

SPECIFICATION FOR APPROVAL

承認書

Description : Piezo Audio Transducer

Kingstate Part No. : KMTG1812-1

Customer's Model No. : _____

Specification No. : POD-7814

Number Of The Edition : 1.2

CUSTOMER'S APPROVED SIGNATURE		



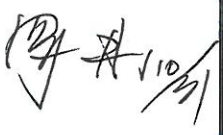
志豐電子股份有限公司 KINGSTATE ELECTRONICS CORP.

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Approved by	Checked by	Issued by
	 2023.10.31	YAO 2023.10.31



成品承認書修訂記錄

志豐電子股份有限公司 KINGSTATE ELECTRONICS CORP 2/9 KMTG1812-1

A. SCOPE 範疇

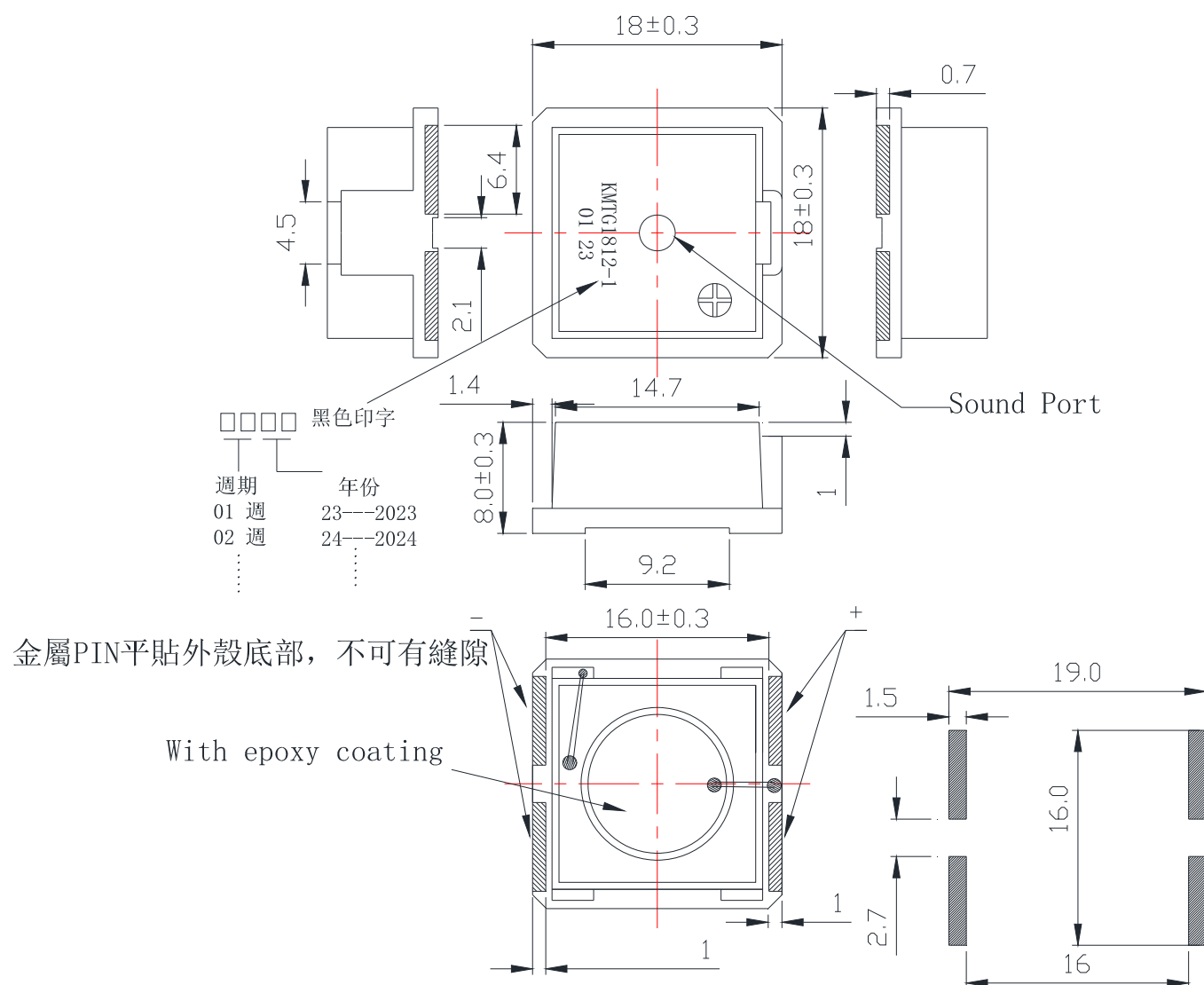
This specification applies piezo audio transducer, **KMTG1812-1**

