CUSTOMER'S NAME

激偉有限公司

ALPHA REFERENCE NO.
SP14040004

SPECIFICATION

PART NO.	ALPHA MODEL NAME
	RA0802F-30-4R-LB10K

MODEL NAME
MODEL NO.

APPROVAL

PREPARED BY	REVIEWED BY	APPROVED BY
鄧 2014.4.03 煥苑		李 2014-4-3. 延玲

ALPHA

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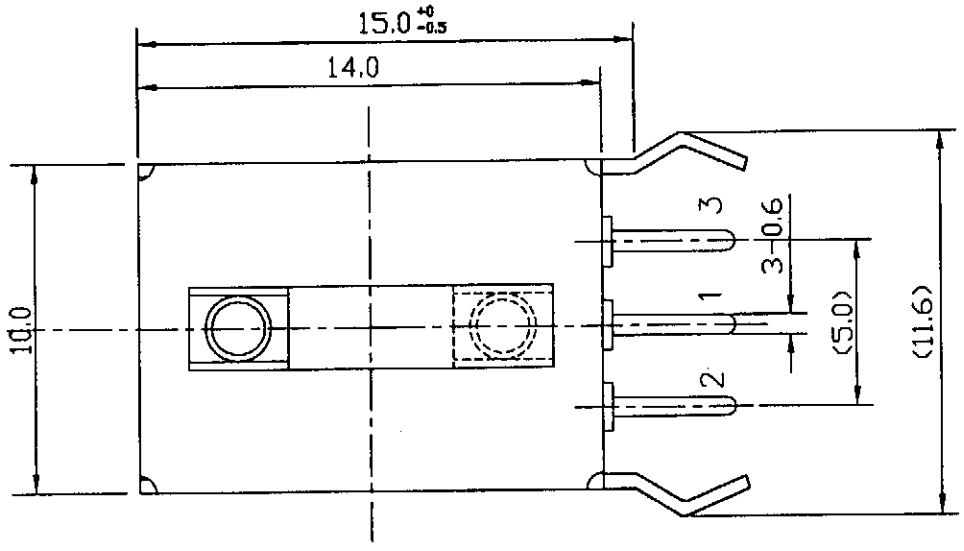
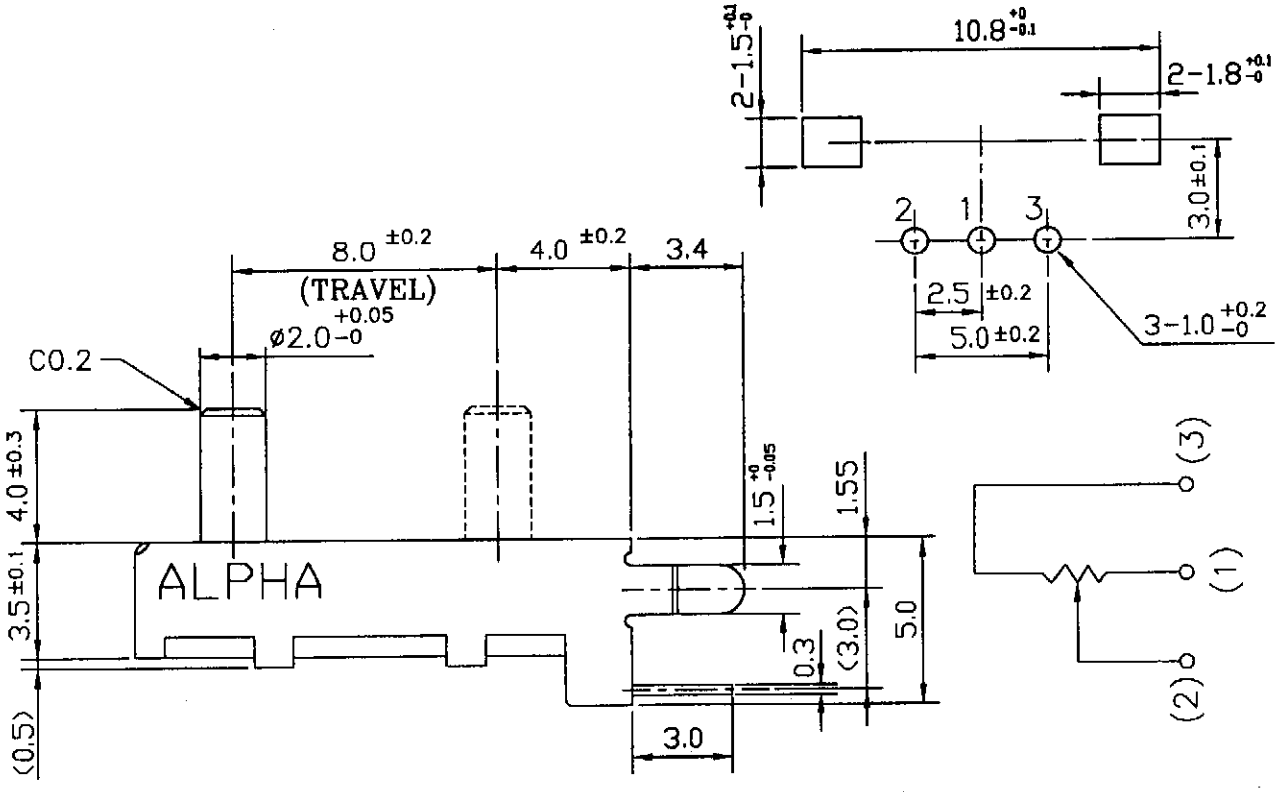
THIRD ANGLE PROJECTION



