



SPECIFICATION  
For Electro-Magnet Transducer

TOTAL PAGE 10 [www.bestargroups.com](http://www.bestargroups.com) RoHS

Customer		Model Name	SMT1715-12H12F LF
Customer P/N		Product No.	050540
Date	21 Jan. 2015	Issue No.	BS/TET01.702C
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Approval:

- 1.Characteristics
- 2.Dimension
- 3.Part List
- 4.Reliability Test
- 5.Surface Mounting Condition
- 6.Tape on Reel Packing
- 7.Notice
- 8.History change record

Drawn by	Checked by	Approved by	Customer approved
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# SMT1715-12H12F LF

## 1. Characteristics



### 1.1 Electrical and Mechanical Characteristics

No.	Item	Specifications
1	Rated Voltage	12Vo-p
2	Operating Voltage	9...16 Vo-p
3	* Rated Current	max.75mA
4	** Sound Output (at 10cm)	2000Hz min.85dB(typ 90dB)
		800Hz min.80dB(typ 85dB)
5	Resonance Frequency	2000Hz
6	Coil Resistance	120±12Ω
7	***Coil Impedance	170±25 Ω
8	Operating Temp.	-40...+ 85 °C
9	Storage Temp.	-40...+ 90 °C
10	Weight	3 g

\*Rate applying rated voltage (2000Hz,1/2 duty,sqaure wave)  
 \*\*Value applying(9Vo-p,1/2 duty, sqaure wave)  
 \*\*\*Value applying (2000Hz,sine wave,measuring current 60μA)

### 1.2 Test method:

**1.21.Recommended Circuit**

the following are examples of externally driven circuits.

**1.22.Standard test Fixture**

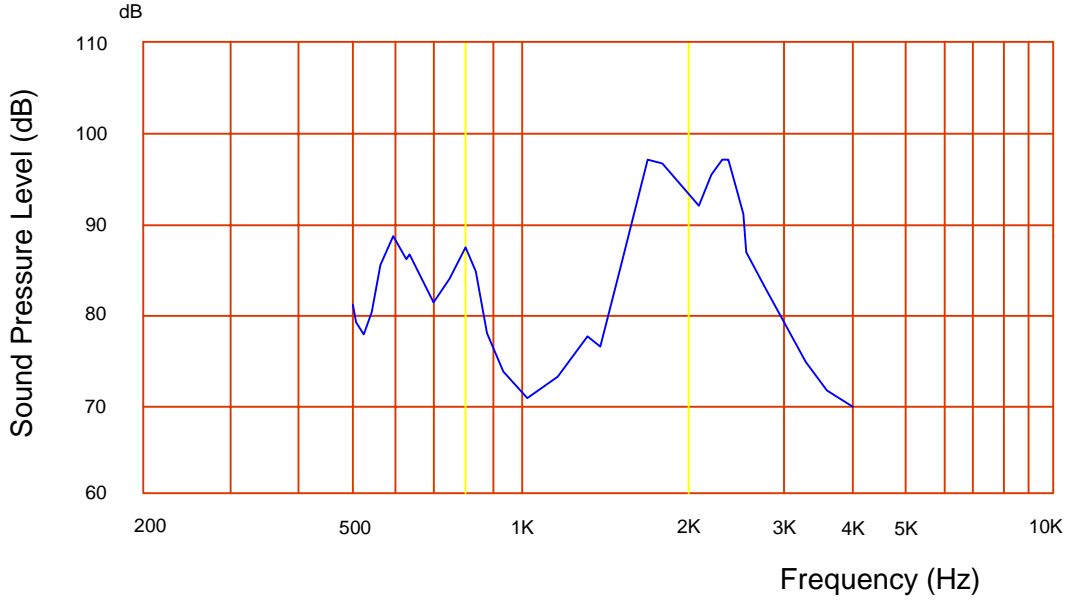
No reaction in space with in 400mm in all direction

