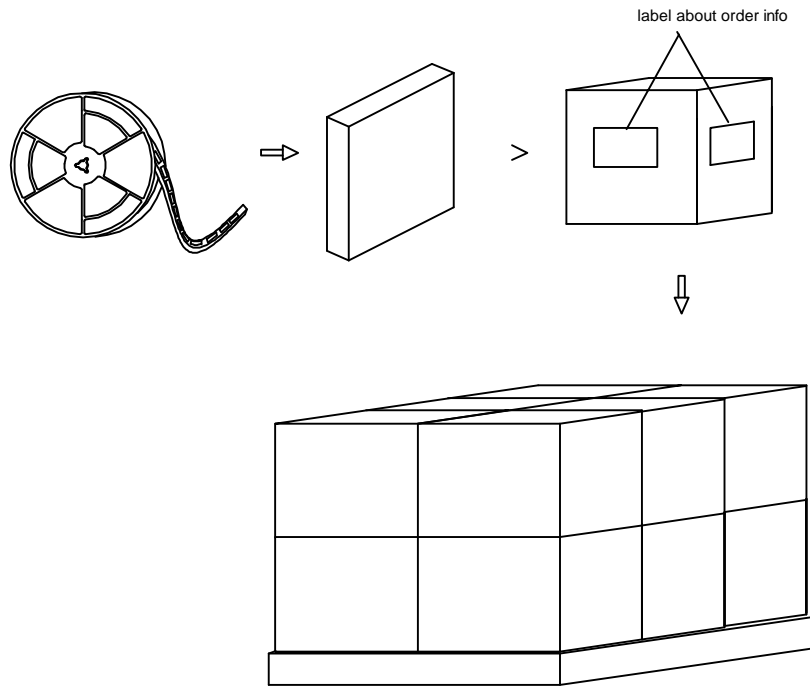
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# SMT1010-3.6H3.2 LF

## 5.2 packing quantity

- 6.2.1 1000pcs/reel
- 6.2.2 5reels/carton
- 6.2.3 5000 pcs/carton in total
- 6.2.4 carton size 38x28x37cm
- 6.2.5 12carton/tray
- 6.2.6 tray size 85x77x74cm



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## 6. Notice

### 6.1 The products mustn't be washed

### 6.2 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.

### 6.3 Expire Date on Storage

Expire date (Shelf life) of the products is six months after delivered under the conditions of a sealed and an unopened package. Please use the products within six months after delivered.

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.

### 6.4 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.

### 6.7

6.7.1 Export Control <For customers outside The People's Republic of China>  
No BeStar products should be used or sold, through any channels, for use in the design, development, production, utilization, maintenance or operation of, otherwise contribution to

(1) any weapons (Weapons of Mass Destruction [nuclear, chemical or biological weapons or missiles] or conventional weapons)

(2) goods or systems specially designed or intended for military end-use or utilization by military end-users.

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6.7.2 Please contact our sales representatives or product engineers before using the products in the specification or catalogue for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this specification.

- a) Aircraft equipment or Aerospace equipment
- b) Undersea equipment and Power plant equipment
- c) Medical equipment and Transportation equipment (vehicles, trains, ships, etc.)
- d) Traffic signal equipment i Disaster prevention / crime prevention equipment
- e) Data-processing equipment including Application of similar complexity and/or reliability requirements to the applications listed above

6.7.3 Product specifications and catalogues are subject to change and our products in them may be discontinued without advance notice.

Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.

6.7.4 Please read rating and CAUTION (for storage, operating, rating, soldering, mounting and handling) in this specifications in order to prevent smoking and/or burning, etc.

6.7.5 Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our specifications and catalogues. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.

6.7.6 No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

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## 7. History change record

version No.	Change Items		Date	Drawn	Approved
	Before	After			
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