P.C.B. MOUNTING HOLE DIMENSIONS



				RA0802F-30-4R-XXX-(001)
No.	DATE	DESCRIPTION	PART No.	NAME

TOL. UNLESS OTHERWISE STATED			DIMENSION	SCALE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING No.
less than	10	± 0.3	m.m.		李 103.8.14.		呂 102.8.14 方誠	RA0802F
above	10~30	± 0.5						
above	30~100	± 1.0						
above		± 3°						

TAIWAN ALPHA ELECTRONIC CO., LTD.

1、一般事項 General：

1.1 適用範圍 Scope：

此規格為 RA0802F 機種適用於消費性產品上。

This specification is applied to model RA0802F types mainly used for consumer products.

1.2 Operating temperature range 使用溫度範圍 -40～+85°C

Storage temperature range 保存溫度範圍 -40～+105°C

1.3 Test conditions 試驗條件

Standard atmospheric conditions 標準狀態

Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows:
Ambient temperature: 5～35°C Relative humidity : 45～85%
Air pressure: 86 kPa to 106 kPa.

無特別規定之實驗及測定時以溫度 5～35°C，相對溼度 45～85%，氣壓 86～106 kPa 之標準狀態測定。

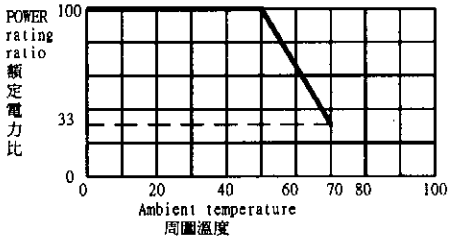
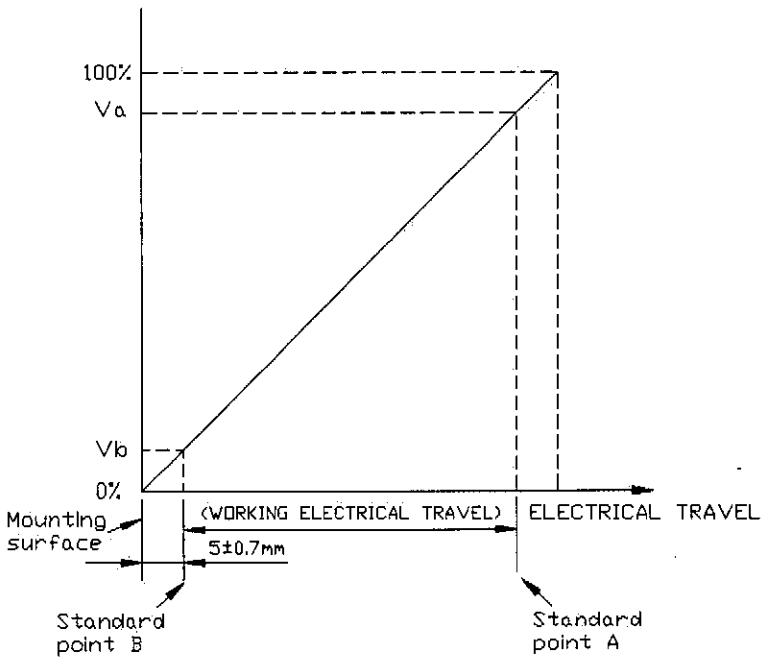
If there is any doubt about the results, measurements shall be made within the following limit:
Ambient temperature:20±2°C Relative humidity : 60～70%
Air pressure: 86 kPa to 106 kPa.

