

SPECIFICATION FOR APPROVAL

承 認 書

Description : Piezo Audio Indicator

Kingstate Part No. : KPEG280

Customer's Model No. : _____

Specification No. : PKD-7503

Number Of The Edition : 1.1

CUSTOMER'S APPROVED SIGNATURE

| | | |
|-------------------------------|--|--|
| CUSTOMER'S APPROVED SIGNATURE | | |
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A.SCOPE 範疇

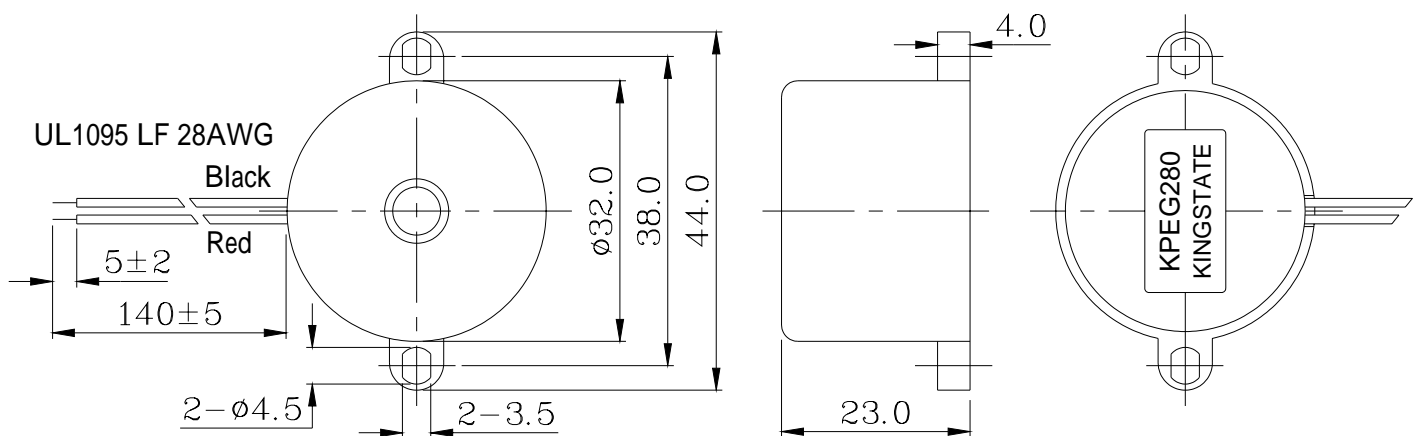
This specification applies piezo audio indicator, **KPEG280**

此規格書適用於壓電式蜂鳴器 **KPEG280**

B. SPECIFICATION 規格

| No. | Item | Unit | Aspecification | Condition |
|-----|--|------|----------------------------|------------------------------------|
| 1 | Resonant frequency 共振頻率 | KHz | 2.5 3.8 | |
| 2 | Operating Volt. range 操作電壓範圍 | VDC | 6 ~ 18 | |
| 3 | Current consumption 消耗電流 | mA | MAX 17 | at 12VDC |
| 4 | Sound pressure level 輸出音壓 | dB | MIN 88 | at 30cm/12VDC |
| 5 | Rated Voltage 額定電壓 | VDC | 12 | |
| 6 | Tone 聲音 | | HIGH/LOW 高低 | |
| 7 | Operating temp. 操作溫度 | °C | -20 ~ +60 | |
| 8 | Storage temp. 儲存溫度 | °C | -30 ~ +70 | |
| 9 | Dimension 尺寸 | mm | 32.0 x H23.0 | See appearance drawing 請參照外觀尺寸圖 |
| 10 | Weight (MAX) 重量 | gram | 13.2 | |
| 11 | Material 材質 | | ABS UL-94 1/16" HB (BLACK) | |
| 12 | Terminal 端子 | | Wire type | See appearance drawing 請參照外觀尺寸圖 |
| 13 | Environmental Protection Regulation 環保法規 | | RoHS | |

