

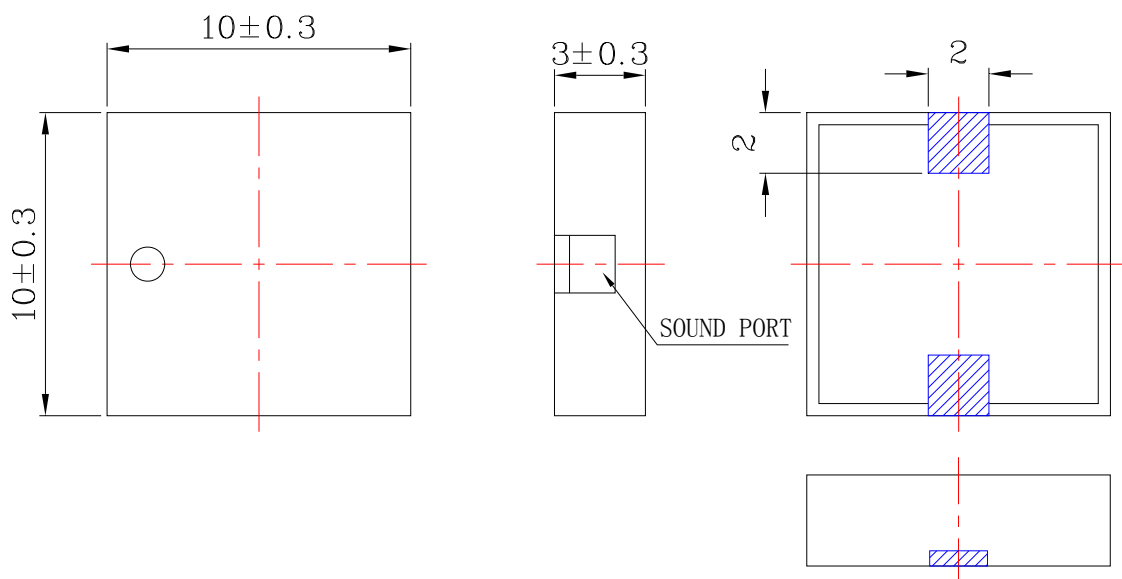
## A. SCOPE

This specification applies SMD piezo buzzer, Passive drive type, **L-KLS3-SMT-10\*03B**

## B. SPECIFICATION

| No. | Item                                | Unit | Specification        | Condition                |
|-----|-------------------------------------|------|----------------------|--------------------------|
| 1   | Oscillation Frequency               | Hz   | 5200                 | Square Wave              |
| 2   | Operating Voltage                   | Vp-p | 1~25                 |                          |
| 3   | Rated Voltage                       | Vp-p | 5                    |                          |
| 4   | Current Consumption                 | mA   | MAX. 3               | at Rated Voltage         |
| 5   | Sound Pressure Level                | dB   | MIN. 70              | at 10cm at Rated Voltage |
| 6   | Electrostatic Capacity              | pF   | 12000±30%            | at 100Hz 1V              |
| 7   | Operating Temperature               | °C   | -40~ +85             |                          |
| 8   | Storage Temperature                 | °C   | -40 ~ +95            |                          |
| 9   | Dimension                           | mm   | 10 x 10 x H3         | See appearance drawing   |
| 10  | Weight (MAX)                        | gram | 0.3                  |                          |
| 11  | Housing 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**

