

# SPECIFICATION FOR APPROVAL

## 承 認 書

Description : Electret Condenser Microphone

Kingstate Part No. : KECH2732TBL-SN70

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

Specification No. : MKS-5097

Number Of The Edition : 1.1

CUSTOMER'S APPROVED SIGNATURE		

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Approved by	Checked by	Issued by
 2013.03.12	 2013.03.12	Nek 03/11/13'

## A. SCOPE 範疇

This specification applies electret condenser microphone, **KECH2732TBL-SN70**

此規格書適用於電容式麥克風 **KECH2732TBL-SN70**

## B. SPECIFICATION 規格

No.	Item	Symbol	Unit	Specification	Condition
1	Directivity 方向性			Omni directional 全指向	
2	Sensitivity 靈敏度	<b>S</b>	dB	-32±3	f=1KHz, 1Pa 0dB=1V/Pa
3	Standard operating voltage 標準操作電壓	<b>Vs</b>	V D.C.	3.0	
4	Output impedance 輸出阻抗	<b>Zout</b>	KΩ	Less than 2.0	f=1KHZ, 1Pa
5	Max operating voltage 最大操作電壓		V D.C.	10	
6	Sensitivity reduction 減電壓靈敏度	$\Delta S-Vs$	dB	-3	f=1KHz, 1Pa Vs=3.0V D.C. to 1.5V D.C.
7	Frequency 頻率	<b>f</b>	Hz	50 ~ 10,000	
8	Max. current consumption 最大耗電流	<b>IdSS</b>	mA	0.5	Vs=2.0V D.C. RL=2.2KΩ
9	Signal to noise ration 訊號對雜音比	<b>S/N</b>	dB	More than 70	f=1KHz, 1Pa A weighted
10	Operation temp. 操作溫度		°C	-20 ~ +70	
11	Storage temp. 儲存溫度		°C	-20 ~ +70	
12	Dimension 尺寸		mm	φ6.0 x 2.7	See appearance drawing 請參照外觀尺寸圖
13	Weight (MAX) 重量		gram	0.22	
14	Material 材質			AL 鋁	
15	Environmental Protection Regulation 環保法規			HF	

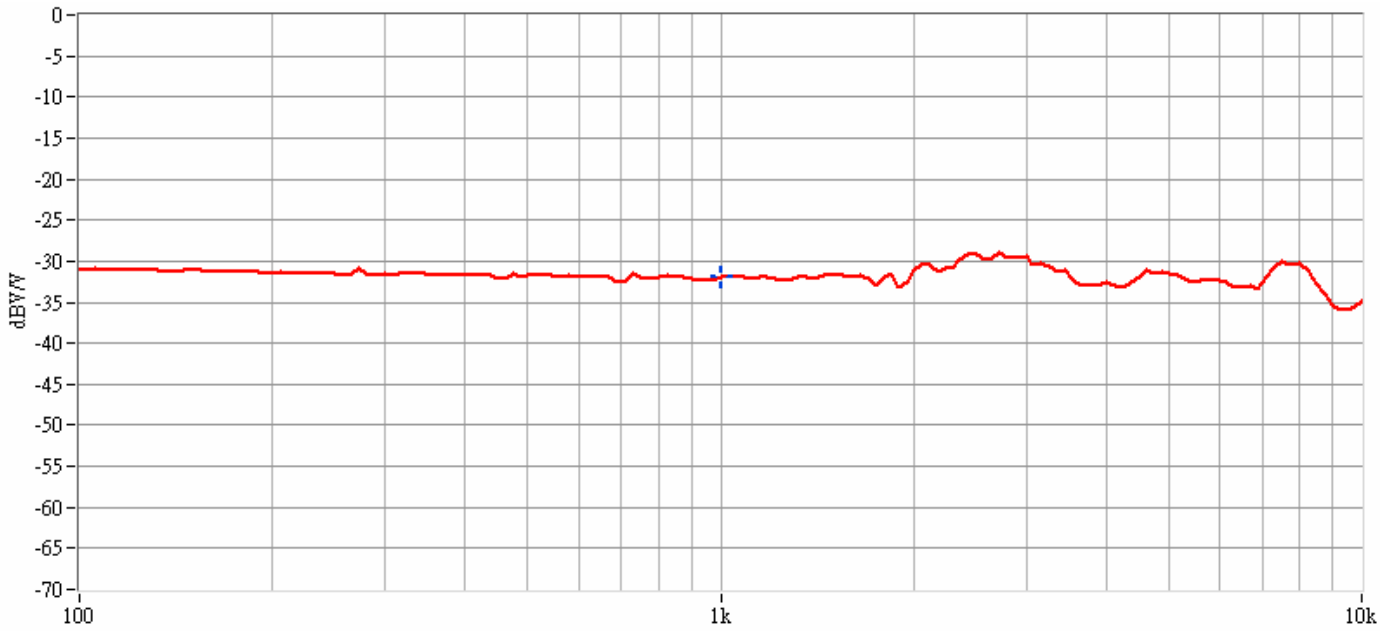
We use "Pascal (Pa)" indication of sensitivity as per the recommendation of I.E.C. (International Electro technical Commission). The Sensitivity of "Pa" will increase 20dB comparing with "ubar" indication.

