

# SPECIFICATION FOR APPROVAL

## 承認書

Description : Magnetic Buzzer

Kingstate Part No. : KSSG33J12-3

Customer's Model No. :

Specification No. : TKS-7297

Number Of The Edition : 1.5

| CUSTOMER'S APPROVED SIGNATURE |  |  |
|-------------------------------|--|--|
|                               |  |  |



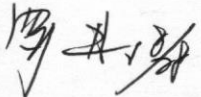
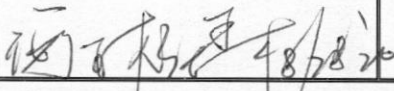
志豐電子股份有限公司 KINGSTATE ELECTRONICS CORP.

Address: 10F, No. 69-11, Sec. 2, Chung Cheng E. Rd., Tamshui County, Taipei Hsien, Taiwan, R.O.C.

International sales dept.: TEL : 886-2-2809-5651 FAX:886-2-2809-7151

Domestic sales dept.: TEL : 886-2-2809-0668 FAX:886-2-28096748

http : //www.kingstate.com.tw

| Approved by                                                                         | Checked by                                                                          | Issued by         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------|
|  |  | 陽志明<br>2020.08.28 |

# KINGSTATE ELECTRONICS CORPORATION

志豐電子股份有限公司

## 修訂記錄

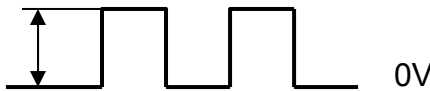
| 圖號: TKS-7297 |     |     | 料號: KSSG33J12-3 |
|--------------|-----|-----|-----------------|
| 修訂日期         | 提出者 | 版次  | 修訂記錄內容          |
| 2020.08.28   | 何彬森 | 1.5 | 變更塑膠殼尺寸         |
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## A. SCOPE 範疇

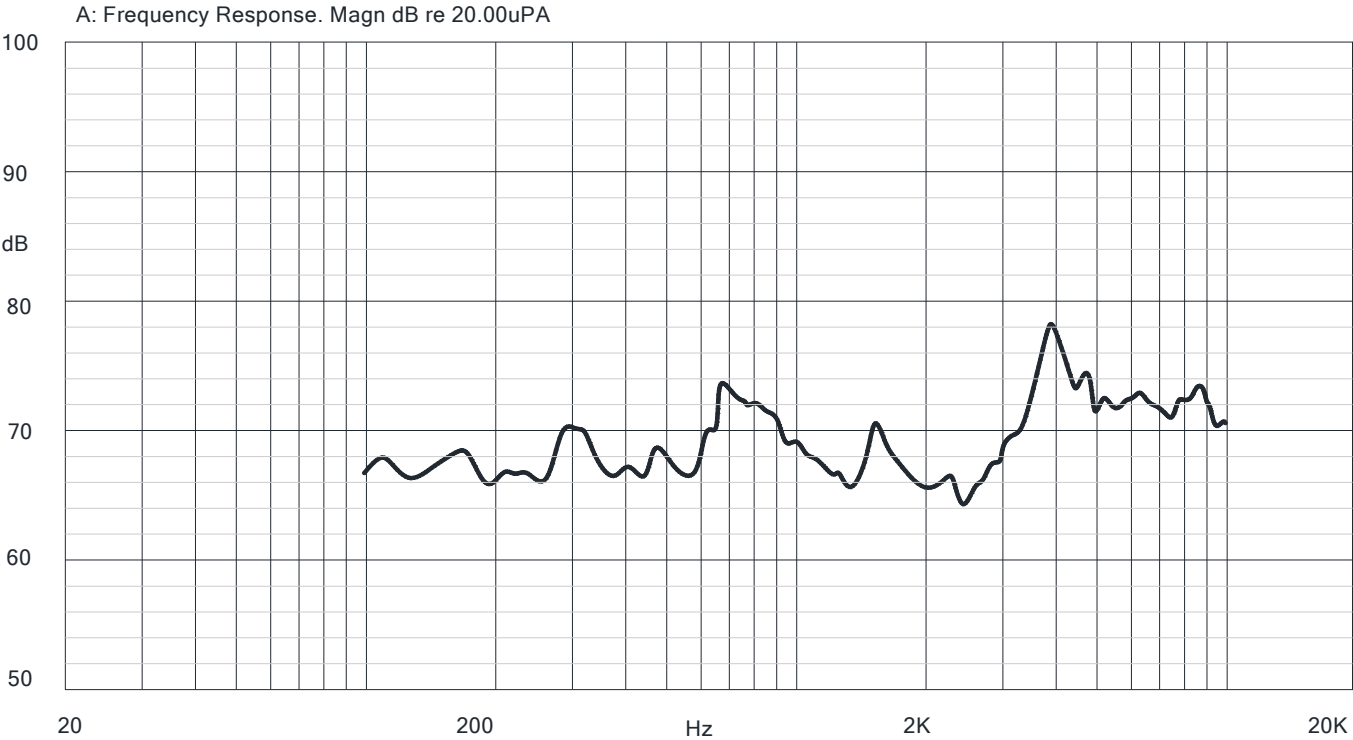
This specification applies magnetic buzzer, **KSSG33J12-3**