發生判定疑問或另有特別要求則以基準狀態(溫度 20±2°C，相對溼度 60～70%氣壓 86～106 kPa)為準測定。

2、 Mechanical characteristics 機械的性能

	Item 項目	Conditions 條件		Specifications 規格
2.1	Operating Stroke 操作距離			8±0.2 mm
2.2	Operating force 作動力	Traveling speed 移動速度 4 mm/sec 秒	Standard atmospheric conditions 常溫 5°C TO 35°C	<120 gf-cm
2.3	Noise 摺動雜音	Refers to JIS C6443 依 JIS C6443 測定法		Less than 100mV 100 mV 以下
2.4	Braking force 把柄止動強度	1 Kgf at a 2mm position from the mounting surface 1 Kgf 力量（固定面起 2mm 處測定）。		Without excessive play or poor contact 無顯著鬆動，接觸不良
2.5	Side thrust of the lever 把柄橫擠壓強度	A static load of 1 Kgf shall be applied for 10 sec at the 2mm position from the mounted plate in the direction perpendicular to the axial direction, with the potentiometer mounted in the assembly conditions 本體以螺絲固定於底板上，固定面起 2mm 位置，在於把柄移動方向垂直之方向加 1 Kgf 靜負荷 10 秒。		Without deformation or damage in the sliding part and contact part 操作部位及關聯部品不可有顯著變形及破損。
2.6	Thrust of tensile lever 把柄擠壓引張強度	Thrust of tensile lever static load of 3Kgf shall be applied to the potentiometer in the lever direction for 10 sec 於把柄垂直之端面方向，擠壓或引張方向加 3 Kgf 靜負荷重 10sec 以上		Without unusual sliding behavior and damage or play in the lever and unusual sliding. 柄不能有破損滑動異常。

