

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : **Piezo Transducer**

Kingstate Part No. : **KMTG1906**

Customer's Model No. : \_\_\_\_\_

Specification No. : **DOD-3363**

Number Of The Edition : **1.2**

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by

# SPEC SHEET REVISION RECORD

## 成品承認書修訂記錄

DRAWING NO. : DOD-3363 圖 號: DOD-3363		P/N: KMTG1906 料 號:KMTG1906	
REVISE DATE 修訂日期	APPLICANT 提出者	Version 版次	Revise 修訂記錄內容
2021/10/15	Mars	1.1	製作 KMTG1906 規格
2022/07/11	Mars	1.2	修改 2D 圖 增加包裝規格

Preliminary

## A. SCOPE 範疇

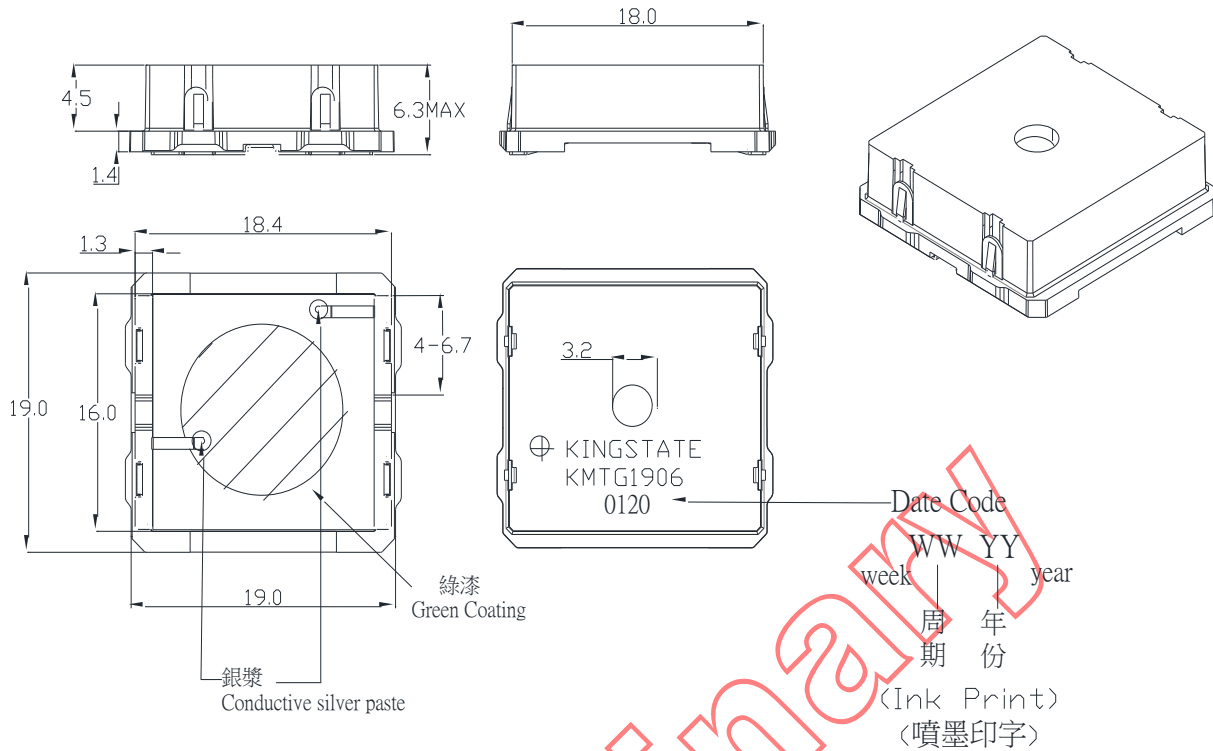
This specification applies piezo transducer, **KMTG1906**

