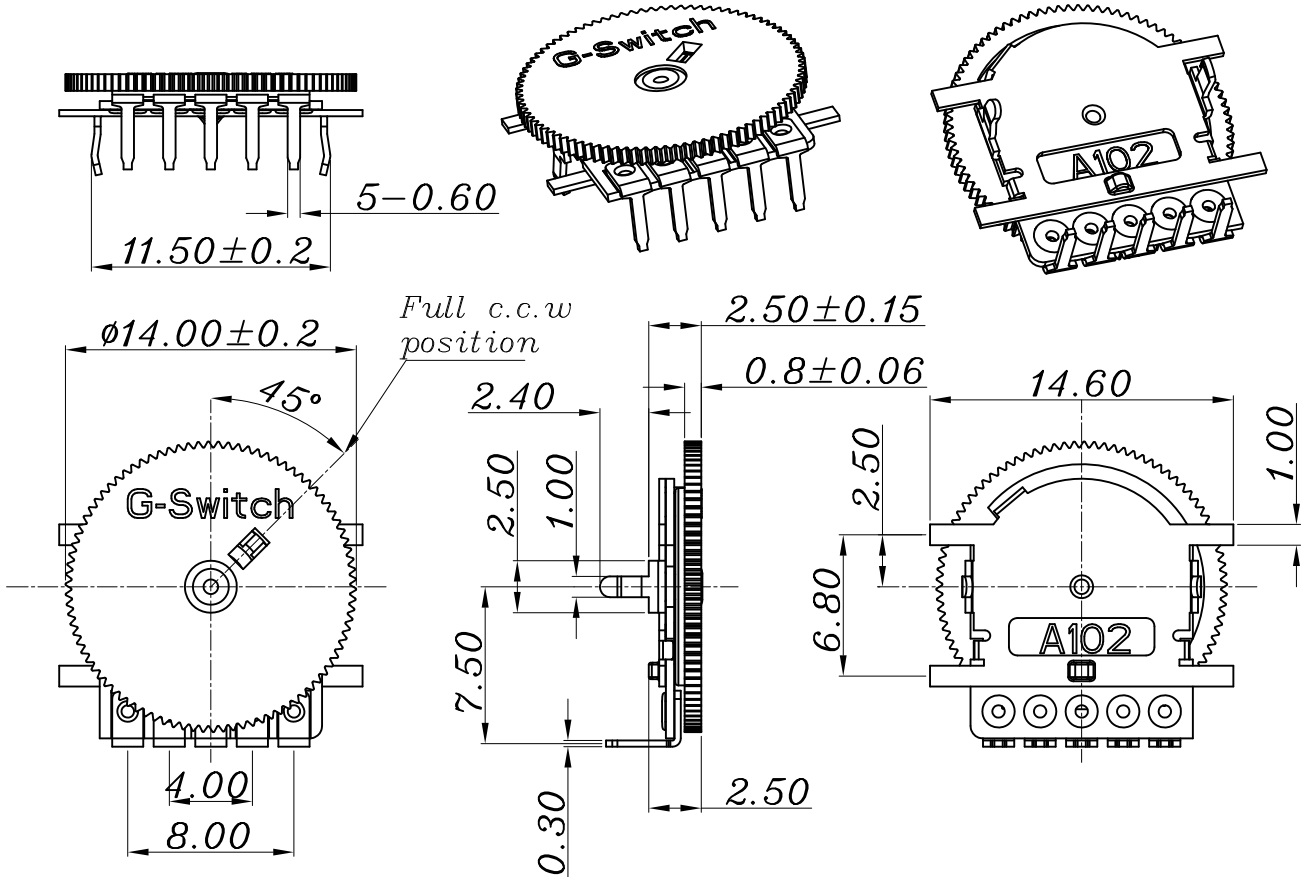


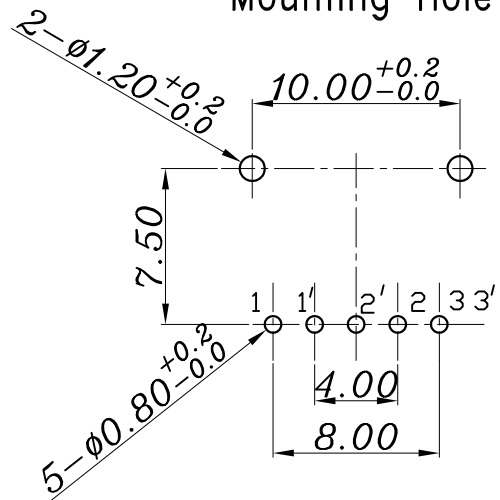
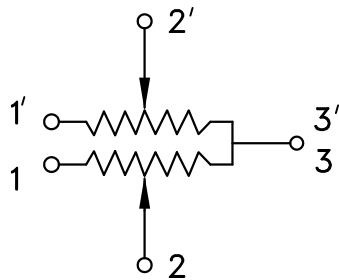
外形圖