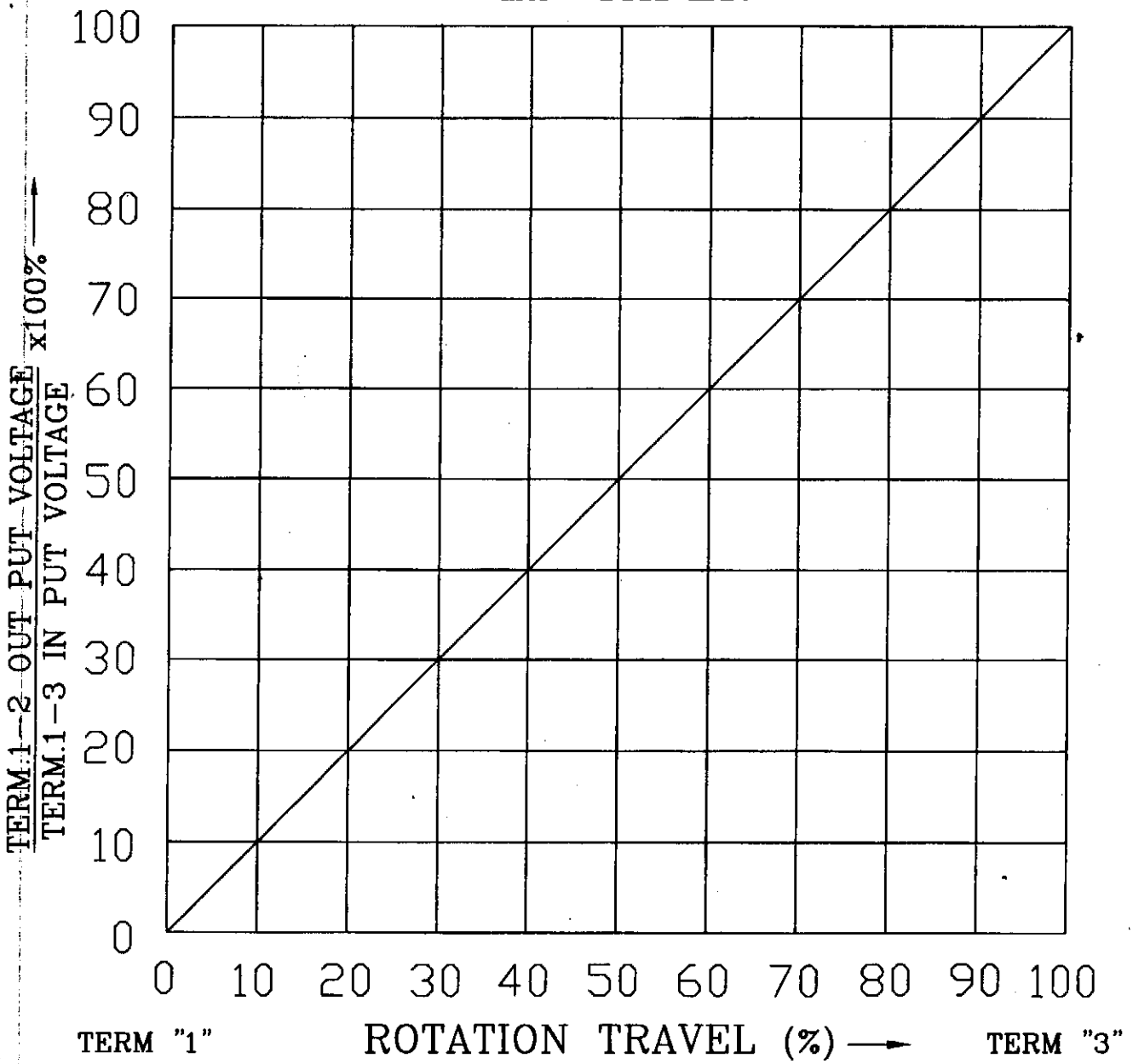
2.7	Lever wobble 把柄橫振	A torsion moment of 150 gf-cm shall be applied at thelever in a direction perpendicular to the axial direction and then the displacement shall be measured. 於把柄頭端加 150gf-cm 之力矩，與把柄移動方向相對應之垂直方向作彎曲測定	2 (2 x L / 25) mm P 、 P or less L=length of lever L=把柄之長度
2.8	Distance form the center of the lever 把柄之偏心	After sliding lever as far as it will go in each direction, the distance from the center of the lever to the middle of the mounting screw hole shall be measure at the both ends 把柄對固定孔中心作單側測定	0.5mm or less on each end 單側 0.5mm 以下
2.9	Resistance to soldering heat 錫耐熱性	Bit temperature: 300°C or less Application time of soldering iron:3 sec or less 溫度 300°C 以下，時間 3 秒以內	Change in total resistance is relative to the value before test: ±30%without excessive looseness of terminals and contact failure 全阻值初期值±30%以內 端子不能有顯著的接觸不良發生
2.10	Slide life test Without load 無負載壽命測試	One complete cycle is having the lever travel from origin to full displacement (8mm) and back. In life test, the samples are subjected to a working speed of 800 cycles/hr for a total of 100,000+/-200 cycles. 無負載壽命測試，移動速度 800 回/時(往復 1 次 1 回)，合計 100,000+/-200 次的滑動。	After Life Test : Total resistance : +/-30% Noies：200mV MAX Operating force : < 150gf 壽命測試後： 全阻值變化: +/- 30% 雜音：200mV 最大 滑動力: < 150gf 以內
3、Electrical characteristics 電氣的性能			
3.1	Nominal total resistance 全阻抗值許容差		4.7 KΩ±20%
3.2	Linearity 線性	LB Taper refers to the graph shown in 3.5 Output Characteristic. LB Taper 參照表 3.5 輸出特性	±2%

