

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : **Magnetic Buzzer**

Kingstate Part No. : **KTG0912CL**

Customer's Model No. : \_\_\_\_\_

Specification No. : **TKR-5023**

Number Of The Edition : **1.1**

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

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

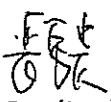


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| Approved by                                                                                       | Checked by                                                                                  | Issued by           |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------|
| <br>2011.07.21 | <br>7/20 | Andrew<br>07/20/11` |

## A. SCOPE 範疇

This specification applies magnetic buzzer, **KTG0912CL**

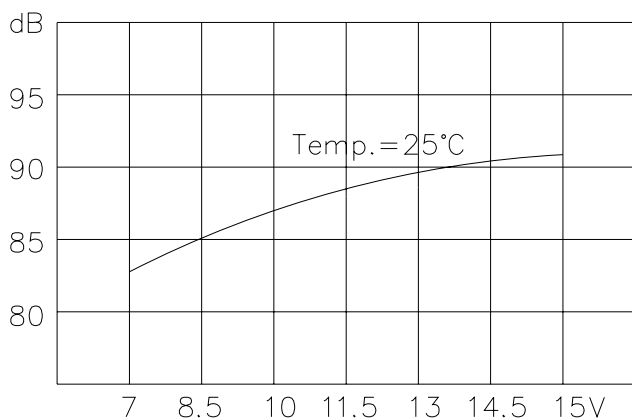
此規格書適用於電磁式蜂鳴器, **KTG0912CL**

## B. SPECIFICATION 規格

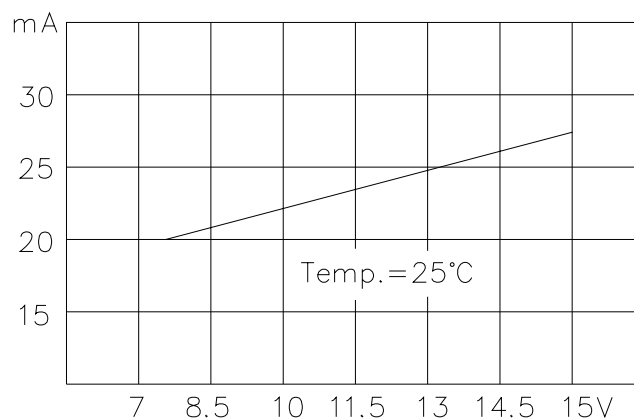
| No. | Item                                           | Unit            | Specification                | Condition                                                                               |
|-----|------------------------------------------------|-----------------|------------------------------|-----------------------------------------------------------------------------------------|
| 1   | Rated Voltage<br>額定電壓                          | V <sub>DC</sub> | 12.0                         |                                                                                         |
| 2   | Operating Volt.<br>操作電壓                        | V <sub>DC</sub> | 7.0~15.0                     |                                                                                         |
| 3   | Mean Current<br>平均耗電流                          | mA              | Max. 30                      |                                                                                         |
| 4   | Sound Output<br>輸出音壓                           | dBA             | Min.85<br>(Typical 90)       | Distance at 10cm(A-weight free air). Applying rated voltage .<br>在自由音場 10 公分處, 施以額定電壓.  |
| 5   | Resonant Frequency<br>諧振頻率                     | Hz              | 2700 ± 300                   |                                                                                         |
| 6   | Operating Temp.<br>操作溫度                        | ℃               | -40 ~ +85                    | SPL Min75dB at "5" test condition<br>音壓 Min75dB, 在第五項測試條件                               |
| 7   | Storage Temp.<br>儲存溫度                          | ℃               | -40 ~ +85                    |                                                                                         |
| 8   | Dimension<br>尺寸                                | mm              | L9.6 x W9.6 x H5.0           | See attached drawing.<br>請參照外觀尺寸圖                                                       |
| 9   | Weight<br>重量                                   | gram            | 1.5                          |                                                                                         |
| 10  | Material<br>材質                                 |                 | PPS(Black)                   |                                                                                         |
| 11  | Terminal<br>端子                                 |                 | SMD type<br>(鍍全錫/Plating Sn) | See attached drawing.<br>請參照外觀尺寸圖                                                       |
| 12  | Environmental<br>Protection Regulation<br>環保法規 |                 | RoHS                         |                                                                                         |
| 13  | Storage life<br>保存期限                           | month           | 6                            | 6 months preservation at room temp.(25±3℃), Humidity40%<br>在室溫下 25±3℃,濕度 40%以下可保存 6 個月. |

