

# SPECIFICATION FOR APPROVAL

## 承認書

Description : Magnetic Buzzer

Kingstate Part No. : KCG0603

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

Specification No. : TKS-1582

Number Of The Edition : 1.3

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

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| Approved by  | Checked by   | Issued by        |
|--------------|--------------|------------------|
| 124 4/28/06' | 陳云華 4/28/06' | Qin<br>04/28/06' |

## A. SCOPE 範疇

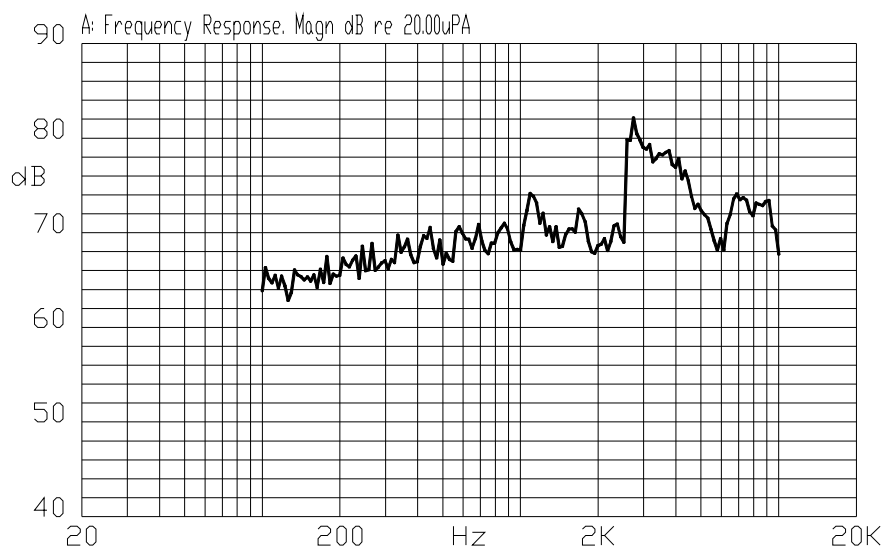
This specification applies magnetic buzzer, **KCG0603**

