SPECIFICATION FOR APPROVAL

承　認　書

Description	:	**Piezo Audio Transducer**
Kingstate Part No.	:	**KPEG165**
Customer's Model No.	:	
Specification No.	:	**PKD-2228**
Number Of The Edition	:	**1.2**

CUSTOMER'S APPROVED SIGNATURE		

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

KINGSTATE

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Approved by	Checked by	Issued by
Evon 7/5/05'	7/5	**JIR** **7/04/05'**

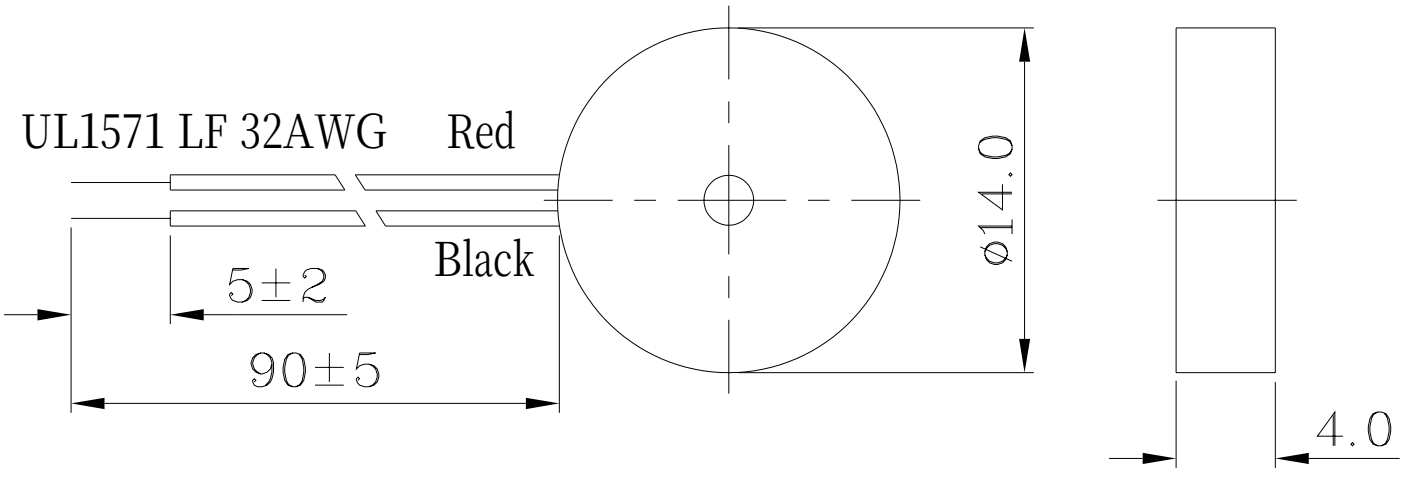
A. SCOPE 範疇

This specification applies piezo audio transducer, **KPEG165**
此規格書適用於壓電式蜂鳴器，**KPEG165**

