

SPECIFICATION FOR APPROVAL

承認書

Description : **Piezo Audio Transducer**
Kingstate Part No. : **KPEG161**
Customer's Model No. :
Specification No. : **PKD-7232**
Number Of The Edition : **1.2**

CUSTOMER'S APPROVED SIGNATURE

--	--	--

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

Address: 10F, No. 69-11, Sec. 2, Chung Cheng E. Rd., Tamshui County, Taipei Hsien, Taiwan, R.O.C.

International sales dept.: TEL:886-2-2809-5651 FAX:886-2-2809-7151

Domestic sales dept.: TEL:886-2-2809-0668 FAX:886-2-28096748

<http://www.kingstate.com.tw>



Approved by	Checked by	Issued by
	周紀山 8/3/07	Qin 08/03/07

A. SCOPE 範疇

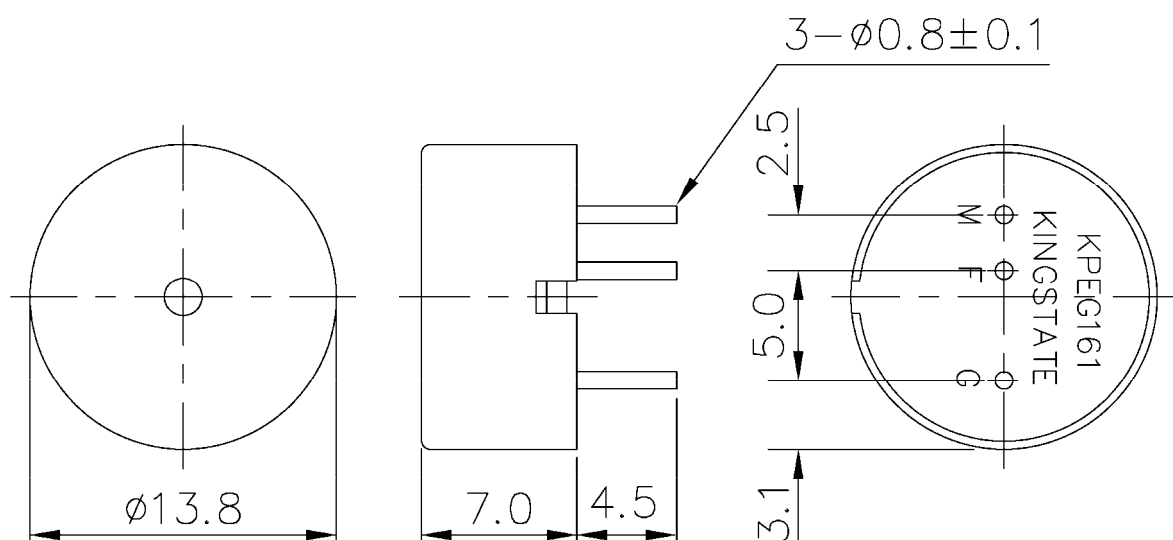
This specification applies piezo audio transducer, **KPEG161**

此規格書適用於壓電式蜂鳴器, **KPEG161**

B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Operating Frequency 操作頻率	KHz	4.1 ± 0.5	
2	Operating Volt. range 操作電壓範圍	VDC	3 ~ 16	
3	Operating Current 操作電流	mA	MAX 7	at 12VDC
4	Sound pressure level 輸出音壓	dB	MIN 70	at 30 cm/12VDC
5	Rated Voltage 額定電壓	VDC	12	
6	Tone 聲音		Continuous 直音	
7	Operating temp. 操作溫度		-30 ~ +85	
8	Storage temp. 儲存溫度		-40 ~ +95	
9	Dimension 尺寸	mm	φ13.8 x H7.0	See appearance drawing 請參照外觀尺寸圖
10	Weight (MAX) 重量	gram	1.0	
11	Material 材質		ABS UL-94 1/16" HB HIGH HEAT (BLACK)	
12	Terminal 端子		Pin type (鍍化金/Plating Au)	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

