

# SPECIFICATION FOR APPROVAL

## 承認書

Description : Piezo Audio Indicator

Kingstate Part No. : KPEG200A

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

Specification No. : PKD-7381

Number Of The Edition : 1.1

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

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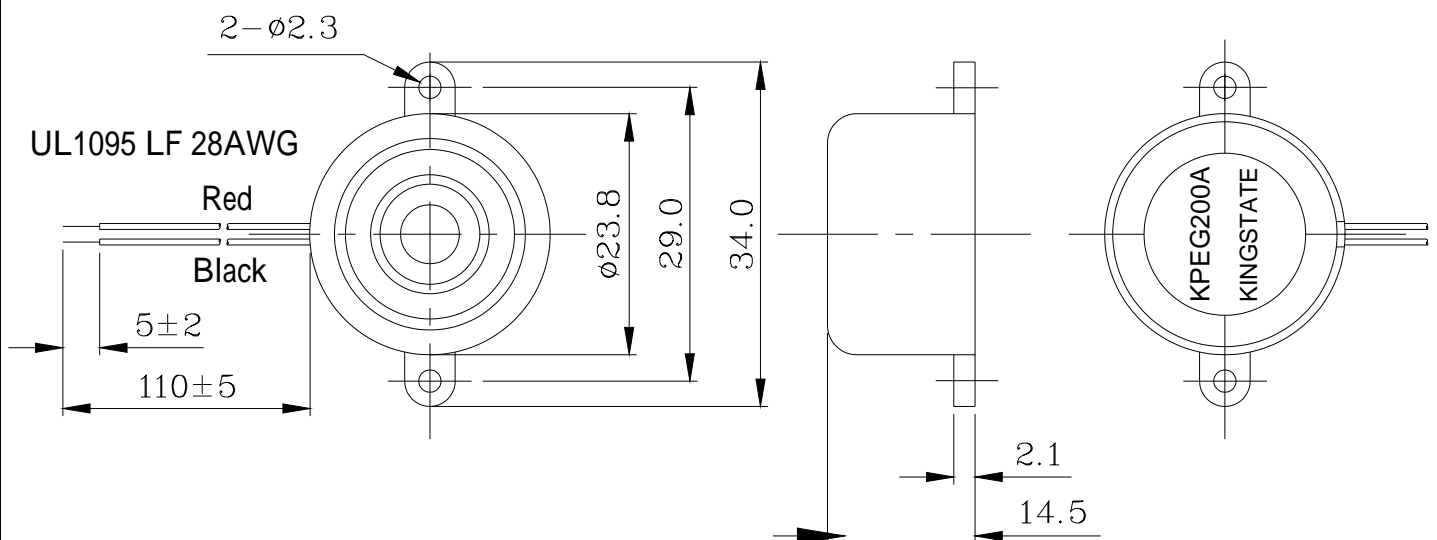
## A. SCOPE 範疇

This specification applies piezo audio indicator, **KPEG200A**  
 此規格書適用於壓電式蜂鳴器, **KPEG200A**

## B. SPECIFICATION 規格

| No. | Item   | Unit | Specification                           | Condition                          |
|-----|--|------|---|------------------------------------|
| 1   | Operating Frequency<br>操作頻率                    | KHz  | 3.1 ± 0.5                               |                                    |
| 2   | Operating Volt. range<br>操作電壓範圍                | VDC  | 3 ~ 20                                  |                                    |
| 3   | Current consumption<br>消耗電流                    | mA   | MAX 8                                   | at 12VDC                           |
| 4   | Sound pressure level<br>輸出音壓                   | dB   | MIN 88                                  | at 30 cm/12VDC                     |
| 5   | Rated Voltage<br>額定電壓                          | VDC  | 12                                      |                                    |
| 6   | Tone<br>聲音                                     |      | Continuous<br>直音                        |                                    |
| 7   | Operating temp.<br>操作溫度                        |      | -30 ~ + 85                              |                                    |
| 8   | Storage temp.<br>儲存溫度                          |      | -40 ~ + 95                              |                                    |
| 9   | Dimension<br>尺寸                                | mm   | 23.8 x H14.5                            | See appearance drawing<br>請參照外觀尺寸圖 |
| 10  | Weight (MAX)<br>重量                             | gram | 4.5                                     |                                    |
| 11  | Material<br>材質                                 |      | ABS UL-94 1/16" HB HIGH HEAT<br>(BLACK) |                                    |
| 12  | Terminal<br>端子                                 |      | Wire type                               | See appearance drawing<br>請參照外觀尺寸圖 |
| 13  | Environmental<br>Protection Regulation<br>環保法規 |      | RoHS                                    |                                    |