此規格書適用於電磁式蜂鳴器, **KSSG33J12-3**

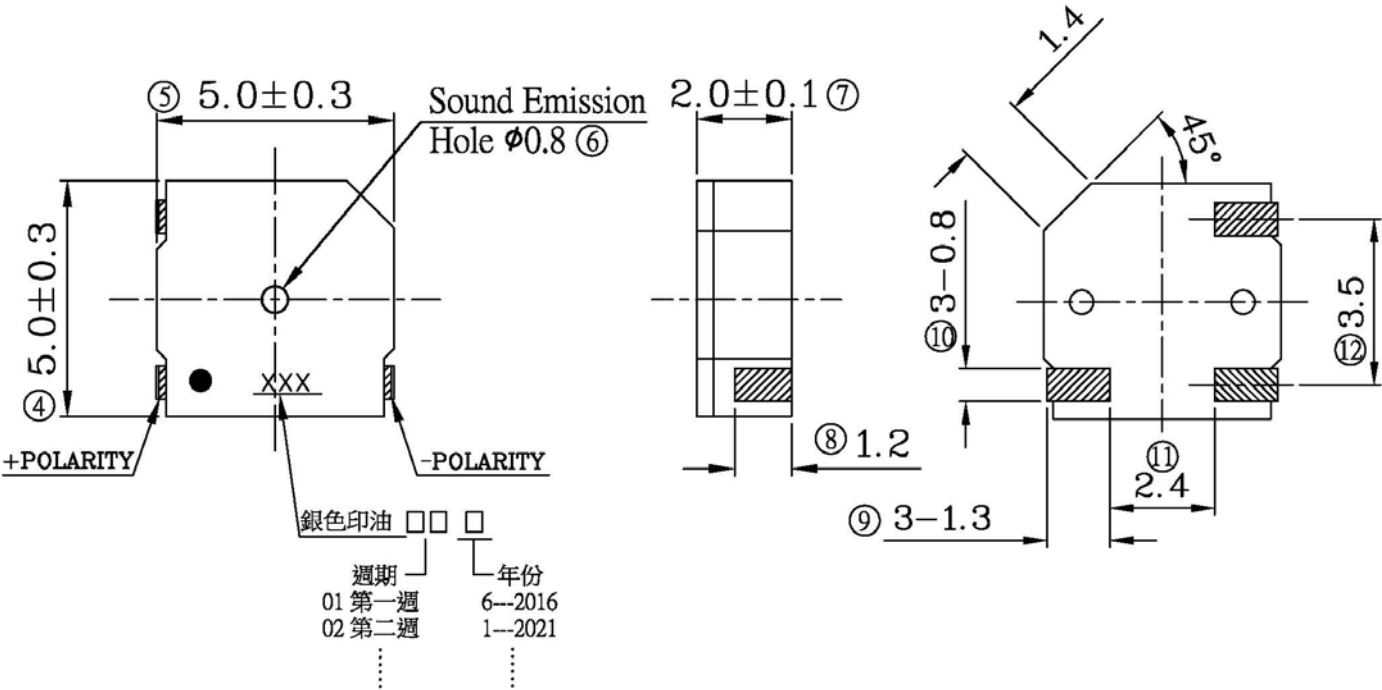
## B. SPECIFICATION 規格

| No. | Item                                           | Unit               | Specification                | Condition                                                                                                                                 |
|-----|------------------------------------------------|--------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Rated Vo<br>額定電壓                               | Vo-p               | 3.0                          |                                                        |
| 2   | Operating Volt.<br>操作電壓                        | Vo-p               | 2.0 ~ 4.0                    |                                                                                                                                           |
| 3   | Mean Current<br>平均耗電流                          | mA                 | ①Max. 110                    | Applying rated voltage, 4000Hz square wave, 1/2duty<br>施以額定電壓, 4000Hz, 方波, 50%負載                                                          |
| 4   | Coil Resistance<br>直流阻抗                        | $\Omega$           | ② $12 \pm 3$                 |                                                                                                                                           |
| 5   | Sound Output<br>輸出音壓                           | dBA                | ③78~85                       | Distance at 10cm (A-weight). Applying rated voltage 4000Hz, square wave, 1/2duty<br>在 10 cm 處, 施以額定電壓, 4000Hz, 方波, 50%負載                  |
| 6   | Rated Frequency<br>額定頻率                        | Hz                 | 4000                         |                                                                                                                                           |
| 7   | Operating Temp.<br>操作溫度                        | $^{\circ}\text{C}$ | -20 ~ +70                    |                                                                                                                                           |