此規格書適用於壓電式蜂鳴器, **KMTG1906**

## B. SPECIFICATION 規格

No.	Item	Unit	Specification	Condition
1	Max Operating Volt 最大操作電壓	Vo-p	MAX 18	
2	Current consumption 消耗電流	mA	MAX 38	at 12Vp-p,square wave,3.0KHz. Measure by FLUKE 87
3	Sound pressure level 輸出音壓	dB	MIN 90	at 10cm/12Vp-p,square wave,3.0KHz
4	Electrostatic capacity 靜電容量	pF	35,000 ± 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	(W)19.0 x (D)19.0 x (H)6.0	See appearance drawing 請參照外觀尺寸圖
8	Weight (MAX) 重量	gram	1.6	
9	Material 材質		LCP	
10	Terminal 端子		SMD Type	See appearance drawing 請參照外觀尺寸圖
11	Environmental Protection Regulation 環保法規		RoHS 2.0	
12	Storage life 保存期限	month	6	6 months preservation at room temp.(25±3°C), Humidity40% 在室溫下 25±3°C,濕度 40%以下可保存 6 個月.
13	MSL 濕敏指數		2a	≤30°C/60%RH 24H Floor life 小於或等於 30°C/60%RH 24 小時車間壽命

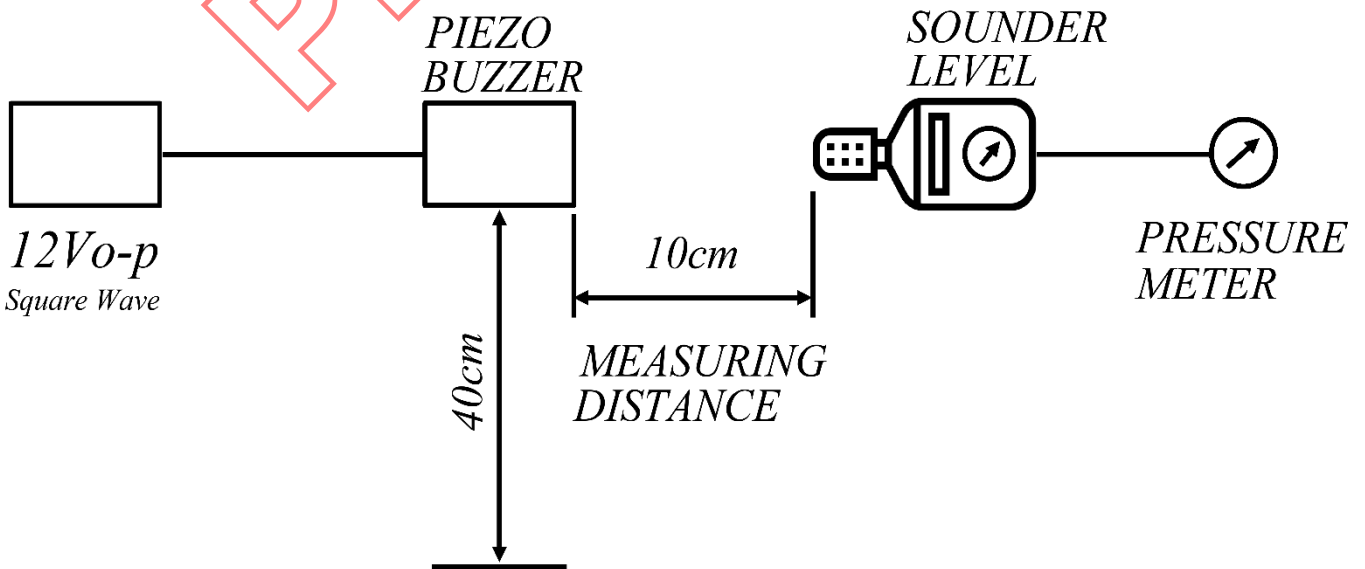
**C. APPEARANCE DRAWING 外觀尺寸圖**



**Tol : ± 0.5**  
**Unit : mm**

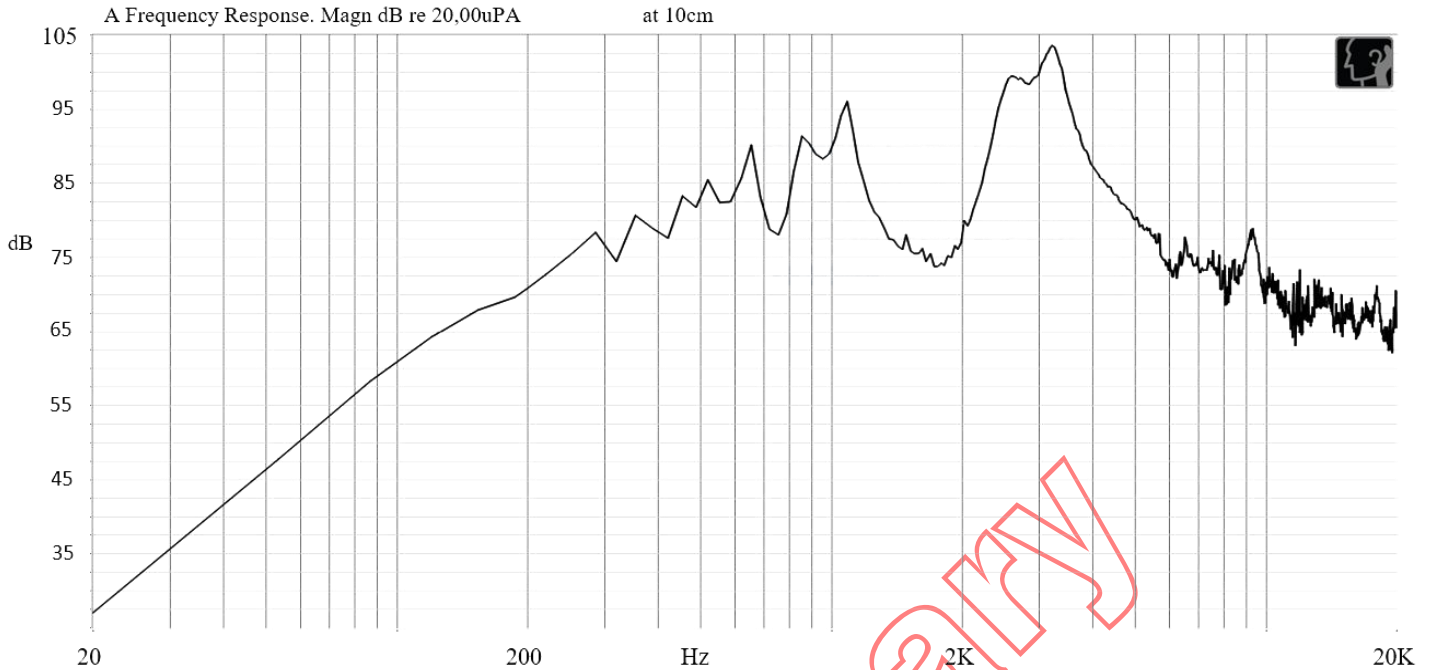
**D. MEASURING METHOD 測量方法**

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

## E. TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線



## 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 $3\pm 1$ seconds. 端子部份浸入松香溶液 5 秒後,再浸入 $+270\pm 5^{\circ}\text{C}$ 熔融焊錫槽中 $3\pm 1$ 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 sounder's body in solder bath of $+300\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds or $+260\pm 5^{\circ}\text{C}$ for $10\pm 1$ seconds. 距離端子根部 1.5mm 的位置,浸入 $+300\pm 5^{\circ}\text{C}$ 的焊錫槽 $3\pm 0.5$ 秒,或 $+260\pm 5^{\circ}\text{C}$ 的焊錫槽 $10\pm 1$ 秒。	No interference in operation 操作上無任何不良。
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 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 $\pm 10\text{dB}$ 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 +105°C for 240 hours 置於+105°C環境中 240 小時	
2	Low temp. test 低溫測試	After being placed in a chamber at -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 85±5% relative humidity for 240 hours 置於+40°C, 相對濕度 85±5% 環境中 240 小時	
4	Temp. cycle test 溫度循環試驗	<p>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:</p>	<p>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.</p> <p>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.</p>

