

## A. SCOPE

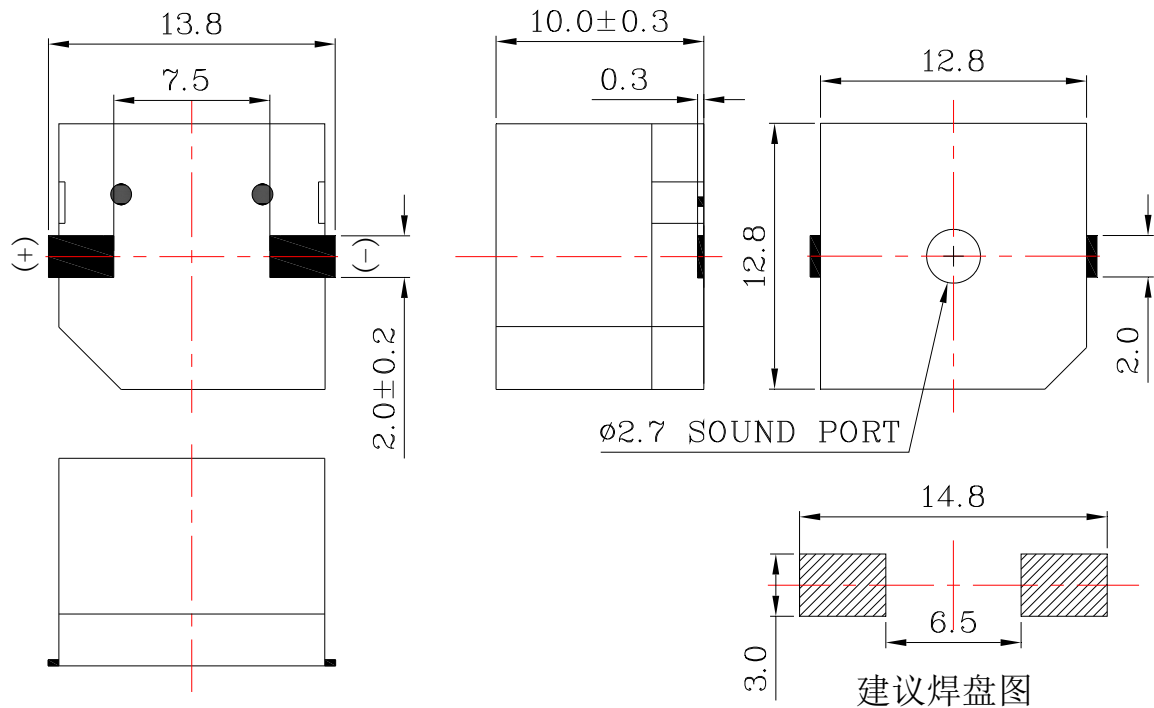
This specification applies SMD magnetic buzzer, Passive drive type, **KLS3-SMT-13\*10B**

## B. SPECIFICATION

No.	Item	Unit	Specification	Condition
1	Oscillation Frequency	KHz	2000	
2	Operating Voltage	V <sub>o-p</sub>	8~16	
3	Rated Voltage	V <sub>o-p</sub>	12	
4	Current Consumption	mA	MAX. 40	Applying DC rated voltage, square wave 1/2 duty at based frequency, see an example of drive circuit (Fig 1) attached.
5	Sound Pressure Level	dB	MIN. 90	Distance at 10 cm (A range) from a microphone with applying DC rated voltage, square wave, 1/2 duty, at based frequency. See an example of drive circuit (Fig.1) and measuring set up (Fig.2) attached.
6	Coil Resistance	Ω	140±14	
7	Operating Temperature	°C	-40 ~ +85	
8	Storage Temperature	°C	-40 ~ +105	
9	Dimension	mm	12.8 x 12.8 x H10.0	See appearance drawing
10	Weight (MAX)	gram	2.0	
11	Housing Material		PPS( Black )	
	Base Material		LCP( Black )	
12	Leading Pin		Tin Plated Brass(Sn)	See appearance drawing
13	Environmental Protection Regulation		RoHS	



## C. APPEARANCE DRAWING



Tol : ± 0.3

Unit: mm

## D. Applications

Clock, Telephone, Modem, Motherboard, Automotive, Pager ETC.

## E. Ozone guarantee

Erificate on the elimination of ozone layer destroying substances such as Freon.