## C. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

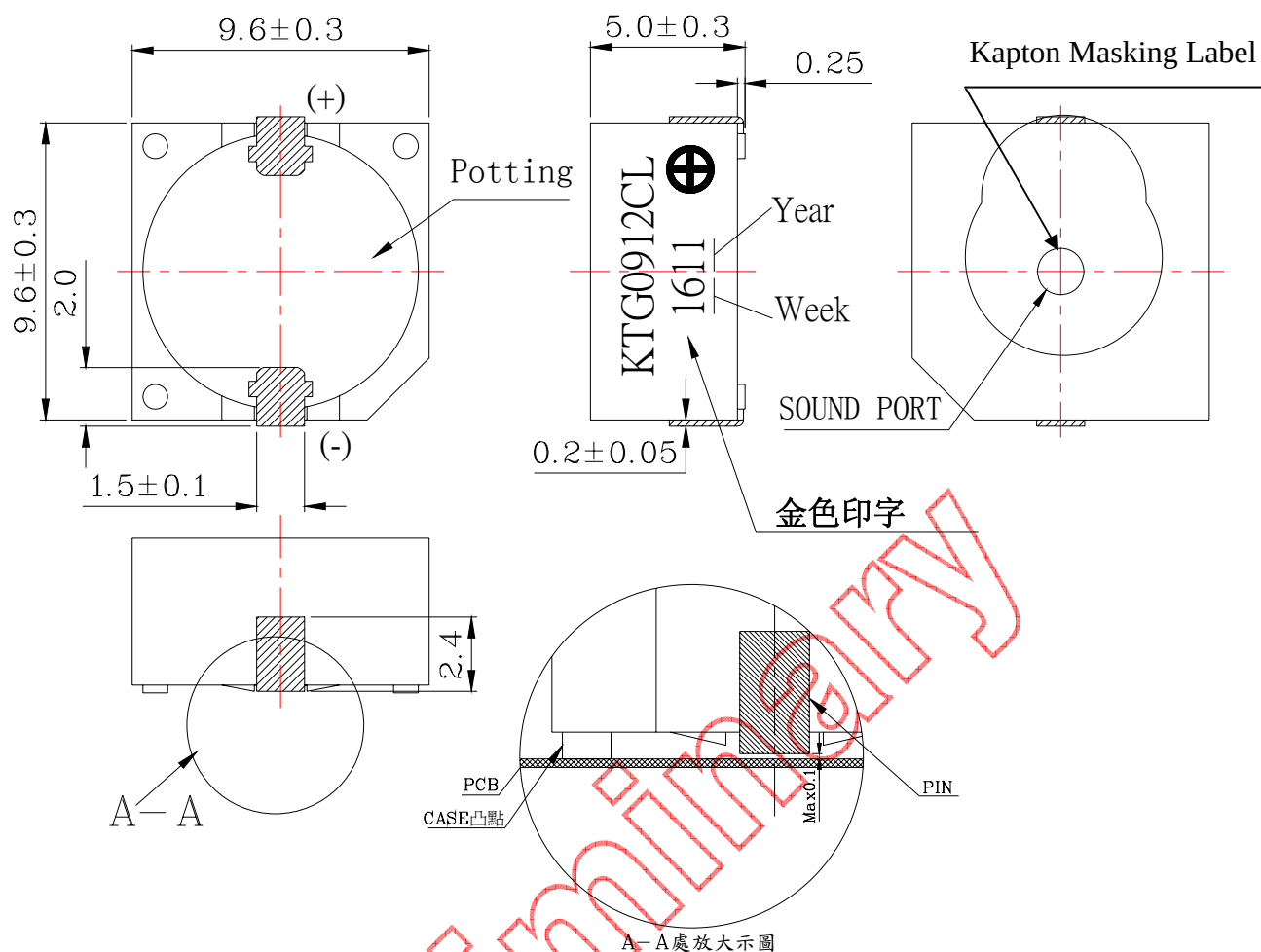
VOLTAGE-SOUND PRESSURE  
LEVEL



VOLTAGE-CURRENT  
CONSUMPTION



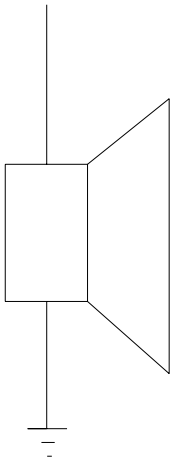
D. APPEARANCE DRAWING 外觀尺寸圖



Tol:  $\pm 0.5$  Unit: mm

E. MEASUREMENT METHOD 測量方式

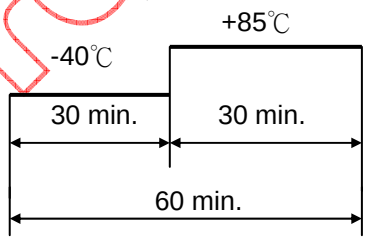
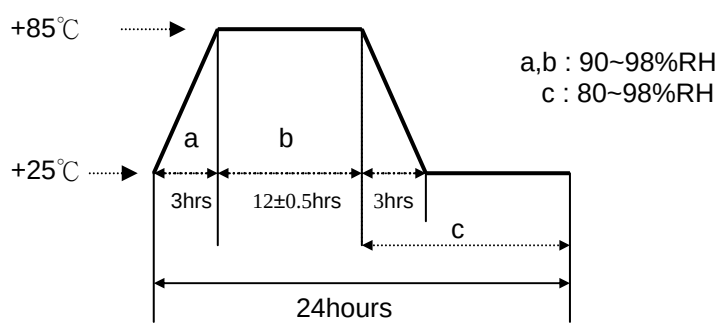
+V DC



## F. 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 $+270\pm5^{\circ}\text{C}$ for $3\pm1$ second.<br>端子置於錫膏內,錫膏溫度: $+270\pm5^{\circ}\text{C}$ . 焊接時間: $3\pm1$ 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 thermo stability.<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 2 hours.<br>振動週波數 10~55HZ、全振幅 1.5mm 於 X.Y.Z 3 個方向,各 2 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. 輸出音壓變化量須在 $\pm 10\text{dBA}$ 內.                                                                                                  |

## G. 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 $+85^{\circ}\text{C}$ for 96 hours.<br>置於 $+85^{\circ}\text{C}$ 環境中 96 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>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 96 hours.<br>置於 $-40^{\circ}\text{C}$ 環境中 96 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> |                                                                                                                                                                                                                                                                                                                                       |