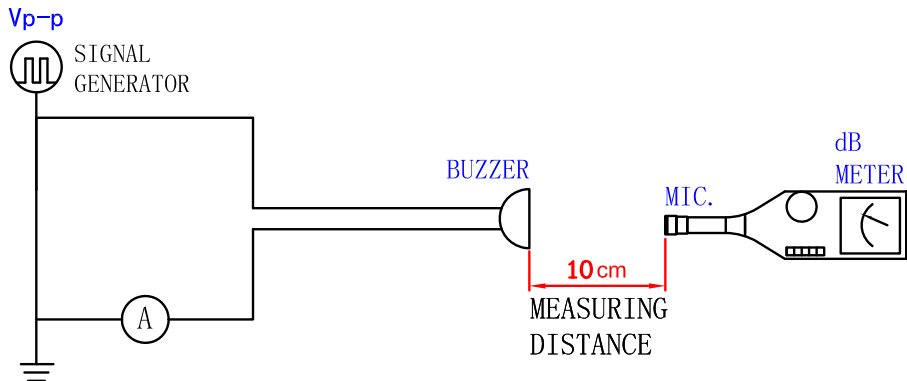
## D. TESTING METHOD

### Standard Measurement conditions

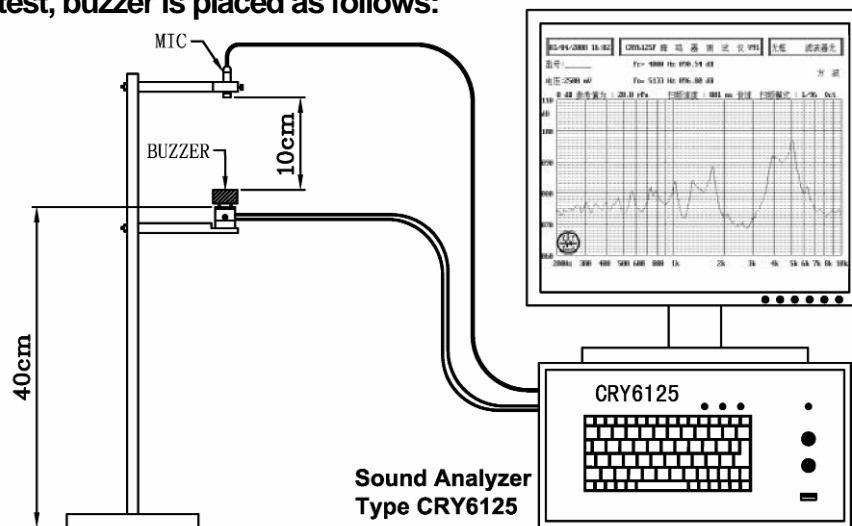
Temperature:  $25 \pm 2^{\circ}\text{C}$  Humidity: 45-65%

### Acoustic Characteristics:

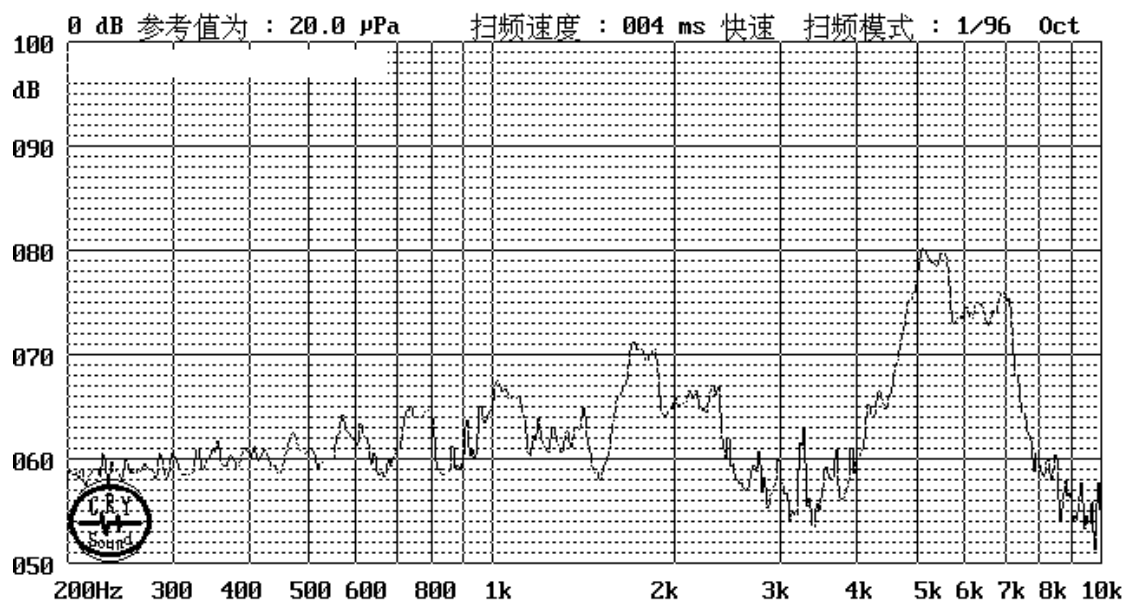
The oscillation frequency, current consumption and sound pressure are measured by the measuring instruments shown below



In the measuring test, buzzer is placed as follows:



## E. Typical Frequency Response Curve

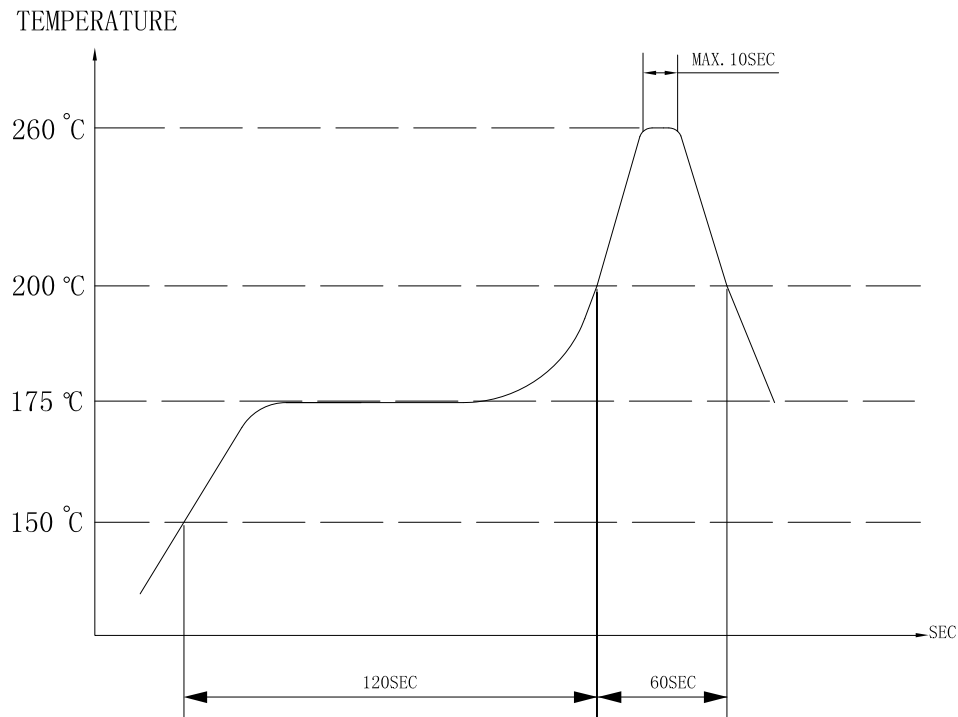


## F. Soldering Condition

(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.

## G. RELIABILITY TEST

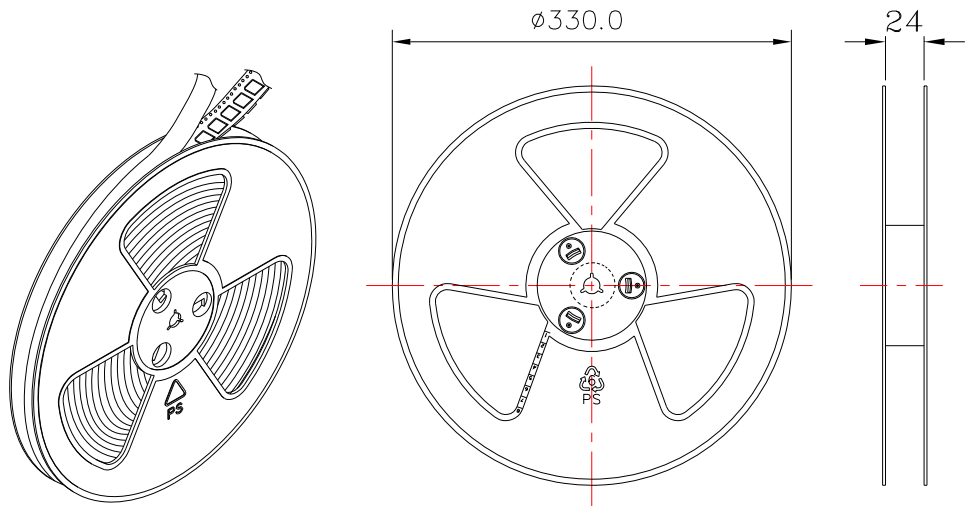
| NO. | ITEM                            | TEST CONDITION AND REQUIREMENT   |
|-----|---------------------------------|--|
| 1   | High Temperature Test (Storage) | After being placed in a chamber with $80\pm 2^{\circ}\text{C}$ for 96 hours and then being placed in normal condition for 2 hours.<br>Allowable variation of SPL after test: $\pm 10\text{dB}$ .                                 |
| 2   | Low Temperature Test (Storage)  | After being Placed in a chamber with $-30\pm 2^{\circ}\text{C}$ for 96 hours and then being placed in normal condition for 2 hours.<br>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.<br>Allowable variation of SPL after test: $\pm 10\text{dB}$ .                  |
| 4   | Temperature Cycle Test          | <p>The part shall be subjected to 5 cycles. One cycle shall be consist of :</p> <p>Allowable variation of SPL after test: <math>\pm 10\text{dB}</math>.</p>  |
| 5   | Drop Test                       | Drop on a hard wood board of 4cm thick, any directions ,6 times, at the height of 75cm .<br>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 .<br>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 .<br>90% min. lead terminals shall be wet with solder<br>(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.<br>No visible damage and cutting off.  |