| 8   | Storage Temp.<br>儲存溫度                          | $^{\circ}\text{C}$ | -30 ~ +80                    |                                                                                                                                           |
| 9   | Dimension<br>尺寸                                | mm                 | L5.0 x W5.0 x H2.0           | See attached drawing.<br>請參照外觀尺寸圖                                                                                                         |
| 10  | Weight<br>重量                                   | gram               | 0.1                          |                                                                                                                                           |
| 11  | Material<br>材質                                 |                    | L.C.P (Black)                |                                                                                                                                           |
| 12  | Terminal<br>端子                                 |                    | SMD type<br>(鍍全錫/Plating Sn) | See attached drawing.<br>請參照外觀尺寸圖                                                                                                         |
| 13  | Environmental<br>Protection Regulation<br>環保法規 |                    | RoHS 2.0                     |                                                                                                                                           |
| 14  | Storage life<br>保存期限                           | month              | 6                            | 6 months preservation at room temp. (11~30 $^{\circ}\text{C}$ ), Humidity 20~75%<br>在室溫下 11~30 $^{\circ}\text{C}$ , 濕度 20~75% 以下可保存 6 個月. |
| 15  | Moisture sensitive level<br>濕敏等級               | Class              | 5                            | Less than or equal to 30C/60%RH, 48 hours of Floor life.<br>小於或等於 30 $^{\circ}\text{C}$ /60%RH 48 小時車間壽命                                  |