## F. Quality protection

Test specifications of the mentioned model are based on this document. Other specification outside than this document must be discussed with us before we insert into this approval document. It means that we will not guarantee the specifications outside than this approval document.

## G. Washing conditions

The products due to the structure limit (A/B cover structure), does not apply to washing

## H. Flux removing solvents

It is recommended to use no clean solder

## I. Signal input polarity

If the voltage signal input V P-P is applied to our transducer with the polarity reversed a sound will be generated but it will not always meet the catalog specifications for the sound pressure level.

## J. Sound emission hole

Products outside the sound hole free space to keep at least 5 mm, otherwise it will cause the change of the resonant frequency, resulting in abnormal sound

## K. Mounting precaution

Buzzer Suggestions on the PCB pad size as page 2

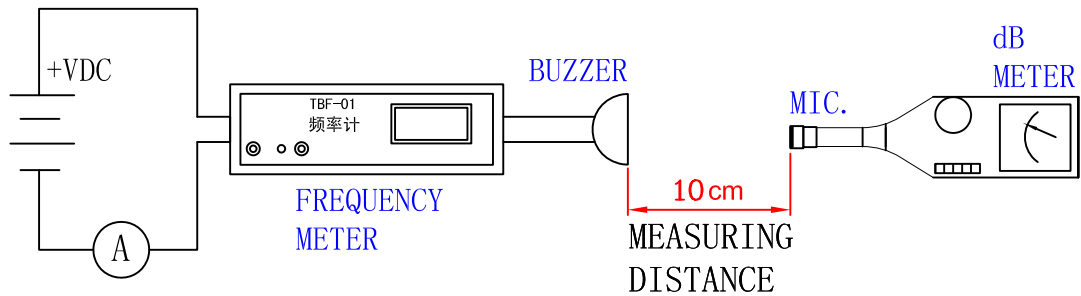
## L. TESTING METHOD

### Standard Measurement conditions

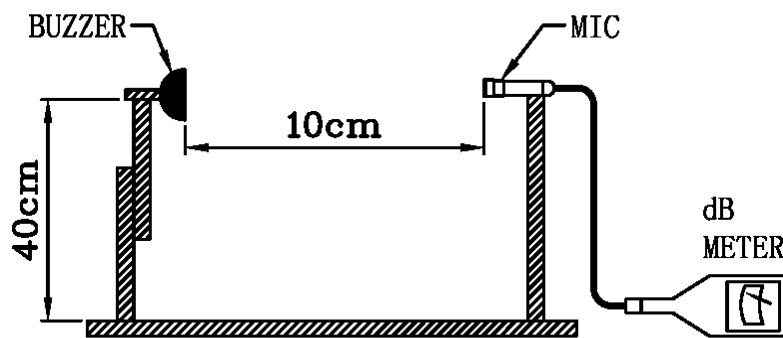
Temperature:  $25 \pm 2^\circ\text{C}$  Humidity: 45-65%