C. APPEARANCE DRAWING 外觀尺寸

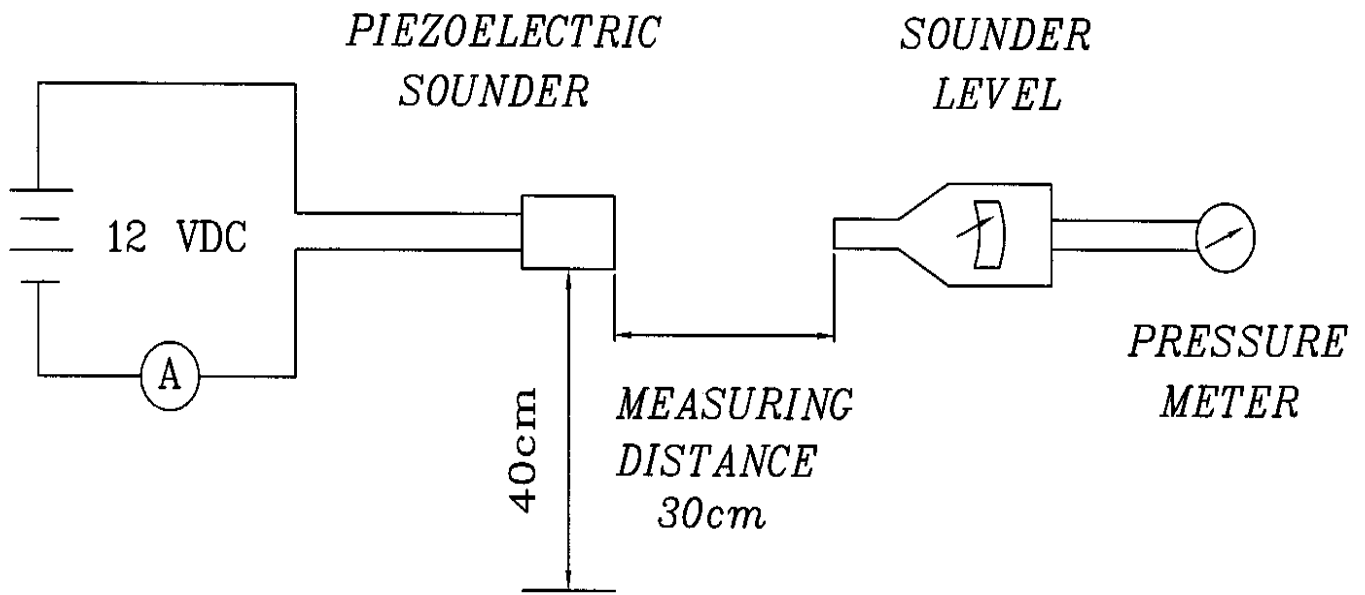


Tol: ± 0.5

Unit: mm

D. Measuring Method 測量方法

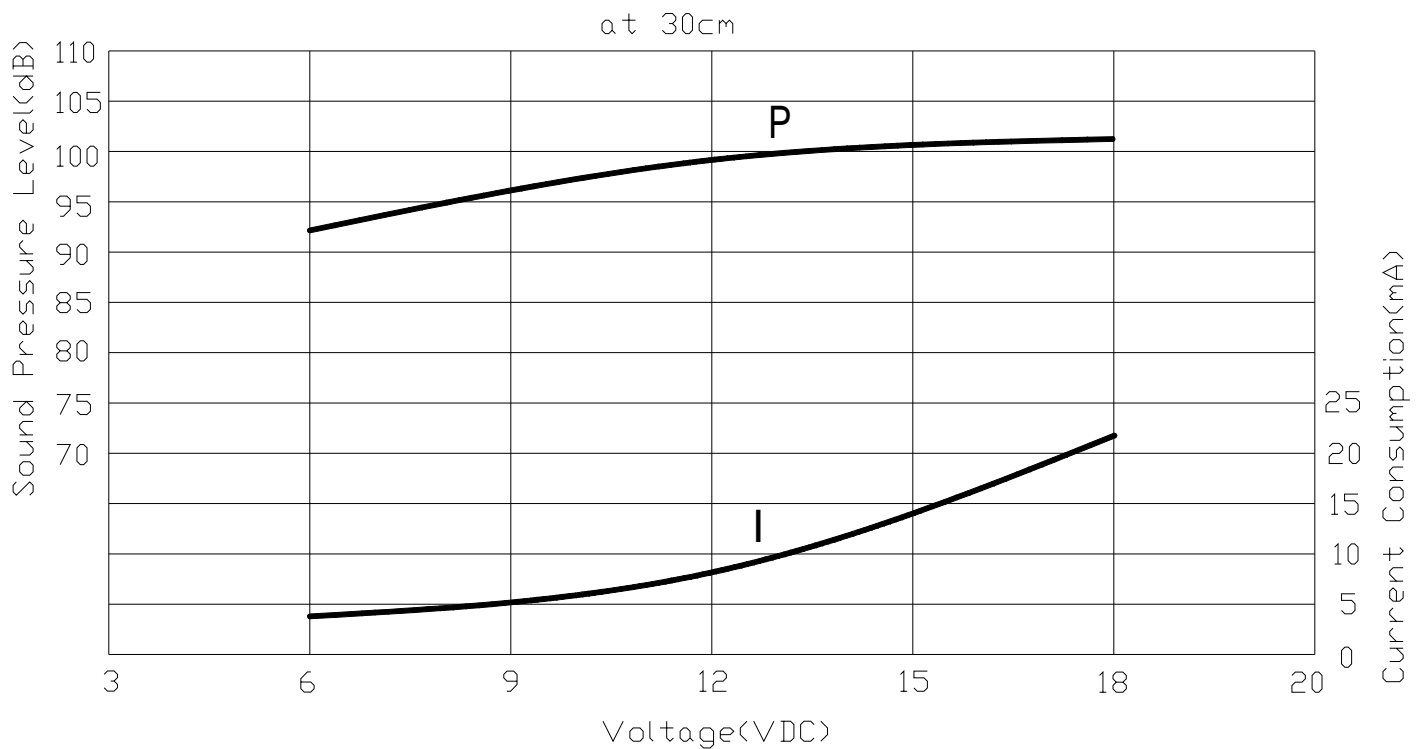
1. S.P.L. Measuring Circuit 音壓測試接線圖



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

Mic : RION 噪音計 UC30 或同等品

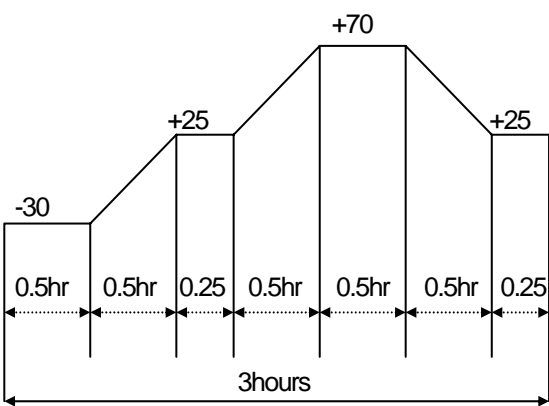
E. VOLTAGE: SOUND PRESSURE LEVEL / VOLTAGE: CURRENT CONSUMPTION CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



F. MECHANICAL CHARACTERISTICS 機械特性

| No | Item | Test Condition | Evaluation standard |
|----|--|---|---|
| 1 | Solderability 焊錫附著性 (Connector excepted) 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 ± 0.5 seconds. 裸線部份浸入松香溶液 5 秒後,再浸入 $+270\pm 5$ 溶錫槽 3 ± 0.5 秒. | 90% min. stripped wires shall be wet with solder.(Except the edge of terminal) 浸入裸線部份附著焊錫 90%以上(末端端面不算) |
| 2 | Lead Wire Pull Strength 線材拉力 | The pull force shall be applied to double lead wire : Horizontal 3.0N(0.306kg) for 30 seconds. Vertical 2.0N(0.204kg) for 30 seconds. 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 interference in operation. 操作無任何不良. |
| 3 | Vibration 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. 振動加波數 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 ± 10 dB compared with initial one. |
| 4 | Drop test 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). 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 ± 10 dB 內. |

G. ENVIRONMENT TEST 環境測試

| No | Item | Test Condition | Evaluation standard |
|----|----------------------------|---|--|