此規格書適用於電磁式蜂鳴器，**KCG0603**

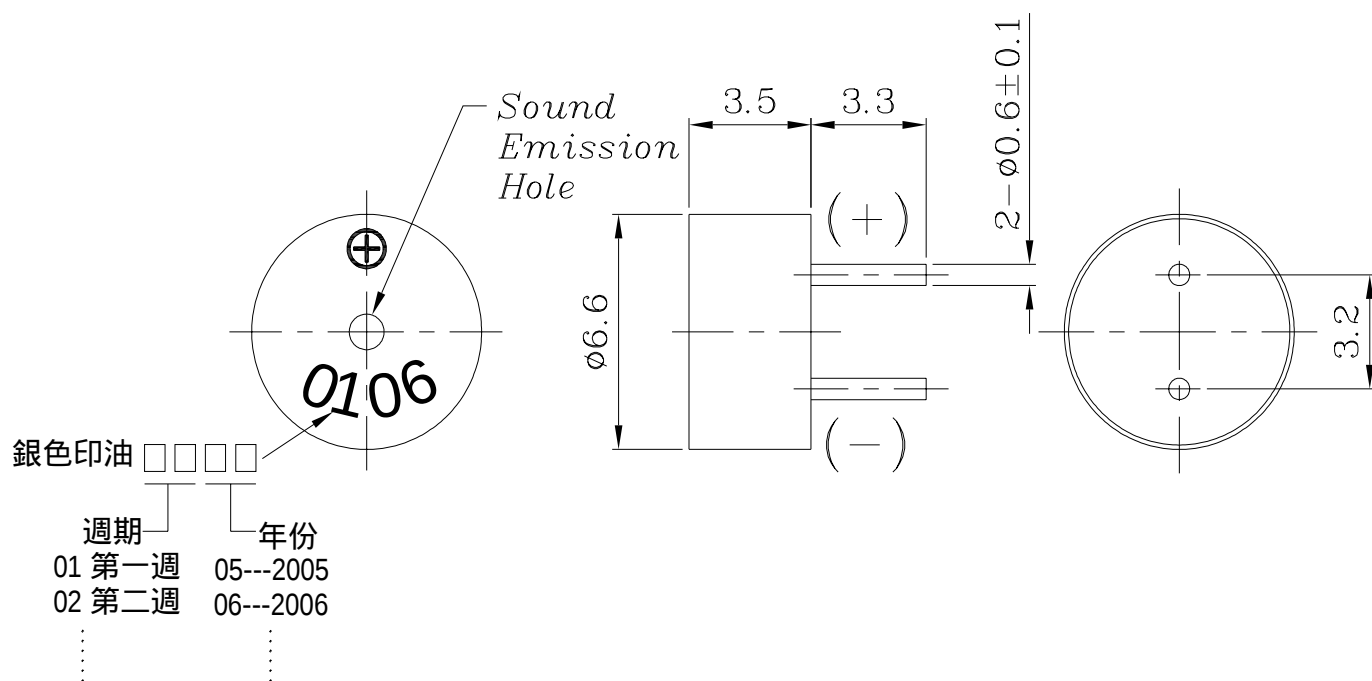
## B. SPECIFICATION 規格

| No. | Item                                           | Unit     | Specification                | Condition                                                                                                                              |
|-----|------------------------------------------------|----------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Rated Voltage<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       | Max. 150                     | Applying rated voltage, 3000Hz square wave, 1/2 duty<br>施以額定電壓, 3000Hz, 方波, 50% 負載                                                     |
| 4   | Coil Resistance<br>直流阻抗                        | $\Omega$ | $8.5 \pm 1.3$                |                                                                                                                                        |
| 5   | Sound Output<br>輸出音壓                           | dBA      | Min. 78<br>(Typical 85)      | Distance at 10cm (A-weight free air). Applying rated voltage 3000Hz, square wave, 1/2 duty<br>在自由音場 10 公分處, 施以額定電壓, 3000Hz, 方波, 50% 負載 |
| 6   | Rated Frequency<br>額定頻率                        | Hz       | 3000                         |                                                                                                                                        |
| 7   | Operating Temp.<br>操作溫度                        |          | -20 ~ +60                    |                                                                                                                                        |
| 8   | Storage Temp.<br>儲存溫度                          |          | -30 ~ +70                    |                                                                                                                                        |
| 9   | Dimension<br>尺寸                                | mm       | $\phi 6.6 \times H3.5$       | See attached drawing.<br>請參照外觀尺寸圖                                                                                                      |
| 10  | Weight<br>重量                                   | gram     | 0.34                         |                                                                                                                                        |
| 11  | Material<br>材質                                 |          | PPO                          |                                                                                                                                        |
| 12  | Terminal<br>端子                                 |          | Pin type<br>(鍍化金/Plating Au) | See attached drawing.<br>請參照外觀尺寸圖                                                                                                      |
| 13  | Environmental Protection<br>Regulation<br>環保法規 |          | RoHS                         |                                                                                                                                        |

