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		

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

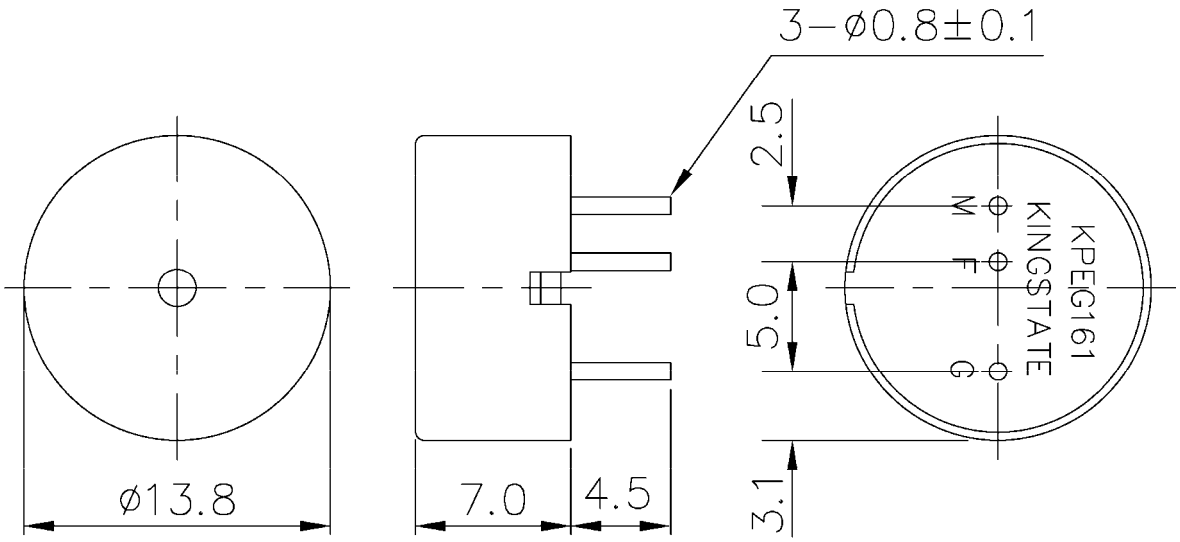
A. SCOPE 範疇

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	

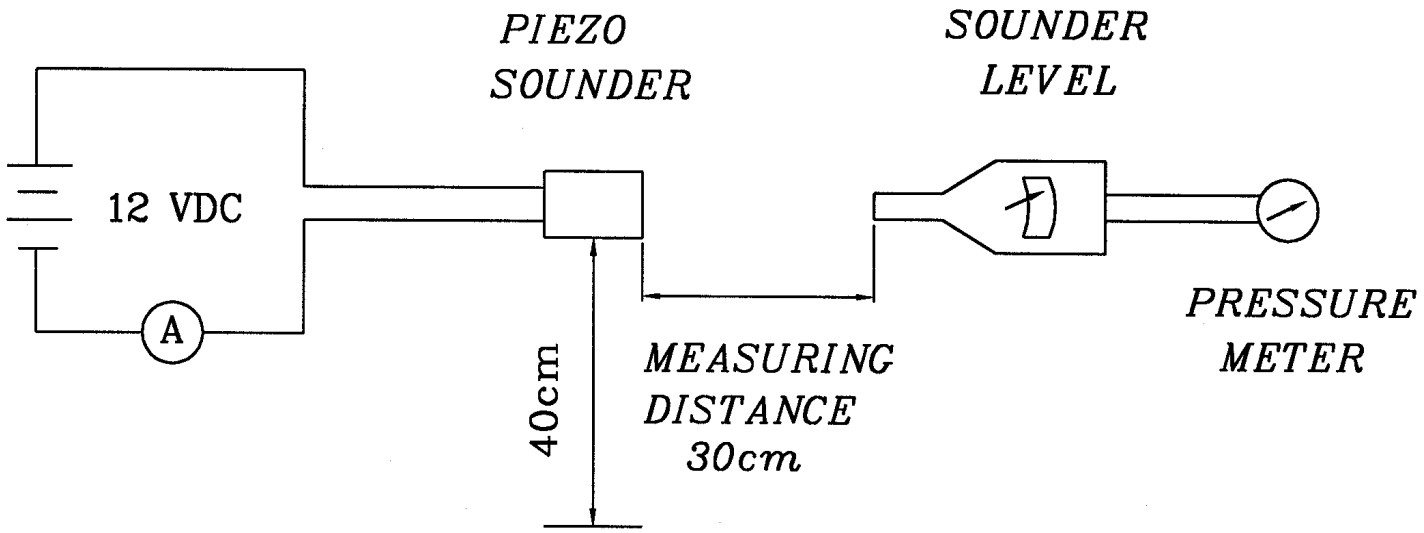
C. APPEARANCE DRAWING 外觀尺寸圖



Tol：± 0.5
Unit：mm

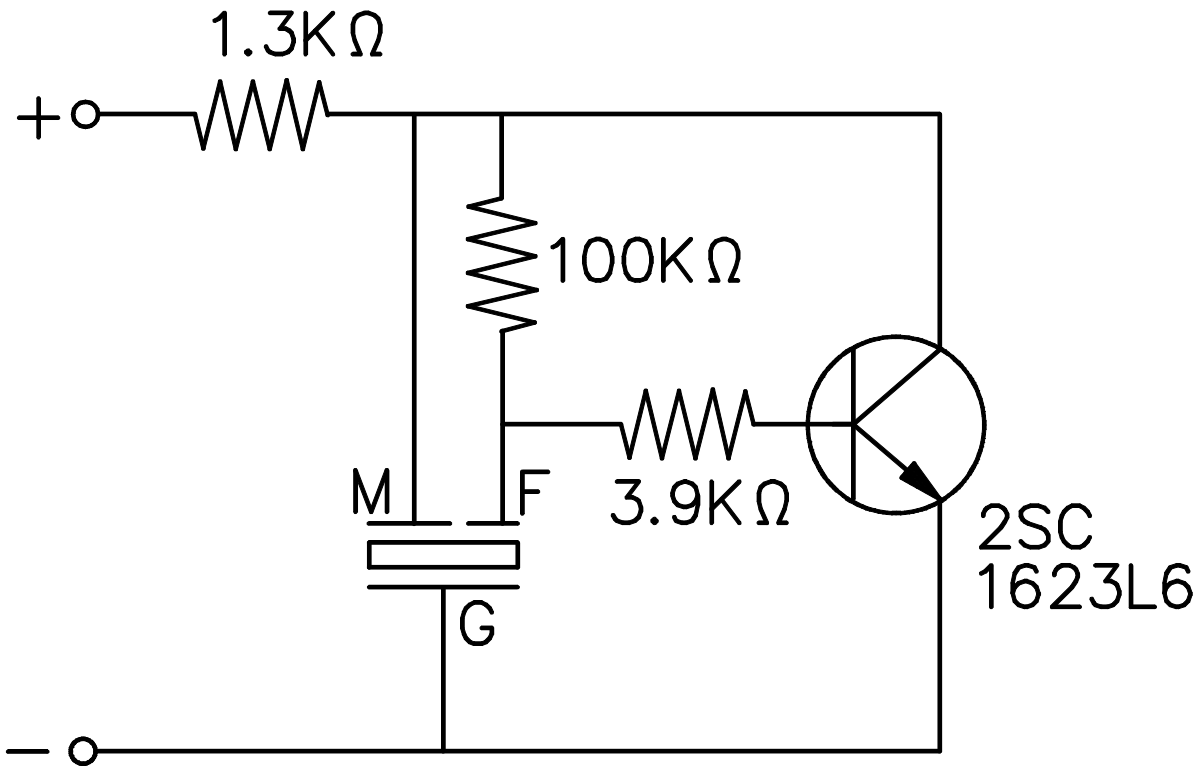
D. MEASURING METHOD 測量方法

1. S.P.L. Measuring Circuit 音壓測試接線圖

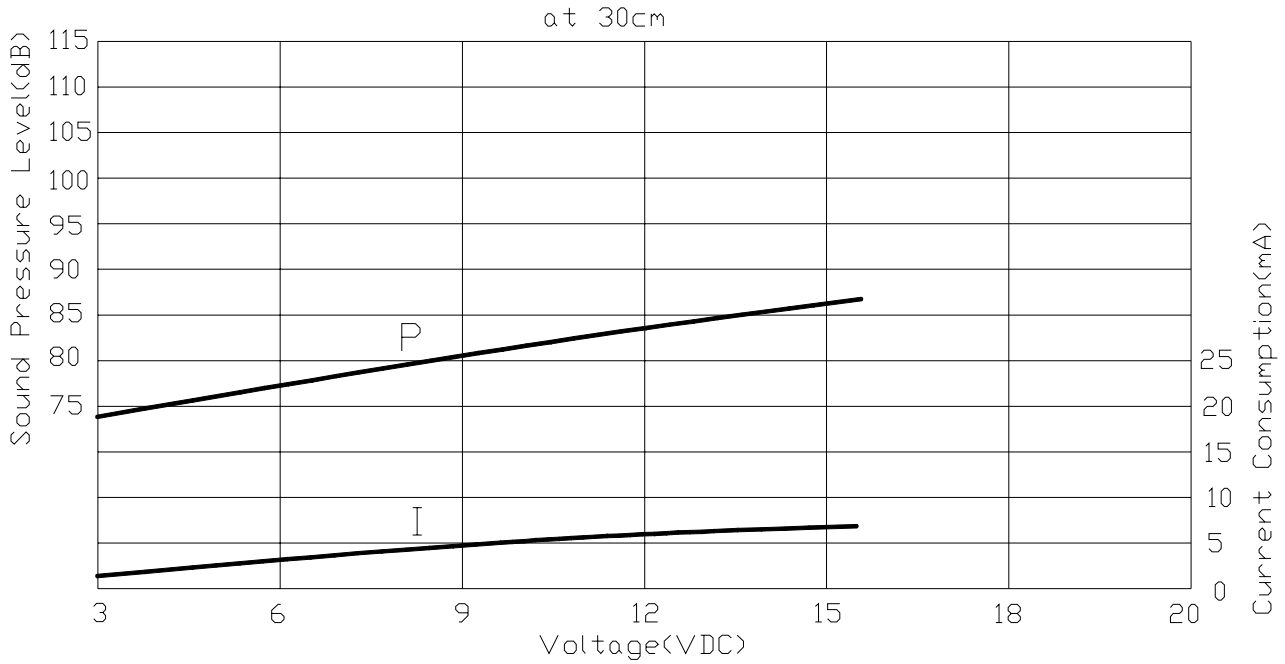


Mic : RION S.P.L. meter UC30 or equivalent
Mic : RION 噪音計 UC30 或同等品

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



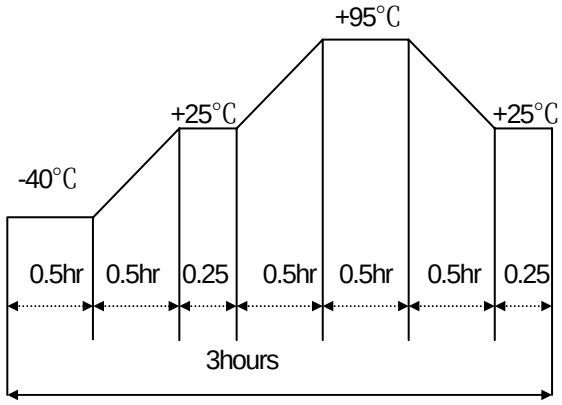
E. VOLTAGE: SOUND PRESSURE LEVEL / VOLTAGE: CURRENT CONSUMPTION CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



