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# SPECIFICATION FOR APPROVAL

# 承　認　書

| | | |
|---|---|---|
| Description | : | **Piezo Audio Indicator** |
| Kingstate Part No. | : | **KPEG278** |
| Customer's Model No. | : | |
| Specification No. | : | **PKD-8000** |
| Number Of The Edition | : | **1.2** |

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

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

KINGSTATE

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| Approved by | Checked by | Issued by |
|---|---|---|
| | | Qin<br>06/08/09' |

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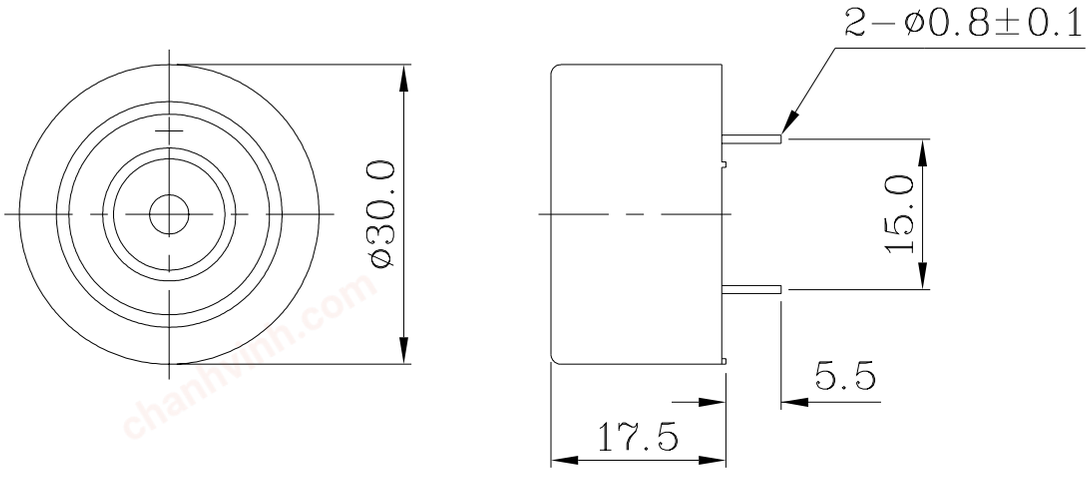
## A.SCOPE 範疇

This specification applies piezo audio indicator, **KPEG278**
此規格書適用於壓電式蜂鳴器, **KPEG278**

## B. SPECIFICATION 規格

| No. | Item | Unit | Specification | Condition |
|---|---|---|---|---|
| 1 | Resonant frequency<br>共振頻率 | KHz | 1.8 ± 0.5 | |
| 2 | Operating` Volt. range<br>操作電壓範圍 | VDC | 3 ~ 28 | |
| 3 | Current consumption<br>消耗電流 | mA | MAX 18 | at 12VDC |
| 4 | Sound pressure level<br>輸出音壓 | dB | MIN 77 | at 30cm/12VDC |
| 5 | Rated Voltage<br>額定電壓 | VDC | 12 | |
| 6 | Tone<br>聲音 | | Continuous<br>直音 | at 12VDC |
| 7 | Operating temp.<br>操作溫度 | ℃ | -30 ~ +80 | |
| 8 | Storage temp.<br>儲存溫度 | ℃ | -40 ~ +80 | |
| 9 | Dimension<br>尺寸 | mm | ψ30.0 x H17.5 | See appearance drawing<br>請參照外觀尺寸圖 |
| 10 | Weight<br>重量 | gram | 5.6 | |
| 11 | Material<br>材質 | | ABS UL-94 1/16" HB（BLACK） | |
| 12 | Terminal<br>端子 | | Pin type | See appearance drawing<br>請參照外觀尺寸圖 |
| 13 | Environmental Protection Regulation<br>環保法規 | | ROHS | |