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



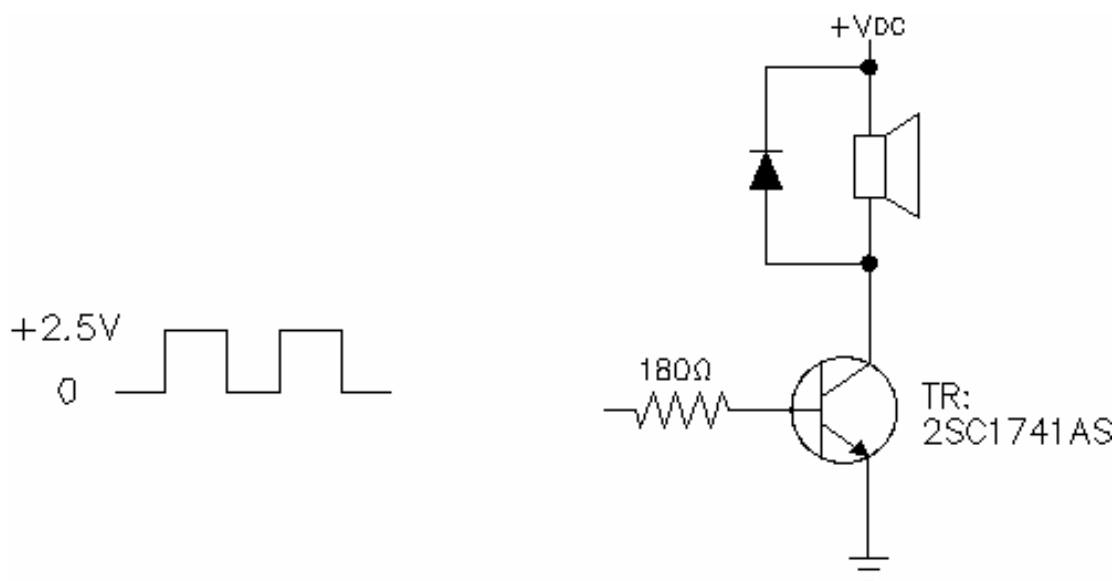
## D. APPEARANCE DRAWING 外觀尺寸圖



Tol:  $\pm 0.5$

Unit: mm

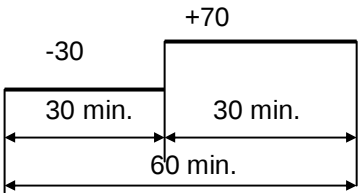
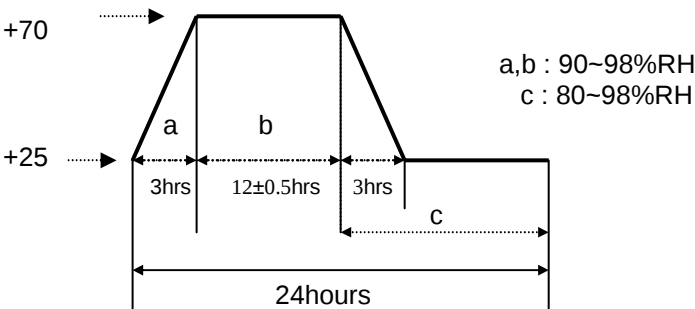
## E. MEASUREMENT METHOD 測量方式



## 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 rosin for 5 seconds and then immersed in solder bath of $+270\pm5$ for $3\pm1$ seconds.<br>端子部份浸入松香溶液 5 秒後,再浸入 $+270\pm5$ 熔融焊錫槽中 $3\pm1$ 秒.                                                    | 90% min. lead terminals shall be wet with solder.<br>(Except the edge of terminal)<br>浸入端子部份附著焊錫 90%以上.(末端斷面不算)                                            |
| 2   | Soldering Heat Resistance<br>焊錫耐熱性   | Lead terminal are immersed up to 1.5mm from solder's body in solder bath of $+260\pm5$ for $3\pm1$ seconds.<br>距離端子根部 1.5mm 的位置,浸入 $+260\pm5$ 的焊錫槽 $3\pm1$ 秒.                                                                 | No interference in operation<br>操作上無任何不良                                                                                                                   |
| 3   | Terminal Mechanical Strength<br>端子強度 | The force 10 seconds of 9.8N (1kg) is applied to each terminal in axial direction.<br>各端子的軸方向施以 9.8N (1kg)的力量 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.<br>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 $+70$ for 96 hours.<br>置於 $+70$ 環境中 96 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.<br>經測試後,單體除音壓外,外觀及電氣特性須符合規格.<br>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 $-30$ for 96 hours.<br>置於 $-30$ 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 +45 with 3.0V,3000Hz applied.<br/>在+45 環境下,輸入 3.0V,3000Hz 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 ) with 3.0V,3000Hz applied.<br/>在室溫下(+25±10 ), 輸入 3.0V,3000Hz 通電 1 分鐘/斷電 1 分鐘,測試 10000 次循環.</p> | <p>Being placed for 4 hours at +25 , buzzer shall be measured. The value of oscillation frequency/ current consumption should be in ±10% compared with initial ones .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,諧振頻率與消耗電流變化量須在±10%內. 輸出音壓變化量須在±10dBA 內.</p> |

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       |
| Judgement 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       |

I. PACKING STANDARD 包裝規格