C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

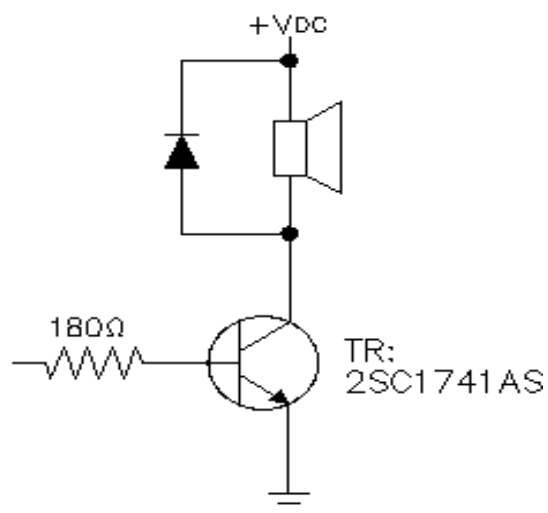


D. APPEARANCE DRAWING 外觀尺寸圖

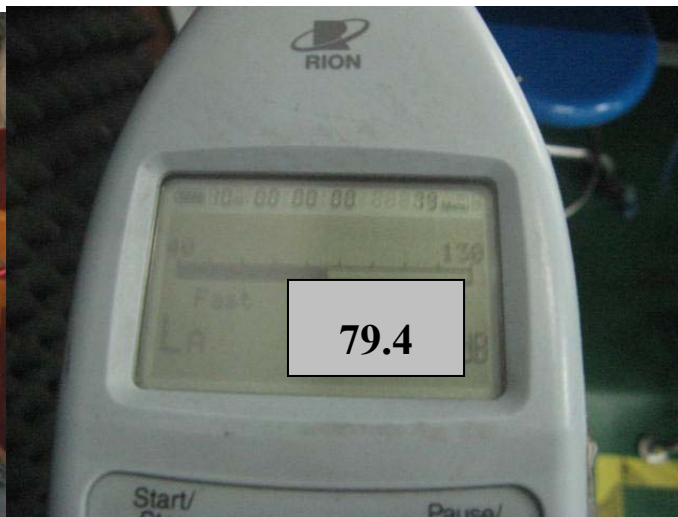
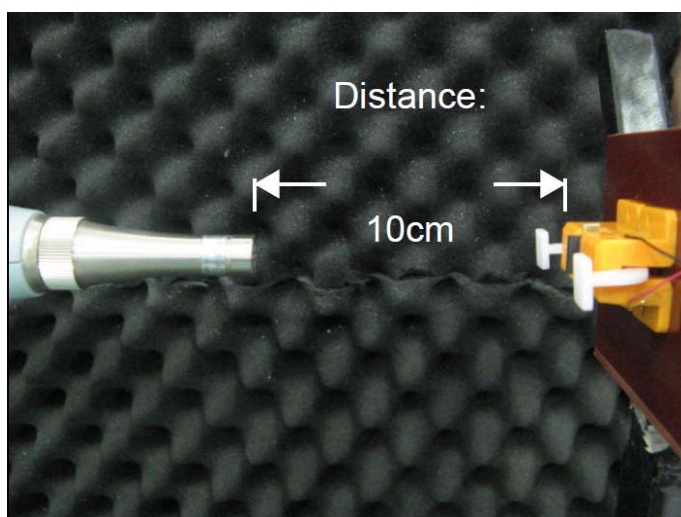
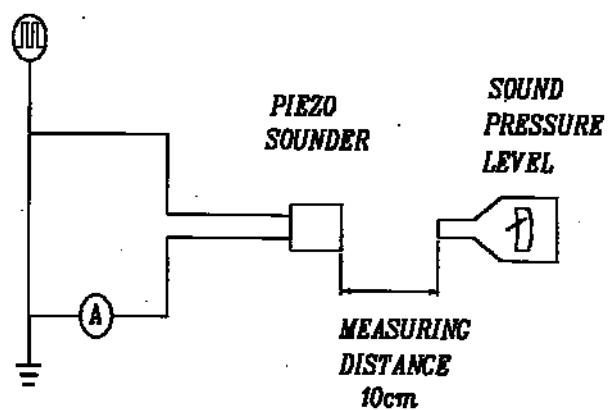