<table>
<tr><td>3.3</td><td>Rating Power
額定功率</td><td>Power rating is based on continuous full load operation at the maximum voltage between terminal 1 and 3.power rating vs. ambient temperature shall be as denoted on the following graph.
端子１～３間連續負載後之功率最大功率周圍溫度對功率影響之曲線如下圖表示
 
</td><td>0.05W</td></tr>
<tr><td>3.4</td><td>Rated voltage
額定電壓</td><td>Rated voltage|(額定電壓) E=√PR
P：rating power (額定功率)
E：Rated voltage (額定電壓)
R：nominal total resistance(全阻抗值)
Maximum operating voltage
最高使用電壓
when the rated voltage exceeds the maximum operating voltage, the maximum operating voltage becomes the rated voltage.
額定電壓超過最高使用電壓時，最高使用電壓為額定電壓</td><td>D.C 18V</td></tr>
<tr><td>3.5</td><td>Output Characte-ristic
輸出特性</td><td> 
</td><td>Resistance change characteristic.
Measure when moving standard point B → standard point A
The 100% applied voltage between 1-3 ,when ouput is Vb=10% slider is placed at index point B,it much be 5±0.7mm from mounting surface
Standard point A's output Va → 90±2%
阻值變化特性.
於 1-3 端施加 100%電壓，從 B 點量測至 A 點
Va 相對輸出為 90±2%
Vb 相對輸出為 10%時滑柄位置在 5±0. 7mm 處。</td></tr>
</table>

3.6	Insulation resistance 絕緣阻抗	A voltage of 250 V DC shall be applied for 1 min, after which measurement shall be made. DC 250 V 1 分鐘	Between individual terminals and frame/shaft/lever. 在端子，固定架，把柄間	100MΩ or more 100MΩ 以上
3.7	Dielectric strength 耐電壓	Trip current: 2mA Measuring frequency: 50/60 Hz 250AC for 1min 電流 2 mA 頻率 50/60 HZ AC 250 V 1 分鐘	Between individual terminals and frame/shaft/lever 在端子，固定架，把柄間	Without damage, arcing or breakdown to parts. 沒有損傷，變形，絕緣破壞等情形。
4、Endurance.耐環境性能				
4.1	Low temperature 低溫試驗	The potentiometer shall be stored at a temperature of -40+/-3 ° C for 96 hours in a temperature chamber.Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed. And then the potentiometer shall be subjected to standard atmospheric conditions for 1 hour,after which measurement shall be made. 溫度-40±3℃恒溫槽中 96 小時放置後，置於常溫常濕 1 小時除去水滴後,1 小時內測定。		Change in total resistance is relative to the value before test : +/-30% Operating force : < 150gf 全阻值初期值±30% 動作力:150gf 以下
4.2	High Temperature 高溫試驗	The potentiometer shall be stored at a temperature of 85+/- 3° C for 96 hours in a temperature chamber.Then the potentiometer shall be maintained at standard atmospheric conditions for 1 hour,after which measurement shall be made. 溫度 85±3℃恒溫箱中 96 小時放置後，置於常溫常濕 1 小時除去水滴後，1 小時內測定。		Change in total resistance is relative to the value before test : +/-30%. Operating force: < 150gf. 全阻值初期值±30%. 動作力:150gf 以下。
4.3	Humidity 耐濕試驗	The potentiometer shall be stored at a temperature of 60+/-3° C with relative humidity of 90% to 95% for 96 hours in a temperature chamber.Then the potentiometer shall be maintained at standard atmospheric conditions for 1 hour,after which measurement shall be made. 溫度 60±3℃，濕度 90-95%恒溫恒濕槽中放置 96 小時後，置於常溫常濕 1 小時除去水滴後,1 小時內測定。		Change in total resistance is relative to the value before test : +/-30%. Operating force: < 150gf. 全阻值初期值±30%. 動作力:150gf 以下。

