

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : **Piezo Audio Indicator**

Kingstate Part No. : **KPE-242**

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

Specification No. : **PKD-1409**

Number Of The Edition : **2.1**

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by
<i>Paddy</i> 11/03/03'	<i>Mama</i> 11/5/03'	Gavin 11/03/03'

## A. SCOPE 範疇

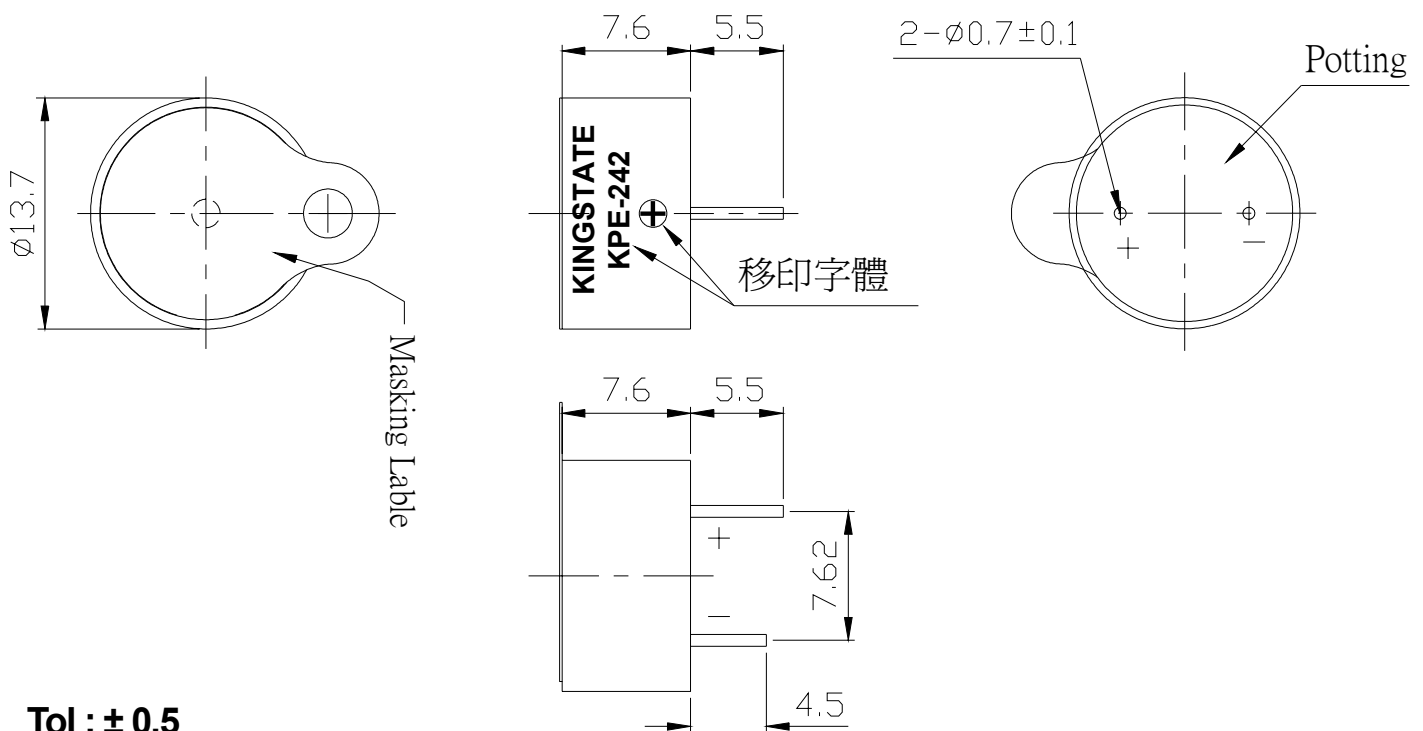
This specification applies piezo audio indicator, **KPE-242**

此規格書適用於壓電式蜂鳴器, **KPE-242**

## B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Resonant frequency 共振頻率	KHz	4.1 ± 0.5	
2	Operating Volt. range 操作電壓範圍	VDC	3 ~ 16	
3	Current consumption 消耗電流	mA	MAX 7	at 12VDC
4	Sound pressure level 輸出音壓	dB	MIN 70	at 30cm/12VDC
5	Rated Voltage 額定電壓	VDC	12	
6	Tone 聲音		Continuous 直音	
7	Operating temp. 操作溫度	°C	-20 ~ +70	
8	Storage temp. 儲存溫度	°C	-30 ~ +80	
9	Dimension 尺寸	mm	φ 13.7 x H7.6	See appearance drawing 請參照外觀尺寸圖
10	Weight (MAX) 重量	gram	1.0	
11	Material 材質		NORYL (BLACK)	
12	Terminal 端子		Pin type	See appearance drawing 請參照外觀尺寸圖

