

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : Piezo Siren

Kingstate Part No. : KPE-1500

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

Specification No. : POD-1122

Number Of The Edition : 1.4

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

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|------------------|-------------|-------------|
| Winner<br>040301 | <br>3/30/01 | <br>3/30/01 |

## A. SCOPE 範疇

This specification applies piezo audio siren, **KPE-1500**

此規格書適用於壓電式蜂鳴器, **KPE-1500**

## B. SPECIFICATION 規格

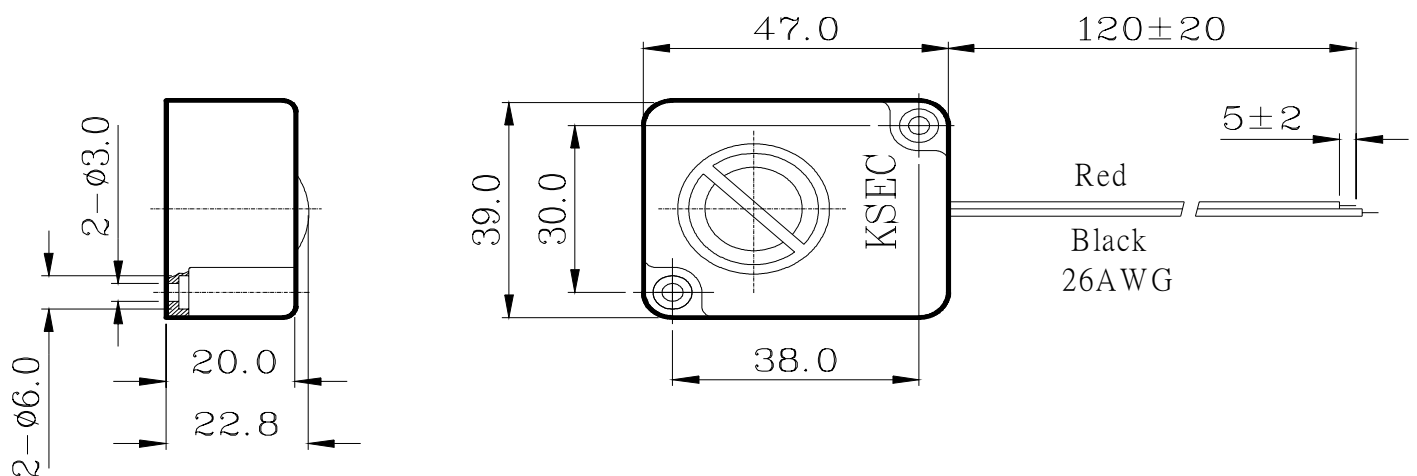
Test condition:

TEMP=25°C±2°C

Related humidity=65±5%

| No. | Item                            | Unit | Specification              | Condition                          |
|-----|---------------------------------|------|----------------------------|------------------------------------|
| 1   | Operating Frequency<br>操作頻率     | KHz  | 2~3.5                      |                                    |
| 2   | Operating Volt. range<br>操作電壓範圍 | VDC  | 6~14                       |                                    |
| 3   | Current consumption<br>消耗電流     | mA   | Maximum 150<br>Typical 110 | At 12VDC                           |
| 4   | Sound pressure level<br>輸出音壓    | dB   | 102                        | At 30 cm/12VDC(MIN.)               |
| 5   | Rated Voltage<br>額定電壓           | VDC  | 12                         |                                    |
| 6   | Tone<br>聲音                      |      | Siren<br>警報音               |                                    |
| 7   | Operating temp.<br>操作溫度         | °C   | -10~+60                    | 10 minutes                         |
| 8   | Storage temp.<br>儲存溫度           | °C   | -40~+80                    |                                    |
| 9   | Dimension<br>尺寸                 | mm   |                            | See appearance drawing<br>請參照外觀尺寸圖 |
| 10  | Weight (MAX)<br>重量              | gram | 27                         |                                    |
| 11  | Material<br>材質                  |      |                            |                                    |
| 12  | Terminal<br>端子                  |      | Wire type                  | See appearance drawing<br>請參照外觀尺寸圖 |