此規格書適用於壓電式蜂鳴器, **KMTG1812-1**

B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Operating Volt. Range 最大操作電壓	Vp-p	1~18	
2	Current consumption 消耗電流	mA	MAX 10	at 12Vp-p,square wave,2.0KHz.
3	Sound pressure level 輸出音壓	dB	MIN 86 (TYPE 90)	at 10cm/12Vp-p,square wave,2.0KHz
4	Electrostatic capacity 靜電容量	pF	25,000 ± 30%	at 100Hz/1V
5	Operating temp. 操作溫度	°C	-40 ~ +105	
6	Storage temp. 儲存溫度	°C	-40 ~ +105	
7	Dimension 尺寸	mm	L18.0 x W18.0 x H8	See appearance drawing 請參照外觀尺寸圖
8	Weight (MAX) 重量	gram	3.0	
9	Material 材質		LCP(Black)	
10	Terminal 端子		SMD type (鍍錫/ Plating Sn)	See appearance drawing 請參照外觀尺寸圖
11	Environmental Protection Regulation 環保法規		RoHS 2.0	
12	Moisture sensitive level 濕敏等級	Class	5	Less than or equal to 30C/60%RH, 48 hours of Floor life. 小於或等於 30°C/60%RH 48 小時車間壽命

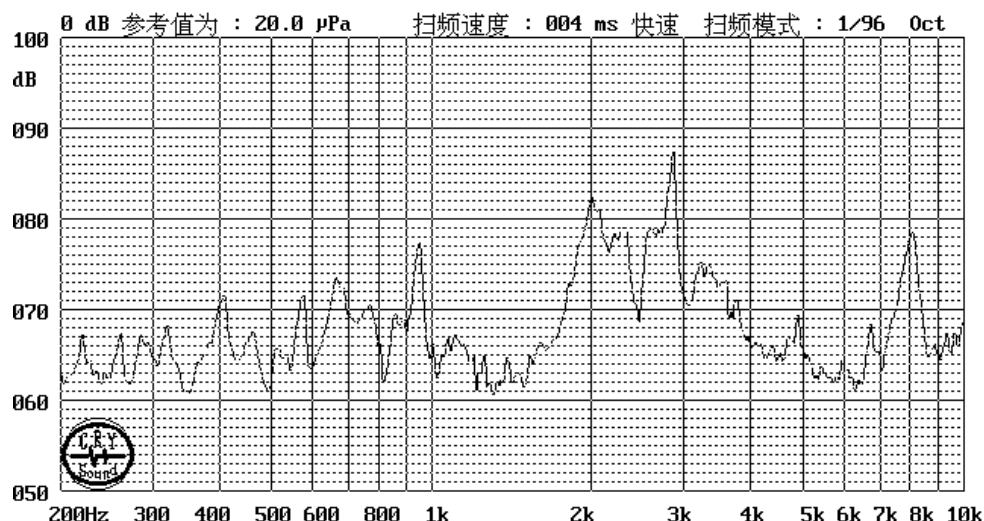
C. APPEARANCE DRAWING 外觀尺寸圖



Tol: ± 0.2

Unit: mm

D. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線



E. MEASURING METHOD 測量方法

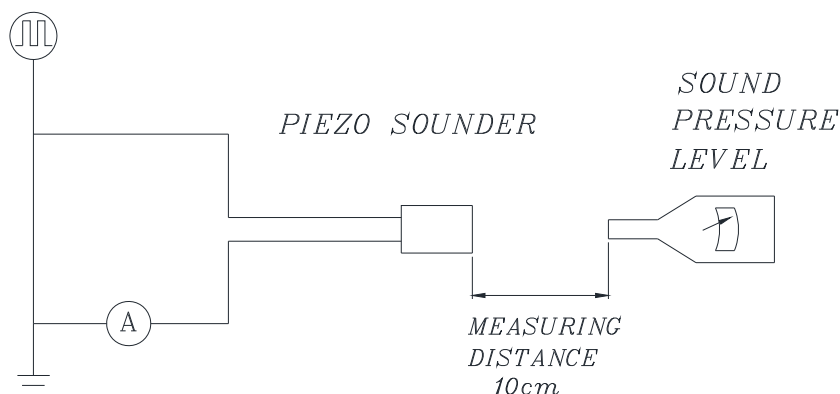
S.P.L. Measuring Circuit 音壓測試接線圖

Input Signal: 12Vp-p, 2.0kHz, Square Wave

輸入信號: 12Vp-p, 2.0kHz, 方波

Temp.: 25 $\pm$ 3 $^{\circ}$ C Humidity: 60 $\pm$ 10%, Free Room

溫度: 25 $\pm$ 3 $^{\circ}$ C, 濕度: 60 $\pm$ 10%, Free Room



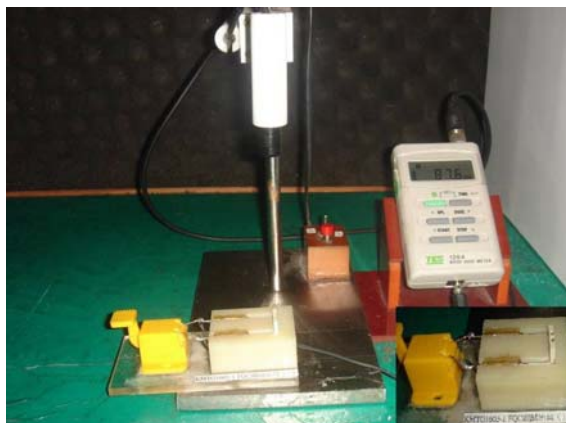
Mic : RION S.P.L meter UC30 or equivalent

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

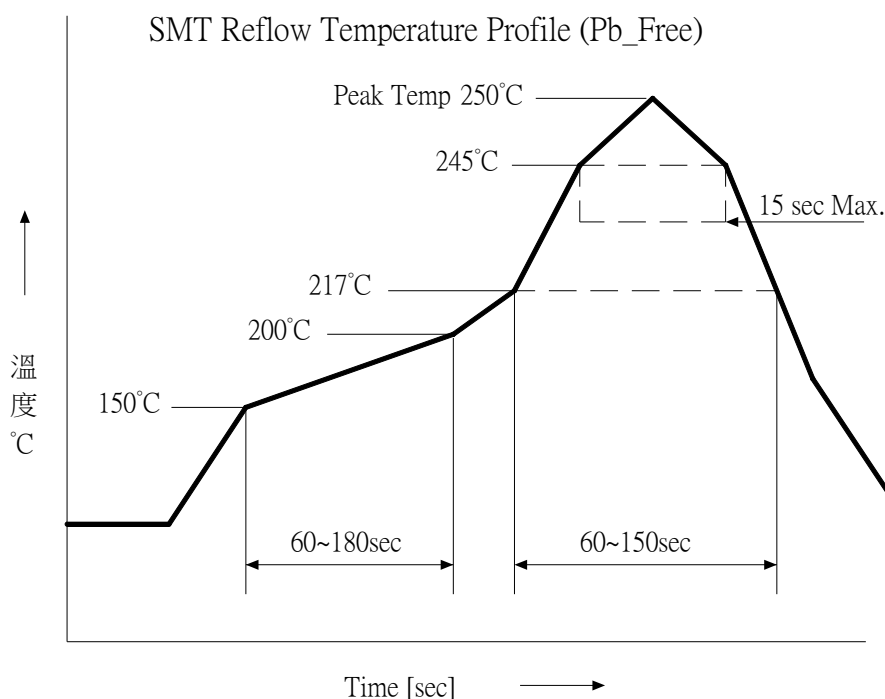
Test Photo:



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 $+270 \pm 5^{\circ}\text{C}$ for 2 ± 0.5 second. 端子浸松香液中 5 秒後置於錫膏內,錫膏溫度: $+270 \pm 5^{\circ}\text{C}$. 焊接時間: 2 ± 0.5 秒.	95% surface of lead pads must be covered with fresh solder 錫膏須覆蓋端子上方 95%
2	Soldering Heat Resistance 焊錫耐熱性	1)IR reflow 遠紅外線熱風迴焊爐 Pre-heating conditions shall be $+150$ to $+200^{\circ}\text{C}$ for 60 to 180 seconds. Ascending time up to $+250^{\circ}\text{C}$ shall be longer than 55 seconds. Heating conditions shall be within 15 seconds at $+245^{\circ}\text{C}$ min. But peak temperature shall be lower than $+250^{\circ}\text{C}$, then being place in natural condition for 1 hour, sounder shall be measured 預熱條件為加熱到 $+150$ to $+200^{\circ}\text{C}$ 為 60 到 180 秒. 加熱到 250°C 時間須長於 55 秒. 焊接條件為 15 秒最低 $+245^{\circ}\text{C}$, 最高不可超過 $+250^{\circ}\text{C}$. 結束後須靜置於室溫中 1 小時後進行檢測 2)Soldering Iron 烙鐵 Soldering iron of $+350 \pm 5^{\circ}\text{C}$ shall be placed 0.5mm above from electrode of sounder. Melting solder through soldering iron shall be applied to electrode for 3 ± 1 seconds, then being place in natural condition for 4 hours, sounder shall be measured. $+350 \pm 5^{\circ}\text{C}$ 的烙鐵置於電極上方 0.5mm 處, 以烙鐵將焊錫熔於電極上 3 ± 1 秒,然後置於室溫中 4 小時後進行檢測.	No interference in operation. 操作上無任何不良.
3	Terminal Mechanical Strength 端子強度	The force 10 seconds of 9.8N(1kg) is applied to each terminal is axial direction. 對每一端子以軸方向, 施 9.8N(1kg)拉力 10 秒.	No damage and cutting off 端子不鬆動, 不脫落
4	Vibration 振動測試	The part shall be subjected to a vibration cycle of 10Hz to 55Hz in a period of 1 minute. Total peak amplitude shall be 1.55mm . The vibration test shall consist of 2 hours per axis in each three axes (X, Y, Z), Total 6 hours. 振幅 1.55mm, 頻率 10Hz-55Hz,時間 1 分鐘. X,Y,Z 3 個方向各 2 小時, 共 6 小時.	After the test the part shall meet specifications without any damage in appearance and performance except SPL. The SPL shall be in $\pm 4\text{dB}$ compared with initial one, Higher than 78 dB. 經測試後,單體除音壓外, 外觀及電氣特性須符合規格.輸出音壓變化量須在 $\pm 4\text{dB}$ 內, 且 $>78\text{dB}$.
5	Piezo ass'y Solder joint rally test 蜂鳴片焊點拉力測試	Piezo ass'y on the spot for each piece of wire, to exert the level of tension, the rate of 20mm/min, may have to bear the min.200g Rally 對蜂鳴片每一焊點的線材,施加水平拉力,速率 20mm/min,須可承受 min.200g 的拉力	The product which was tested can not be packed and deliver, it should be abandoned 測試后的產品不可包裝出貨, 以報廢處理

G. Recommended Temperature Profile For Reflow Oven 建議迴焊爐溫度曲線



Note: 245°C is Less than 15 sec. ,but only pass the lead free reflow once.

備注: 245°C不可超過 15 秒, 且只能過無鉛迴流焊一次。

H. 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 +105°C for 96 hours 置於+105°C環境中 96 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 $\pm 4\text{dB}$ compared with initial one, Higher than 78 dB. 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 $\pm 4\text{dB}$ 內, 且>78dB.
2	Low temp. test 低溫測試	After being placed in a chamber at -40°C for 96 hours 置於-40°C環境中 96 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 96 hours 置於+40°C, 相對濕度 90 $\pm 5\%$ 環境中 96 小時	
3	Temp. Cycle 溫度循環測試	The part shall be subjected to 5 cycles. 單體承受溫度循環測試 5 次.其循環內容如圖示. 3hours	