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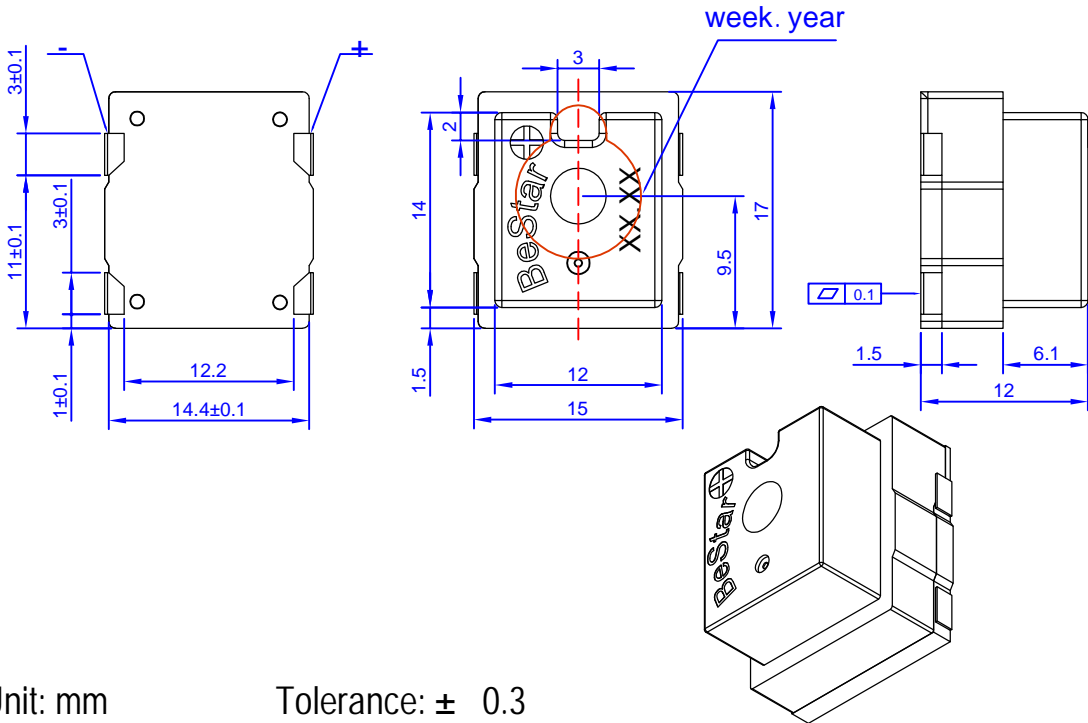
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## 1.3 Frequency Response(Square wave 9Vo-p 10cm)



## 2.Dimension

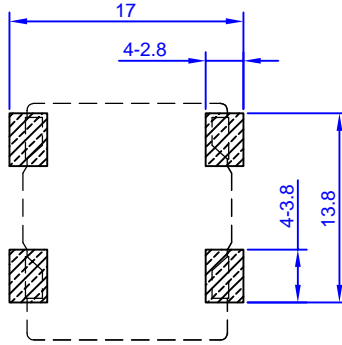


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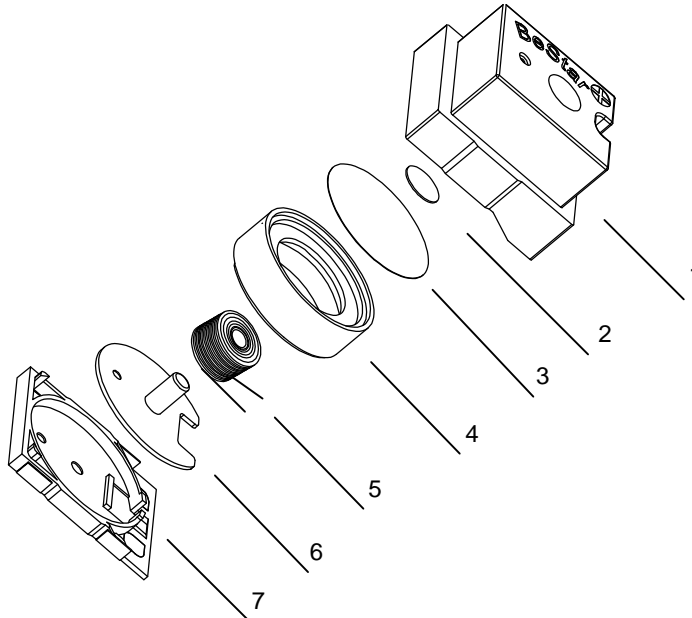
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## Recommendable land pattern



## 3.Part List



No	Part Name	Material
1.	Cover	PA
2.	Magnet piece	SPCC
3.	Membrane	NiFe52
4.	Magnet ring	HM-1618
5.	Voice coil	Cu
6.	T-Yoke	DT4E+SPCC
7.	Housing	PA+Cu

