



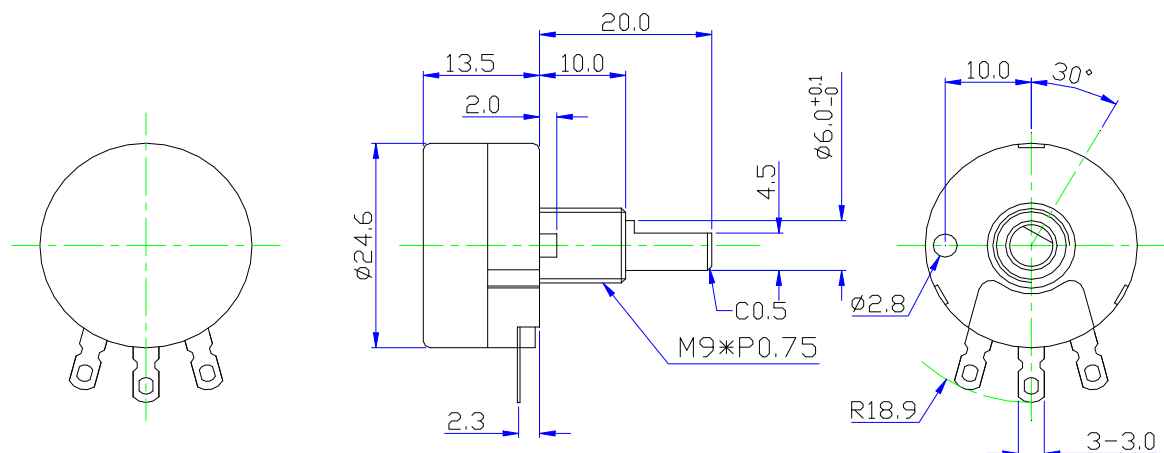
# 东莞市凡睿电子科技有限公司

DONG GUAN FAN RUI TECHNOLOGY&ELECTRONICS CO., LTD.

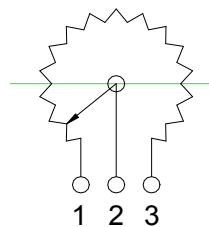
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● — 300° ROTATION



CIRCUIT



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|            |  |  |  |          |       |                   |
|------------|--|--|--|----------|-------|-------------------|
| Title      |  |  |  | 3        |       |                   |
| Code       |  |  |  | 2        |       |                   |
| Dwg Name   |  |  |  | 1        |       |                   |
| Dwg No     |  |  |  | Devision | Date  | Design            |
| CPT-24-001 |  |  |  | Unit     | Scale | TOLERANCE         |
| Version    |  |  |  | MM       | 3:1   |                   |
| A          |  |  |  | MTL      |       | UNDER 10          |
| DESIGN     |  |  |  | SPEC     |       | 10~100            |
| CHECK      |  |  |  | DISPOSAL |       | OVER 100          |
| APPROVAL   |  |  |  |          |       | ANGULAR DIMENSION |
|            |  |  |  |          |       |                   |



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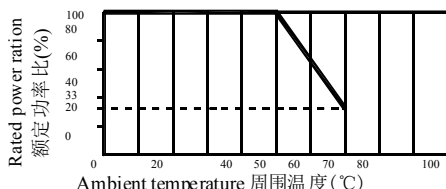
## RV24 系列规格书

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### 1、GENERAL 一般事项

|                                                                                                                          |                                                                |
|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| 1.1、Scope                                                                                                                | 适用范围                                                           |
| The specification applies to model RK24 type mainly used for consumer products                                           | 此规格书适用于 RV24 机型                                                |
| 1.2、Operating temperature range                                                                                          | 使用温度范围 -10℃~+70℃                                               |
| 1.3、Storage temperature range                                                                                            | 保存温度范围 -30℃~+85℃                                               |
| 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以温度 5~35℃, 相对湿度 45~85%, 气压 86~106kpa 之标准状态测定。       |
| Ambient temperature: 5~35℃ Relative humidity: 45~85%                                                                     |                                                                |
| Air pressure: 86kpa to 106kpa                                                                                            |                                                                |
| If there is any doubt about the results, measurements shall be Made within the following limit:                          | 发生判定疑问或另有特别要求则以基准状态 (温度 20±2℃, 相对湿度 60~70%, 气压 86~106kpa) 为标准测 |
| Ambient temperature: 20±2℃ Relative humidity: 60~70%                                                                     |                                                                |
| 定。 Air pressure: 86kpa to 106kpa                                                                                         |                                                                |