Example: -60dB (0dB=1V/ubar) = -40dB (1V/Pa)

依I.E.C.(國際電子協會)建議,以"Pa"為靈敏度標示單位比"ubar" 靈敏度標示單位增加20dB

例如: -60dB (0dB=1V/ubar) = -40dB (1V/Pa)

**C.TYPICAL FREQUENCY RESPONSE CURVE 頻率響應曲線**



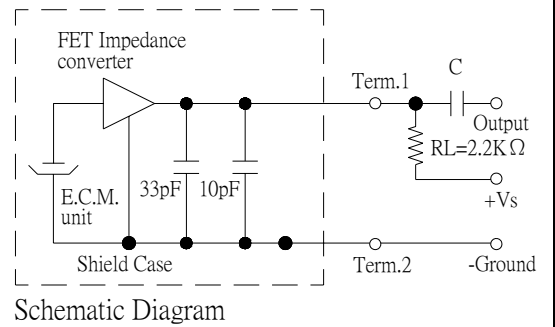
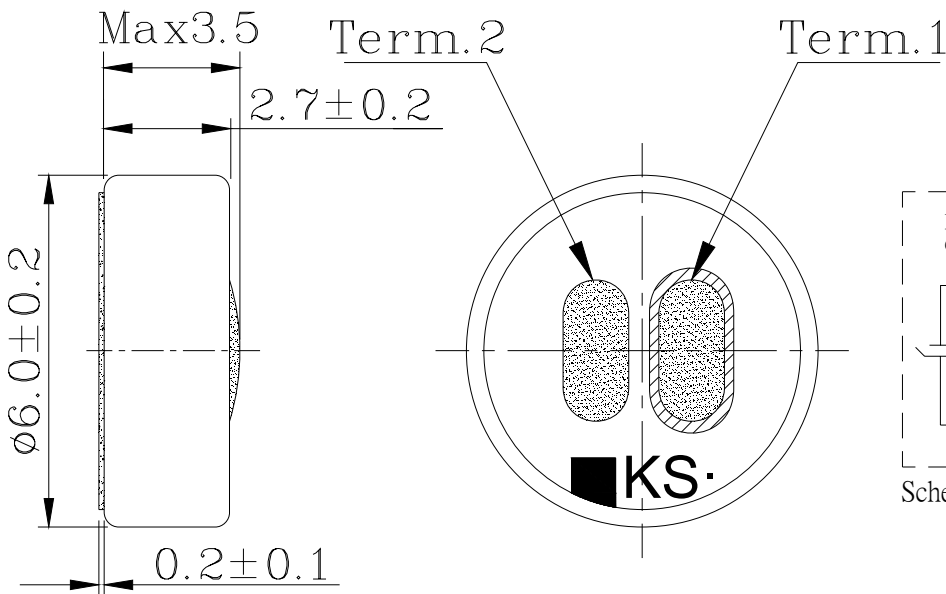
**D. APPEARANCE DRAWING**