## C. APPEARANCE DRAWING 外觀尺寸圖

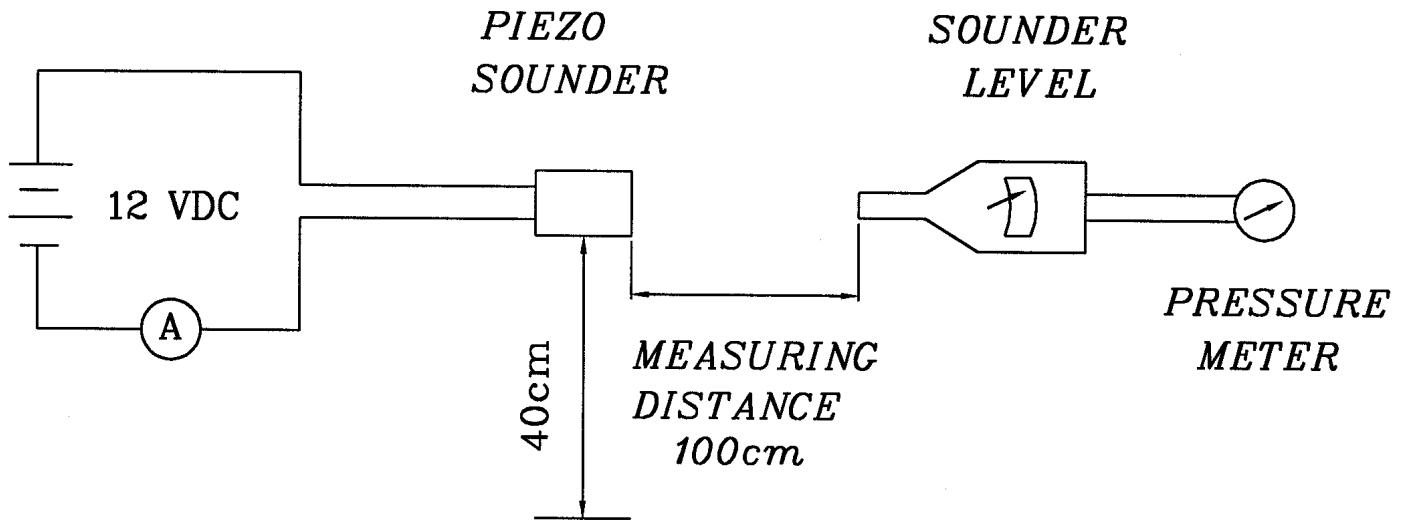


Tol : ± 0.5

Unit: mm

## D. MEASURING METHOD 測量方法

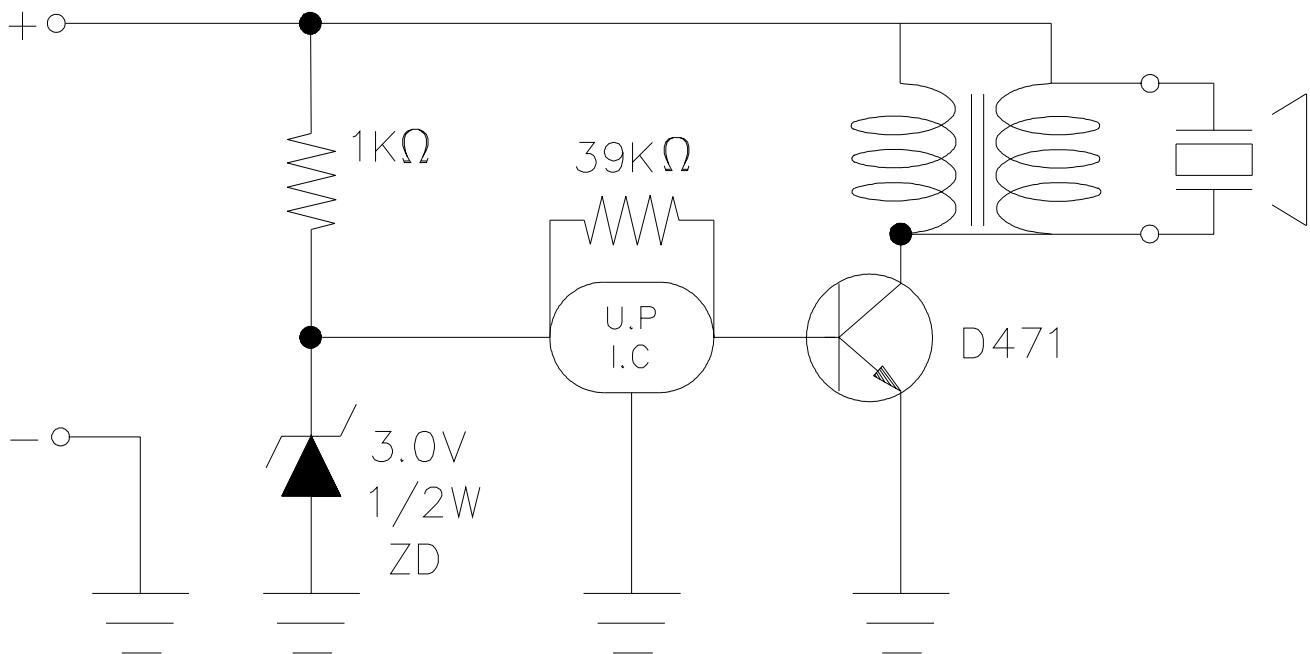
### 1. S.P.L. Measuring Circuit 音壓測試接線圖



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

Mic : RION 噪音計 UC30 或同等品

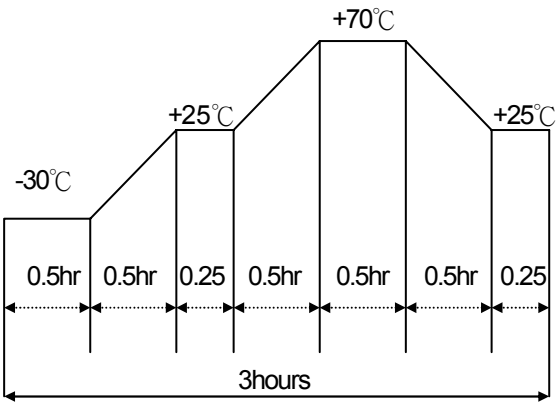
### 2. Internal Oscillating Circuit 內部驅動線路圖



## E. MECHANICAL CHARACTERISTICS 機械特性

| No. | Item                               | Test Condition   | Evaluation standard   |
|-----|------------------------------------|--|---|
| 1   | Solderability<br>焊錫附著性             | Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $+230\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds.<br>裸線部份浸入松香溶液 5 秒後,再浸入 $+230\pm 5^{\circ}\text{C}$ 熔融焊錫槽中 $3\pm 0.5$ 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   | Soldering Heat Resistance<br>焊錫耐熱性 | Stripped wires are immersed up to 1.5mm from insulation in solder bath of $+300\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds or $+260\pm 5^{\circ}\text{C}$ for $10\pm 1$ seconds, and then solder shall be measured after being placed in natural condition for 4 hours.<br>距絕緣體 1.5mm 的位置,浸入 $+300\pm 5^{\circ}\text{C}$ 的焊錫槽 $3\pm 0.5$ 秒,或 $+260\pm 5^{\circ}\text{C}$ 的焊錫槽 $10\pm 1$ 秒。 | No interference in operation.<br>操作上無任何不良。  |
| 3   | Lead Wire Pull Strength<br>線材拉力    | The pull force shall be applied to lead wire:<br>Horizontal 3.0N<br>Vertical 2.0N<br>線材水平方向施以 3.0N 的力量,垂直方向施以 2.0N 的力量。  | No damage and cutting off.<br>線材不鬆動,不脫落。  |
| 4   | 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 perpendicular 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 $\pm 10\text{dB}$ compared with initial one. |
| 5   | Dorp 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 $\pm 10\text{dB}$ 內。  |