MECHANICAL DIMENSIONS



安裝孔位圖  
Mounting Hole

接線圖  
Circuit Explanation



品贊  
G-Switch

TOLERANCE UNLESS OTHERWISE STATED

|                       |      |
|-----------------------|------|
| LESS THAN 10          | ±0.3 |
| ABOVE 10 LESS THAN 30 | ±0.5 |
| ABOVE 30              | ±1.0 |
| ANGLE                 | ±5°  |

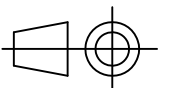
PRODUCT NO. RA1010L-5V-0814-A1K-000

PC NO.

DRAW NO. END-DG UNIT MM PROJECTION

|          |               |          |        |        |        |
|----------|---------------|----------|--------|--------|--------|
| DEVISION | REVISION NOTE | DATE     | DE. BY | CH. BY | AP. BY |
| A/O      | 新版發行          | 09.10.09 | Z.G.W  |        |        |

PRODUCT NAME 電位器



## 10mm ROTARY POTENTIOMETER

### Environment

- |   |   |
|---|---|
| <p>1.1 Operating temperature range</p> <p>1.2 Storage temperature range</p> <p>1.3 Test conditions</p> <p style="padding-left: 20px;">Standard atmospheric conditions</p> <p>Unless otherwise specified, the standard range of atmospheric conditions for making measurements and tests is as follows:</p> <p>Ambient temperature: 5~35°C    Relative humidity : 45~85%</p> <p>Air pressure: 860 mbar to 1060 mbar</p> <p>If there is any doubt about the results, measurements shall be made within the following limit:</p> <p>Ambient temperature: 20±2°C    Relative humidity : 60~70%</p> <p>Air pressure: 860 mbar to 1060 mbar</p> | <p>使用溫度範圍    -10~+70°C</p> <p>儲存溫度範圍    -25~+75°C</p> <p>試驗條件</p> <p>標準狀態</p> <p>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 860~1060mbar 之標準狀態測定</p> <p>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 860~1060mbar)為準測定</p> |
|---|---|

### 一、Mechanical characteristics    機械的性能

|   | Item<br>項目                               | Specifications<br>規格   |
|---|--|--|
| 1 | Total rotational angle<br>全迴轉角度          | 270°±10°   |
| 2 | Rotational torque<br>迴轉轉矩                | 5~100gf.cm   |
| 3 | Rotational speed<br>迴轉速度                 | Rotational speed    60°/1 sec. (秒)   |
| 4 | Push and pull strength of knob<br>旋鈕推拉強度 | <p>Push and pull static load of 0.5kgf shall be applied to the knob in the axial direction for 3 sec. No abnormality in electric characteristics and operating feeling.</p> <p>在旋鈕壓及拉的方向加 0.5kgf 靜負荷 3 秒鐘,作用後不會影響其電氣特性及操作感覺.</p>   |
| 5 | Knob wobble<br>旋鈕晃動                      | <p>A momentary load of 100 gf-cm shall be applied at the point 2 mm from the tip of the knob in a direction perpendicular to the axis of knob, the wobble is 0.6xL/30 mm p-p max.(L:The knob diameter)</p> <p>旋鈕前端 2mm 位置加 100gf-cm,晃動程度 0.6xL/30 mm p-p 以下(L:旋鈕直徑).</p> |

|      |             |          |          |          |            |       |
|------|-------------|----------|----------|----------|------------|-------|
|      |             | PREPARED | REVIEWED | APPROVED | PART NAME: |       |
|      |             | Z.G.W    | F.D.J    | X.C.M    | RA1010L    |       |
|      |             |          |          |          | NO.        | ISSUE |
| Date | Description |          |          |          | 001        | A     |