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±5°C for 3±1 seconds. 端子部份浸入松香溶液 5 秒後,再浸入+270±5°C溶融焊錫槽中 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 solider bath of +260±5°C for 3±1 seconds. 距離端子根部 1.5mm 的位置,浸入+260±5°C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 ±10% compared with initial ones .The SPL should be in ±10dB compared with initial one. 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	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°C for 240 hours 置於+95°C環境中 240 小時	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. 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 低溫測試	After being placed in a chamber at –40°C for 240 hours 置於-40°C環境中 240 小時	
3	Humidity test 相對濕度測試	After being placed in a chamber at +40°C and 90±5% relative humidity for 240 hours 置於+40°C, 相對濕度 90±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: 	

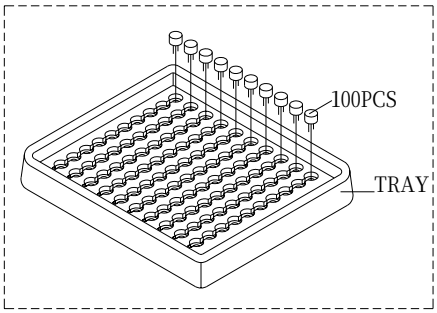
H. RELIABILITY TEST 信賴性測試

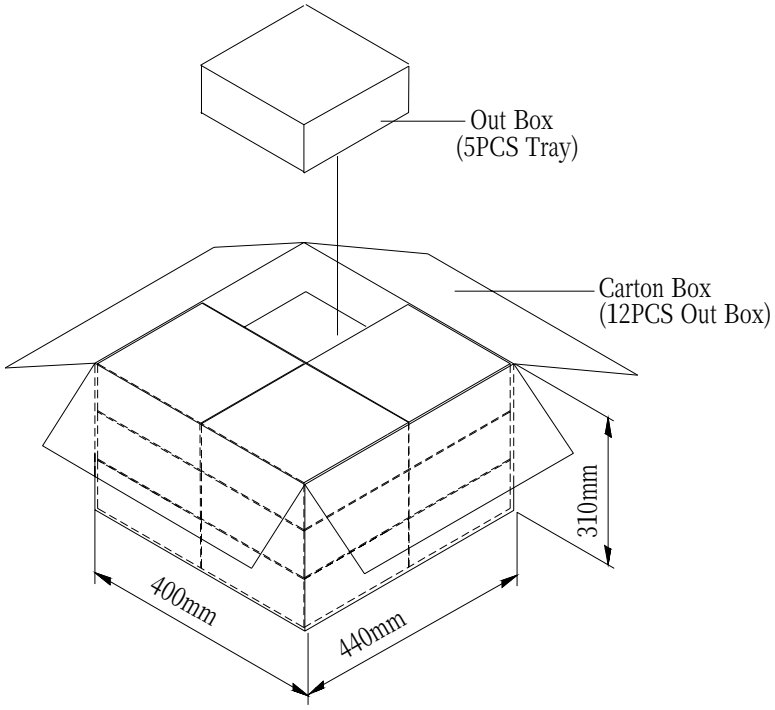
No.	Item	Test condition	Evaluation standard
1	Operating life test 壽命測試	1.Continuous life test 高溫壽命測試(連續) 48 hours continuous operation at +70°C with rated voltage applied. 在+70°C環境下,以額定電壓連續操作 48 小時 2.Intermittent life test 室溫壽命測試(間歇) A duty cycle of 1 minute on, 1 minutes off, a minimum of 5000 times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

I. PACKING STANDARD 包裝規格





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