

R09051NO SERIES GENERAL SPECIFICATION

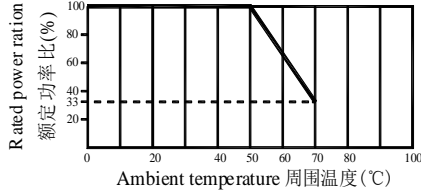
R09051NO 系列规格书

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1、GENERAL 一般事项

1.1、Scope	适用范围
The specification applies to model R09051NO type mainly used for consumer products	此规格书适用于R09051NO机型
Rotational (1 shaft,1 dual)	回转型 (1轴, 1联)
1.2、Operating temperature range	使用温度范围 -10℃~70℃
1.3、Storage temperature range	保存温度范围 -25℃~70℃
1.4、Test conditions:	试验状态
Standard atmospheric conditions:	标准状态
Unless otherwise specified,the standard range of atmospheric conditions for making measurements and test is as follows:	无特别规定之实验及测定时以温度
Ambient temperature:5~35℃ Relative humidity:45~85%	5~35℃, 相对湿度45~85%, 气压
Air pressure:86kpa to 106kpa	86~106kpa 之标准状态测定。
If there is any doubt about the results,measurements shall be	发生判定疑问或另有特别要求则以
Made within the following limit:	基准状态 (温度20±2℃, 相对湿度60~70%,
Ambient temperature:20±2℃ Relative humidity:60~70%	气压 86~106kpa) 为标准测定。
Air pressure:86kpa to 106kpa	

2 ELECTRICAL CHARACTERISTICS 电气特性

Item 项目	Conditions 条件	Specifications 规格
2.1、Nominal total resistance and tolerance 公称全阻抗值	The resistance between terminals 1 and 3 shall be measured 端子1-3间阻值测定。	$10\text{ K}\Omega \pm 20\%$ _%
2.2、Resistance law 阻抗变化特性	Measurement shall be made by the resistance law method. For other procedures(REFER JISC5261 standard) 用电压法测试, 参照JISC5261标准	<u> </u> B Taper (Refer to the attached) <u> </u> B 线性 (参见附页)
2.3、Power rating 额定功率	Power rating is based on continuum full load operation at the maximum voltage between terminals 1 and 3 . Power rating vs.ambient temperature shall be denoted on the following graph. 端子1-3间连续负载后的最大功率。 环境温度对功率影响的曲线如下图所示: 	0.05W
2.4、Rated voltage 额定电压	Rated voltage 额定电压: $E = \sqrt{PR}$	Maximum operating voltage 最高使用电压
	Power rating P: 额定功率 (W) Nominal total resistance R: 公称全阻抗值 (Ω) When the rated voltage exceeds the maximum operating voltage. the maximum operating voltage shall be the rated voltage 额定电压大于最高使用电压时, 最高使用电压作为额定电压	50V AC 20V DC

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2.5、Residual resistance 残留电阻	The resistance at each end of the (A). Resistance between terminals 1 and 2, terminal 2 and 3 shall be measured.A: Angle of effective rotation 接触刷停留在(A)终端位置,在端子1-2间,端子2-3间测定之电阻值. A:有效回转角度	Residual resistance: R1~2: <u> 10 </u> Ω or less R2~3: <u> 10 </u> Ω or less 残留电阻: R1~2: ≤ <u> 10 </u> Ω R2~3: ≤ <u> 10 </u> Ω
2.6、Rotational noise 转动噪音	Apply DC 20V between terminals 1-3 to measure noise voltage . (rated voltage ≤20V . Apply by rated voltage). 在端子1-3间加直流电压20V(额定电压≤20V,则以额定电压值测试)后,测定的杂音电压. Shaft rotation : 1 rotation /3Sec 轴转速:1回转/3秒	100mVp-p or less ≤100mVp-p
2.7、Insulation resistance 绝缘阻抗	Apply DC 250 V for 1 minute. DC250V 1分钟	Between individual terminals and frame 端子-固定板 100MΩ or more ≥100MΩ
2.8、Dielectric strength 耐电压	Trip current:2mA Measuring frequency : 50~60Hz ; 250V AC for 1 minute. 电流: 2mA 频率: 50~60Hz AC 250V 1分钟	Between individual terminals and frame 端子-固定板 satisfied. 电气性能符合规定要求