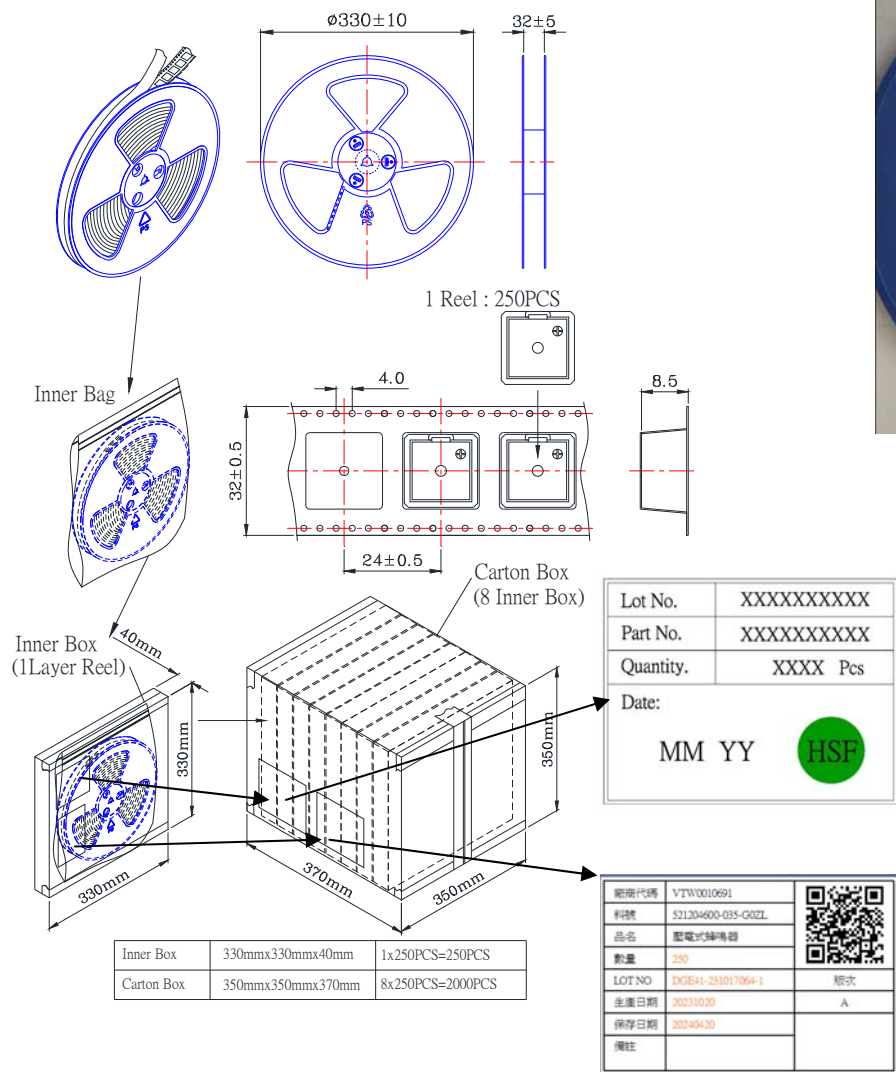
I. RELIABILITY TEST 信賴性測試

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) 96 hours continuous operation at +105°C with rated voltage applied. 在+105°C環境下,以額定電壓連續操作 96 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 ±4dB compared with initial one, Higher than 78 dB. 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±4dB 內, 且>78dB.

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

J. PACKING STANDARD 包裝規格



防潮卡位置

Packing requirements:

包裝要求:

1. Apply drying treatment before packing the product
產品裝袋前干燥處理
2. Vacuum package by MBB package
使用 MBB 包裝袋真空包裝
3. Add desiccant
加入去濕劑
4. Add moisture indication card
加入防潮標示卡

Barcode requirements

條碼標籤要求

只要更改紅字內容即可

內外箱條碼標籤批號後面箱號分別計算, 都從-1開始

批号:

後面-1為箱號,每一箱需不同.請接續-2-3往後

生產日期:

取標籤打印日期,格式為yyyyMMdd,不要有-或/

保存日期:

取生產日期半年后日期,格式為yyyyMMdd,不要有-或/

廠商代碼	VTW0010691	
料號	521204600-035-G0ZL	
品名	壓電式蜂鳴器	
數量	250	
LOT NO	DGE41-231017064-1	版次
生產日期	20231020	A
保存日期	20240420	
備註		

備註內容

二維碼內容如下:

廠商代碼/料號/數量/LOT No/版次/生產日期
如:
VTW0010691/521204600-035-G0ZL/250/DGE41-231017064-1/20231020