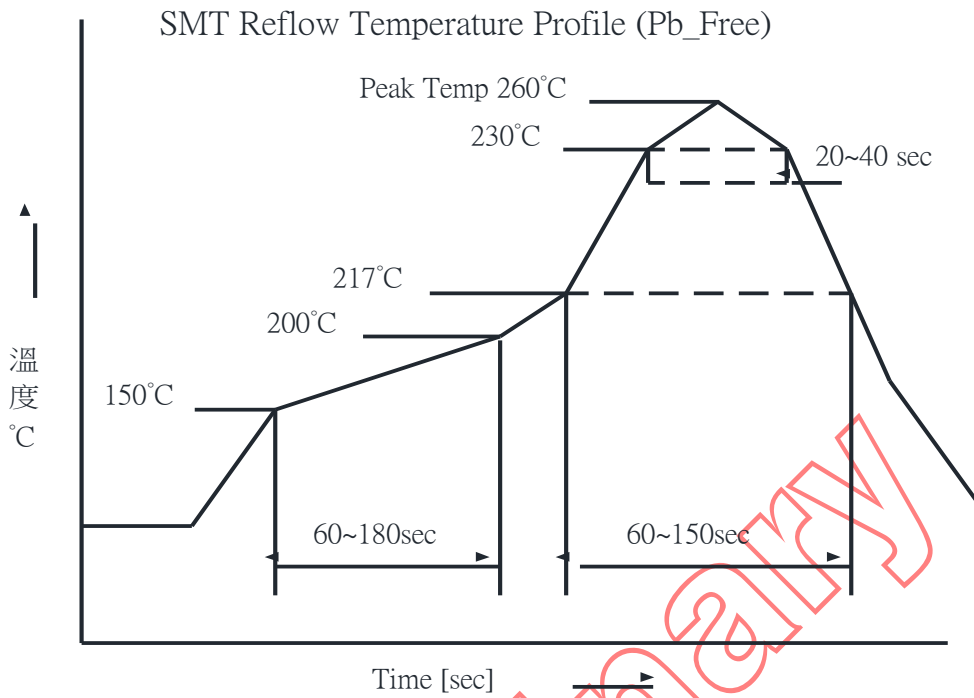
## H. RELIABILITY TEST 信賴性測試

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) 48 hours continuous operation at +105°C with 18 Vo-p and set the frequency at 2KHz. 在+105°C環境下,以 18v-op 在 2khz 電壓連續操作 48 小時</p> <p>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.</p>	<p>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.</p> <p>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.</p>

### TEST CONDITION.

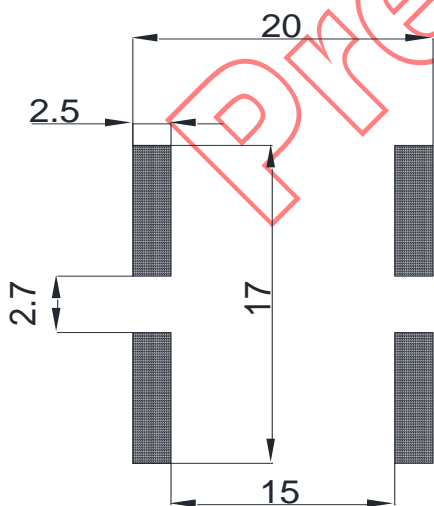
Standard Test Condition	:	a) Temperature : +5 ~ +35°C	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件	:	a) 溫度 : +5 ~ +35°C	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	:	a) Temperature : +25 ± 2°C	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件	:	a) 溫度 : +25 ± 2°C	b) 濕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

# I. Recommended Temperature Profile for Reflow Oven 推薦迴流焊曲線



\*Reflow can't over 1 time. 迴流焊次數不超過1次.