外觀尺寸圖

**E. MEASUREMENT CIRCUIT**

測量線路

Fig D-1 Microphone with rubber holde



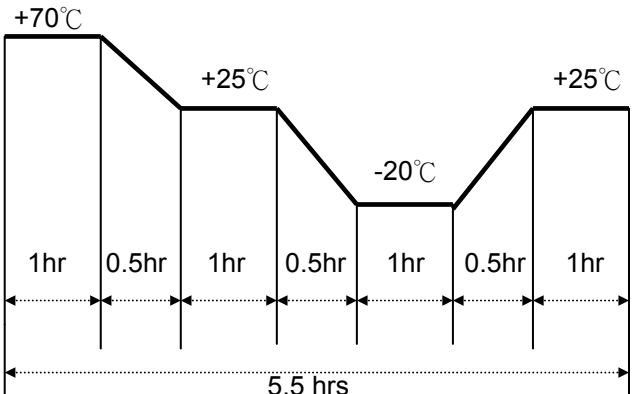
Unit:mm

$RL=2.2K\Omega$

## F. MECHANICAL CHARACTERISTICS 機械特性

No.	Item	Test condition	Evaluation standard
1	Soldering Heat Resistance 焊錫耐熱性	Soldering iron of $+270\pm 5^{\circ}\text{C}$ should be placed on the terminal for $2\pm 0.5$ seconds. 端子部份置於 $+270\pm 5^{\circ}\text{C}$ 烙鐵上 $2\pm 0.5$ 秒。	No interference in operation 操作無任何不良
2	PCB Wire Pull Strength PCB 線材拉力	The pull force shall be applied to double lead wire : Horizontal 4.9N(0.5kg) for 30 seconds. 雙線材水平方向施以 4.9N(0.5kg)的力量,30 秒。	No damage and cutting off. 不鬆動,不脫落。
3	Vibration Test 振動測試	The part shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55hz band of vibration frequency to each of 3 per-pendicular 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。	After any tests, the sensitivity to be within $\pm 3\text{dB}$
4	Drop Test 落下測試	The part unit without packaged must be subjected to each 3 drops at three axes from the height of 1 meter to 20 mm thick wooden board. 未包裝麥克風單體從 1 公尺高處, X.Y.Z.3 個方向,各 3 回,落於 20mm 厚木板上。	測試其靈敏度須與原測試值的差異不超過 $\pm 3\text{dB}$ 。

## G. ENVIRONMENTAL TEST 環境試驗

No.	Item	Test conditions	Evaluation standard
1	High temp. test 高溫測試	After being placed in a chamber at $+70^{\circ}\text{C}$ for 72 hours. 置於 $+70^{\circ}\text{C}$ 環境中 72 小時	After any tests, the sensitivity to be within $\pm 3\text{dB}$ of initial sensitivity after 6 hours of conditioning at $+25^{\circ}\text{C}$ . 經測試後麥克風,須靜置於 $+25^{\circ}\text{C}$ (室溫)環境中 6 小時後.測試其靈敏度須與原測試值的差異不超過 $\pm 3\text{dB}$ 。
2	Low temp. test 低溫測試	After being placed in a chamber at $-20^{\circ}\text{C}$ for 72 hours. 置於 $-20^{\circ}\text{C}$ 環境中 72 小時	
3	Humidity test 相對濕度測試	After being placed in a chamber at $+40^{\circ}\text{C}$ and $90\pm 5\%$ relative humidity for 240 hours. 置於 $+40^{\circ}\text{C}$ , 相對濕度 $90\pm 5\%$ 環境中 240 小時	
4	Temp. cycle test 溫度循環測試	The part shall be subjected to 10 cycles. One cycle shall be consist of : 單體承受溫度循環測試 10 次,其循環內容如圖示: 	

### TEST CONDITION.

Standard Test Condition	: a) Temperature : $+5 \sim +35^{\circ}\text{C}$	b) Humidity : 45-85%	c) Pressure : 860-1060mbar
一般測試條件	: a) 溫度 : $+5 \sim +35^{\circ}\text{C}$	b) 濕度 : 45-85%	c) 氣壓 : 860-1060mbar
Judgement Test Condition	: a) Temperature : $+25 \pm 2^{\circ}\text{C}$	b) Humidity : 60-70%	c) Pressure : 860-1060mbar
爭議時測試條件	: a) 溫度 : $+25 \pm 2^{\circ}\text{C}$	b) 濕度 : 60-70%	c) 氣壓 : 860-1060mbar