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## 4.Environmental Test

### 4.1 High temperature storage test

Temperature +100° C  
Duration 96hrs

### 4.2 Low temperature storage test

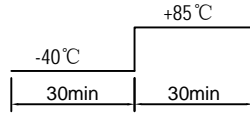
Temperature -40° C  
Duration 96hrs

### 4.3 Life test in normal temperature

Power supply Rated voltage  
Duration 1000hrs

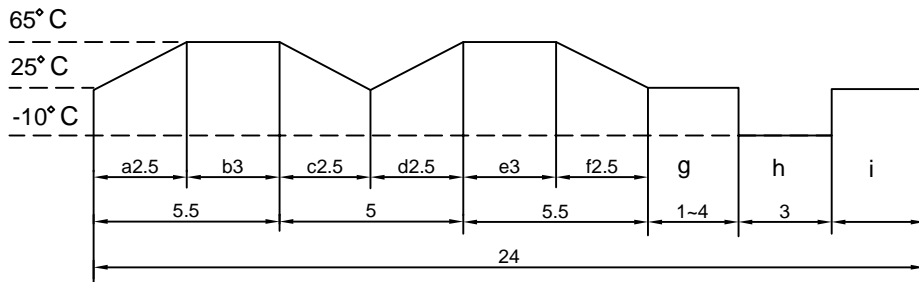
### 4.4 Thermal Shock Test

Cycles 1000



### 4.5 Humidity cycle test

Cycles 10



a, b, d, e, g, i: 90~98%RH

c, f : 90~98%RH

Unit:hours

### 4.6 High Temperature life Test

Power supply 14Vo-p  
Temperature +85° C  
Duration 500hrs

### 4.7 Low Temperature life Test

Power supply 12Vo-p  
Temperature -40° C  
Duration 500hrs

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

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## 4.8 Vibration Test

Vibration Frequency 10~200~10Hz  
 Amplitude 1.53mm  
 Direction 3(x,y&z)  
 Duration 2hrs each direction (total 6 hrs)

## 4.9 Random vibration Test

Vibration Frequency 10,20,40,800,1000 Hz  
 Amplitude 44.1m/sec<sup>2</sup>=4.5Grms  
 Direction 3(x,y&z)  
 Duration 2hrs each direction (total 6 hrs)

## 4.10 Drop test

Height 100cm  
 (to 10mm thickness woodenboard)  
 Direction 6

## 4.11 Fixed Drop test

Height 100cm  
 (Fix onto standard PCB(solder), 10mm thickness woodenboard)  
 Direction 6

## 4.12 Solderability Test

### 1. Hand soldering system

Pretreatment 40°C, 90~95%RH×240 hrs  
 Soldering Temperature 260 ± 5°C  
 Duration 2 ± 0.5sec

## 4.13 Direct current Applies

Power supply 12VDC  
 Duration 1hrs (+/GND)  
 Result No smoking and ignition

Notice: All specification must be satisfied in this condition except SPL. SPL shall be 82dB(2000Hz) or more.

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## 5.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