B. SPECIFICATION 規格

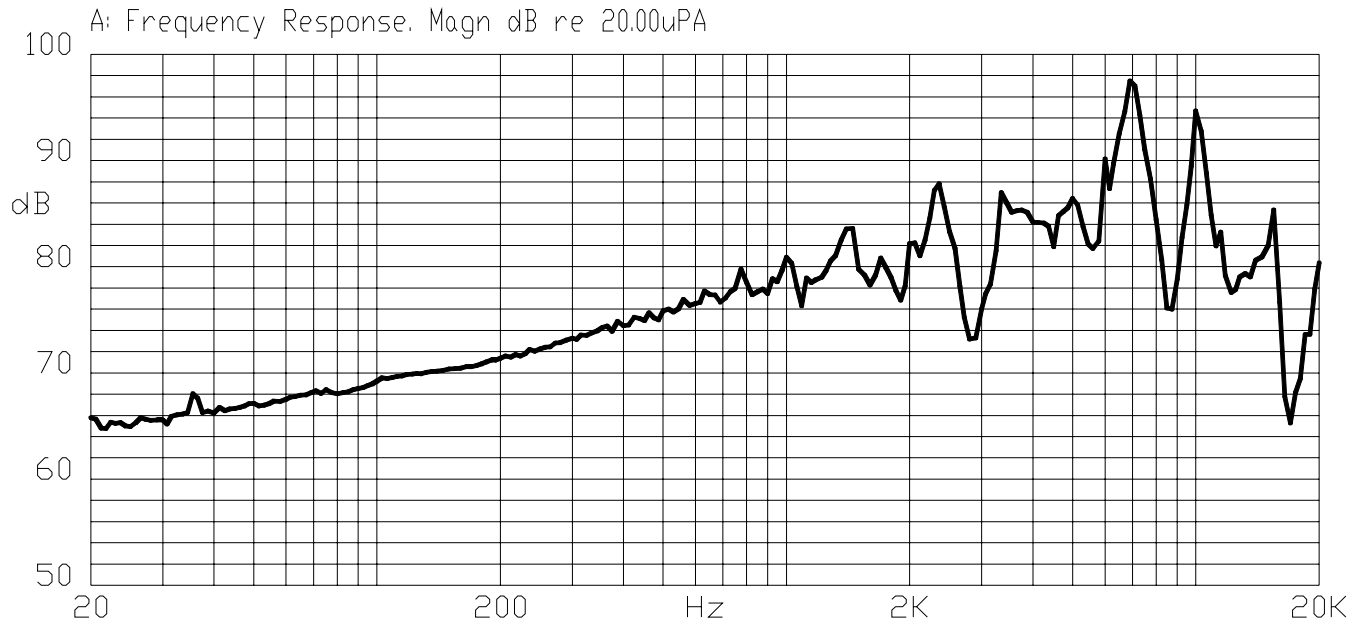
No.	Item	Unit	Specification	Condition
1	Operating Volt. 操作電壓	Vp-p	MAX 30	
2	Current consumption 消耗電流	mA	MAX 11	at 10Vp-p,square wave,4.8KHz.
3	Sound pressure level 輸出音壓	dB	MIN 85	at 10cm/10Vp-p,square wave,4.8KHz.
4	Electrostatic capacity 靜電容量	pF	15,000 ± 30%	at 1KHz/1V
5	Operating temp. 操作溫度	℃	-30 ~ +85	
6	Storage temp. 儲存溫度	℃	-40 ~ +95	
7	Dimension 尺寸	mm	ϕ14.0 x H 4.0	See appearance drawing 請參照外觀尺寸圖
8	Weight (MAX) 重量	gram	1.0	
9	Material 材質		ABS UL-94 1/16" HB HIGH HEAT (BLACK)	
10	Terminal 端子		Wire type	See appearance drawing 請參照外觀尺寸圖
11	Environmental Protection Regulation 環保法規		RoHS	