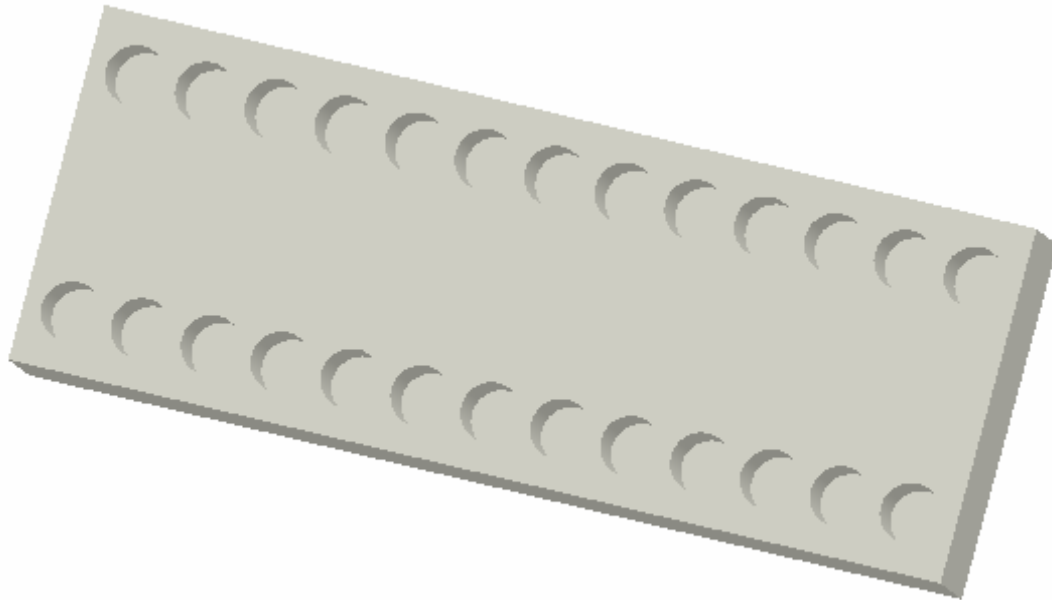
## H. Regarding the Soldering operation 焊接要求

ECM contains a FET with microphone body .The FET easy to damageable from excessive heat and electrical Shock. Proper attention for the soldering work is required same as followings.

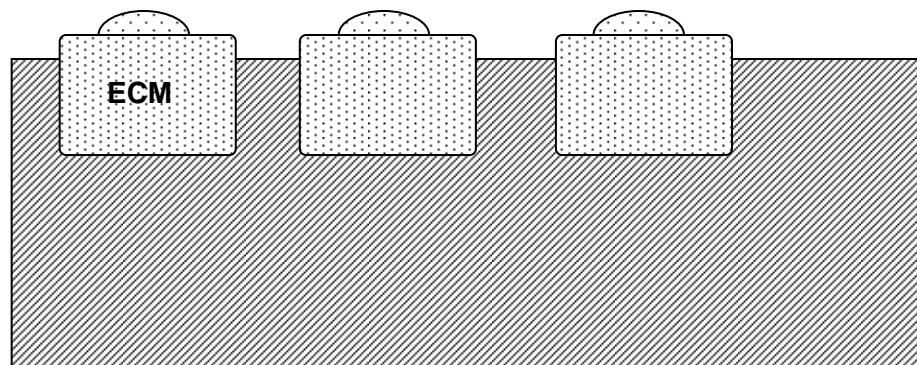
駐極體電容式麥克風里都有一個 FET，這種 FET 在過熱和電流撞擊時容易損壞，所以對於焊接應遵循以下操作：

1. Soldering temperature should be controlled under  $350\pm 10^{\circ}\text{C}$ 。  
焊接溫度保持  $350\pm 10^{\circ}\text{C}$  的範圍。
2. Soldering should be accomplished within 2 seconds at terminal so as not to be over heated.  
在每一個端的焊接應在 2 秒內完成，以防過熱。
3. Do not make be cavity at the surface of lead lump on the PCB. Wiring board.  
(Opened cavity will influence to the sensitivity of ECM)  
禁止麥克風單體焊接。(否則會影響駐極體電容傳聲器的靈敏度)
4. Operating design for heat sink pad is same as below.  
最理想的散熱裝置按以下設計。