Temperature profile for a lead-free reflow process

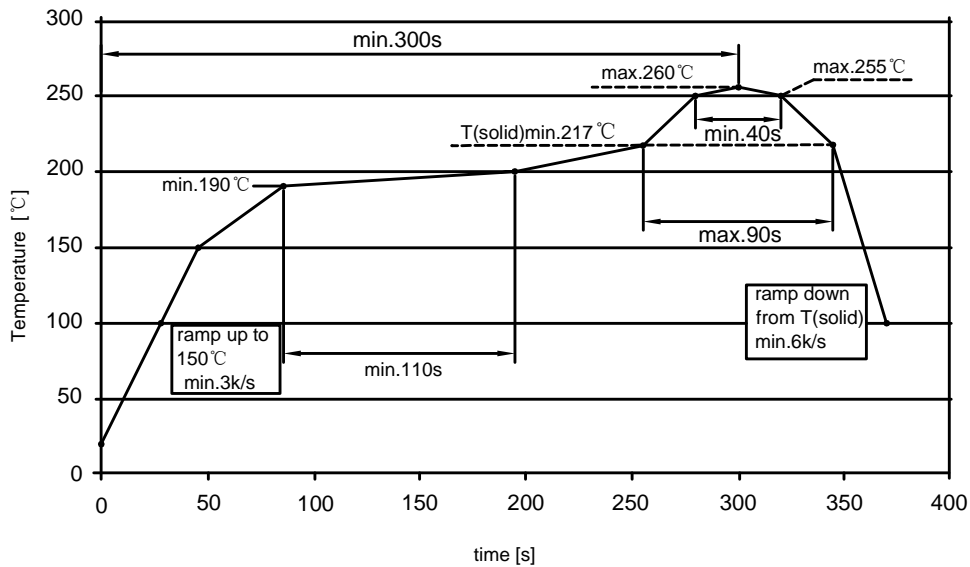


Fig. 1 Recommended soldering Temperature-Time profile (Reflow soldering)

Notice: All specification must be satisfied in this condition except SPL. SPL shall be 82dB(2000Hz) or more.

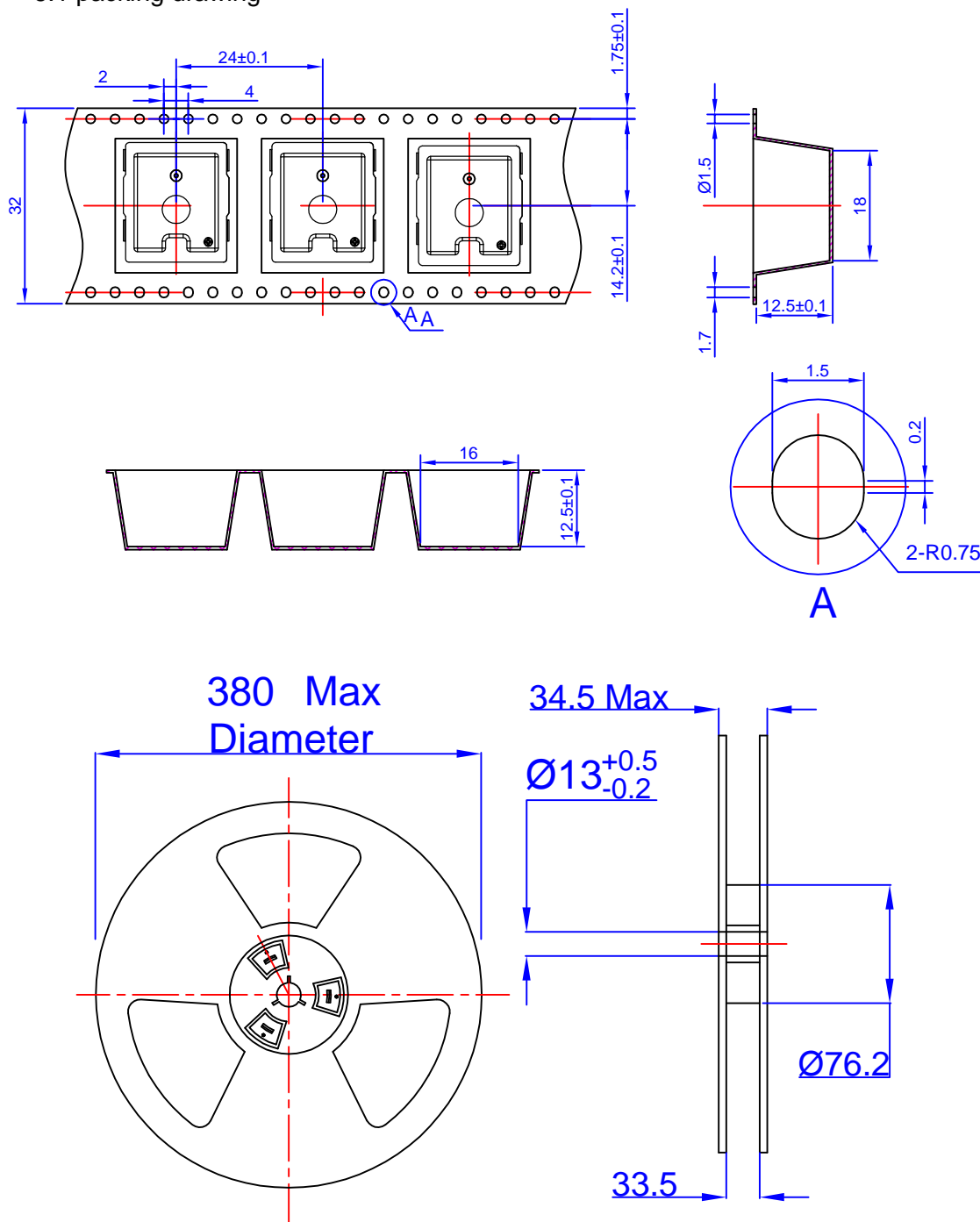
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## 6. Tape on Reel Packing