**10mm ROTARY POTENTIOMETER**

|                                    | Item<br>項目                          | Specifications<br>規格  |
|------------------------------------|-------------------------------------|---|
| 6                                  | Shaft stopper strength<br>迴轉止動強度    | 0.6Kgf-cm max.  |
| 二、Electrical characteristics 電氣的性能 |                                     |   |
| 1                                  | Nominal total resistance<br>全阻抗值公差  | Terminal 1-3 B1KΩ±20%<br>1-3 端子全阻值 B1KΩ±20%   |
| 2                                  | Resistance law (Taper)<br>電阻變化特性    | Refer to Taper graph shown<br>參照 Taper 表  |
| 3                                  | Insulation resistance<br>絕緣阻抗       | 100MΩmin. at DC100 volts<br>DC 100 V 需在 100MΩ以上.  |
| 4                                  | Dielectric strength<br>耐電壓          | Apply AC100 V for 1 min. between individual terminals and case/shaft without damage to parts,arcing or breakdown etc.<br>在端子, 固定架, 軸間施以 AC100V 耐 1 分鐘以上,沒有損傷,變形絕緣破壞等情形.   |
| 5                                  | End resistance<br>殘留阻抗              | 20Ωmax. Between terminal 1-2(1-2 端最大 20Ω)<br>20Ωmax. Between terminal 2-3(2-3 端最大 20Ω)  |
| 6                                  | Noise<br>雜音                         | 100mV max.  |
| 7                                  | Life(no load)<br>無負載可變電阻壽命          | No load life test speed of 1 cycle( CW270°CCW270°)/6 秒 total of 5,000cycles.<br>無負載壽命測試, 1 回 270 度(左右來回算 1 次)/6 秒, 合計 5,000 次.  |
| 8                                  | Maximum operating voltage<br>最高使用電壓 | AC 50V.<br>交流 50 伏特.  |
| 9                                  | Power rating<br>額定功率                | 0.03W   |
| 10                                 | Tracking error<br>連動誤差              | Tracking is measured by applying 1kHz,2V to terminals 1 &3 of each control and getting out voltage of terminals 1 & 2 of each control. -40db~0db≅4db<br>在前後端的 1~3 端子間加 1kHz 2V 電壓,以前段為準,1~2 端子間的輸出.(2~3 端間測定) 規格 -40db~0db≅4db. |

|      |             |          |          |          |            |            |
|------|-------------|----------|----------|----------|------------|------------|
|      |             | PREPARED | REVIEWED | APPROVED | PART NAME: |            |
|      |             | Z.G.W    | F.D.J    | X.C.M    | RA1010L    |            |
| Date | Description |          |          |          | NO.<br>002 | ISSUE<br>A |

## 10mm ROTARY POTENTIOMETER

### 可變電阻無鉛焊錫規格書

#### Common Specification of Lead-Free Soldering for potentiometers

以下焊錫條件可變電阻置於單層 1.6mm 厚度之印刷電路板上測試為基準。

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 使用發泡式比重 0.82 以上的助焊劑,發泡高度以印刷電路板厚度一半為標準,助焊劑不可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,焊錫界面(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. 若迴轉型電位器是塑膠軸且帶有檔位,請將主軸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 center 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能超過一回.

Regardless of soldering facility and method,solder dipping or solder smearing must not be carried out more than 1 time.