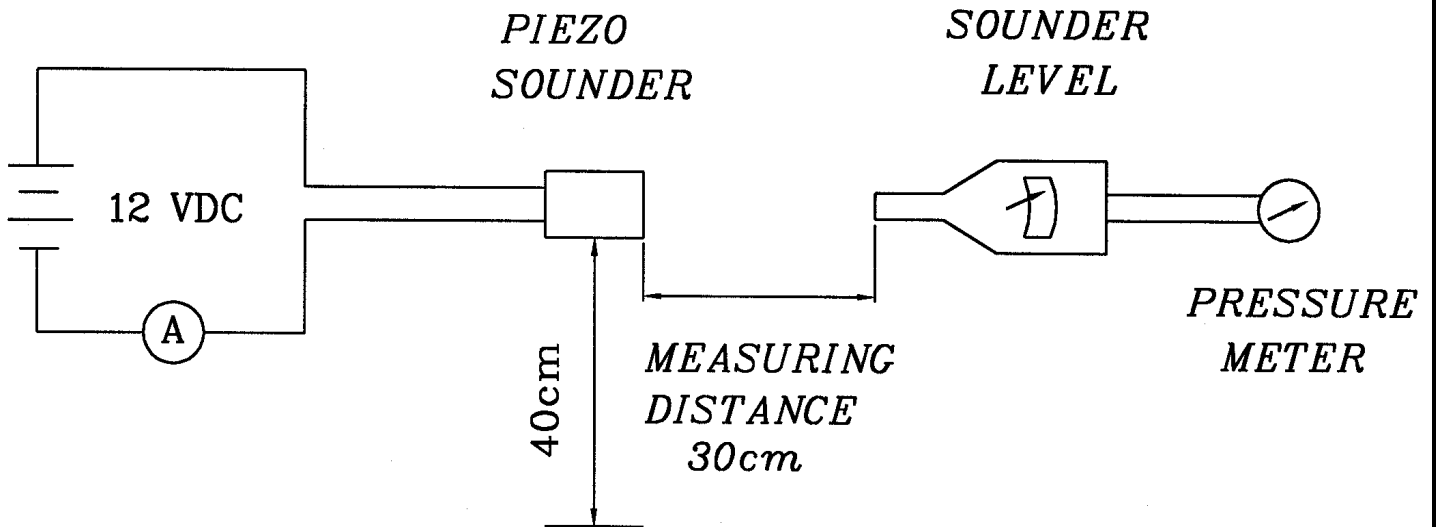


Tol : ± 0.5

Unit : mm

D. MEASURING METHOD 測量方法

1. S.P.L. Measuring Circuit 音壓測試接線圖

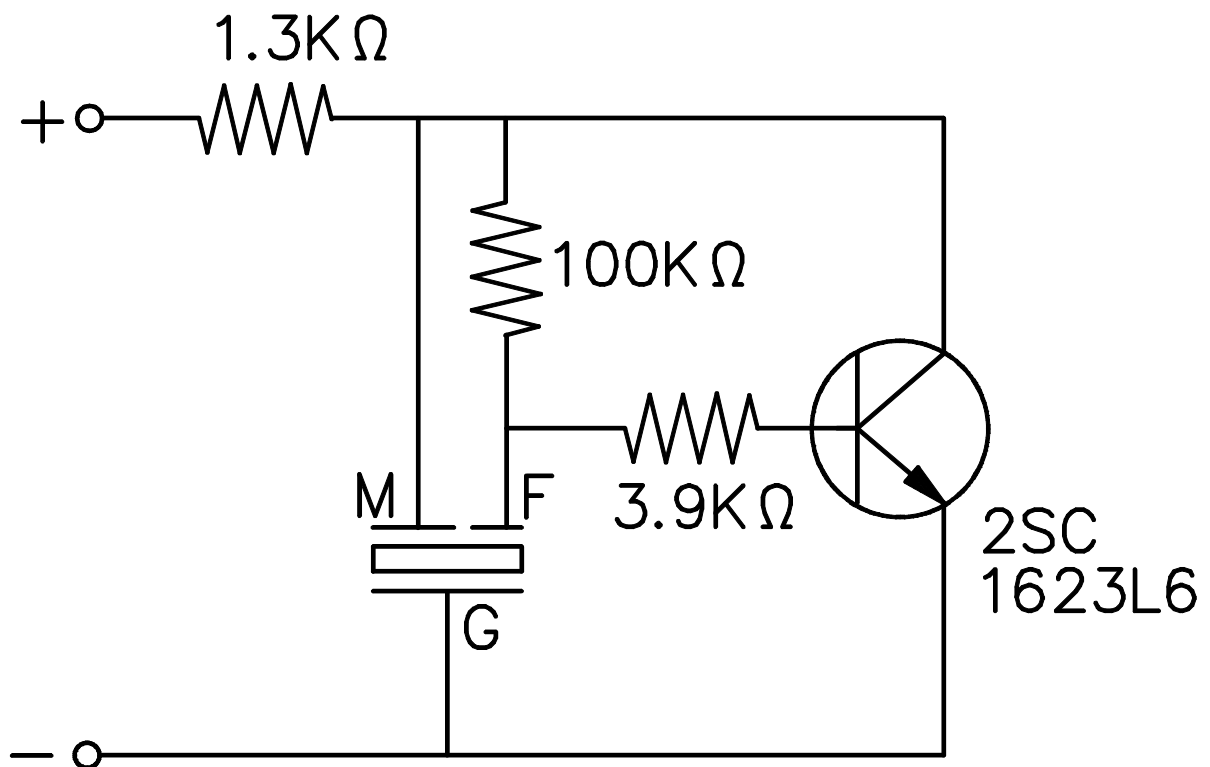


Mic : RION S.P.L. meter UC30 or equivalent

Mic : RION 噪音計 UC30 或同等品

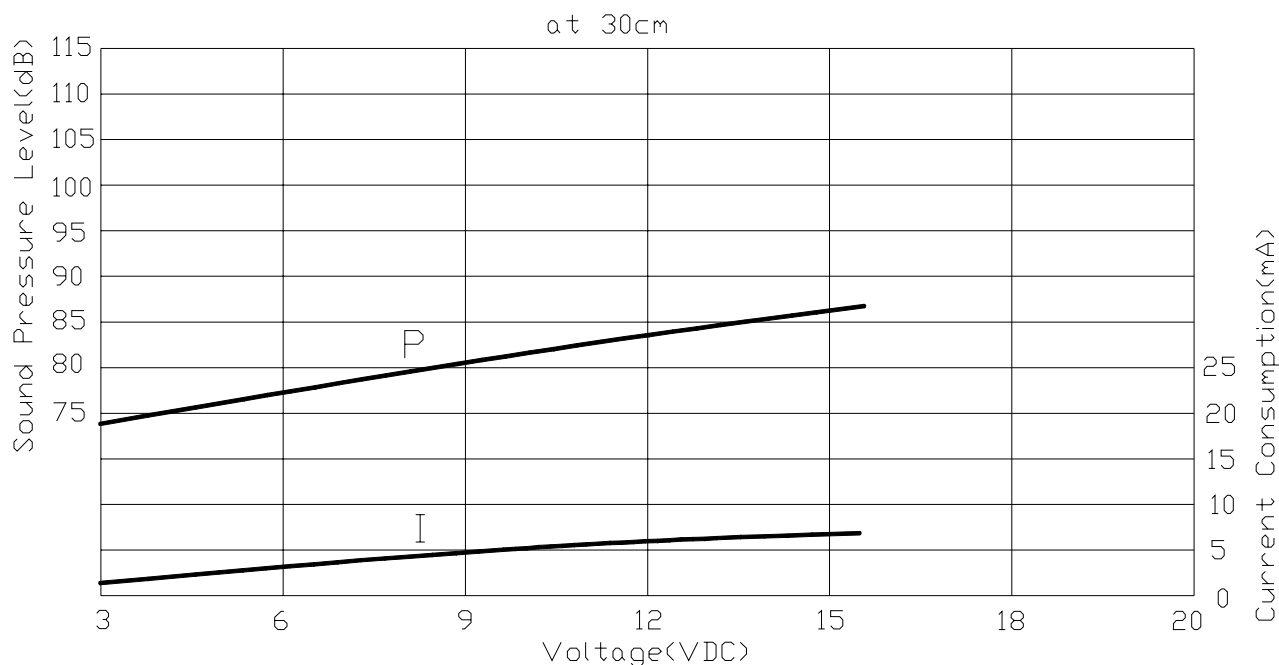
2. The current consumption and the sound pressure level are measured by using the recommend driving circuit shown as below (one example)

當前的測試數據是依靠此電氣迴路所量測



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

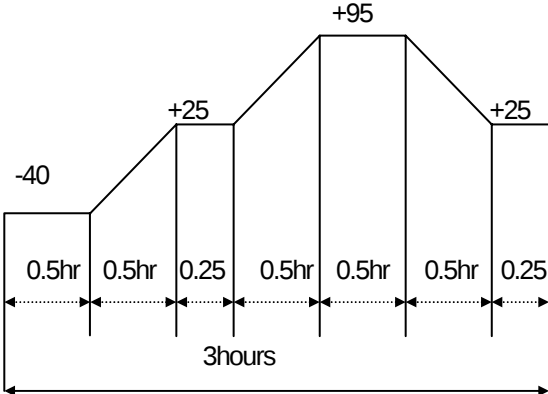
CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test Condition	Evaluation standard
1	Solderability 焊錫附著性	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of $+270\pm5$ for 3 ± 1 seconds. 端子部份浸入松香溶液 5 秒後,再浸入 $+270\pm5$ 溶錫槽中 3 ± 1 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 sounder's body in solder bath of $+260\pm5$ for 3 ± 1 seconds. 距離端子根部 1.5mm 的位置,浸入 $+260\pm5$ 的焊錫槽 3 ± 1 秒.	No interference in operation 操作上無任何不良
3	Terminal Strength Pulling 端子強度	The force 10 seconds of 9.8N(1.0kg) is applied to each terminal in axial direction. 各端子的軸方向施以 9.8N(1.0kg)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 per-pendicular 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 ± 10 dB compared with initial one. 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.
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.	

