

# 承認書

Description	:	<b>Piezo Siren</b>
Kingstate Part No.	:	<b>KPE-1600L</b>
Customer's Model No.	:	
Specification No.	:	<b>POD-2247</b>
Number Of The Edition	:	<b>1.1</b>

**CUSTOMER'S APPROVED SIGNATURE**




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Approved by	Checked by	Issued by
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## A. SCOPE 範疇

This specification applies piezo audio indicator, KPE-1600L  
此規格書適用於壓電式蜂鳴器, KPE-1600L

## B. SPECIFICATION 規格

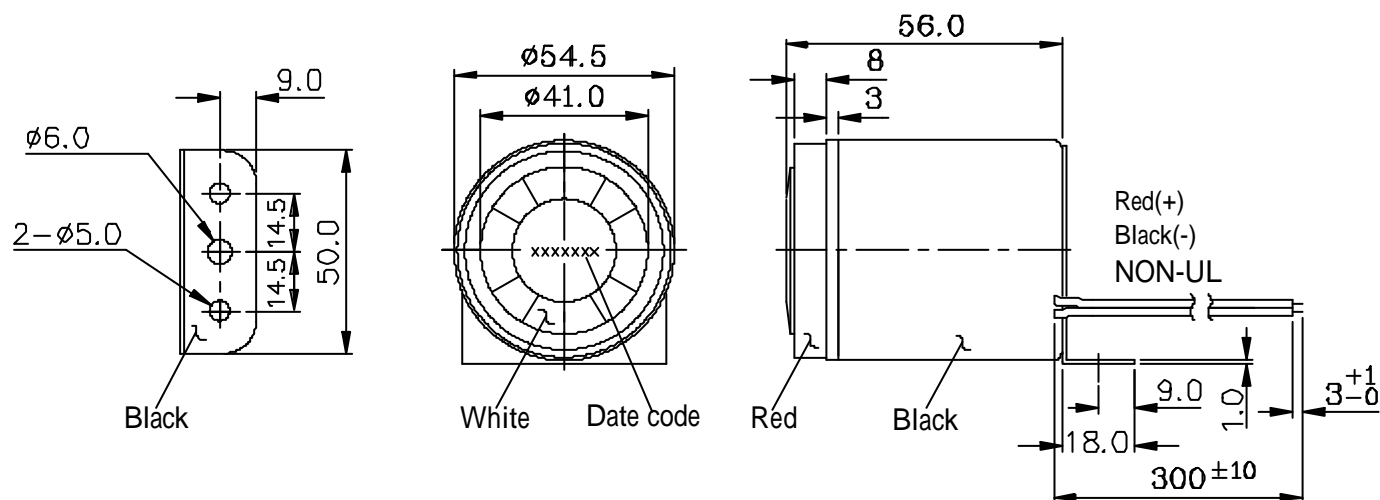
Test condition:

TEMP=25 ±2

Related humidity=65±5%

No.	Item	Unit	Specification	Condition
1	Operating Frequency 操作頻率	KHz	2 ~ 4	
2	Operating Volt. range 操作電壓範圍	VDC	6 ~ 16	
3	Operating Current 操作電流	mA	MAX 260	at 12VDC
4	Sound pressure level 輸出音壓	dB	MIN 105	at 100 cm/12VDC
5	Rated Voltage 額定電壓	VDC	12	
6	Tone 聲音		Siren 警報音	
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	54.5x H56.0	See appearance drawing 請參照外觀尺寸圖
10	Weight (MAX) 重量	gram	89.4	
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