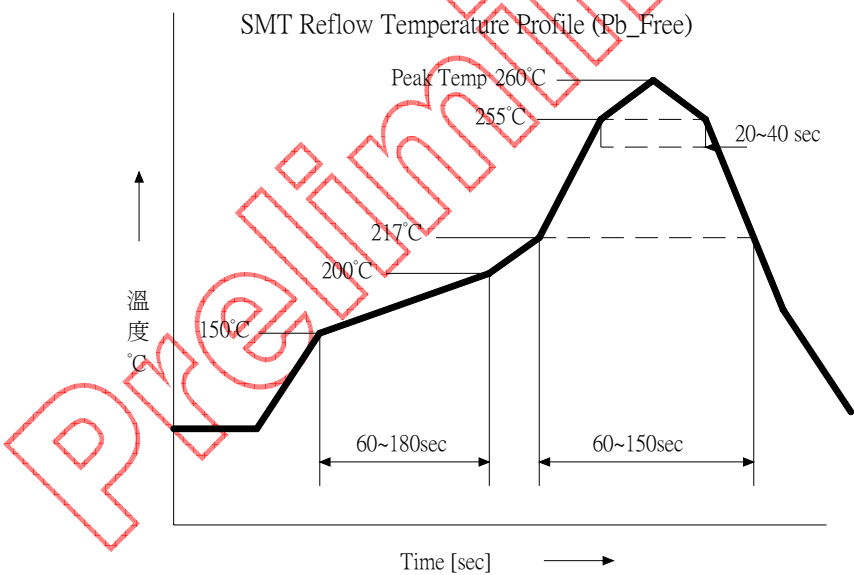
H. RELIABILITY TEST 信賴性測試

| No. | Item                        | Test condition                                                                                                                                                                                                                                                                                                                                                                             | Evaluation standard                                                                                                                                                                                                                                                               |
|-----|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Operating life test<br>壽命測試 | <p>1.Continuous life test 高溫壽命測試(連續)<br/>The part shall be subjected to 72 hours at +70°C with 12.0VDC applied.<br/>在+70°C環境下，輸入 12.0VDC,連續操作 72 小時.</p> <p>2.Intermittent life test 室溫壽命測試(間歇).<br/>A duty cycle of 1 minute on, 1 minutes off, a minimum of 10000 times at room temp.( +25±10°C) with 12.0VDC applied.<br/>在室溫下(+25±10°C), 輸入 12.0VDC, 通電 1 分鐘/斷電 1 分鐘,測試 10000 次循環.</p> | <p>After the test the part shall meet specifications with-out any degradation in appearance and performance except SPL. after 4 hours at +25°C. the SPL should be in ±10dBA compared with initial one.</p> <p>經測試後，靜置於+25（室溫）環境中 4 小時後，單體除音壓外，外觀及電氣特性須符合規格。輸出音壓變化量須在±10dBA 內。</p> |

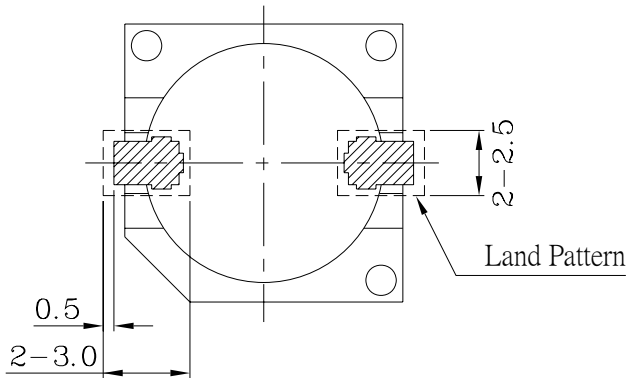
TEST CONDITION.

|                          |   |                             |                      |                            |
|--------------------------|---|-----------------------------|----------------------|----------------------------|
| Standard Test Condition  | : | a) Temperature : +5 ~ +35°C | b) Humidity : 45-85% | c) Pressure : 860-1060mbar |
| 一般測試條件                   | : | a) 溫度 : +5 ~ +35°C          | b) 濕度 : 45-85%       | c) 氣壓 : 860-1060mbar       |
| Judgement Test Condition | : | a) Temperature : +25 ± 2°C  | b) Humidity : 60-70% | c) Pressure : 860-1060mbar |
| 標準測試條件                   | : | a) 溫度 : +25 ± 2°C           | b) 濕度 : 60-70%       | c) 氣壓 : 860-1060mbar       |