### 1 ELECTRICAL CHARACTERISTICS 电气特性

| Item<br>项 目                                        | Conditions<br>条 件                                                                                                                                                                                                                                                                                                                     |                                     | Specifications<br>规 格                                                                                                       |                                                     |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| 1、Nominal total resistance and tolerance<br>公称全阻抗值 | The resistance between terminals 1 and 3 shall be measured<br>端子 1-3 间阻值测定。                                                                                                                                                                                                                                                           |                                     | <u>10K</u> Ω <input checked="" type="checkbox"/> ±20%                                                                       |                                                     |
| 2、Resistance law<br>阻抗变化特性                         | 阻抗变化特 性<br>Taper                                                                                                                                                                                                                                                                                                                      | 测定点(° )<br>Test point position      | 端子 1-2 间输出电压<br>端子 1-3 间输入电压<br><u>V1-2</u><br>V1-3                                                                         | 端子 2-3 间输出电压<br>端子 1-3 间输入电压<br><u>V2-3</u><br>V1-3 |
|                                                    | A                                                                                                                                                                                                                                                                                                                                     | 180°                                | 10-30%                                                                                                                      |                                                     |
|                                                    | B                                                                                                                                                                                                                                                                                                                                     | 150°                                | 40-60%                                                                                                                      |                                                     |
|                                                    | C                                                                                                                                                                                                                                                                                                                                     | 180°                                |                                                                                                                             | 10-30%                                              |
|                                                    | D                                                                                                                                                                                                                                                                                                                                     | 150°                                | 2-15%                                                                                                                       |                                                     |
|                                                    | W                                                                                                                                                                                                                                                                                                                                     | 90° ±5°                             | 5-15%                                                                                                                       |                                                     |
|                                                    |                                                                                                                                                                                                                                                                                                                                       | 180°                                | 40-60%                                                                                                                      |                                                     |
|                                                    |                                                                                                                                                                                                                                                                                                                                       | 180° ±5°                            | 85-95%                                                                                                                      |                                                     |
| 3、Power rating<br>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.<br>端子 1-3 间连续负载后的最大功率。<br>环境温度对功率影响的曲线如下图表示：<br><div></div> |                                     | <input checked="" type="checkbox"/> B taper: 0.5W<br>B 曲线:0.5W<br><input type="checkbox"/> Other taper: 0.25W<br>其它曲线:0.25W |                                                     |
| 4、Rated voltage<br>额定电压                            | Rated voltage<br>额定电压：E= PR                                                                                                                                                                                                                                                                                                           | Maximum operating voltage<br>最高使用电压 | linear taper B AC 500V<br>other tapers AC 250V                                                                              |                                                     |
|                                                    | Power rating<br>P: 额定功率<br>Nominal total resistance R: 公称阻抗值<br>When the rated voltage exceeds the maximum operating voltage.<br>the maximum operating voltage shall be the rated voltage .<br>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.                                                                                                            |                                     |                                                                                                                             |                                                     |



