

SPECIFICATION FOR APPROVAL

承 認 書

Description : **Piezo Ceramic Audio Transducer**

Kingstate Part No. : **KPE-129**

Customer's Model No. : _____

Specification No. : **PKD-1392**

Number Of The Edition : **1.3**

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
林盛鵬 061901	paddy 061401	

A.SCOPE 範疇

This specification applies piezo audio transducer, KPE-129
 此規格書適用於壓電式蜂鳴器 KPE-129

B. SPECIFICATION 規格

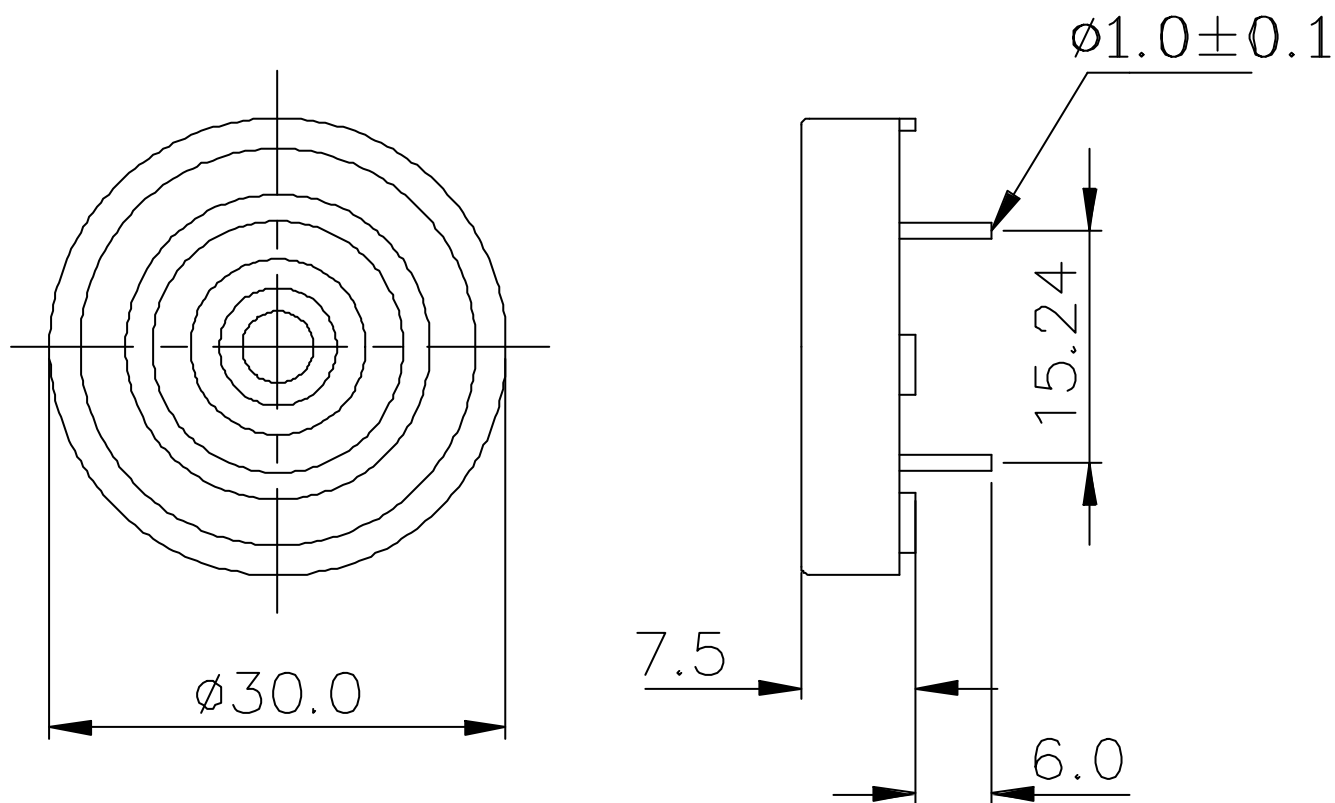
Test condition:

TEMP=25 ±2

Related humidity=65±5%

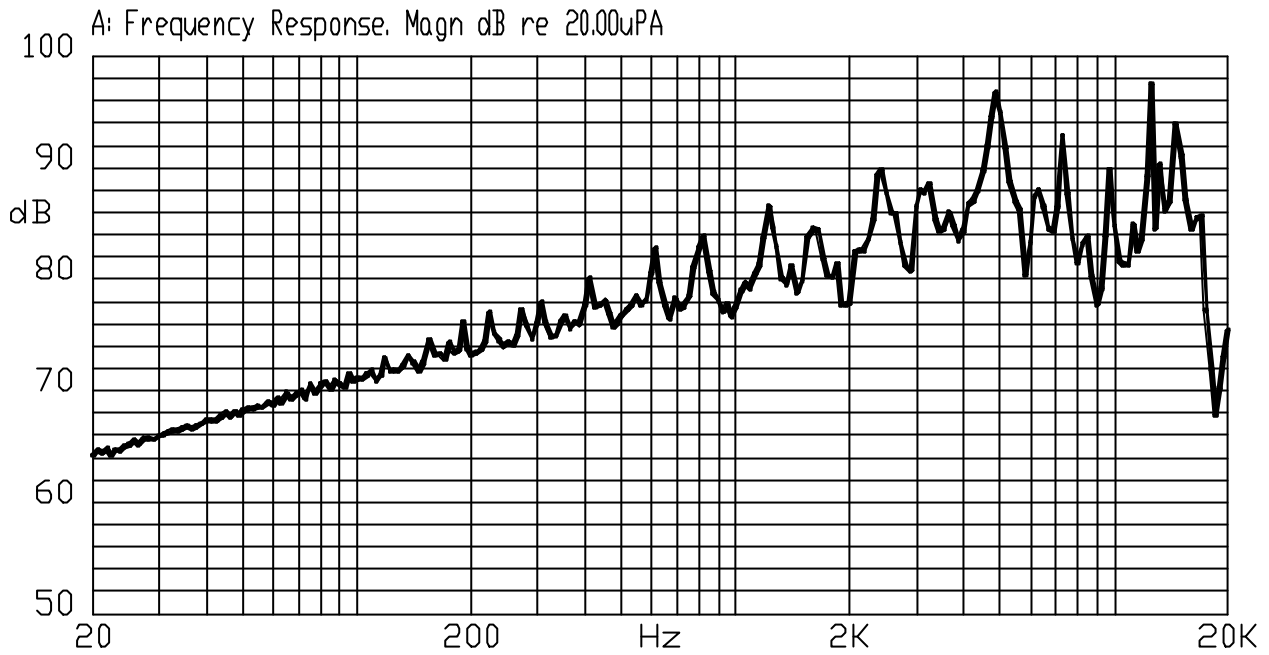
No.	Item	Unit	Specification	Condition
1	Operating Volt. 操作電壓	Vp-p	MAX 30	
2	Current consumption 消耗電流	mA	MAX 10	at 10Vp-p,square wave,4.6KHz.
3	Sound pressure level 輸出音壓	dB	MIN 85	at 10cm/10Vp-p,square wave,4.6KHz.
4	Electrostatic capacity 靜電容量	pF	16,000±30%	at 1KHz/1V
5	Operating temp. 操作溫度	°C	-30 ~ +85	
6	Storage temp. 儲存溫度	°C	-40 ~ +95	
7	Dimension 尺寸	mm	30.0x H 7.5	See appearance drawing 請參照外觀尺寸圖
8	Weight (MAX) 重量	gram	4.3	
9	Material 材質		ABS UL-94 1/16" HB HIGH HEAT (BLACK)	
10	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. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

