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SPECIFICATION FOR APPROVAL

承　　認　　書

Description	:	Piezo Audio Transducer
Kingstate Part No.	:	KMTG1303-1
Customer's Model No.	:	
Specification No.	:	POD-5167
Number Of The Edition	:	1.1

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
2011.10.21	10/21	Merry 2011.10.21

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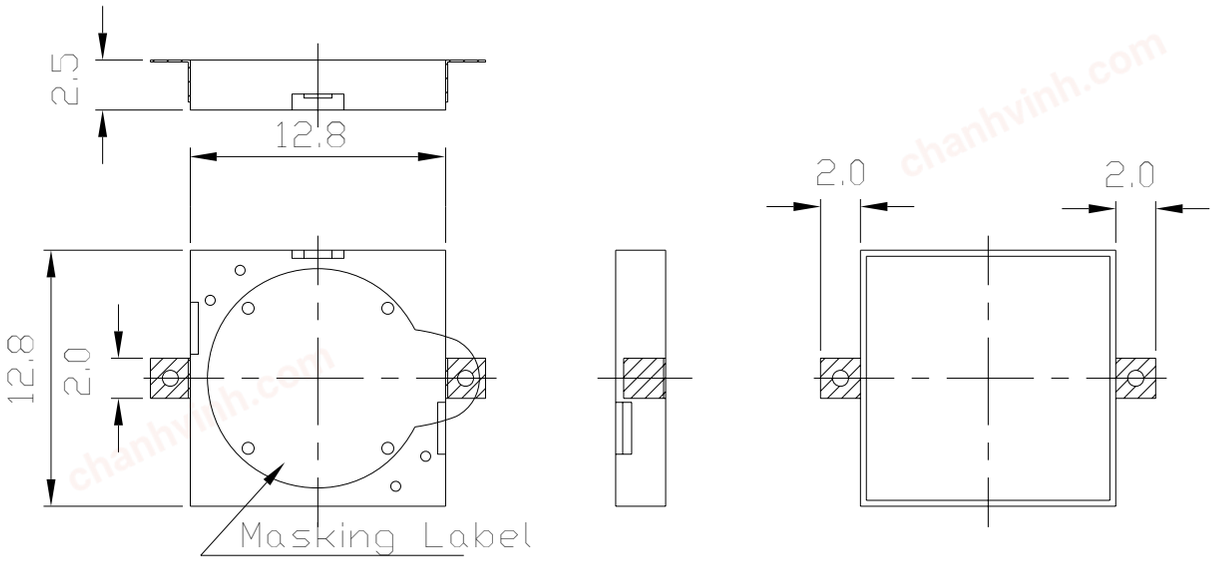
A. SCOPE 範疇

This specification applies piezo audio transducer, **KMTG1303-1**
此規格書適用於壓電式蜂鳴器，**KMTG1303-1**

B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Operating Volt. Range 最大操作電壓	Vp-p	MAX 25	
2	Current consumption 消耗電流	mA	MAX 5	at 5Vp-p,square wave,4.1KHz.
3	Sound pressure level 輸出音壓	dB	MIN 70	at 10cm/5Vp-p,square wave,4.1KHz
4	Electrostatic capacity 靜電容量	pF	16,000 ± 30%	at 1KHz/1V
5	Operating temp. 操作溫度	℃	-30 ~ +70	
6	Storage temp. 儲存溫度	℃	-40 ~ +85	
7	Dimension 尺寸	mm	L12.8 x W12.8 x H2.5	See appearance drawing 請參照外觀尺寸圖
8	Weight (MAX) 重量	gram	0.5	
9	Material 材質		LCP（Black） Washable	
10	Terminal 端子		SMD type	See appearance drawing 請參照外觀尺寸圖