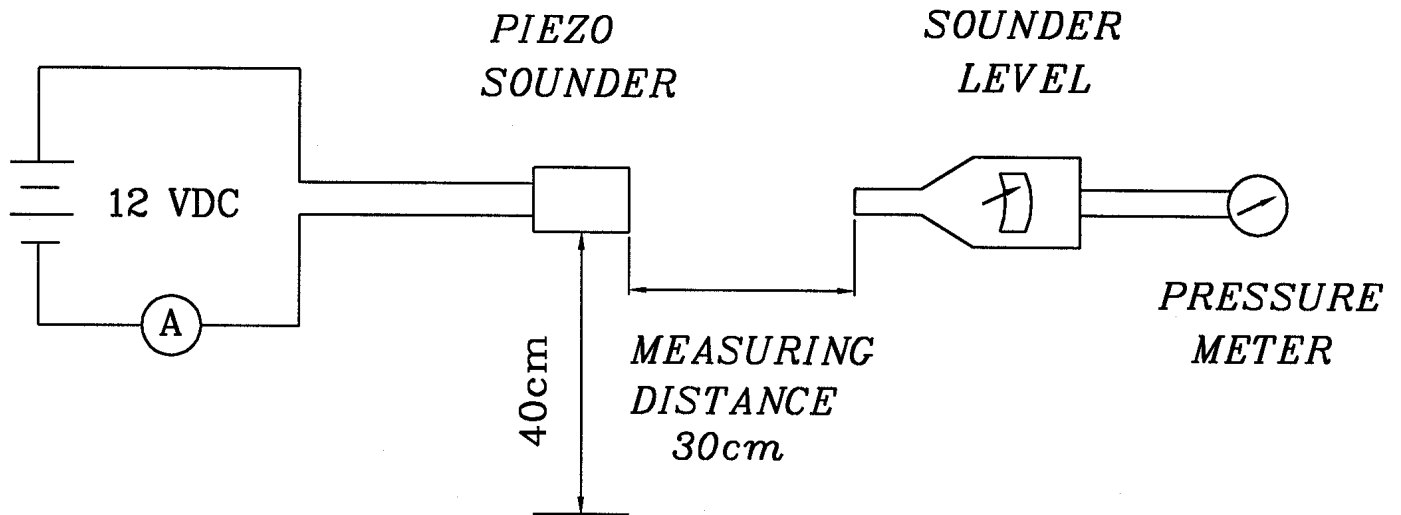
## C. APPEARANCE DRAWING 外觀尺寸圖



**Tol: ± 0.5**  
**Unit: mm**

## D. MEASURING METHOD 測量方法

S.P.L. Measuring Circuit 音壓測試接線圖



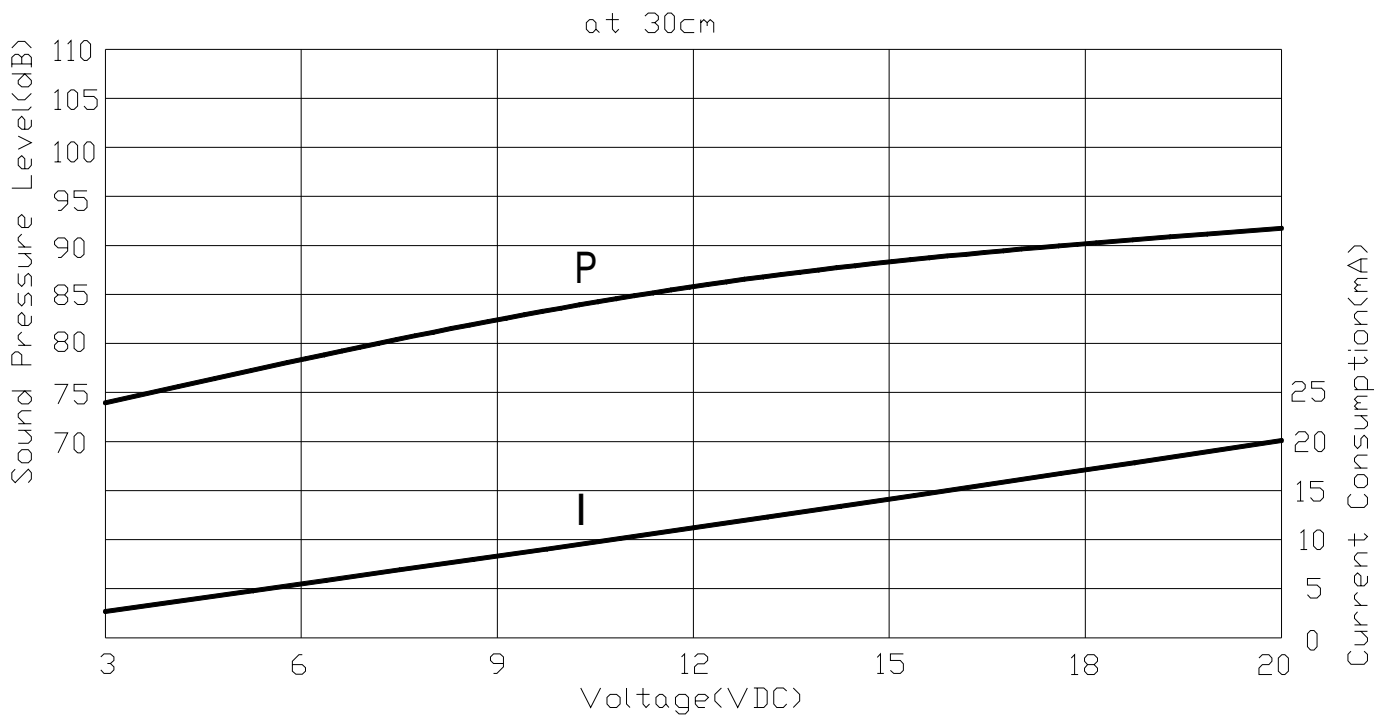
Mic : RION S.P.L meter UC30 or equivalent