## C. APPEARANCE DRAWING 外觀尺寸圖

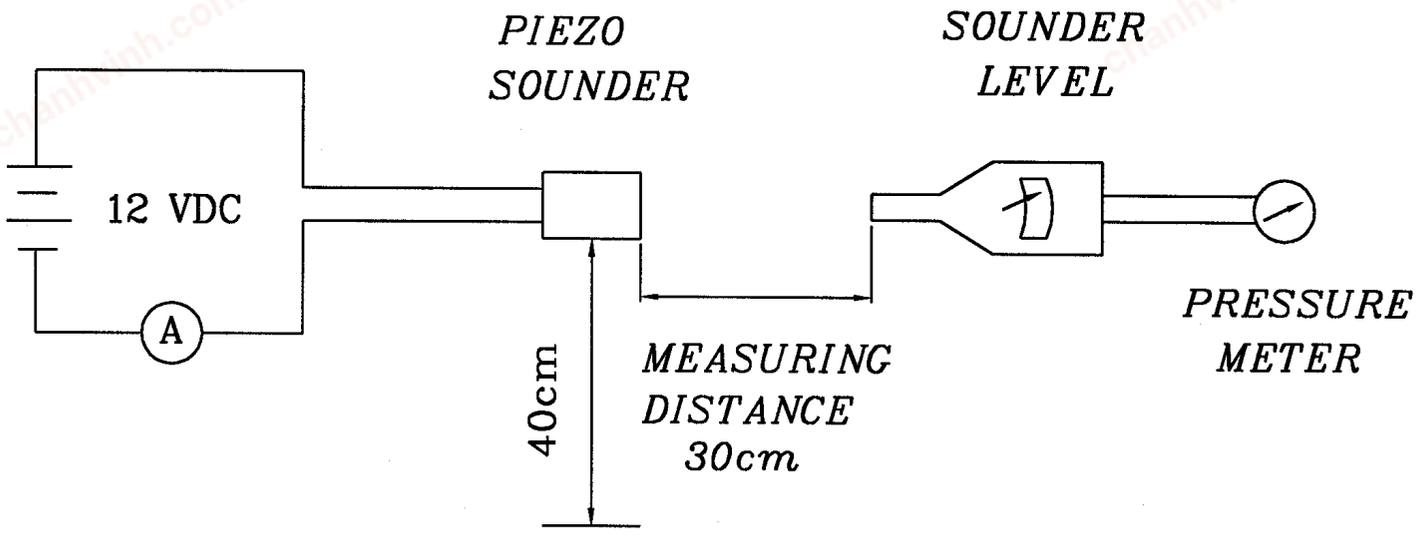



**Unit : mm** **Tol : ±0.5**

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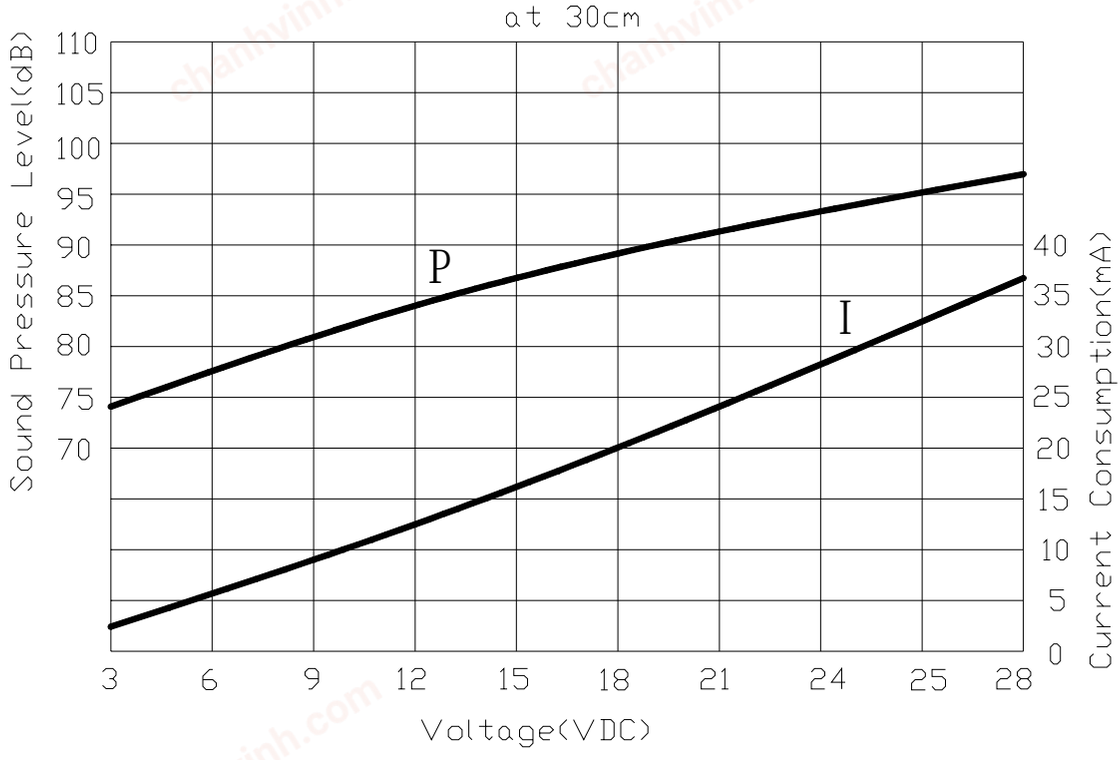
## D. Measuring Method 測量方法