3 MECHANICAL CHARACTERISTICS 机械特性

Item 项 目	Conditions 条 件	Specifications 规 格
3.1、Total mechanical rotation 全回转角度	Angle of effective rotation 有效旋转角度	280°±10°
3.2、Rotational torque 旋转力矩	Rotational speed 旋转速度 S 1回转 / 3 秒	standard atmospheric conditions 常温5°C至35°C
		-10°C 400gf. cm 以下
		70°C 10~80gf. cm
3.3、Click slip out force 定位推动力	Rotation speed 60°/ S , standard atmospheric 5°C to 35°C(center click) 旋转速度 60°/S 常温5°C至35°C	20~120gf.cm(产品不带定位无此项参数)
3.4、Shaft stop strength 止档强度	The following torsion moment load of 5kgf.cm shall be applied to the shaft for 5sec at both ends (after fixation) 固定后于旋转前后两端未加5Kgf.cm力矩并持续5秒.	Electrical characteristics shall be satisfied. 电气性能符合规定要求
3.5、Shaft push & pull strength 轴向推拉强度	Push &pull static load of 5Kgf shall be applied to the shaft in perpendicular to axial directions for 10 s(After fixation) 固定后在与轴垂直的端面方向加5Kgf.cm静载荷并保持10秒。	torque without abnormality . Electrical characteristics shall be satisfied with specification . 轴无破损, 旋转无异常。 电气性能符合规定要求
3.6. Shaft wobble 轴摆动	A momentary load of 500gf.cm shall be applied at the point 5 mm from the tip of the shaft in a direction perpendicular to the axis (after fixation). 固定后在与轴心末端往下5mm处施加500gf.cm静载荷。	0.5*L/20mm p-p or less ≤0.5*L/20mm p-p L is the length between mounting surface and measuring points L: 固定面到测试点的距离