### Acoustic Characteristics:

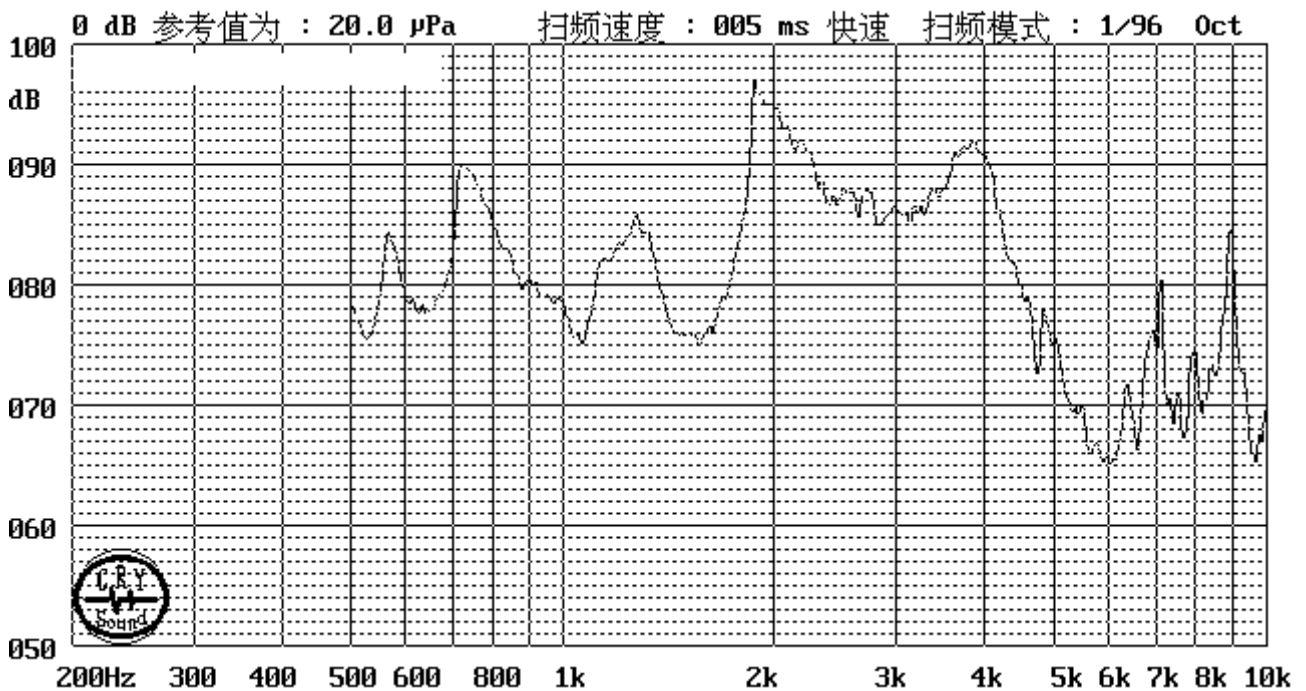
The oscillation frequency, current consumption and sound pressure are measured by the Measuring instruments shown below



In the measuring test, buzzer is placed as follows:



## M. VOLTAGE / CURRENT / SOUND PRESSURE CHARACTERISTICS

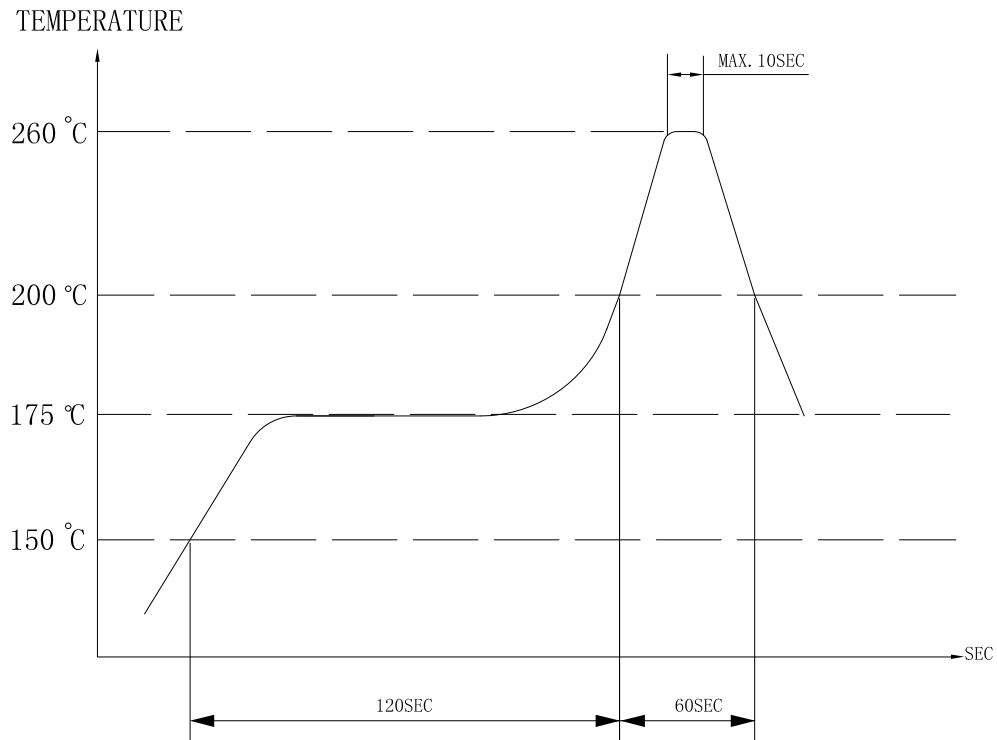


## N. Soldering Condition

(1) Recommendable reflow soldering condition is as follows

(Reflow soldering is twice)