C. APPEARANCE DRAWING 外觀尺寸圖



Tol : ± 0.5
Unit: mm

D. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

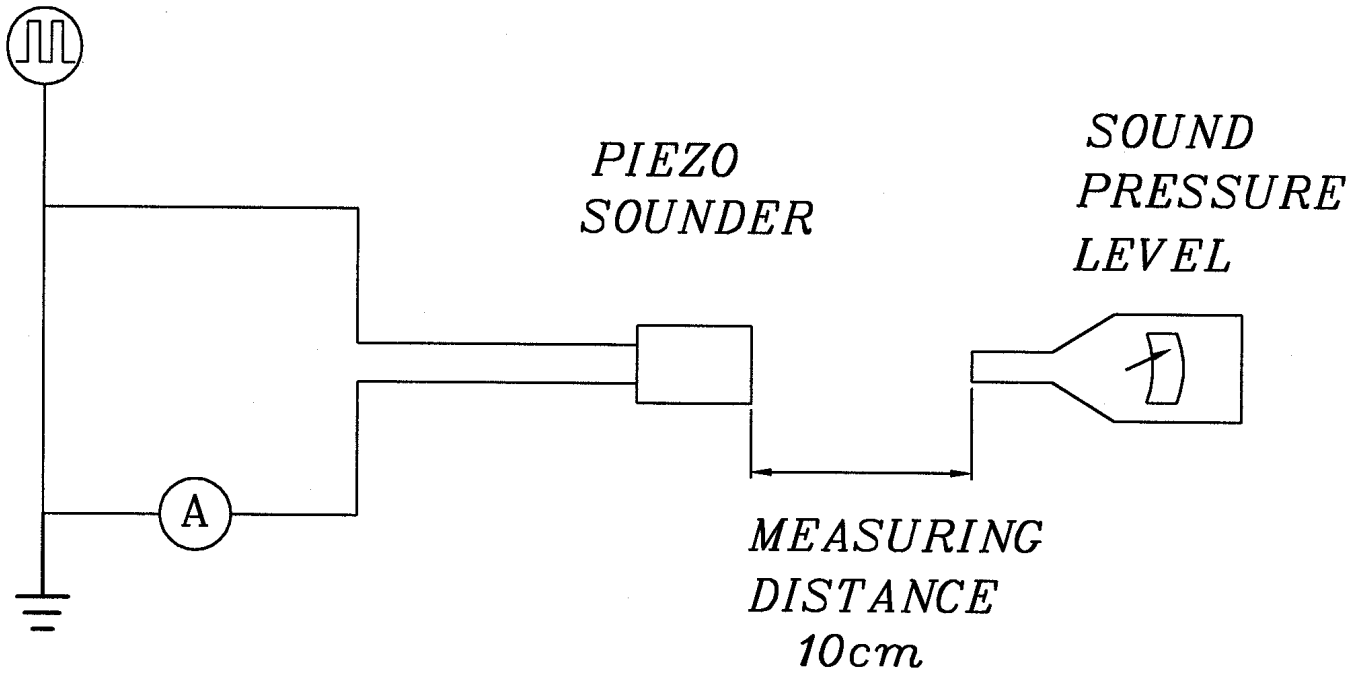


E. MEASURING METHOD 測量方法

S.P.L. Measuring Circuit 音壓測試接線圖

Input Signal: 10Vp-p,4.8kHz, Square Wave

輸入信號: 10Vp-p,4.8kHz,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

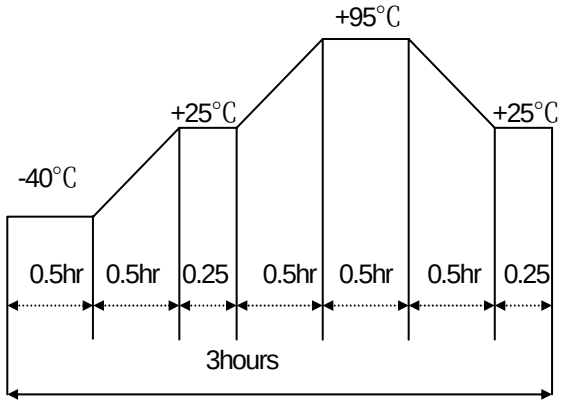
S.G : Hewlett Packard 33120A 函數信號產生器或同等品

F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test Condition	Evaluation standard
1	Solder ability 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±5°C for 3±0.5 seconds. 裸線部份浸入松香溶液 5 秒後,再浸入+230±5°C溶融焊錫槽中 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	Soldering Heat Resistance 焊錫耐熱性	Stripped wires are immersed up to 1.5mm from insulation in solder bath of +300±5°C for 3±0.5 seconds or +260±5°C for 10±1 seconds, and then sounder shall be measured after being placed in natural condition for 4 hours. 距絕緣體 1.5mm 的位置,浸入+300±5°C的焊錫槽 3±0.5 秒,或+260±5°C 的焊錫槽 10±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 ±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.	
6	Bottom Covering Pull Force 底蓋拉力	The pull force of 3.0N shall be applied to bottom covering on the vertical direction. 底蓋垂直方向施以 3.0N 的力量.	No damage and cutting off. 底蓋不鬆動,不脫落.