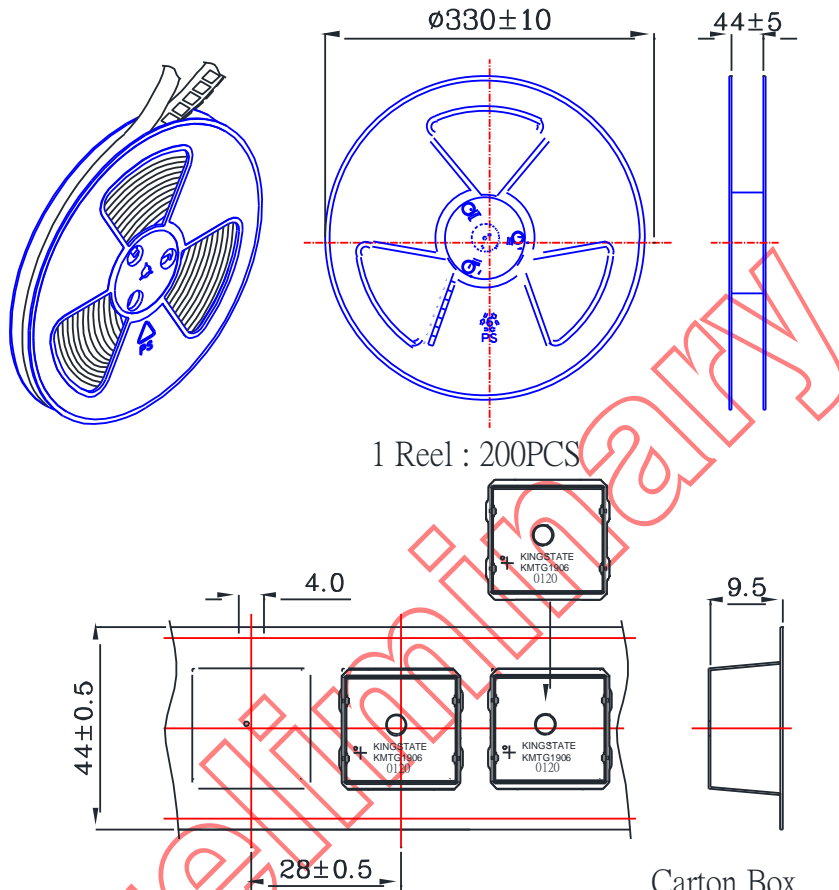
# J. Recommended land pattern 建議基板設計



## J.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.

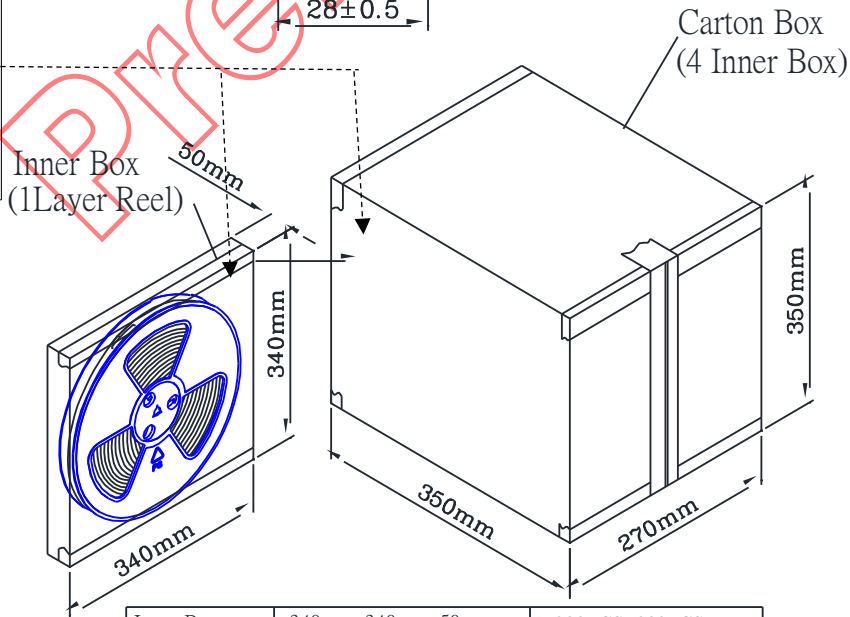
外箱須標示最小包裝單位，並註明產品型號、數量及檢驗批號，必須是物品儲藏或運輸過程中可防止造成損傷的包裝。



1 Reel : 200PCS

Lot No.	XXXXXXXXXX
Part No.	XXXXXXXXXX
Quantity	XXXX Pcs
Date:	
WWYY	HSF
KINGSTATE ELECTRONICS CORP.	

\* The label stuck on inner boxes and the outer of carton.



Inner Box	340mmx340mmx50mm	1x200PCS=200PCS
Carton Box	350mmx270mmx350mm	4x200PCS=800PCS