4 ENDURANCE CHARACTERISTICS 耐久性能

Item 项 目	Conditions 条 件	Specifications 规 格
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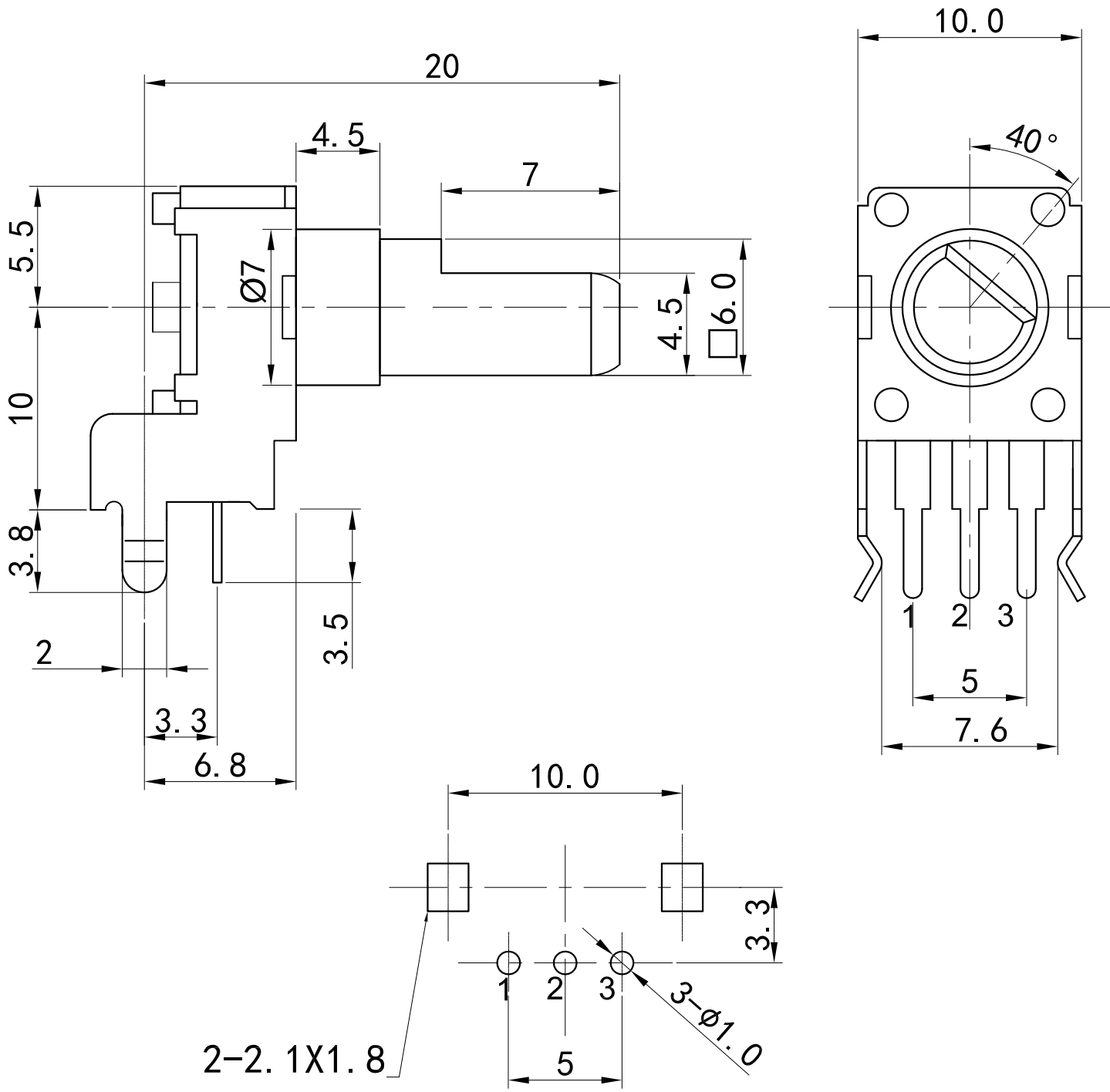
4.1、Solder ability 焊锡性	The terminals shall be immersed into solder bath at 260°±5°C for 3±0.5s.端子在260°±5°C温度的焊锡槽内浸锡3±0.5秒	A new uniform coating of solder shall cover a minimum of 75% of the surface being immersed. 浸渍面须有75%以上焊锡附着	
4.2、Resistance to soldering heat 焊锡耐热性	Substrate to be soldered:Cooper clad laminated phenol in one surface of 1.6mm thickness,Do not use double sided through PCB. Preheating:Surface temperature of substrate shall be settled qithin 100°C in one minutes. 使用基板; T=1.6mm厚单面铜泊积层板面. 预热: 基板表面温度100°C以下, 1分钟以内. Wave soldering:波峰焊条件: Bit temperature温度: 260°±10°C Application time of soldering时间: 5 ±1 sec	Change in total resistance is relative to the value before test : ±5% Without deformation of case or terminals loosing ,Electrical characteristics shall be satisfied with . specification 总阻变化值: 初测期±5% 外观无变形, 端子无松动, 电气性能符合规定要求	
	Soldering method手焊条件(60W): Bit temperature 温度: 350°±5°C Application time of soldering时间: 3 ±1秒		
4.3、Resistance to heat 耐热性	The potentiometer shall be stored at a temperature of 70°C±2°C for 120±8h in a thermostatic chamber.Then the potentiometer shall be measured after maintaining at standard atmospheric conditions for 1h in order to to remove surface moisture. .温度70°C±2°C恒温槽中120±8小时放置后,置于常温常湿1小时除去水滴后测定。	Change in total resistance is relative to the value before test : ±20% 总阻变化值: 初期值的±20%	
4.4、Resistance to Cold 耐寒性	The potentiometer shall be stored at a temperature of -25±3°C for120±4h in a thermostatic chamber.Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed. And measure the potentiometer which shall be subjected to standard atmospheric conditions for 1h . 温度-25±3°C恒温槽中120±4小时放置后, 置于常温常湿1小时除去水滴后, 1小时内测定。	Change in total resistance is relative to the value before test : ±20% 总阻变化值: 初期值的±20%	
4.5、Damp heat 耐湿性	The potentiometer shall be stored at a temperature of 40±2°C, with relative humidity of 90% to 95% for 120±4h in a thermostatic chamber. Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed.and measure the potentiometer which shall be subjected to standard atmospheric conditions for 1h.. shall be made.温度40±2°C,湿度90-95%,恒温恒湿槽中放置120±4小时后, 置于常温常湿1小时除去水滴后, 1小时内测定。	Change in total resistance is relative to the value before test : +35%~-5% 总阻变化值:初期值的+35%~-5% Insulation resistance: 20MΩ or more 绝缘阻抗: ≥20M Ω Noise : 150mV p-p or less 转动噪音: ≤150mV p-p	
4.6、Change of temperature 温度循环试验	The potentiometer shall be subjected to 5 successive change of temperature cycles,each as shown in table below. surface moisture shall be removed. And measure the potentiometer which shall be subjected tostandard atmospheric conditions for 1hour. 以下条件温度连续5个周期的试验后,置于常温常湿1小时除去水滴后,1小时内测定。		
		Temperature 温度	Duration 放置时间
	1	-10±3°C	30 min (分)
	2	standard atmospheric conditions 常温	10 to 15 min(分)
	3	70±2°C	30 min (分)
4	standard atmospheric conditions 常温	10 to 15 min(分)	
		Change in total resistance is relative to the value before test : ±30% 总阻变化值: 初期值的±30% Insulation resistance:100MΩ or more 绝缘阻抗 :≥100M Ω。 Dielectric strength : Without damage to parts arcing or breakdown etc. 耐电压:无损伤,变形,绝缘破坏等情形. Appearance: There shall be no dafo- rmation or cracks of molded part. 外观: 塑胶部分无形成破裂	