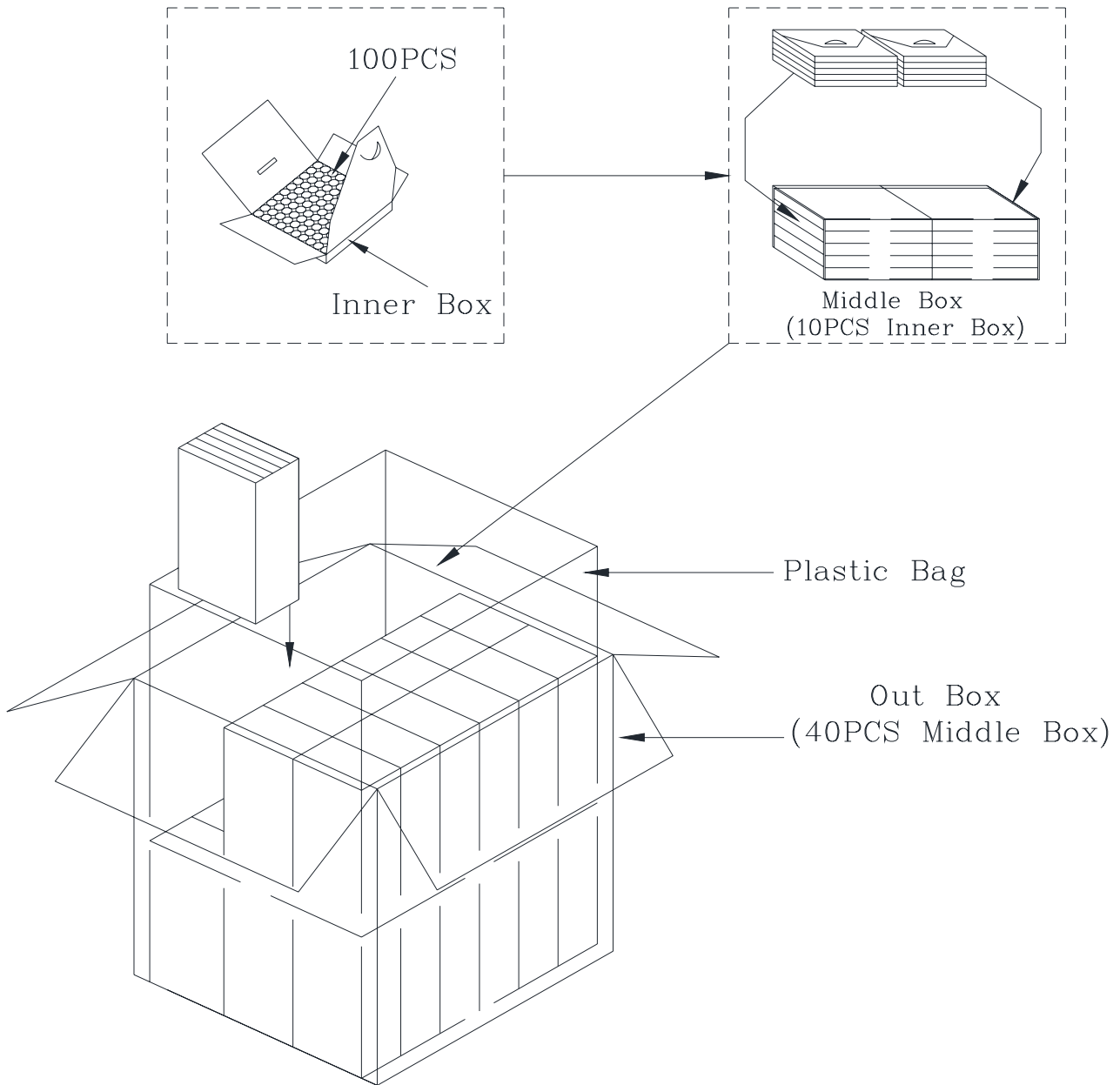
### Welding Fixture



Material Al



# I. PACKING STANDARD 包裝規格



Inner Box	61mm*61mm*5mm	100PCS*1=100PCS
Middle Box	127mm*65mm*28mm	100PCS*10=1000PCS
Out Box	230mm*230mm*300mm	1000PCS*40= 40000PCS