Mic : RION 噪音計 UC30 或同等品

S.G : Hewlett Packard 33120A Function Generator or equivalent

S.G : Hewlett Packard 33120A 函數信號產生器或同等品

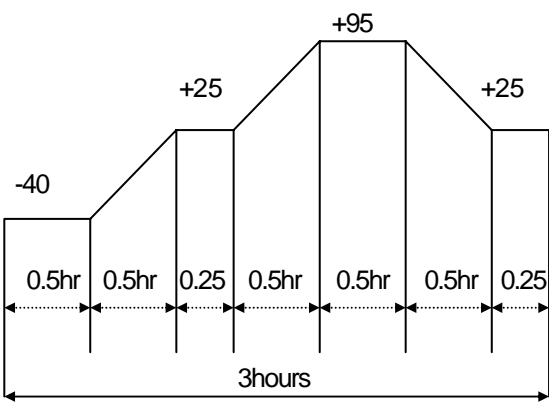
## E. VOLTAGE: SOUND PRESSURE LEVEL / VOLTAGE: CURRENT CONSUMPTION CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



## F. MECHANICAL CHARACTERISTICS 機械特性

| No. | Item   | Test Condition  | Evaluation standard   |
|-----|--|---|---|
| 1   | Solderability<br>焊錫附著性<br>(Connector excepted)<br>(端子類不適用此項) | Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $+270\pm 5$ for $3\pm 0.5$ seconds.<br>裸線部份浸入松香溶液 5 秒後,再浸入 $+270\pm 5$ 溶錫蝕蝕槽 $3\pm 0.5$ 秒。                               | 90% min. stripped wires shall be wet with solder.(Except the edge of terminal)<br>浸入裸線部份附著焊錫 90%以上.(末端斷面不算)   |
| 2   | Lead Wire Pull<br>Strength<br>線材拉力                           | The pull force shall be applied to double lead wire :<br>Horizontal 3.0N(0.306kg) for 30 seconds.<br>Vertical 2.0N(0.204kg) for 30 seconds.<br>雙線材水平方向施以 3.0N(0.306kg)的力量, 垂直方向施以 2.0N(0.204kg) 的力量,各 30 秒。                   | No damage and cutting off.<br>線材不鬆動,不脫落。  |
| 3   | Vibration<br>振動試驗  | 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。 | The value of oscillation frequency/ current consumption should be in $\pm 10\%$ compared with initial ones .The SPL should be in $\pm 10$ dB compared with initial one. |
| 4   | 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。  | 諧振頻率與消耗電流變化量須在 $\pm 10\%$ 內. 輸出音壓變化量須在 $\pm 10$ dB 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 $+95$ for 240 hours<br>置於 $+95$ 環境中 240 小時   | Being placed for 4 hours at $+25$ , buzzer shall be measured. The value of oscillation frequency/ current consumption should be in $\pm 10\%$ compared with initial ones .The SPL should be in $\pm 10$ dB compared with initial one.<br>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 $\pm 10\%$ 內. 輸出音壓變化量須在 $\pm 10$ dB 內. |
| 2   | Low temp. test<br>低溫測試     | After being placed in a chamber at $-40$ for 240 hours<br>置於 $-40$ 環境中 240 小時   |  |
| 3   | Humidity test<br>相對濕度測試    | After being placed in a chamber at $+40$ and $90\pm 5\%$ relative humidity for 240 hours<br>置於 $+40$ , 相對濕度 $90\pm 5\%$ 環境中 240 小時  |  |
| 4   | Temp. cycle test<br>溫度循環試驗 | The part shall be subjected to 5 cycles. One cycle shall be consist of :<br>單體承受溫度循環測試 5 次,其循環內容如圖示 :<br> |  |