Tol: ±0.5  
Unit: mm

## E. MEASUREMENT METHOD 測量方式



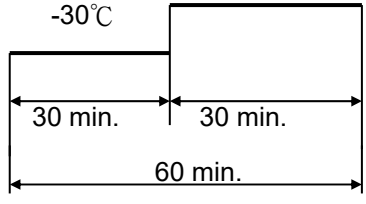
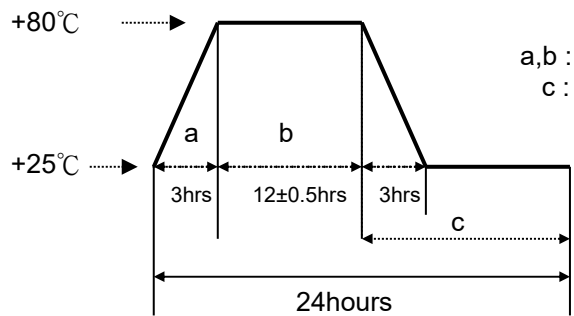
## F. INSPECTION FIXTURE 測試架



## G. MECHANICAL CHARACTERISTICS 機械特性

| No. | Item                                 | Test condition                                                                                                                                                                                                                | Evaluation standard                                                                                                                                        |
|-----|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Solderability<br>焊錫附著性               | Lead terminals are immersed in solder bath of $+260\pm 5^{\circ}\text{C}$ for $3\pm 1$ second.<br>端子置於錫膏內,錫膏溫度: $+260\pm 5^{\circ}\text{C}$ . 焊接時間: $3\pm 1$ 秒.                                                               | 95% surface of lead pads must be covered with fresh solder<br>錫膏須覆蓋端子上方 95%                                                                                |
| 2   | Soldering Heat Resistance<br>焊錫耐熱性   | The product is followed the reflow temperature curve to test its reflow thermostability.<br>產品依照迴焊溫度曲線測試迴焊耐熱性.                                                                                                                | No interference in operation<br>操作上無任何不良                                                                                                                   |
| 3   | Terminal Mechanical Strength<br>端子強度 | Lead pads shall be soldered on the pc board, and the force 9.8N (1.0kg) shall be applied behind the part for 10 seconds.<br>將端子焊在 PC 板上後,對單體施以 9.8N(1.0kg)拉力 10 秒.                                                            | No damage and cutting off<br>端子不鬆動, 不脫落.                                                                                                                   |
| 4   | Vibration<br>振動測試                    | Buzzer shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55hz band of vibration frequency to each of 3 per-pendicular directions for 6 hours.<br>振動週波數 10~55HZ、全振幅 1.5mm 於 X.Y.Z 3 個方向,各 6 小時. | After the test the part shall meet specifications with-out any damage in appearance and the SPL should be in $\pm 10\text{dBA}$ compared with initial one. |
| 5   | Drop test<br>落下測試                    | The part only shall be dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes (X.Y.Z). (a total of 9 times).<br>單體從 75 公分高處, X.Y.Z.3 個方向,各 3 回,落於 40mm 厚木板上.                                          | 經測試後,單體除音壓外,外觀及電氣特性須符合規格. 輸出音壓變化量須 $\pm 10\text{dBA}$ 內.                                                                                                   |

