

SPECIFICATION FOR APPROVAL

承認書

Description : Piezo Audio Transducer

Kingstate Part No. : KPEG121

Customer's Model No. : _____

Specification No. : PKD-7443

Number Of The Edition : 1.3

CUSTOMER'S APPROVED SIGNATURE

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

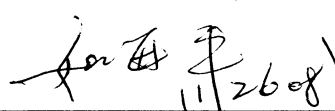
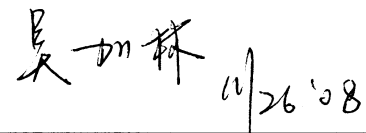


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Approved by	Checked by	Issued by
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A.SCOPE 範疇

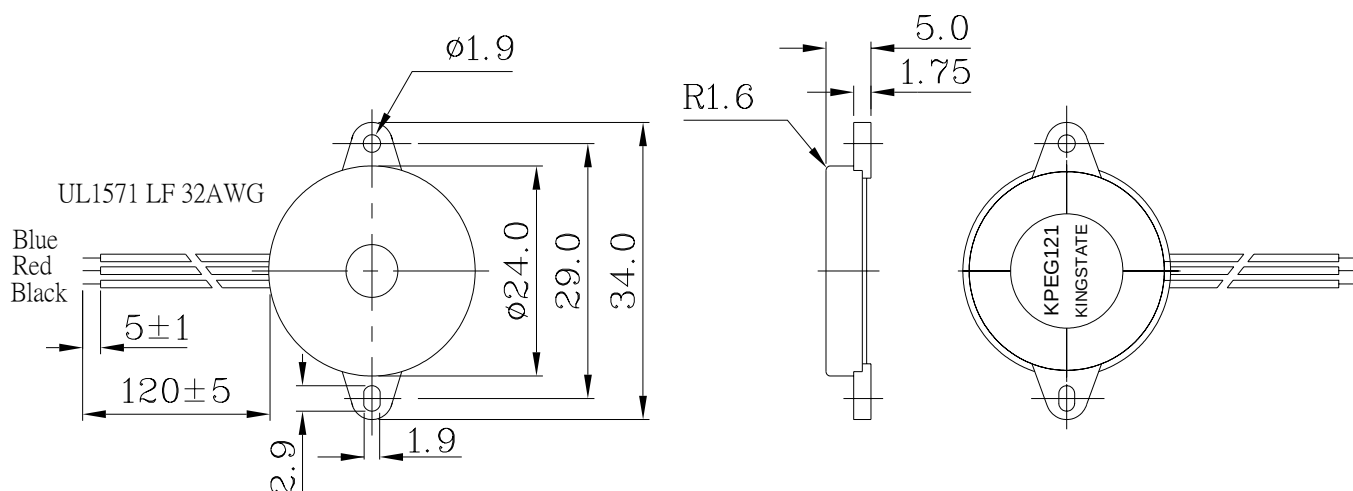
This specification applies piezo audio transducer, **KPEG121**

此規格書適用於壓電式蜂鳴器, **KPEG121**

B.SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Resonant frequency 共振頻率	KHz	4.5 ± 0.5	
2	Operating Volt. range 操作電壓範圍	VDC	3 ~ 28	
3	Current consumption 消耗電流	mA	MAX 13	at 12VDC
4	Sound pressure level 輸出音壓	dB	MIN 83	at 30cm/12VDC
5	Rated Voltage 額定電壓	VDC	12	
6	Tone 聲音		Continuous 直音	
7	Operation temp. 操作溫度	°C	-30 ~ + 85	
8	Storage temp. 儲存溫度	°C	-40 ~ + 95	
9	Dimension 尺寸	mm	φ24.0 x H5.0	See appearance drawing 請參照外觀尺寸圖
10	Weight (MAX) 重量	gram	7.4	
11	Material 材質		ABS UL-94 1/16" HB HIGH HEAT (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