| 1 | High temp. test 高溫測試 | After being placed in a chamber at $+70$ for 240 hours 置於 $+70$ 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 ± 10 dB compared with initial one. 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 ± 10 dB 內. |
| 2 | Low temp. test 低溫測試 | After being placed in a chamber with -30 for 240 hours 置於 -30 環境中 240 小時 | |
| 3 | Humidity test 相對濕度測試 | After being placed in a chamber at $+40$ and $90\pm 5\%$ relative humidity for 240 hours 置於 $+40$, 相對濕度 $90\pm 5\%$ 環境中 240 小時 | |
| 4 | Temp. cycle test 溫度循環試驗 | The part shall be subjected to 5 cycles. One cycle shall be consist of: 單體承受溫度循環測試 5 次,其循環內容如圖示:  | |

H. RELIABILITY TEST 信賴性測試

| No. | Item | Test condition | Evaluation standard |
|-----|-----------------------------|--|--|
| 1 | Operating life test 壽命測試 | 1. Continuous life test 高溫壽命測試(連續) 48hours continuous operation at +45 with rated voltage applied. 在+45 環境下,以額定電壓連續操作 48 小時 2. Intermittent life test 室溫壽命測試(間歇) A duty cycle of 1 minute on, 1 minutes off, a minimum of 5000 times at room temp.(+25±2)and rated voltage applied 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. 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 一般測試條件 | : | a) Temperature : +5 ~ +35°C | b) Humidity : 45-85% | c) Pressure : 860-1060mbar |
| Judgement Test Condition 爭議時測試條件 | : | a) 溫度 : +5 ~ +35°C | b) 濕度 : 45-85% | c) 氣壓 : 860-1060mbar |
| | : | a) Temperature : +25±2°C | b) Humidity : 60-70% | c) Pressure : 860-1060mbar |
| | : | a) 溫度 : +25 ±2°C | b) 濕度 : 60-70% | c) 氣壓 : 860-1060mbar |

I. PACKING STANDARD 包裝規格