## H. ENVIRONMENT TEST 環境測試

| No. | Item                               | Test condition                                                                                                                                                                                              | Evaluation standard                                                                                                                                                                                                                                                                                                                       |
|-----|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | High temp. test<br>高溫測試            | After being placed in a chamber at $+80^{\circ}\text{C}$ for 48 hours.<br>置於 $+80^{\circ}\text{C}$ 環境中 48 小時                                                                                                | After the test the part shall meet specifications with-out any degradation in appearance and performance except SPL. after 4 hours at $+25^{\circ}\text{C}$ . the SPL should be in $\pm 10\text{dBA}$ compared with initial one.<br><br>經測試後,靜置於 $+25^{\circ}\text{C}$ (室溫)環境中 4 小時後,單體除音壓外,外觀及電氣特性須符合規格. 輸出音壓變化量須在 $\pm 10\text{dBA}$ 內. |
| 2   | Low temp. test<br>低溫測試             | After being placed in a chamber at $-30^{\circ}\text{C}$ for 48hours.<br>置於 $-30^{\circ}\text{C}$ 環境中 48 小時                                                                                                 |                                                                                                                                                                                                                                                                                                                                           |
| 3   | Thermal Shock<br>熱衝擊試驗             | The part shall be subjected to 10 cycles. One cycle shall consist of;<br>對單體施以熱衝擊試驗 10 次循環,其循環內容如圖示<br>                  |                                                                                                                                                                                                                                                                                                                                           |
| 4   | Temp./ Humidity Cycle<br>溫度/溼度循環測試 | The part shall be subjected to 10 cycles. One cycle shall be 24 hours and consist of;<br>單體承受溫度/溼度循環測試 10 次.其循環內容如圖示<br> |                                                                                                                                                                                                                                                                                                                                           |

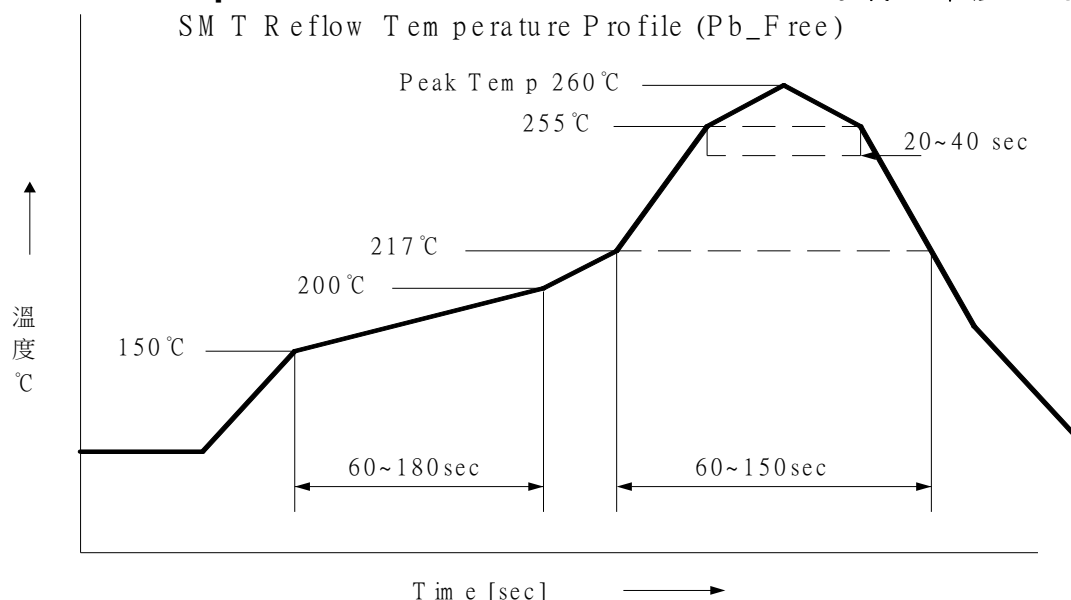
## I. RELIABILITY TEST 信賴性測試

| No. | Item                        | Test condition                                                                                                                                                                                                                                                                                                                                                                                                                           | Evaluation standard                                                                                                                                                                                                                          |
|-----|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Operating life test<br>壽命測試 | 1. Ordinary temperature 室溫壽命測試<br>The part shall be subjected to 100 hours at room temperature (+25±10℃)下，輸入 3.0V,4000HZ 連續操作 100 小時。<br>2. High temperature 高溫壽命測試<br>The part shall be subjected to 50 hours at +55℃ with 3.0V,4000HZ applied.<br>在+55℃環境下，輸入 3.0V,4000HZ 連續操作 50 小時。<br>3. Low temperature 低溫壽命測試<br>The part shall be subjected to 50 hours at -30℃ with 3.0V,4000HZ applied.<br>在-30℃環境下，輸入 3.0V,4000HZ 連續操作 50 小時。 | After the test the part shall meet specifications with-out any degradation in appearance and performance except SPL. after 4 hours at +25℃. the SPL should be in ±10dBA compared with initial one.<br>經測試後，靜置於+25℃（室溫）環境中 4 小時後，單體除音壓外，外觀及電氣 |