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## RV24 系列规格书

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| 1 ELECTRICAL CHARACTERISTICS 电气特性      |                                                                                                                                                                                                                                                                                                     |                                                |                                                                                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item<br>项 目                            | Conditions<br>条 件                                                                                                                                                                                                                                                                                   |                                                | Specifications<br>规 格                                                                                                                                         |
| 5、Residual resistance<br>残留电阻          | Contact brush stop at the end of the (A). Resistance between terminals 1 and 2, terminals 2 and 3 shall be measured. A: Angle of effective rotation<br>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.<br>A:有效回转角度                                                                                          |                                                | R1,2: $\leq 20 \Omega$ less<br>R2,3: $\leq 20 \Omega$ less<br>以下<br>( $R \geq 10K\Omega$ $20\Omega$ Max)                                                      |
| 6、Rotational noise<br>转动噪音             | Apply DC 20V between terminals 1-3 to measure the noise voltage ( rated voltage $\leq 18V$ apply by rated voltage ).<br>在端子 1-3 间加直流电压 18V(额定电压 $\leq 20V$ ,则以额定电压值测试)后,测定的杂音电压.<br>Shaft rotation : 1 rotation / 3S 轴转速:1 回转/3 秒                                                                   |                                                | 100mVp-p or less<br>$\leq 100mVp-p$ 以下                                                                                                                        |
| 7、Insulation resistance<br>绝缘阻抗        | Apply voltage of 500V DC and measure for 1 minute                                                                                                                                                                                                                                                   | Between individual terminals and frame 端子-固定板  | 100M $\Omega$ or more<br>100M $\Omega$ 以上                                                                                                                     |
| 8、Dielectric strength<br>耐电压           | Measuring frequency : 50~60Hz ;<br>500VDC for 1 minute.                                                                                                                                                                                                                                             | Between individual terminals and frame 端子-固定板  | Electrical characteristics shall be satisfied with specification.<br>电气性能符合规定要求                                                                               |
| 2 MECHANICAL CHARACTERISTICS 机械特性      |                                                                                                                                                                                                                                                                                                     |                                                |                                                                                                                                                               |
| 1、Total mechanical rotation 全回转角度      | Angle of effective rotation<br>有效旋转角度                                                                                                                                                                                                                                                               |                                                | 300° $\pm 10^\circ$                                                                                                                                           |
| 2、Rotational torque<br>旋转力矩            | Rotational speed<br>旋转速度 S 旋转速度 60°/S                                                                                                                                                                                                                                                               | Standard atmospheric conditions<br>常温 5℃ 至 35℃ | 10~60 gf.cm                                                                                                                                                   |
| 3、Shaft push & pull strength<br>轴向推拉强度 | Pull: 8.0 Kg Max. Push: 12.0 Kg Max.<br>最大拉力 8Kg 力矩。最大推力 12kg 力矩。                                                                                                                                                                                                                                   |                                                | Shaft without damage, rotational torque. without abnormality . Electrical characteristics shall be satisfied with specification<br>轴无破损, 旋转无异常。<br>电气性能符合规定要求 |
| 4、Shaft stop strength<br>止档强度          | After fixation, rotate the shaft to the end and add 8Kg torque for 5 seconds.<br>固定后与轴转至末端加 8Kg 力矩并持续 5 秒。                                                                                                                                                                                          |                                                | Electrical characteristics shall be satisfied with specification.<br>电气性能符合规定要求                                                                               |
| 3 ENDURANCE CHARACTERISTICS 耐久性能       |                                                                                                                                                                                                                                                                                                     |                                                |                                                                                                                                                               |
| 1、Solderability<br>焊锡性                 | The terminals shall be stored at a temperature of 40℃ with relative humidity of 90~95%and measured in 168hours.<br>温度 40℃, 湿度 90~95%RH , 168 小时测定。<br>The terminals shall be immersed into solder bath at 270℃ $\pm 5^\circ C$ for 3 $\pm 0.5S$<br>端子在 270℃ $\pm 5^\circ C$ 温度的焊锡槽内浸锡 3 $\pm 0.5$ 秒 |                                                | A new uniform coating of solder hall cover 75% minimum of the surface being immersed.<br>浸渍面须有 75%以上焊锡附着                                                      |
| 2、Heat resistance<br>耐热特性              | Temperature $\cdots \cdots 85 \pm 2^\circ C$<br>Time $\cdots \cdots 16$ hours<br>After that , leave in ordinary temp and humidity for an hour. Then measure.<br>温度 $\cdots \cdots 85 \pm 2^\circ C$<br>时间 $\cdots \cdots 16$ 小时<br>然后放置在常温和湿度下一个小时再测试。                                              |                                                | Change in total resistance is relative to the value before test : $\pm 20\%$<br>总阻变化值: 初期值的 $\pm 20\%$                                                        |



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## RV24 系列规格书

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|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |                                                                                                                                   |                                                                                                                                                                                                                              |         |                      |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|----------------------|
| 3、Resistance to cold<br>耐寒性 | The potentiometer shall be stored at a temperature of -40±3℃ for 96±4H in a thermostatic chamber. Then the potentiometer shall be taken out of the chamber and its surface moisture shall be removed.<br>And measure the potentiometer which shall be subjected to standard atmospheric conditions for 1.5H.<br>温度 -40±3℃ 恒温槽中 96±4 小时放置后, 置于常温常湿 1.5 小时除去水滴后, 1.5 小时内测定。                                                       |      |                                                                                                                                   | Change in total resistance is relative to the value<br>before test : ±20%<br>总阻变化值: 初期值的±20%                                                                                                                                 |         |                      |
| 4、IP Rating<br>防护等级         |                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |                                                                                                                                   | IP65                                                                                                                                                                                                                         |         |                      |
| 5、Endurance<br>耐久性          | 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.<br>And the moving contact shall be subjected to 600 cycles per hour. total 500,000±200 cycles. (5000 to 8000 continuous cycles for 24H).<br>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 500,000±200 周。 |      |                                                                                                                                   | Variable Value of Total Resistance: specified value±15%<br>总阻变化值: 规格值范围的±15%<br><br>Noise 200mV p-p less than<br>转动噪音: 200mV p-p 以下<br>Rotational torque shall not deviate from the previously specified value.<br>回转力矩满足规格值 |         |                      |
| REVISION 变更记事               |                                                                                                                                                                                                                                                                                                                                                                                                                                 | 变更时间 | <div><div></div><div>东莞市凡睿电子科技有限公司</div></div> |                                                                                                                                                                                                                              |         |                      |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |      | DSGD.主办                                                                                                                           | CHKD.审查                                                                                                                                                                                                                      | APPD.核准 | TITLE 标题:            |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |                                                                                                                                   |                                                                                                                                                                                                                              |         | POTENTIOMETER 电位器规格书 |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |                                                                                                                                   |                                                                                                                                                                                                                              |         | Model 机种:            |
|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                 |      |                                                                                                                                   |                                                                                                                                                                                                                              |         | RV24 系列              |