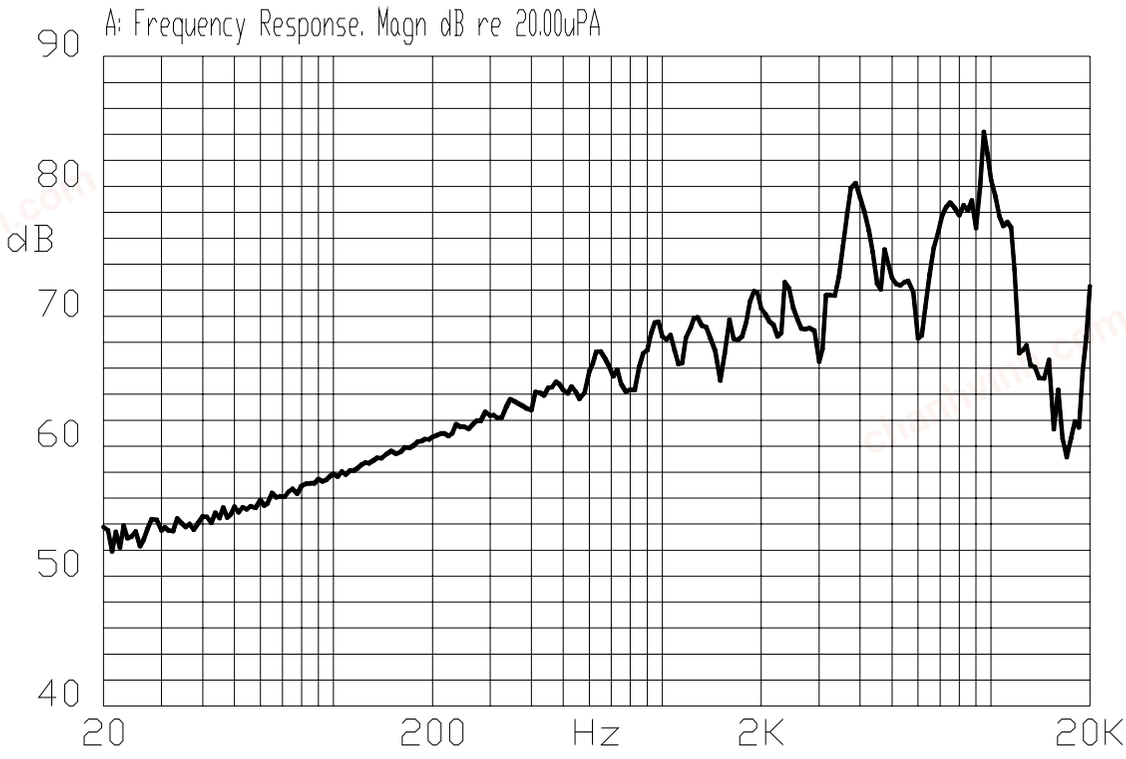
C. APPEARANCE DRAWING 外觀尺寸圖



Tol : ± 0.5
Unit: mm

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D. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線