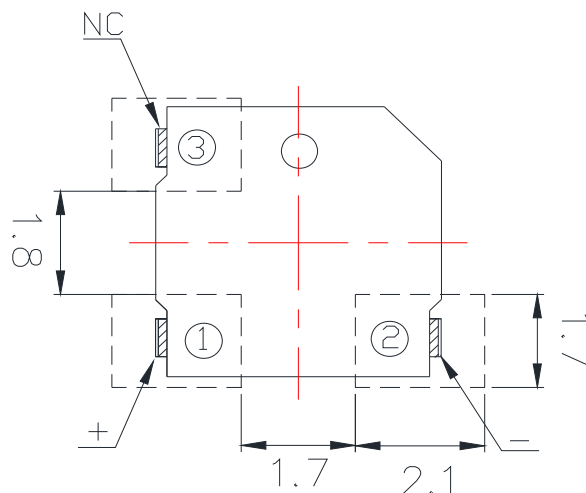
### TEST CONDITION.

|                         |   |                            |                      |                            |
|-------------------------|---|----------------------------|----------------------|----------------------------|
| Standard Test Condition | : | a) Temperature : +5 ~ +35℃ | b) Humidity : 45-85% | c) Pressure : 860-1060mbar |
| 一般測試條件                  | : | a) 溫度 : +5 ~ +35℃          | b) 濕度 : 45-85%       | c) 氣壓 : 860-1060mbar       |
| Judgment Test Condition | : | a) Temperature : +25 ± 2℃  | b) Humidity : 60-70% | c) Pressure : 860-1060mbar |
| 爭議時測試條件                 | : | a) 溫度 : +25 ± 2℃           | b) 濕度 : 60-70%       | c) 氣壓 : 860-1060mbar       |