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 +95 for 240 hours 置於+95 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 $\pm 10\text{dB}$ 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 $\pm 10\text{dB}$ 內.
2	Low temp. test 低溫測試	After being placed in a chamber at -40 for 240 hours 置於-40 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 溫度循環測試	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: 	

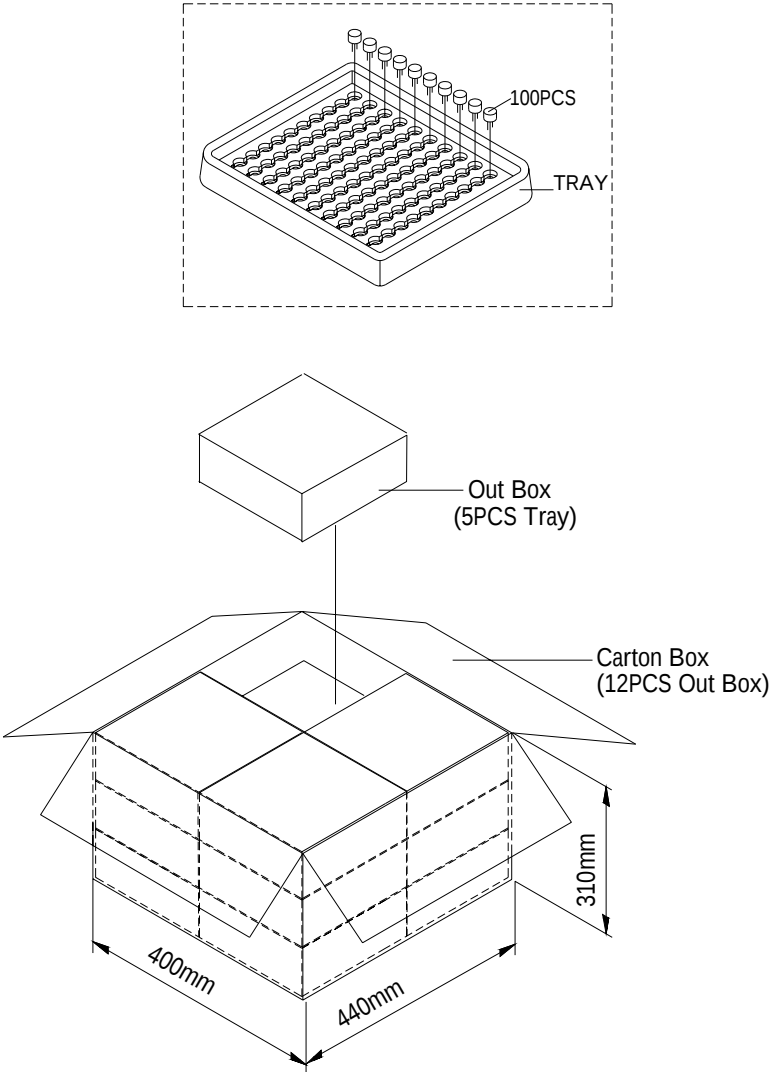
H. RELIABILITY TEST 信賴性測試

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) 48 hours continuous operation at +70 with rated voltage applied. 在+70 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. ($+25\pm 2$) and rated voltage applied 在室溫下 ($+25\pm 2$), 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 $\pm 10\%$ 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 (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.

TEST CONDITION.

Standard Test Condition	:	a) Temperature : $+5 \sim +35^\circ\text{C}$	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件	:	a) 溫度 : $+5 \sim +35^\circ\text{C}$	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	:	a) Temperature : $+25 \pm 2^\circ\text{C}$	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件	:	a) 溫度 : $+25 \pm 2^\circ\text{C}$	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

I. PACKING STANDARD 包裝規格



Tray	184mmx180mmx23mm	1x100PCS=100PCS
Out Box	200mmx190mmx100mm	5LAYERx100PCS=500PCS
Carton Box	440mmx400mmx310mm	500PCSx12=6000PCS