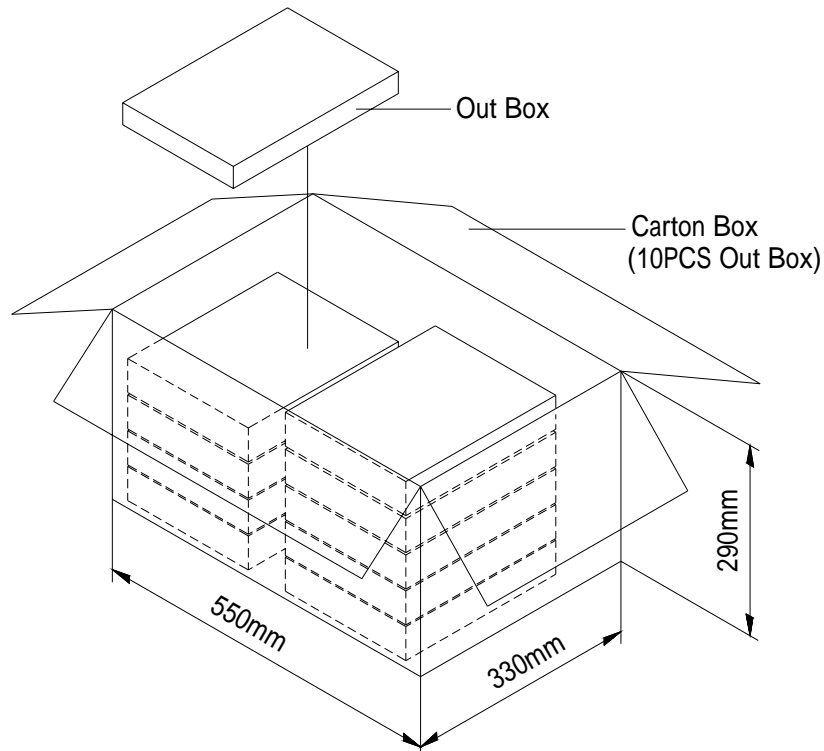
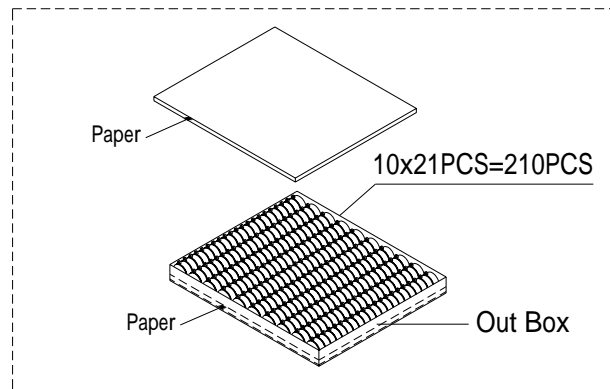
## H. RELIABILITY TEST 信賴性測試

| No. | Item                        | Test condition  | Evaluation standard   |
|-----|-----------------------------|---|---|
| 1   | Operating life test<br>壽命測試 | 1. Continuous life test 高溫壽命測試(連續)<br>48 hours continuous operation at +70 with rated voltage applied.<br>在+70 環境下,以額定電壓連續操作 48 小時。<br>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 5000 times at room temp. (+25±2 )and rated voltage applied.<br>在室溫下(+25±2 ), 以額定電壓操作, 通電 1 分鐘斷電 1 分鐘,測試 5000 次循環。 | 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 ±10dB compared with initial one.<br>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±10dB 內。 |

### TEST CONDITION.

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

## I. PACKING STANDARD 包裝規格



|            |                   |                    |
|------------|-------------------|--------------------|
| Out Box    | 310mmx248mmx49mm  | 1x210PCS=210PCS    |
| Carton Box | 550mmx330mmx290mm | 210PCSx10=2,100PCS |