### 6.1 packing drawing

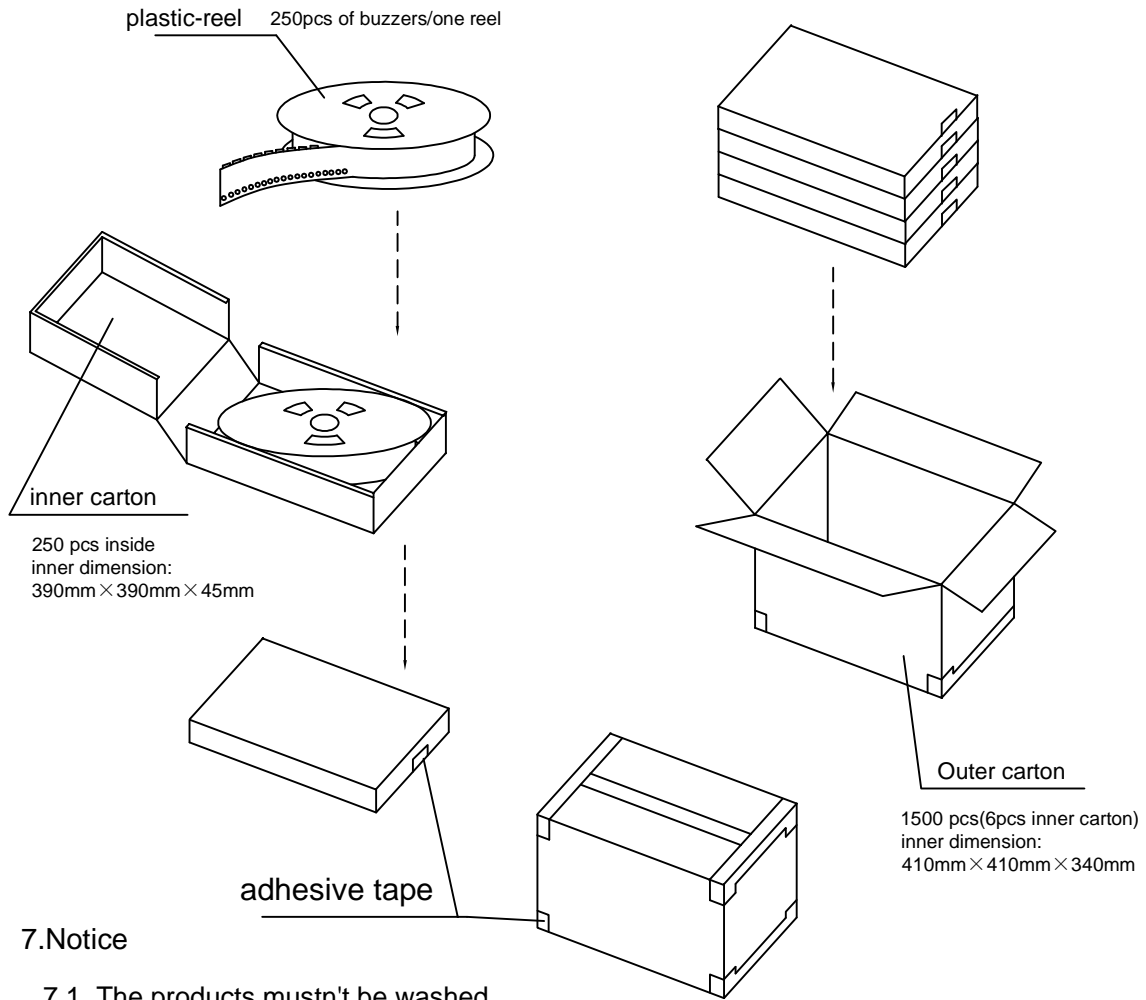


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## 7. Notice

7.1 The products mustn't be washed

### 7.2 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.

### 7.3 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.

### 7.4 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.

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