## F. 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 240 hours<br>置於 $+ 80^{\circ}\text{C}$ 環境中 240 小時   | Being placed for 4 hours at $+25^{\circ}\text{C}$ , 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 $\pm 10\text{dB}$ 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,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 $\pm 10\text{dB}$ 內。 |
| 2  | Low temp. test<br>低溫測試     | After being placed in a chamber with $-40^{\circ}\text{C}$ for 240 hours<br>置於 $-40^{\circ}\text{C}$ 環境中 240 小時   |  |
| 3  | Humidity test<br>相對濕度測試    | After being placed in a chamber at $+40^{\circ}\text{C}$ and $90\pm 5\%$ relative humidity for 240 hours<br>置於 $+40^{\circ}\text{C}$ , 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> |  |

## G. 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/>10 minutes continuous operation at +60°C with maximum rated voltage applied.<br/>在+60°C環境下,以最大額定電壓連續操作 10 分鐘.</p> <p>2. Intermittent life test 室溫壽命測試(間歇)<br/>A duty cycle of 1 minute on, 0.5 minutes off, a minimum of 960 times at room temp. (+25 ±2°C) and maximum rated voltage applied.<br/>在室溫下(+25 ±2°C), 以最大額定電壓操作, 通電 1 分鐘/斷電 0.5 分鐘, 測試 960 次循環.</p> | <p>Being placed for 4 hours at +25°C, 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.</p> <p>經測試後, 靜置於+25°C (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.</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 |
| 爭議時測試條件                  | : | a) 溫度 : +25 ± 2°C           | b) 濕度 : 60-70%       | c) 氣壓 : 860-1060mbar       |

## H. PACKING STANDARD 包裝規格

Each minimum package unit of products shall be in a carton box and it shall be clearly marked with Part Number, quantity and outgoing inspection number. There shall be no mechanical damage on products during transportation and/or in storage.

外箱須標示最小包裝單位, 並註明產品型號、數量及檢驗批號, 必須是物品儲藏或運輸過程中可防止造成損傷的包裝。