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



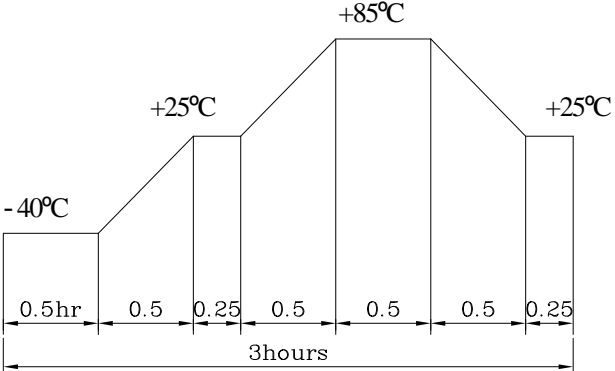
Heat resistant line

(Used when heat resistant reliability test is performed)

(2) Manual soldering

Manual soldering temperature 350 °C within 5 sec.

## O. RELIABILITY TEST

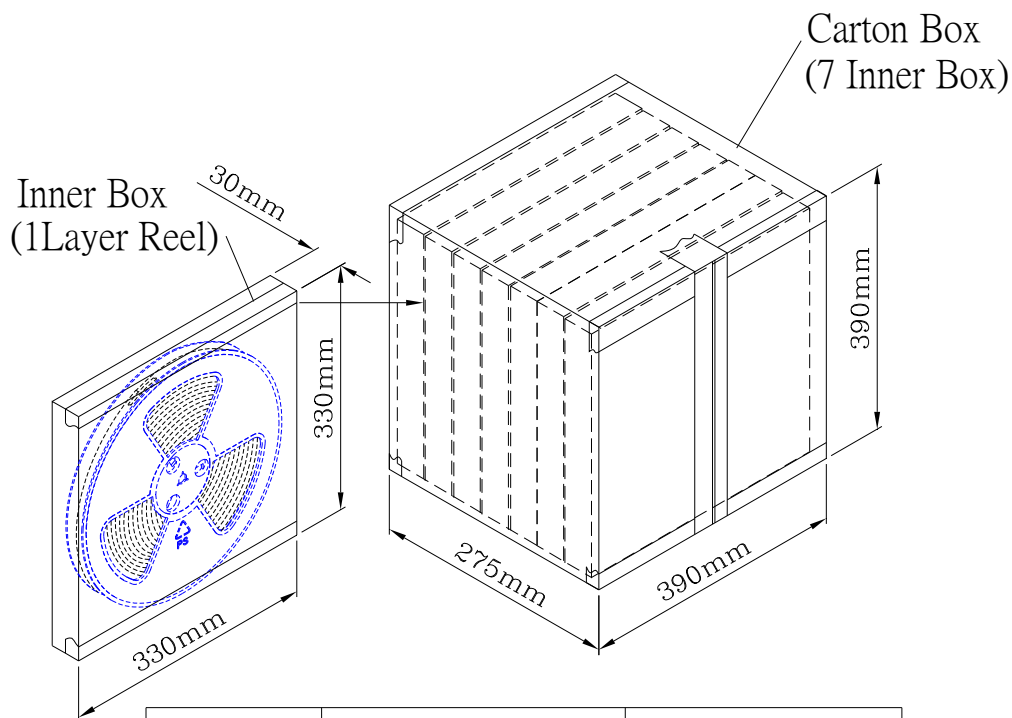
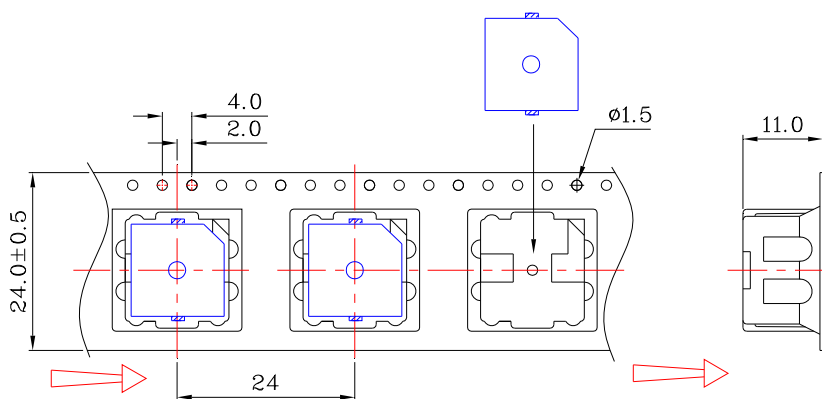
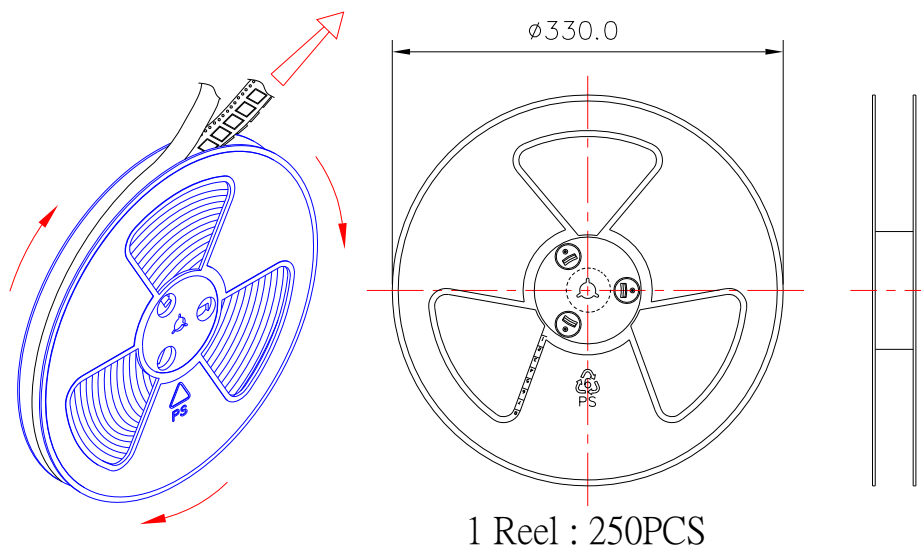
NO.	ITEM	TEST CONDITION AND REQUIREMENT
1	High Temperature Test (Storage)	After being placed in a chamber with $85\pm 2^{\circ}\text{C}$ for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
2	Low Temperature Test (Storage)	After being Placed in a chamber with $-40\pm 2^{\circ}\text{C}$ for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
3	Humidity Test	After being Placed in a chamber with 90-95% R.H. at $40\pm 2^{\circ}\text{C}$ for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
4	Temperature Cycle Test	The part shall be subjected to 5 cycles. One cycle shall be consist of :  <p>The diagram shows a temperature cycle profile over 3 hours. It starts at <math>-40^{\circ}\text{C}</math> for 0.5 hours, then ramps up to <math>+25^{\circ}\text{C}</math> in 0.5 hours, holds at <math>+25^{\circ}\text{C}</math> for 0.25 hours, ramps up to <math>+85^{\circ}\text{C}</math> in 0.5 hours, holds at <math>+85^{\circ}\text{C}</math> for 0.5 hours, ramps down to <math>+25^{\circ}\text{C}</math> in 0.5 hours, holds at <math>+25^{\circ}\text{C}</math> for 0.25 hours, and finally ramps down to <math>-40^{\circ}\text{C}</math> in 0.5 hours. The total duration is 3 hours.</p>