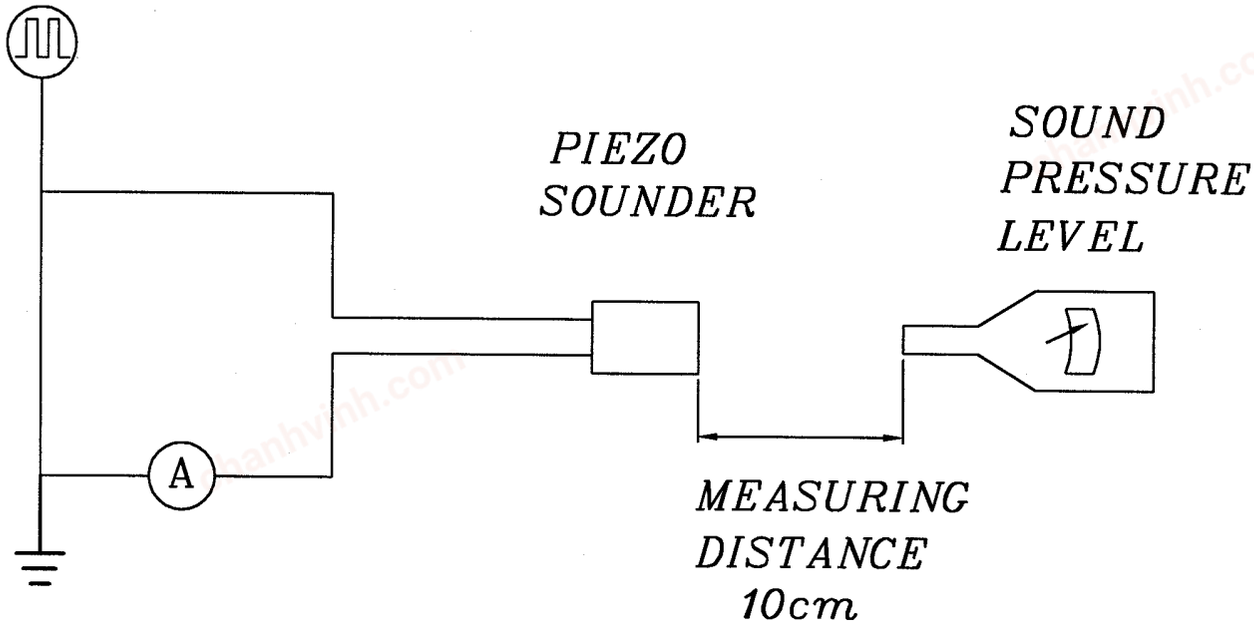


E. MEASURING METHOD 測量方法

S.P.L. Measuring Circuit 音壓測試接線圖

Input Signal: 5Vp-p,4.1kHz, Square Wave

輸入信號: 5Vp-p,4.1kHz,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

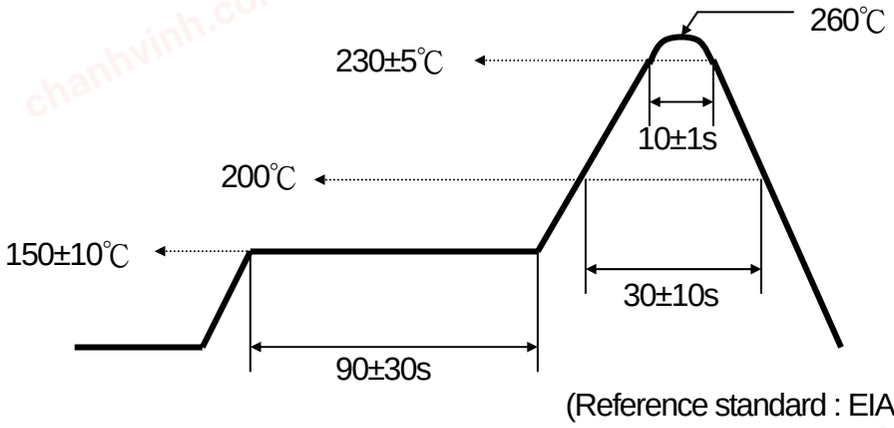
S.G : Hewlett Packard 33120A 函數信號產生器或同等品

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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 ±5℃ for 2 ± 0.5 second. 端子浸松香液中 5 秒後置於錫膏內,錫膏溫度:+230±5℃. 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+140 to +160℃ for 60 to 120 seconds. Ascending time up to +150℃ shall be longer than 30 seconds. Heating conditions shall be within 10 seconds at +230℃ min. But peak temperature shall be lower than +235℃,then being place in natural condition for 1 hour, sounder shall be measured 預熱條件為加熱到+140 to +160℃為 60 到 120 秒. 加熱到 150℃時間須長於 30 秒. 焊接條件為 10 秒內最低+230℃, 最高不可超過+235℃. 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 +270±5℃ 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. +270±5℃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 is applied to each terminal is axial direction. 對每一端子以軸方向, 施 9.8N 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 ±10dB compared with initial one. 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±10dB 內.

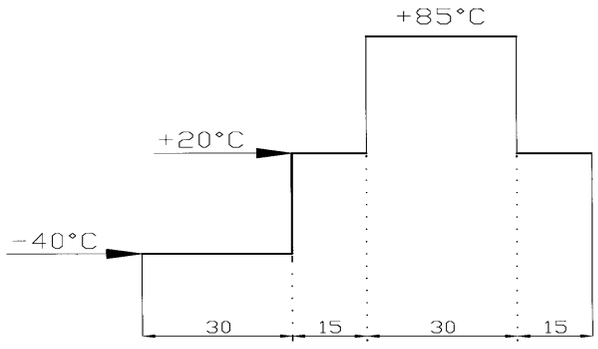
G. Recommended Temperature Profile For Reflow Oven 建議迴焊爐溫度曲線



(Reference standard : EIAJ ED-4702)

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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 +85℃ for 240 hours 置於+85℃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 ±10% compared with initial ones .The SPL should be in ±10dB 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±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℃ 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±5% relative humidity for 240 hours 置於+40℃, 相對濕度 90±5% 環境中 240 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.  Unit : minute	

I. RELIABILITY TEST 信賴性測試

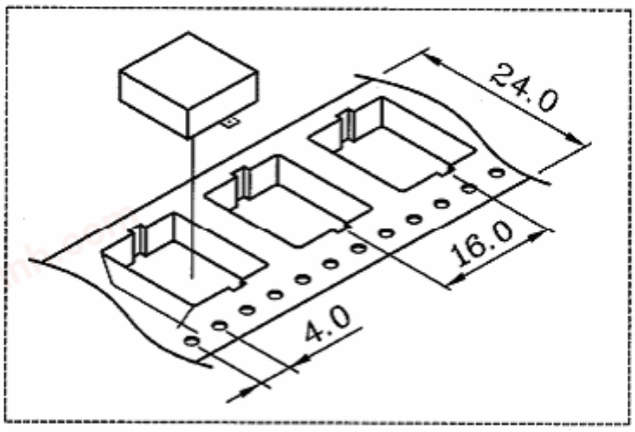
No.	Item	Test condition	Evaluation standard
1	Operating life test 壽命測試	1.Continuous life test 高溫壽命測試(連續) 240 hours continuous operation at +55℃ with maximum rated voltage applied. 在+55℃環境下,以最大額定電壓連續操作 240 小時. 2.Intermittent life test 室溫壽命測試(間歇) A duty cycle of 1 minute on, 5 minutes off, a minimum of 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.	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. 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±10%內. 輸出音壓變化量須在±10dB 內.