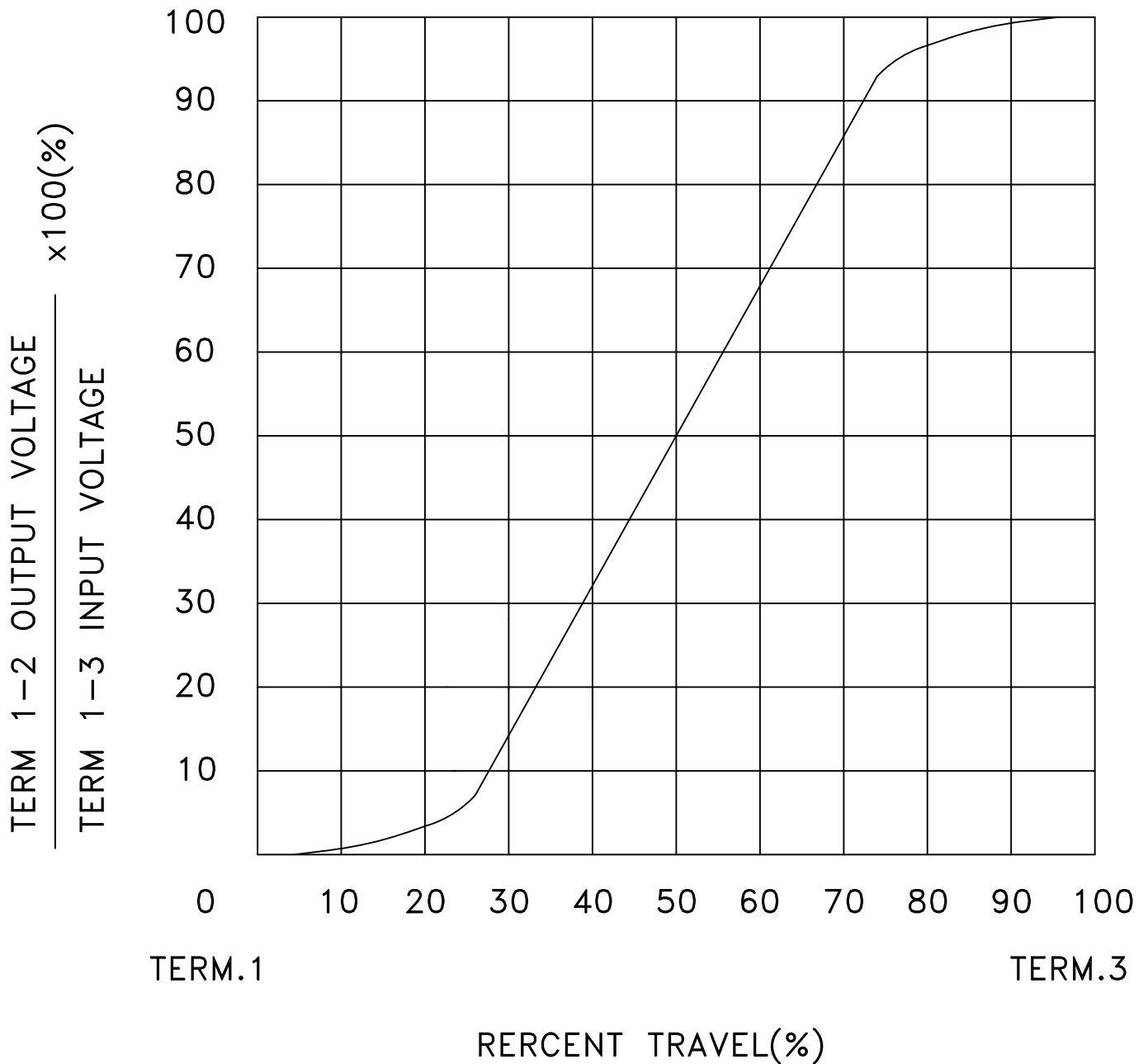
5. 該產品不適用於回流焊錫作業設備.

This specification is not recommended for and applicable in reflow soldering.

|      |             |          |          |          |                |       |
|------|-------------|----------|----------|----------|----------------|-------|
|      |             | PREPARED | REVIEWED | APPROVED | PART NAME:     |       |
|      |             | Z.G.W    | F.D.J    | X.C.M    | POTENTIOMETERS |       |
|      |             |          |          |          | NO.            | ISSUE |
| Date | Description |          |          |          | 003            | A     |

# STANDARD RESISTANCE TAPER

## 3B TAPER



Notes: Percent Voltage  
Check Point

50% Travel From Term.3

Tolerance

40~60%

|              |      |                                     |            |            |                             |         |
|--------------|------|-------------------------------------|------------|------------|-----------------------------|---------|
| Tolerances   |      | DONGGUAN PINZAN ELECTRONICS CO.,LTD |            |            |                             |         |
| less than 10 | ±0.3 | PREPARED                            | REVIEWED   | APPROVED   | MODEL:<br>Resistances Taper |         |
| above 10~50  | ±0.5 | Z.G.W                               | C.M        | X.C.M      |                             |         |
| above 50~100 | ±0.8 | 2012.07.12                          | 2012.07.12 | 2012.07.12 |                             |         |
| angular      | ±5°  | Description                         |            |            | NO.                         | UNIT mm |

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