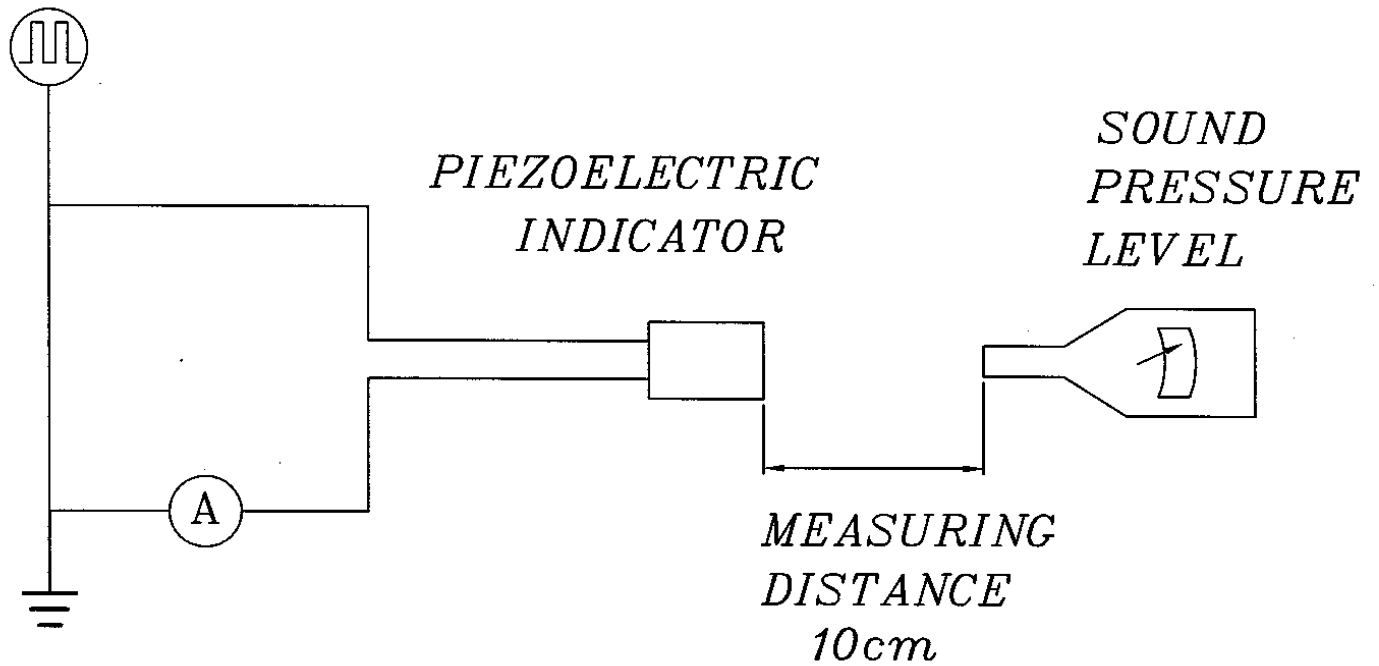


E. MEASURING METHOD 測量方法

S.P.L. Measuring Circuit 音壓測試接線圖

Input Signal: 10Vp-p, 4.6kHz, Square Wave

輸入信號: 10Vp-p, 4.6kHz, 方波



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

Mic : RION 噪音計 UC30 或同等品

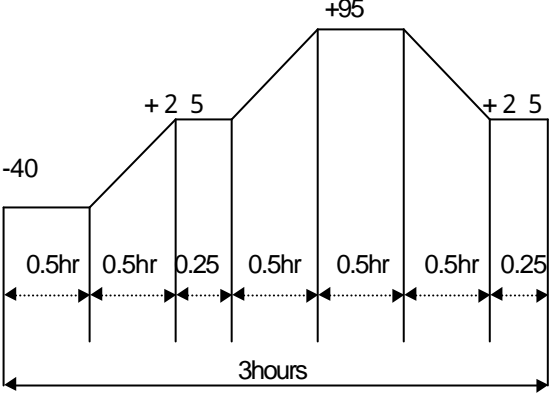
S.G : Hewlett Packard 33120A Function Generator or equivalent

S.G : Hewlett Packard 33120A 函數信號產生器 或同等品

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 $+230 \pm 5$ for 3 ± 0.5 seconds. 端子部份浸入松香溶液 5 秒後,再浸入 $+230 \pm 5$ 溶錫焊錫槽中 3 ± 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 $+300 \pm 5$ for 3 ± 0.5 seconds or $+260 \pm 5$ for 10 ± 1 seconds. 距離端子根部 1.5mm 的位置,浸入 $+300 \pm 5$ 的焊錫槽 3 ± 0.5 秒,或 $+260 \pm 5$ 的焊錫槽 10 ± 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 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 $\pm 10\%$ compared with initial ones .The SPL should be in ± 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.	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.

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 ± 10 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 ± 10 dB 內.
2	Low temp. test 低溫測試	After being placed in a chamber with -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 +95 with maximum rated voltage applied. 在+95 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)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 5分鐘,測試 10000 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+ 2 5 (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 : 860-1060mpa
一般測試條件	:	a) 溫度 : +5 ~ +35°C	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mpa
Judgement Test Condition	:	a) Temperature : +25 ± 2°C	b) Humidity : 60-70%	c) Pressure : 860-1060mpa.
標準測試條件	:	a) 溫度 : +25 ± 2°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mpa

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。