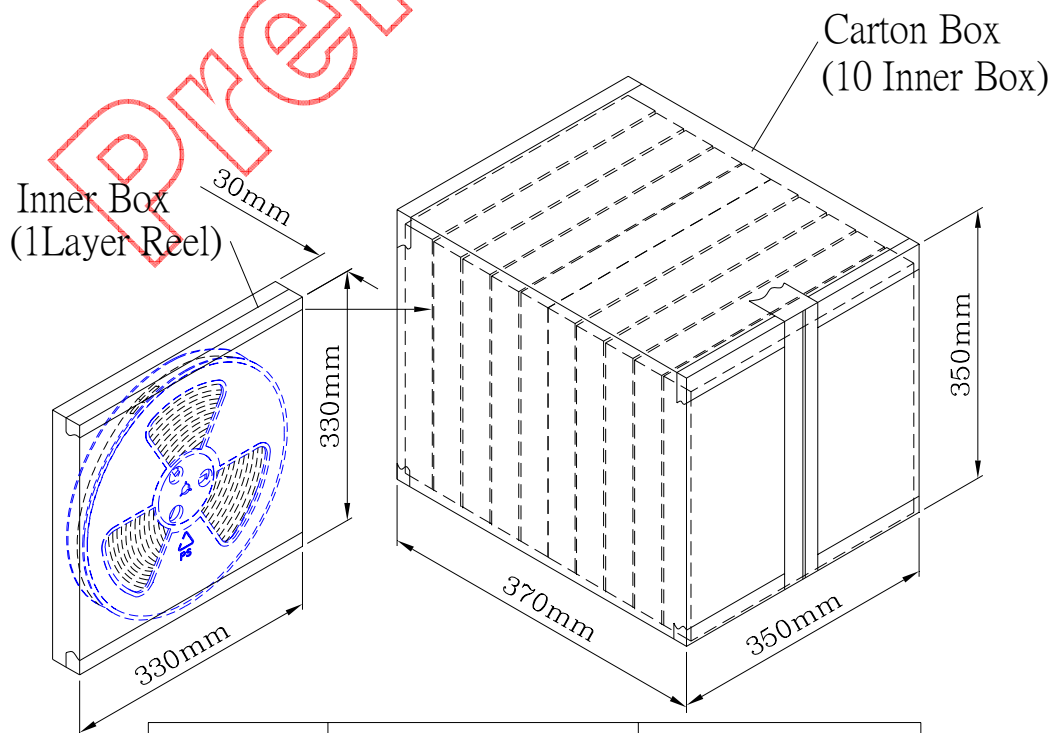
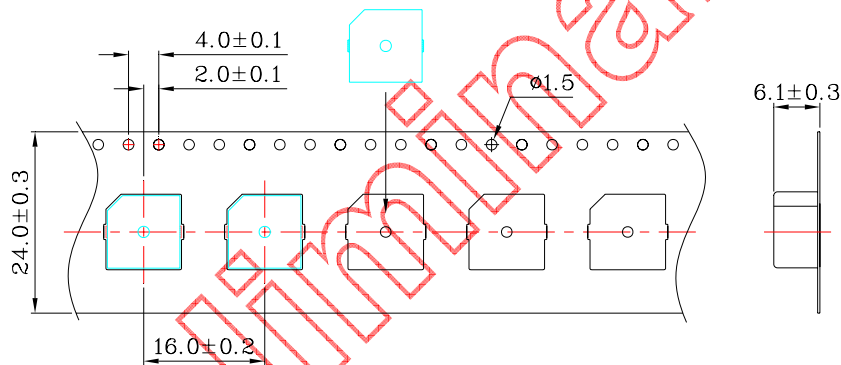
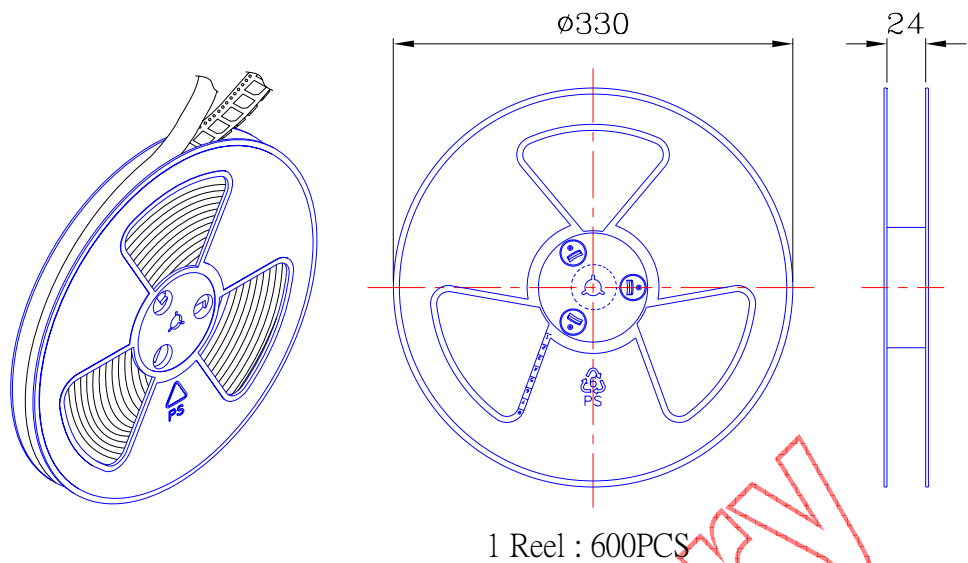
I. Recommended Temperature Profile For Reflow Oven 建議迴焊爐溫度曲線



J. Recommended land pattern 建議基板設計尺寸圖



K.PACKING STANDARD 包裝規格



|            |                   |                    |
|------------|-------------------|--------------------|
| Inner Box  | 330mmx330mmx30mm  | 1x600PCS=600PCS    |
| Carton Box | 350mmx350mmx370mm | 10x600PCS=6,000PCS |