STANDARD RESISTANCE TAPER

LB TAPER



NO.	DATE	DESCRIPTION	MODEL NAME

TOL. UNLESS OTHERWISE STATED	DIMENSION	SCALE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NO.
less than 10 ±0.3 above 10 ~ 30 ±0.5 above 30 ~100 ±1.0 above ±5°	mm		呂 '98.3.17		劉 '98.3.17	

TAIWAN ALPHA ELECTRONIC CO., LTD.

可變電阻無鉛焊錫與保管條件共通規格書

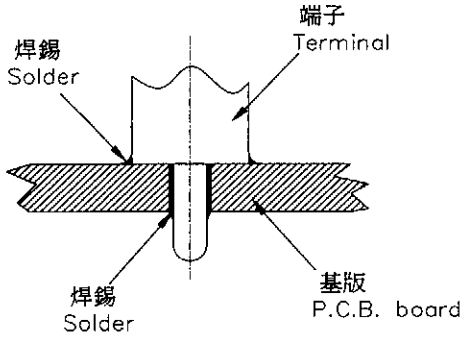
Common Specification of Lead-Free Soldering and Storage conditions for Potentiometers

以下焊錫條件以可變電阻置於單層 1.6mm 厚度之印刷電路板上測試爲基準.
The specification below is based on testing results of 1.6mm thickness single layer printed circuit board.

1. 手工焊錫條件：
   For Manual Soldering：
   1-1 操作溫度最高 350°C，操作時間 3 秒以內。
   To be performed within 3 seconds at 350°C or below.
2. 自動或半自動機台焊錫條件：
   For Automated or Semi-Automated Soldering Equipments:
   2-1 使用發泡式且比重 0.82 以上的助焊劑，發泡高度以印刷電路板厚度一半爲標準，且助劑不能流入可變電阻基板表面及印刷電路板表面。
   Flux of 0.82 specific gravity, applied by foam fluxer, shall be used. Foam head shall be limited to the height which is half thickness of printed circuit board to be soldered. No flux should be allowed to run up onto resistive element board of potentiometer and the surface of printed circuit board.
   2-2 預熱時間不超過兩分鐘，焊錫接面 (即印刷電路板底) 最高預熱溫度不超過 100°C。
   Regarding preheating, the entire flow duration should not exceed 2 minutes, and soldering surface temperature (undersurface of PCB) shall be settled within 100°C.
   2-3 焊錫過程機台設定溫度在 260°C 以下、 4 秒以內。
   Solder Dipping is to be performed within 4 seconds at 260°C or below.
3. 若回轉型電位器是塑膠軸且帶有檔位，請將主軸先調整至其中一個檔位或中心檔位上才可以進行焊錫作業。
   For rotary potentiometer with plastic shaft which have centre detent or multiple detents, the shaft should be settled in relevant detent position prior to soldering process.
4. 手工焊錫、自動或半自動機台焊錫不得超過一回。
   Regardless of soldering facility and method, solder dipping or solder smearing must not be carried out more than 1 time.

註: 本項焊錫溫度條件不適用於回流焊接作業設備。
Remarks: This specification is not recommended for and applicable in reflow soldering.

焊錫注意事項:
Caution for soldering:
如圖所示，請避免 PCB 上層表面有焊錫
Please avoid soldering on upper surface of P.C.B. as shown.



5. 保管條件(Storage conditions):
   產品需儲存在原始的包裝,以及保持常溫常濕、避免陽光直射、遠離任何腐蝕性氣體.
   產品需盡快完全地使用完,建議最慢不要超過交貨後 6 個月. 產品經拆封後, 全部的數量都需迅速地使用完.
   The products shall be stored in the original packaging and kept at room temperature and humidity, out of direct sunlight, and away from any and all corrosive gas. The products shall be completely used as soon as possible, but no longer than 6 months from the date of delivery. Once product packaging is opened, the complete quantity of such products shall be promptly used.