5	Drop Test	Drop on a hard wood board of 4cm thick, any directions ,6 times, at the height of 75cm . Allowable variation of SPL after test: $\pm 10\text{dB}$ .
6	Vibration Test	After being applied vibration of amplitude of 1.5mm with 10 to 55 Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours . Allowable variation of SPL after test: $\pm 10\text{dB}$ .
7	Solderability Test	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of $+300\pm 5^{\circ}\text{C}$ for $3\pm 1$ seconds . 90% min. lead terminals shall be wet with solder (Except the edge of terminals).
8	Terminal Strength Pulling Test	The force of 9.8N(1.0kg) is applied to each terminal in axial direction for 10 seconds. No visible damage and cutting off.

### TEST CONDITION.

Standard Test Condition	:	a) Temperature : $+5 \sim +35^{\circ}\text{C}$	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般测试条件	:	a) 温度 : $+5 \sim +35^{\circ}\text{C}$	b) 湿度 : 45-85%	c) 气压 : 860-1060mbar
Judgment Test Condition	:	a) Temperature : $+25 \pm 2^{\circ}\text{C}$	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
争议时测试条件	:	a) 温度 : $+25 \pm 2^{\circ}\text{C}$	b) 湿度 : 60-70%	c) 气压 : 860-1060mbar



# P. PACKING STANDARD



Inner Box	330mmx330mmx30mm	1x250PCS=250PCS
Carton Box	390mmx390mmx275mm	7x250PCS=1,750PCS