### TEST CONDITION.

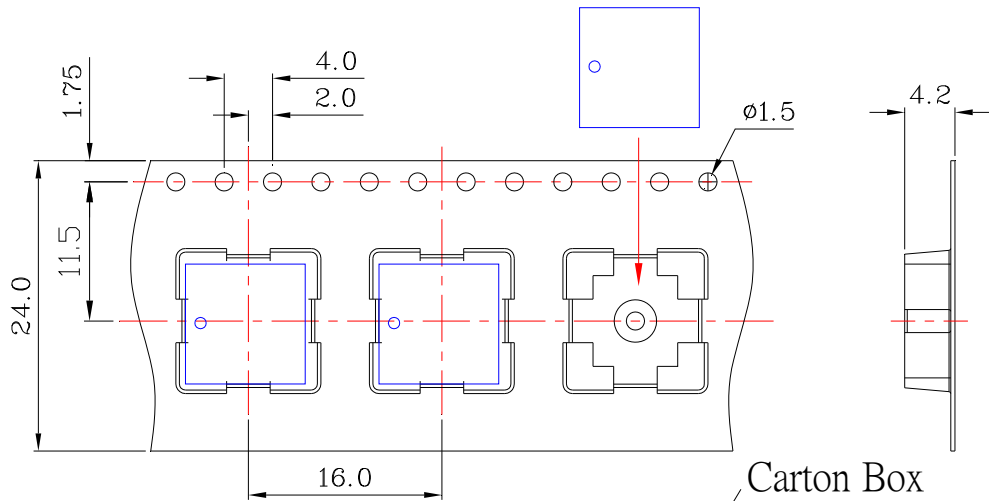
|                         |   |  |                      |                            |
|-------------------------|---|--|----------------------|----------------------------|
| Standard Test Condition | : | a) Temperature : $+5 \sim +35^{\circ}\text{C}$ | b) Humidity : 45-85% | c) Pressure : 860-1060mbar |
| 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       |



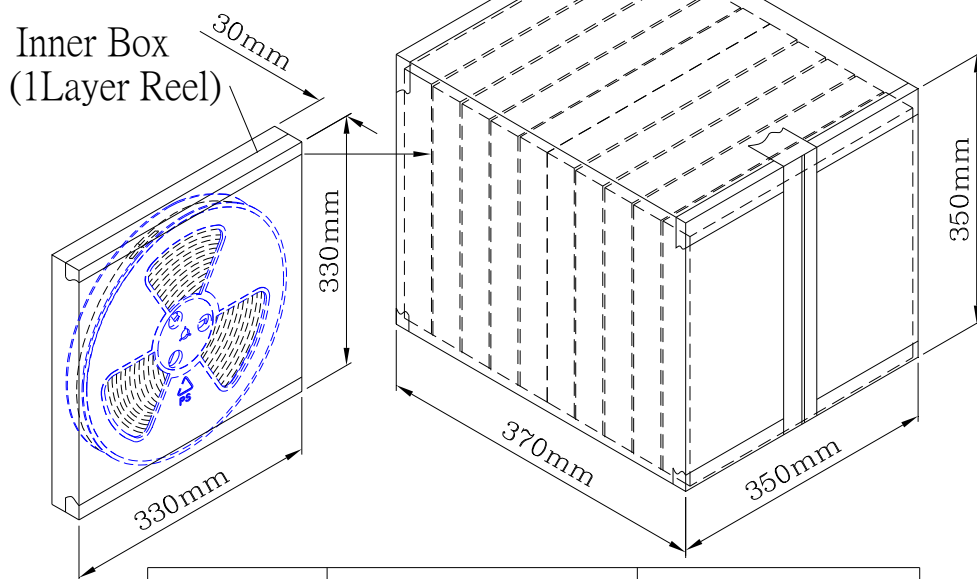
# H. PACKING STANDARD



1 Reel : 1000PCS



Carton Box  
(10 Inner Box)



|            |                   |                      |
|------------|-------------------|----------------------|
| Inner Box  | 330mmx330mmx30mm  | 1x1000PCS=1000PCS    |
| Carton Box | 350mmx350mmx370mm | 10x1000PCS=10,000PCS |



NingBo KLS ELECTRONIC CO.,LTD.