## C. APPEARANCE DRAWING 外觀尺寸圖

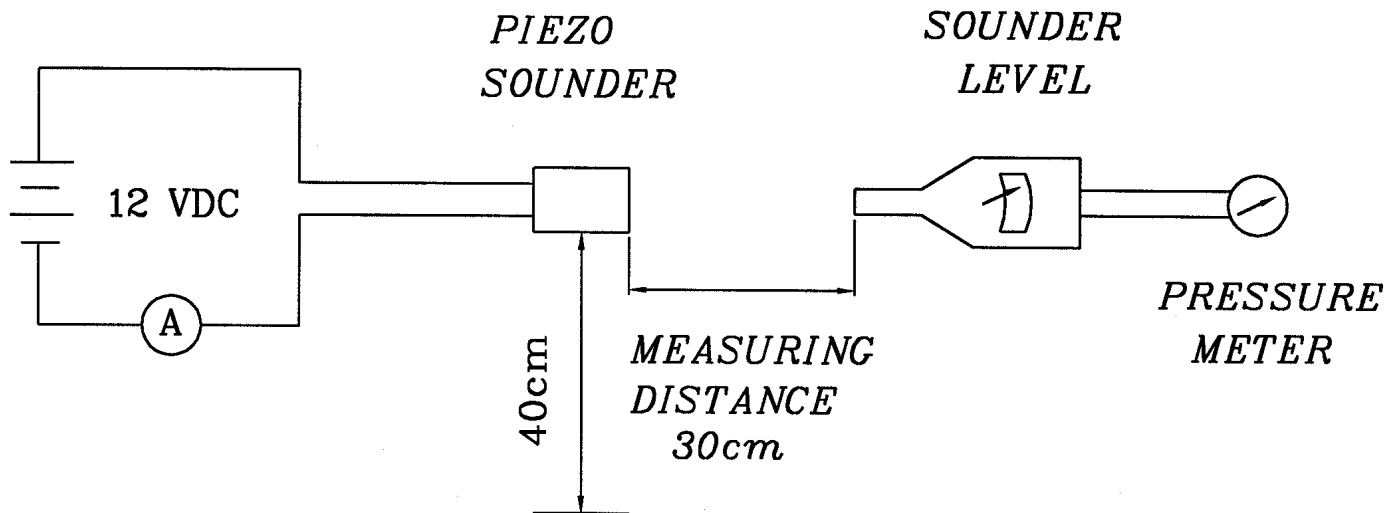


Tol : ± 0.5

Unit : mm

## D. MEASURING METHOD 測量方法

S.P.L. Measuring Circuit 音壓測試接線圖

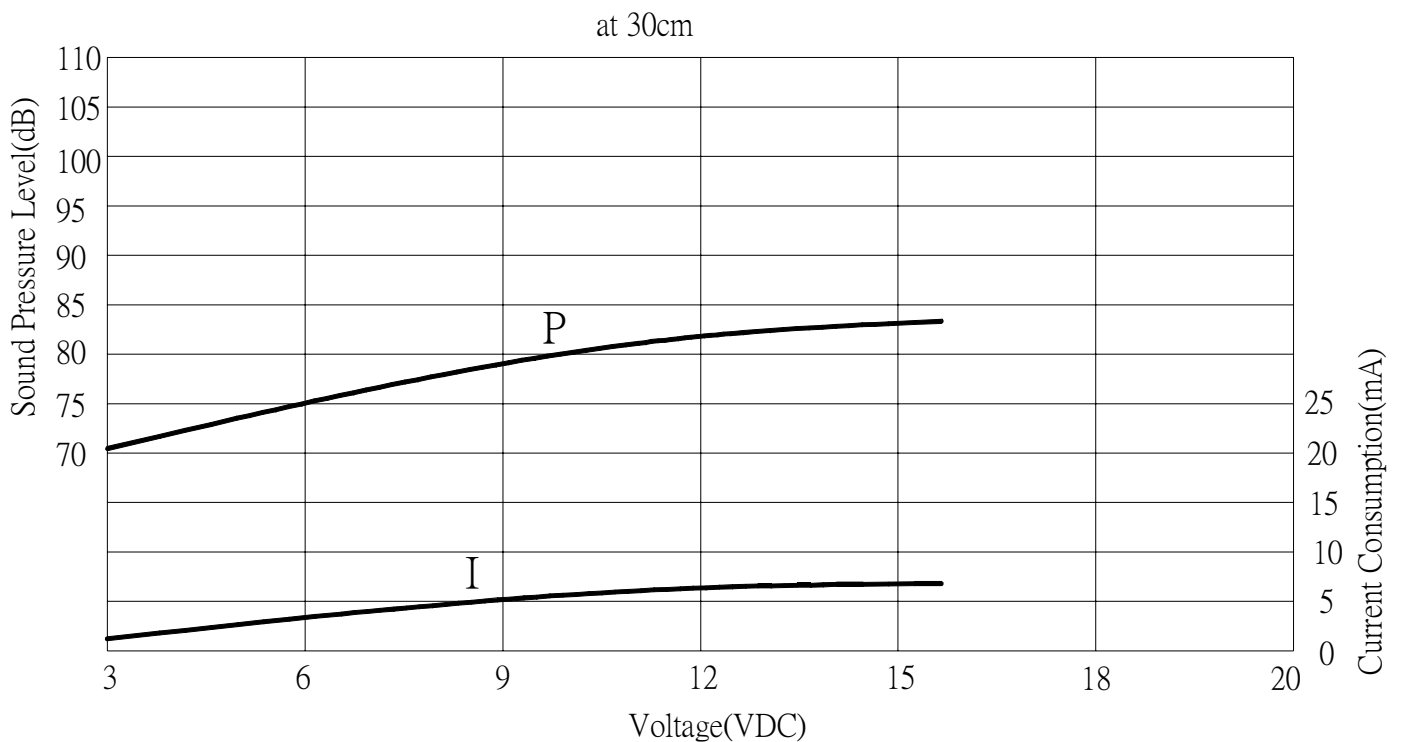


Mic : RION S.P.L meter UC30 or equivalent

Mic : RION 噪音計 UC30 或同等品

## E. VOLTAGE: SOUND PRESSURE LEVEL / VOLTAGE: CURRENT CONSUMPTION

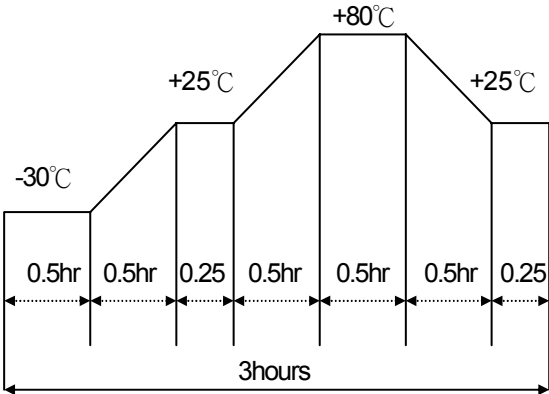
CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



## F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test Condition	Evaluation standard
1	Solder ability 焊錫附著性	Lead terminals 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. 端子部份浸入松香溶液 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. lead terminals shall be wet with solder.(Except the edge of terminal) 浸入端子部份附著焊錫 90%以上.(末端斷面不算)
2	Soldering Heat Resistance 焊錫耐熱性	Lead terminal are immersed up to 1.5mm from solder's body 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. 距離端子根部 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. 操作無任何不良.
3	Terminal Strength Pulling 端子強度	The force 10 seconds of 9.8N is applied to each terminal in axial direction. 各端子的軸方向施以 9.8N 的力量 10 秒.	No damage and cutting off. 端子不鬆動,不脫落.
4	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 perpendicular directions for 2 hours. 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 $\pm 10\text{dB}$ compared with initial one.
5	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 $\pm 10\text{dB}$ 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 $+80^{\circ}\text{C}$ for 240 hours 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. 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 低溫測試	After being placed in a chamber at $-30^{\circ}\text{C}$ for 240 hours 置於 $-30^{\circ}\text{C}$ 環境中 240 小時	
3	Humidity test 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 置於 $+40^{\circ}\text{C}$ , 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	<p>1. Continuous life test 高溫壽命測試(連續) 250 hours continuous operation at +70°C with maximum rated voltage applied. 在+70°C環境下,以最大額定電壓連續操作 250 小時。</p> <p>2. Intermittent life test 室溫壽命測試(間歇) A duty cycle of 1 minute on, 5 minutes off, a minimum of 10000 times at room temp. (+25±2°C) and maximum rated voltage applied. 在室溫下(+25±2°C), 以最大額定電壓操作, 通電 1 分鐘/斷電 5 分鐘, 測試 10000 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

## I. PACKING STANDARD 包裝規格