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<p>4.7、Endurance 耐久性</p>	<p>The moving contact without electrical load shall be rotated from one end stop to the other and returned to its original position exceeds 90% of effective angle. This procedure constitutes 1 cycle. And the moving contact shall be subjected to 600 cycles per hour. total 15000±200 cycles.(5000 to 8000continuous cycles for 24h). 轴以600周/小时(来回算1周)的速度旋转,24小时旋转5000~8000周,有效旋转角度超过90%,共15000±200周.</p>	<p>Variable value of total resistance: specified value±15% 总阻变化值: 规格值范围的±15% Rotational noise:150mVp-p or less 转动噪音: ≤150mVp-p Rotational torque shall not deviate from the previously specified value. 回转力矩满足规格值 残留电阻: R1,2≤规格值的2倍 R 2,3 ≤全阻抗1% (全阻值 ≤2K Ω时,则≤规格值的2倍)</p>			
<p>版本号: 00</p>	<p>编制时间: 2021. 12. 16</p>				
<p>REVISION变更记事:</p>	<p>变更时间:</p>	<p>经办 工程部 2021.12.25 韦德爱</p>	<p>核 对 工程部 2021.12.25 喻钊</p>	<p>核 准 工程部 2021.12.25 彭先炎</p>	<p>TITLE标题: rotational potentiometer R090旋转系列电位器</p>



P.C.B. MOUNTING HOLES DETAIL

东莞市长泰尔电子有限公司

未注尺寸公差	比例	2:1	版本	1.0	设计	审核	批准
L ≤ 1.0时 ±0.1	品名	电位器					
1.0 < L ≤ 10时 ±0.3							
10 < L ≤ 30时 ±0.5	图号	R09051NO-FB20C7.0-B103-000					
30 < L ≤ 100时 ±1.0							