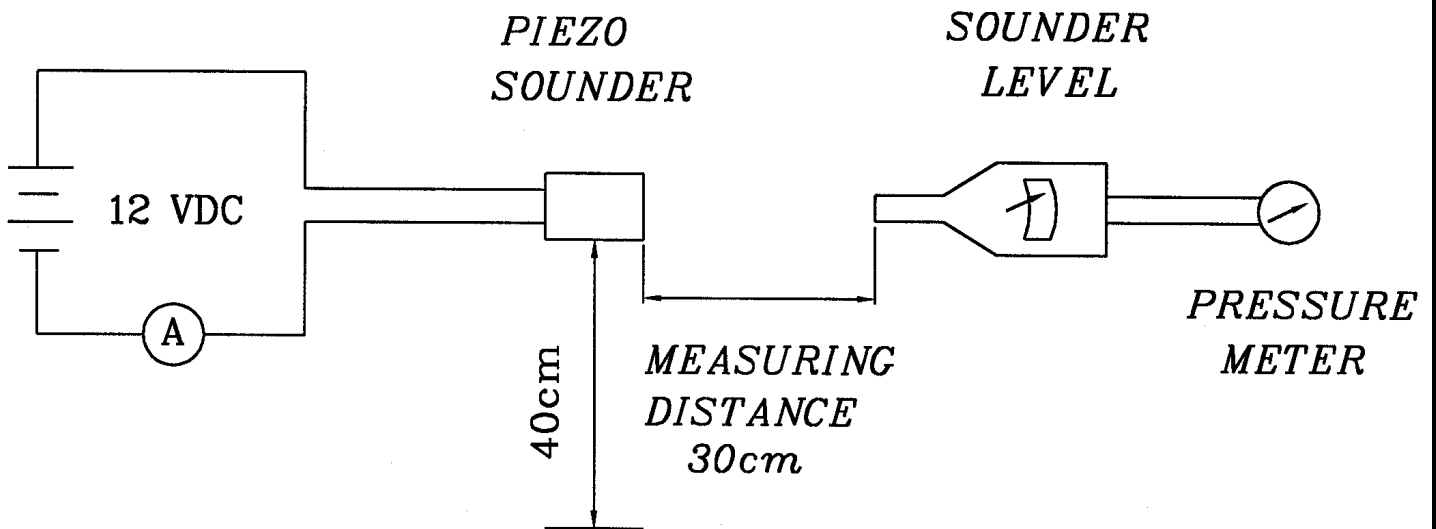


Tol : ±0.5

Unit : mm

D. Measuring Method 測量方法

1. S.P.L. Measuring Circuit 音壓測試接線圖

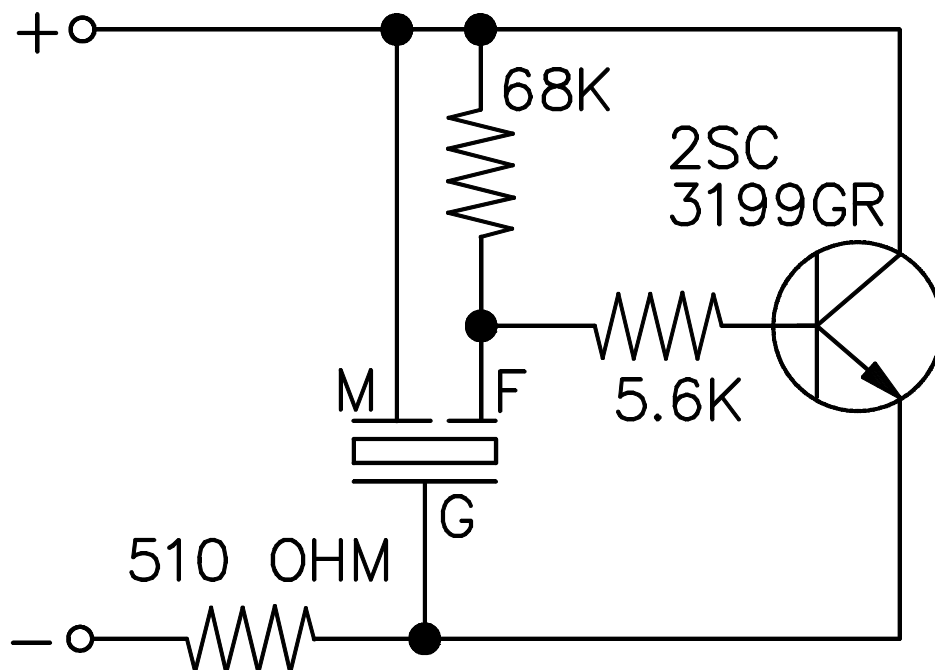


Mic : RION S.P.L meter UC30 or equivalent

Mic : RION 噪音計 UC30 或同等品

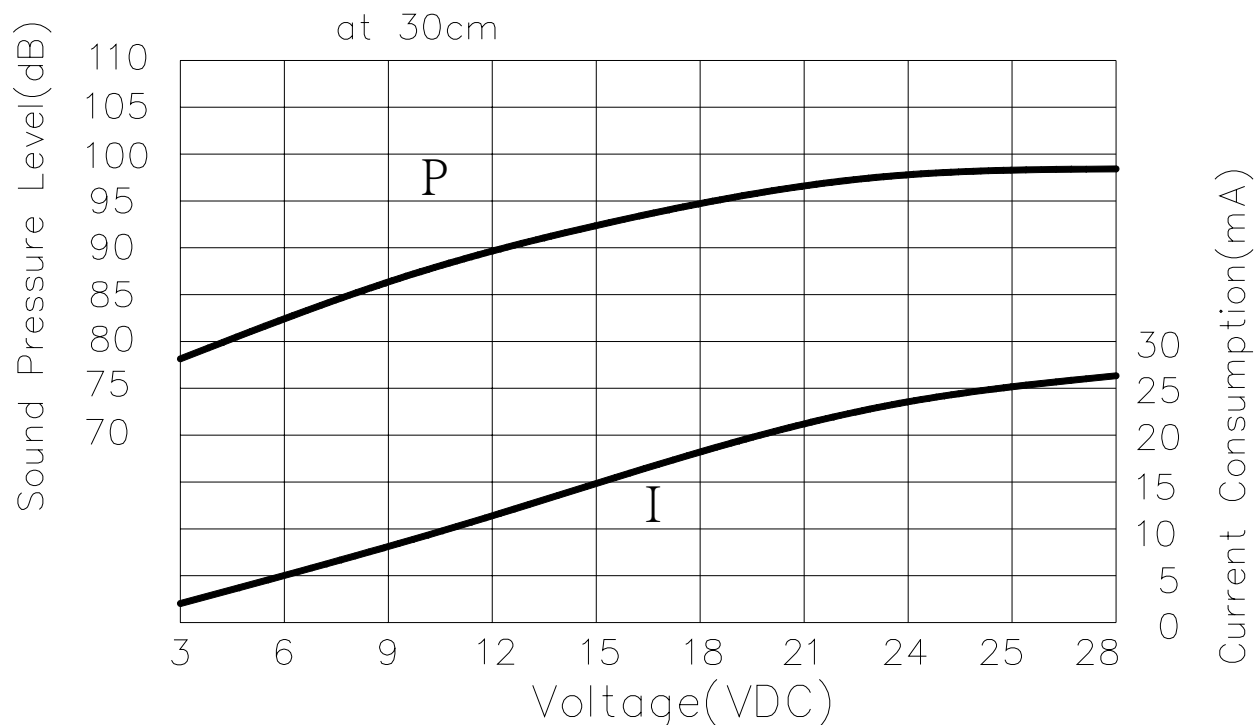
2. The current consumption and the sound pressure level are measured by using the recommend driving circuit shown as below (one example)

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

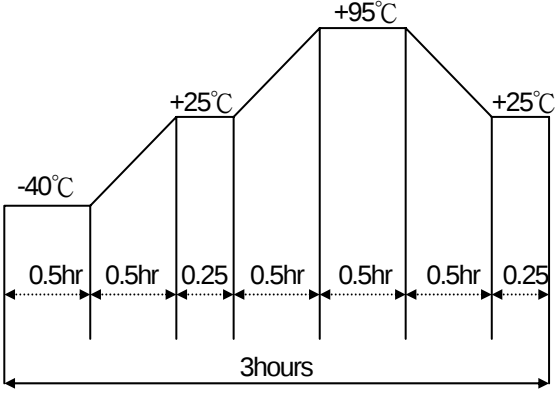
CHARACTERISTICS 電壓與音壓/電壓與耗電流之特性



F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test Condition	Evaluation standard
1	Solderability 焊錫附著性 (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 $+270\pm5^{\circ}\text{C}$ for 3 ± 0.5 seconds. 裸線部份浸入松香溶液 5 秒後,再浸入 $+270\pm5^{\circ}\text{C}$ 溶融焊錫槽 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.(末端斷面不算)
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 damage and cutting off. 線材不鬆動,不脫落.
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 $\pm 10\text{dB}$ 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 $\pm 10\text{dB}$ 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 +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 $\pm 10\%$ 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°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 with -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 $\pm$ 5% relative humidity for 240 hours 置於+40°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	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 $\pm$ 2°C) and rated voltage applied. 在室溫下(+25 $\pm$ 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 $\pm 10\%$ 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°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。

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 $\pm$ 2°C	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件	:	a) 溫度 : +25 $\pm$ 2°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

I. PACKING STANDARD 包裝規格

