

12Ø單軸雙連回轉式可變電阻器製品規格書

12Ø SINGLE SHAFT DUAL-UNIT ROTARY POTENTIOMETERS SPECIFICATIONS

1. 一般事項 General

1.1 適用範圍：此規範適用於電子機器之可變電阻器。

Application: This specification is applied to potentiometers used for electronic equipment .

1.2 使用溫度範圍 Operating temperature: -10 ~ +55°C

1.3 試驗狀態：若無特別規定限制，則以溫度5~35°C，相對濕度45~85%，氣壓860~1060mbar之標準狀態測之。但對此標準狀態之測定值發生判定疑問或有特別要求則以基準狀態(溫度20±2°C，相對濕度65 ±5%，氣壓860~1060mbar)為準測定。

Test conditions : the standard test conditions shall be 5~35°C in temperature ,45~85%RH and 860~1060mbar in atmospheric , should any doubt arise in judgement , tests shall be conducted at 20±2°C , 65±5%RH and 860~1060mbar .

2. 構造、尺寸 Construction and dimensions 依組立圖 Refer to attached drawing

3. 電氣性能 Electrical characteristics

NO.	項目 Item	試驗條件 Test conditions	規格 Specifications					
3-1	全阻抗值 Total resistance	軸置於端子1或3終端，測定端子1-3間的阻抗值 Measurement shall be made by the resistance between terminal 1 and 3 with shaft setted at terminal 1 or 3 .	R < 250KΩ 許容差±20% R ≥ 250KΩ 許容差±30% R < 250KΩ Tolerance±20% R ≥ 250KΩ Tolerance±30%					
3-2	額定電力 Power rating	端子1和3間所能連續負荷之最大電力 Power rating is based on continuous full load operation at the maximum voltage between terminal 1 and terminal 3 .	0.05W					
3-3	額定電壓 Rated voltage	額定電壓 Rated voltage $E=\sqrt{PR}$ (V) 額定電力 P: Power rating (W) 公稱全阻抗值 R: Nominal total resistance (Ω) 當額定電壓超過最高使用電壓的時候， 最高使用電壓即為額定電壓。 When the rated voltage exceeds the maximum operating voltage , the maximum operating voltage shall be the rated voltage .						
3-4	最高使用電壓 Max operating Voltage		A. C. 50V					
		APPD.	CHKD.					
		余 倩	鐘學峰					
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		電壓法測定 *記號表示自第3端子測起 Measurement shall be made by the resistance law method . * With respect to terminal 3				詳細曲線請參照變化特性一覽表 Detailing resistance taper to see resistance Taper list
3-5	阻抗變化特性 Taper	變化特性	測定位置	V1-2	V2-3	
		taper	test point	V1-3	V1-3	
		05A	150°	✓	—	0~10%
		10A	150°	✓	—	6~15%
		15A	150°	✓	—	10~25%
		25A	150°	✓	—	18~34%
		30A	150°	✓	—	25~35%
		1B ,2B	150°	✓	—	40~60%
		4B	90±5°	✓	—	5~15%
			150°	✓	—	40~60%
			210±5°	✓	—	85~95%
		05C	*150°	—	✓	0~10%
		10C	*150°	—	✓	6~15%
		15C	*150°	—	✓	10~25%
		25C	*150°	—	✓	18~34%
		30C	*150°	—	✓	25~35%
		M	75±5°	✓	—	40~60%
			150°	✓	—	98~100%
		N	* 75±5°	—	✓	40~60%
			*150°	—	✓	98~100%
3-6	殘留阻抗 Residual resistance	滑動子置于全回轉角度的終端時, 端子1-2間, 端子2-3間的阻抗值測定. The resistances at each end of the mechanical rotation between terminal 1 and 2, terminal 2 and 3 shall be measured .				
公稱全阻抗值(KΩ) Nominal total resistance (KΩ)						
R≤30				30Ω MAX. 30Ω 以下		
30< R ≤1000				全阻值的0.1%以下 0.1%MAX of total resistance		
3-7	滑動雜音 Slider noise	端子1-3間印加直流電壓20V(額定電壓20V以下時, 則印加此額定電壓), 以30回/分的轉速所測定之雜音. Applying 20V D.C between the terminals 1 and 3 (When the rated voltage is small than the 20V D.C, it shall be applied the rated voltage.) And then the noise shall be measured by the specified speed 30 cycles / min .				100mV 以下 100mV MAX.

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3-8	絕緣阻抗 Insulation resistance	施加 250V 之直流電壓, 1分鐘後測試。 測試位置：端子和固定板間 Test voltage : 250V D.C measure after 1 min . Test position : Between terminal and attaching plate	100MΩ 以上 100MΩ MIN.
3-9	耐電壓 Voltage proof	以300V之交流電壓, 測試1分鐘。 測試位置：端子和固定板間 Applying 300V A.C measure for 1 min . Applied position : Between terminal and attaching plate .	不可有損傷, 電弧, 絶緣破壞 Without damage to parts arcing or breakdown .
3-10	運動誤差 Tracking error	在前、後段的1-3 端子間加1KHz, 2V 的直流電壓，以前段為基準，1-2 端子間的輸出。（C.E.RD 變化特性測2-3 端子間的輸出）(M,N 無規定)。 測試範圍：迴轉角150 度位置時 Applying 2V D.C. (1KHz) across terminals 1 and 3 of the front and rear section , output across terminals 1 and 2 of the rear section of the front section output level , (Taper C and E and RD output across terminals 2 and 3) (M,N not specified). Test sphere : 150°	±2dB