## C. APPEARANCE DRAWING 外觀尺寸圖

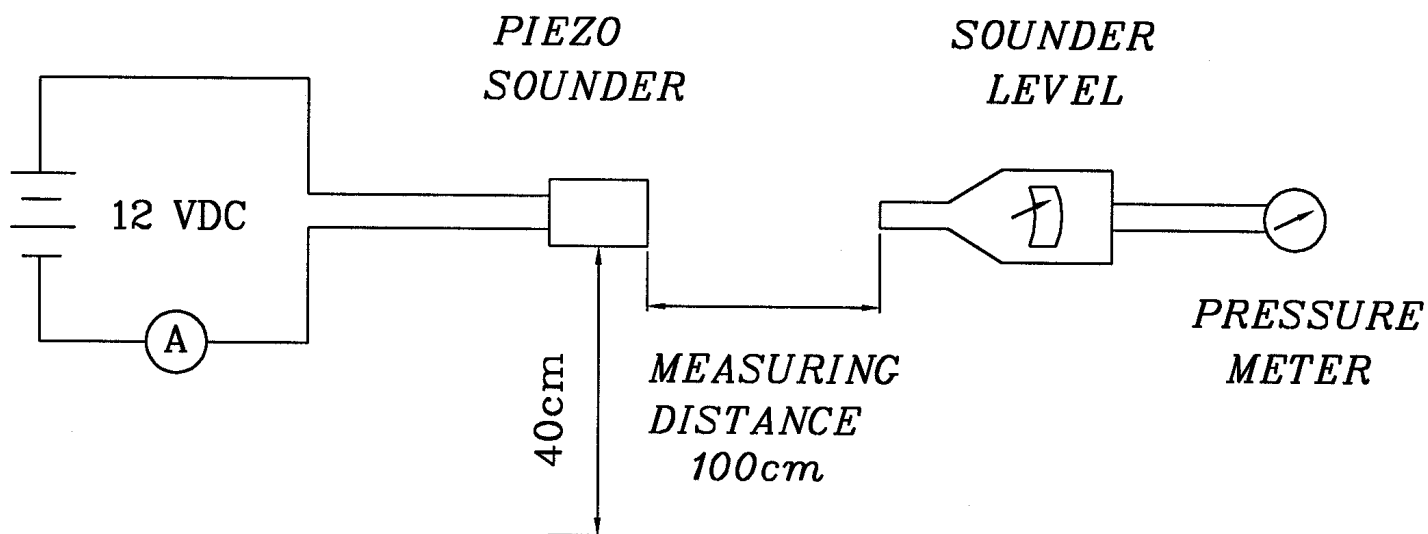


Unit : mm

Tol :  $\pm 0.5$

## D. MEASURING METHOD 測量方法

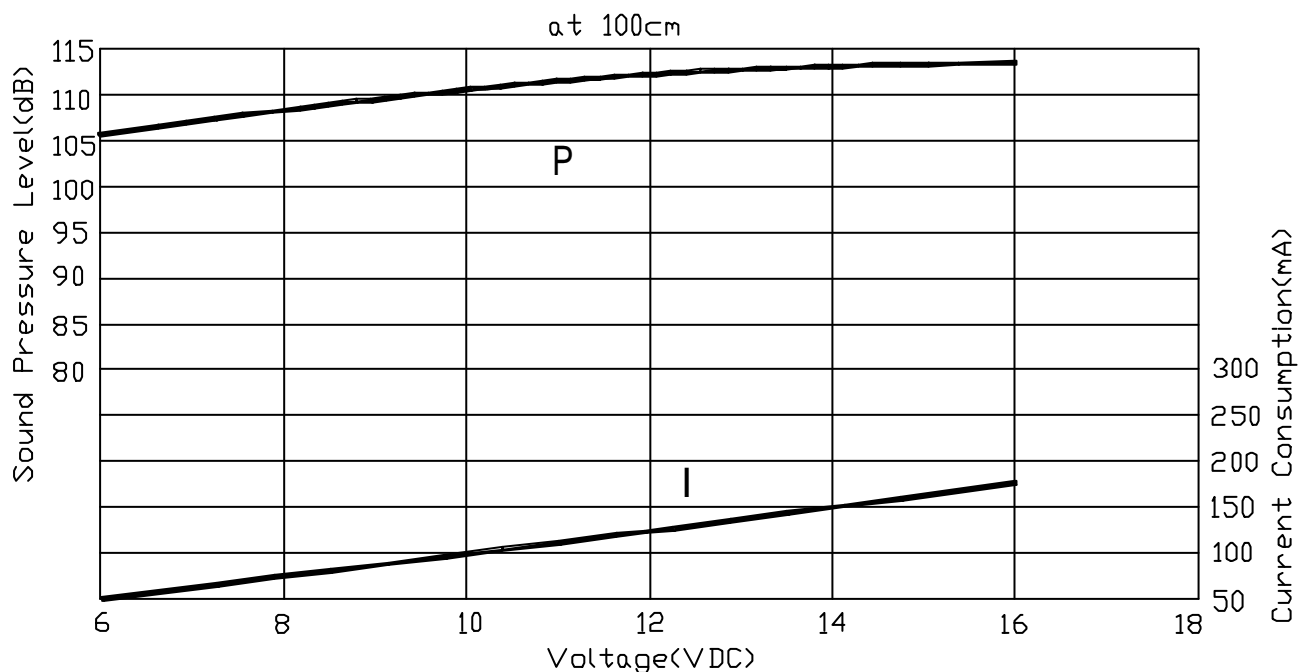
### 1. S.P.L. Measuring Circuit 音壓測試接線圖



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

Mic: RION 噪音計 UC30 或同等品

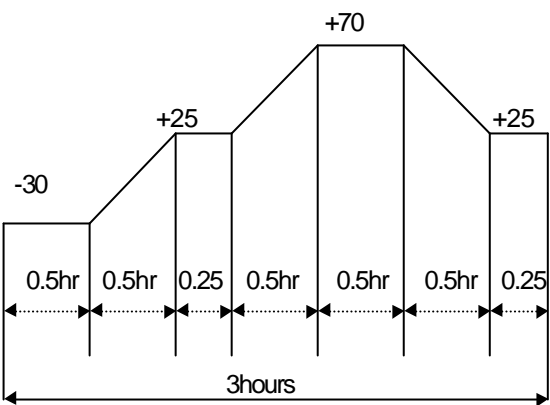
## E. VOLTAGE:SOUND PRESSURE LEVEL / VOLTAGE:CURRENT CONSUMPTION CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



## F. MECHANICAL CHARACTERISTICS 機械特性

No	Item	Test Condition	Evaluation standard
1	Solderability 焊錫附著性	Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $+230 \pm 5$ for $3 \pm 0.5$ seconds. 裸線部份浸入松香溶液 5 秒後,再浸入 $+230 \pm 5$ 溶融焊錫槽中 $3 \pm 0.5$ 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.(末端斷面不算)
2	Soldering Heat Resistance 焊錫耐熱性	Stripped wires are immersed up to 1.5mm from insulation in solder bath of $+300 \pm 5$ for $3 \pm 0.5$ seconds or $+260 \pm 5$ for 10 $\pm 1$ seconds, and then solder shall be measured after being placed in natural condition for 4 hours. 距絕緣體 1.5mm 的位置,浸入 $+300 \pm 5$ 的焊錫槽 $3 \pm 0.5$ 秒,或 $+260 \pm 5$ 的焊錫槽 10 $\pm 1$ 秒.	No interference in operation. 操作上無任何不良.
3	Lead Wire Pull Strength 線材拉力	The pull force shall be applied to lead wire: Horizontal 3.0N Vertical 2.0N 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. 線材不鬆動,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 $\pm 10\%$ compared with initial ones .The SPL should be in $\pm 10$ dB compared with initial one.
5	Dorp 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.	諸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 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 $\pm 10$ dB compared with initial one. 經測試後, 靜置於 $+25$ (室溫) 環境中 4 小時後, 諸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 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	<p>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:</p> 	

## 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) 10 minutes continuous operation at +60 with maximum rated voltage applied. 在+60 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) A duty cycle of 1 minute on, 0.5 minutes off, a minimum of 960 times at room temp.( +25 ±2 )and maximum rated voltage applied. 在室溫下(+25 ±2 ), 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 , 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 ( 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
標準測試條件	:	a) 溫度 : +25 ± 2°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

## I. PACKING STANDARD 包裝規格

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.