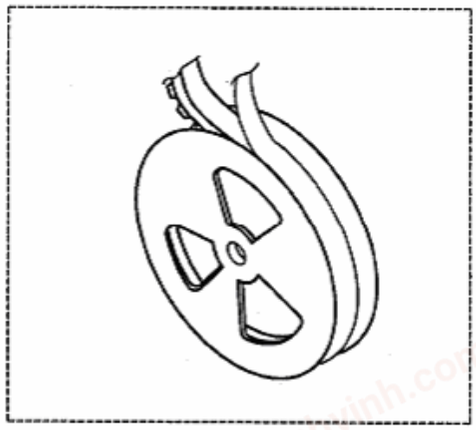
TEST CONDITION.

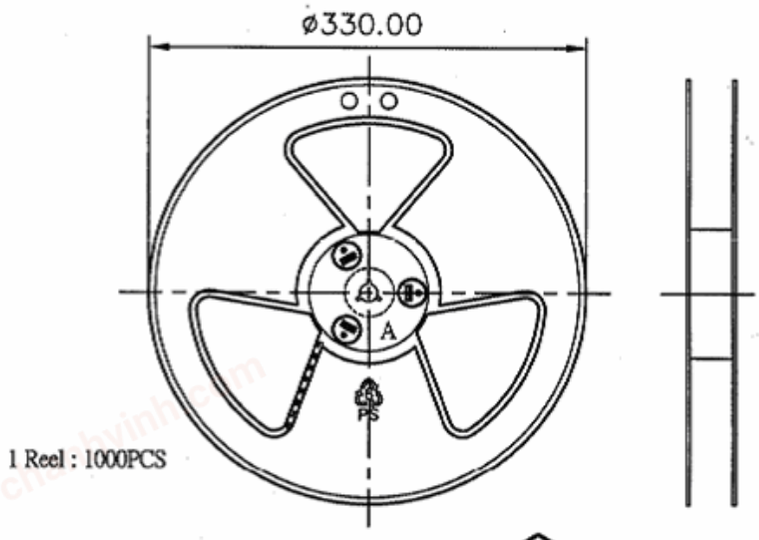
Standard Test Condition	:	a) Temperature : +5 ~ +35℃	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件	:	a) 溫度 : +5 ~ +35℃	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	:	a) Temperature : +25 ± 2℃	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件	:	a) 溫度 : +25 ± 2℃	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

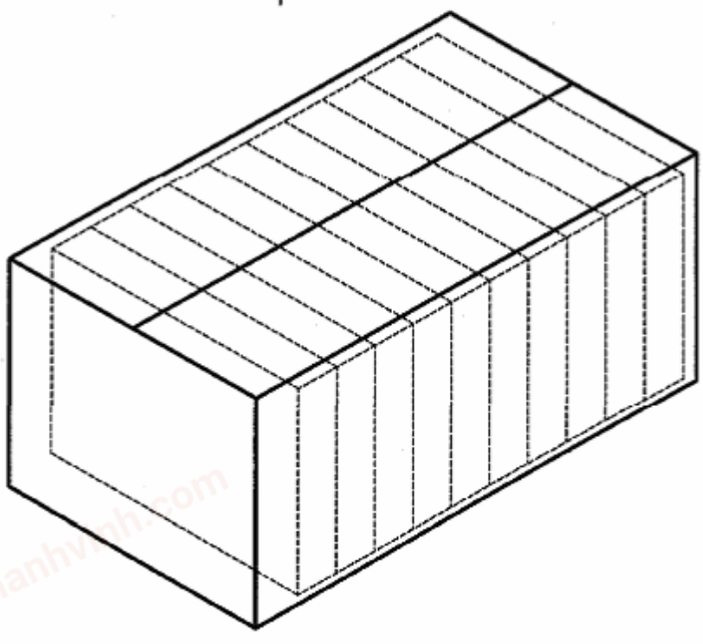
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J. PACKING STANDARD 包裝規格









Inner Box	330mmx330mmx30mm	1x1000PCS=1000PCS
Carton Box	350mmx350mmx370mm	10x1000PCS=10,000PCS