4. 機械性能: Mechanical characteristics

NO.	項目 Item	試驗條件 Test conditions	規格 Specifications
4-1	全回轉角度 Total rotational angle		300 ± 5°
4-2	回轉轉矩 Operating torque	回轉速度60° /1秒, 但指針之瞬間下滑不計 Rotational speed 60° /1 sec. but torque meter indicator dropping in an instant shall be accepted .	20 ~ 250 gf-cm
4-3	軸承螺絲固定強度 Bushing mount strength		10Kgf-cm以上, 在12Kgf-cm以下使用 10Kgf-cm MIN . Don t over 12Kgf-cm when operating
4-4	軸之張力壓力強度 Shaft push-pull strength	在軸之方向加壓力或張力之靜負荷 10Kgf, 10秒 Push and pull static load 10Kgf shall be applied in the shaft direction for 10 sec.	電氣性能須滿足 Electrical characteristics shall be satisfied .
4-5	軸止動強度 Shaft stopper strength	在1 端子側或3 端子側施加回轉力矩5Kgf-cm, 1秒鐘 A torsion moment of 5Kgf-cm shall be applied at shaft in terminal 1 or terminal 3 for 1 sec.	操作部和關連部不可有變形、破損 Without deformation or breaks in the operating part and

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4-6	軸松動 Shaft wobble	在固定狀態下,距離固定面30mm位置施加500gf-cm之力矩。 (軸長未滿30mm時,依比例計算) The potentiometer is fixed condition A torsion moment of 500gf-cm shall be applied at the point of 30mm from the mounting surface. (If the shaft length is less than 30mm the value shall be calculated proportionally .)											
		<table border="1"> <tr> <td>軸受長 Bushing length</td> <td>軸松動 Wobbie of shaft</td> </tr> <tr> <td>5</td> <td>0.6mm p-p 以下(MAX)</td> </tr> <tr> <td>7</td> <td>0.5mm p-p 以下(MAX)</td> </tr> <tr> <td>10以上 (MIN)</td> <td>0.4mm p-p 以下(MAX)</td> </tr> </table>			軸受長 Bushing length	軸松動 Wobbie of shaft	5	0.6mm p-p 以下(MAX)	7	0.5mm p-p 以下(MAX)	10以上 (MIN)	0.4mm p-p 以下(MAX)	
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7	0.5mm p-p 以下(MAX)												
10以上 (MIN)	0.4mm p-p 以下(MAX)												
4-7	焊錫耐熱 Resistance to soldering heat	※DIP鋸錫條件 DIP Condition of soldering 1. 浸漬焊錫處理時,請確保在下列條件下作業 Soldering shall be certifide with following condition.			全阻抗值變化在初期的±5%以內, 端子不可有接觸不良或明顯松動 Change in total resistance is relative to the value before test ±5%. Without excessive looseness of terminals and failure contact .								
		<table border="1"> <tr> <td>預熱溫度 Preheating temperature</td> <td>(印刷基板之RV固定溫度) 100°C 以下, 2分鐘以內。 (Surface temperature of mounting side) 100°C MAX. Within 2 MIN.</td> </tr> <tr> <td>焊錫溫度 Solder temperature</td> <td>260°C ±5°C, 5秒以內 260°C ±5°C, Within 5 sec.</td> </tr> <tr> <td>手焊溫度 Manual solder temperature</td> <td>350°C ±5°C, 3秒以內 350°C ±5°C, Within 3 sec.</td> </tr> <tr> <td colspan="3">2. 以上工程1回通過即可。 Please use the above process only one times.</td></tr> </table>			預熱溫度 Preheating temperature	(印刷基板之RV固定溫度) 100°C 以下, 2分鐘以內。 (Surface temperature of mounting side) 100°C MAX. Within 2 MIN.	焊錫溫度 Solder temperature	260°C ±5°C, 5秒以內 260°C ±5°C, Within 5 sec.	手焊溫度 Manual solder temperature	350°C ±5°C, 3秒以內 350°C ±5°C, Within 3 sec.	2. 以上工程1回通過即可。 Please use the above process only one times.		
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5. 耐久性能 Endurance

NO.	項目 Item	試驗條件 Test conditions	規格 Specifications
5-1	回轉壽命 Rotational life	無負荷狀態,軸回轉速度600回/小時,有效回轉角度的90%以上,總次數15,000回以上。 (但阻值5KΩ以下時,5000回轉以上) The moving contact, without electrical load, shall be rotated form one end stop to the other end returned to its original position extend over 90% or more effective angle. Rotation speed : 600 cycle / hour . Total cycles : 15,000 cycles . (But nominal total resistance under 5KΩ, the total cycles is 5000 cycles) .	1. 全阻抗值的變化為初期值的±15%以內 . 2. 旋轉雜音 : 150mV 以下 3. 其它需滿足(3項)(4項) 1. Change in total resistance is relative to the value before test ±15% . 2. Rotational oise : 150mV MAX 3. Clause (3)(4) shall be satisfied

ROHS COMPLIANCE

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