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

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



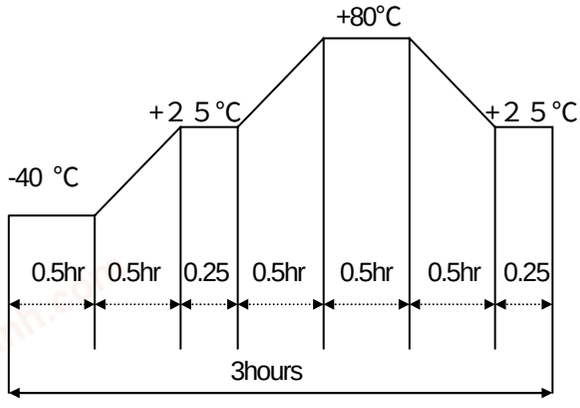
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## F. MECHANICAL CHARACTERISTICS 機械特性

| 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 +230 ±5 °C for 3 ±0.5 seconds.<br>端子部份浸入松香溶液 5 秒後,再浸入+230 ±5 °C溶融焊錫槽中 3 ±0.5 秒. | 90% min. lead terminals shall be wet with solder.(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 sounder's body in solider bath of +300 ±5 °C for 3 ±0.5 seconds or +260 ±5 °C for 10 ±1 seconds.<br>距離端子根部 1.5mm 的位置,浸入+300 ±5 °C 的焊錫槽 3 ±0.5 秒,或+260 ±5 °C 的焊錫槽 10 ±1 秒 | No interference in operation.<br>操作上無任何不良. |
| 3 | Terminal Strength Pulling<br>端子強度 | The force 10 seconds of 9.8N is applied to each terminal in axial direction.<br>各端子的軸方向施以 9.8N 的力量 10 秒. | No damage and cutting off.<br>端子不鬆動,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 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 ±10% compared with initial ones .The SPL should be in ±10dB compared with initial one.<br>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. |
| 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. | |

## 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 +80°C for 240 hours<br>置於+80°C環境中 240 小時 | Being placed for 4 hours at +25 °C, buzzer shall be measured.<br>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°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. |
| 2 | Low temp. test<br>低溫測試 | After being placed in a chamber with –40°Cfor 240 hours<br>置於-40°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°C and 90±5% relative humidity for 240 hours<br>置於+40°C, 相對濕度 90±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: | |



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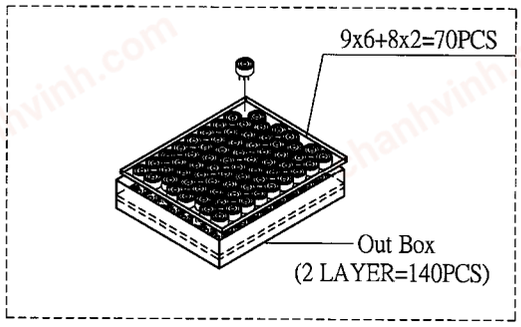
## H. RELIABILITY TEST 信賴性測試

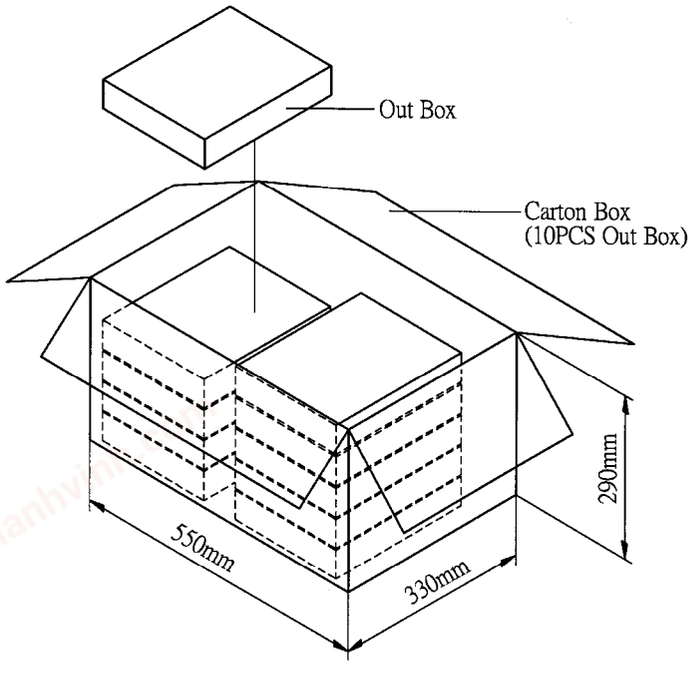
| No. | Item | Test condition | Evaluation standard |
|---|---|---|---|
| 1 | Operating life test<br>壽命測試 | 1.Continuous life test 高溫壽命測試(連續)<br>48 hours continuous operation at +65°C with rated voltage applied.<br>在+65°C環境下,以額定電壓連續操作 48 小時.<br>2.Intermittent life test 室溫壽命測試(間歇)<br>A duty cycle of 1 minute on, 1 minutes off, a minimum of 5000 times at room temp.( +25±2°C)and rated voltage applied.<br>在室溫下(+25±2°C), 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 °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.<br>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. |

**TEST CONDITION.**

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

## I. PACKING STANDARD 包裝規格




| | | |
|---|---|---|
| Out Box | 310mmx248mmx49mm | 2x70PCS=140PCS |
| Carton Box | 550mmx330mmx290mm | 140PCSx10=1400PCS |