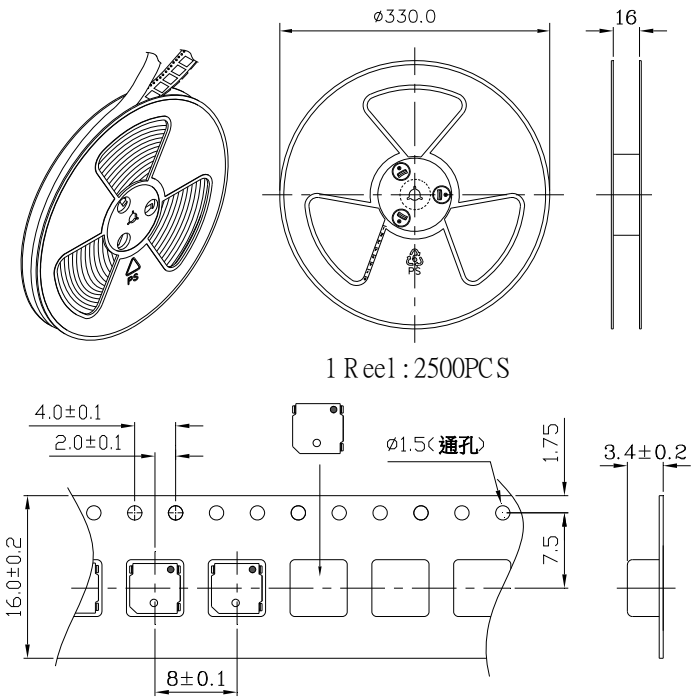
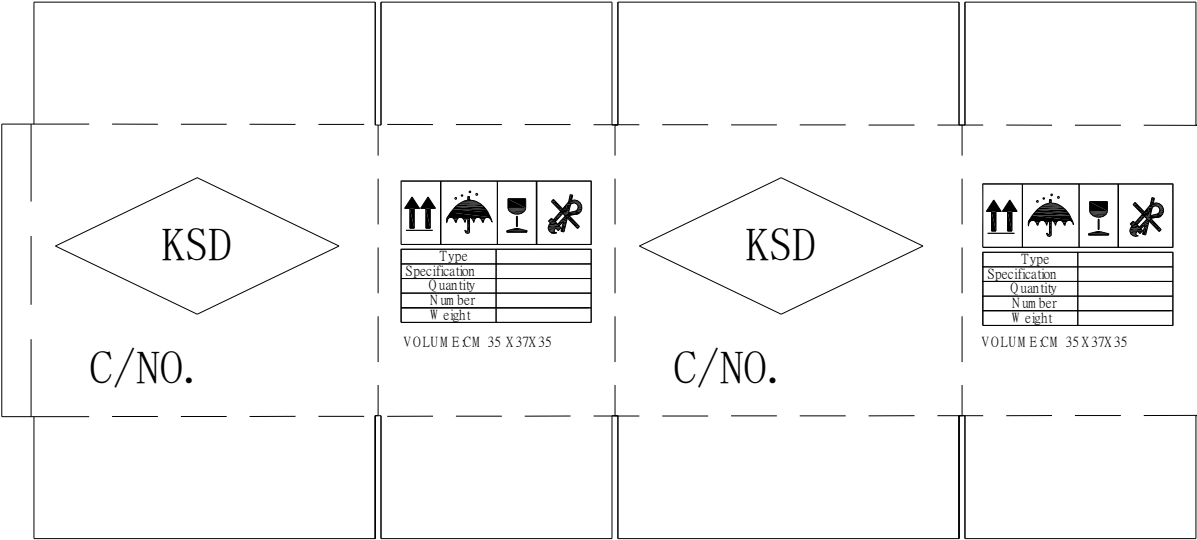
## J. Recommended Temperature Profile For Reflow Oven 建議迴焊爐溫度曲線



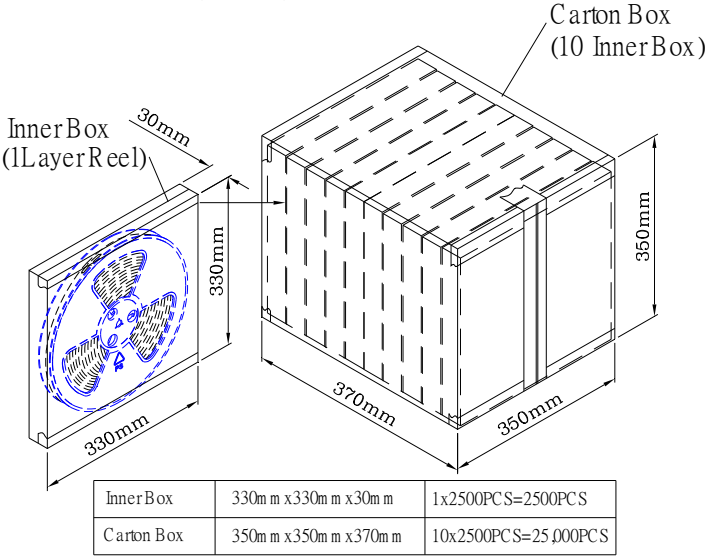
## K. Recommended land pattern 建議基板設計尺寸圖



L. PACKING STANDARD 包裝規格



防潮卡位置



Packing requirements:

包裝要求:

1. Apply drying treatment before packing the product  
产品装袋前干燥处理
2. Vacuum package  
真空包装
3. Add desiccant  
加入去湿剂
4. Add moisture indication card  
加入防潮標示卡