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°Cfor 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:	



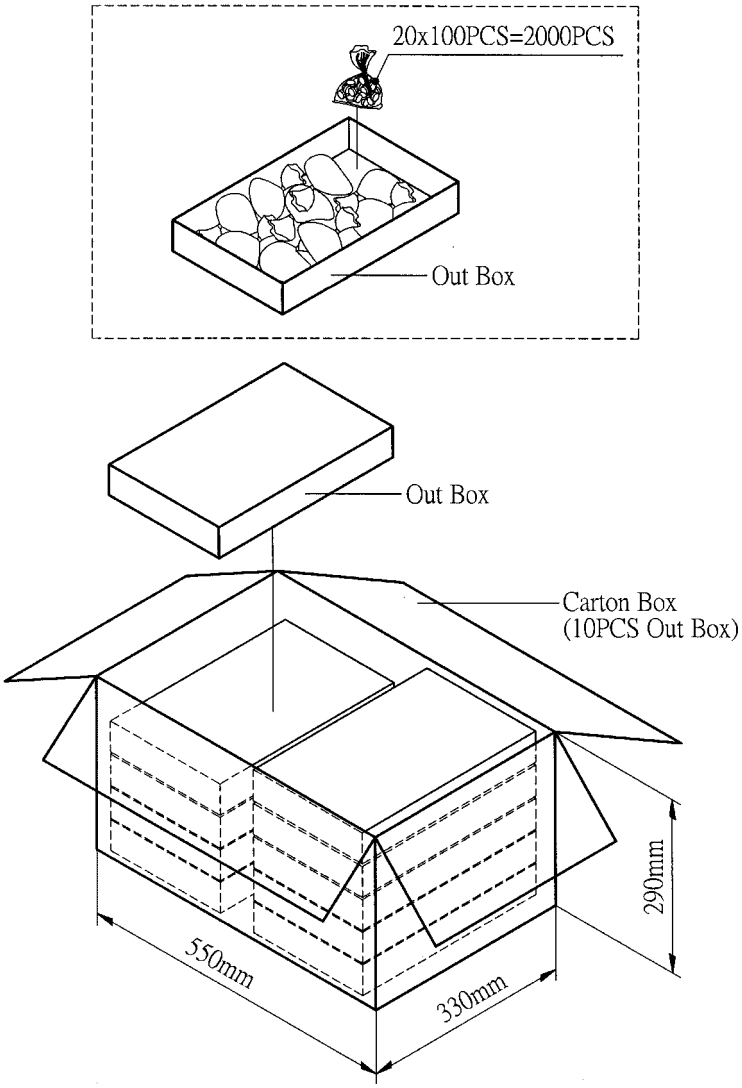
H. RELIABILITY TEST 信賴性測試

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) 120 hours continuous operation at +70°C with maximum rated voltage applied. 在+70°C環境下,以最大額定電壓連續操作 120 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 10000 times at room temp.(+25±2°C)and maximum rated voltage applied 在室溫下(+25±2°C), 以最大額定電壓操作, 通電 1 分鐘/斷電 1 分鐘,測試 10000 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 ~ +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
Judgment Test Condition	:	a) Temperature : +25 ± 2°C	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件	:	a) 溫度 : +25 ± 2°C	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

I. PACKING STANDARD 包裝規格



Out Box	310mmx248mmx49mm	1x2000PCS=2000PCS
Carton Box	550mmx330mmx290mm	2000PCSx10=20000PCS