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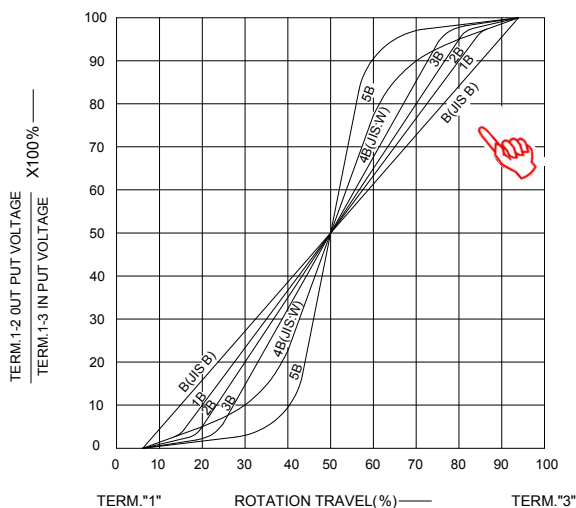
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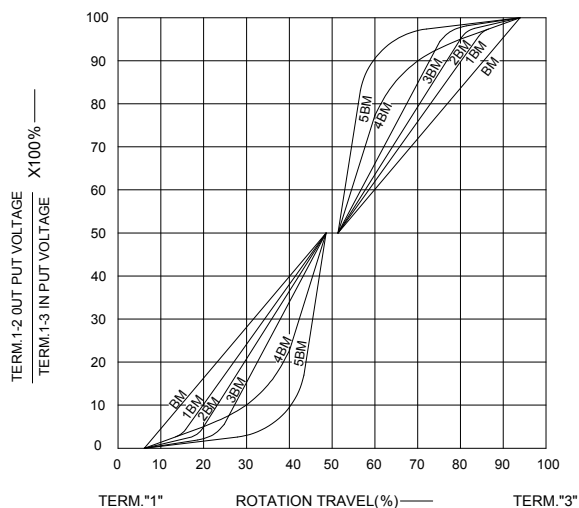
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## 电位器曲线图 POTENTIOMETER CURVE

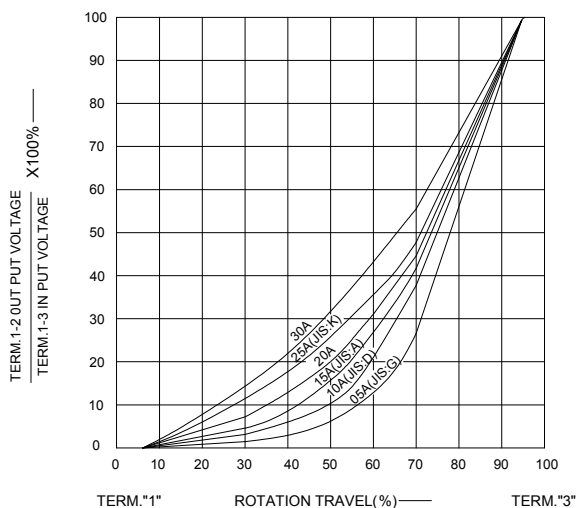
TAPERS B SERIES



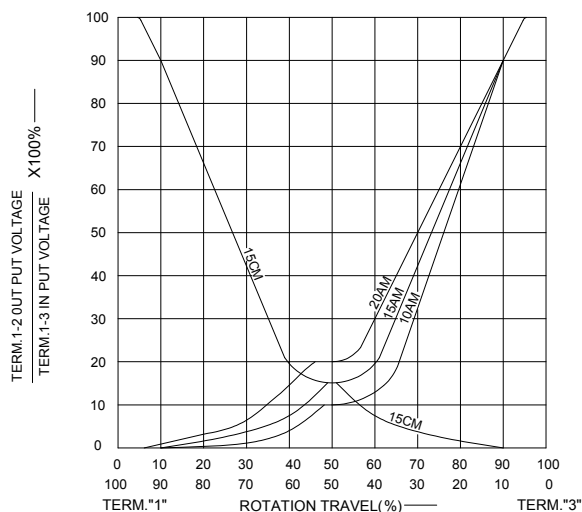
TAPERS B WITH 50% TAP



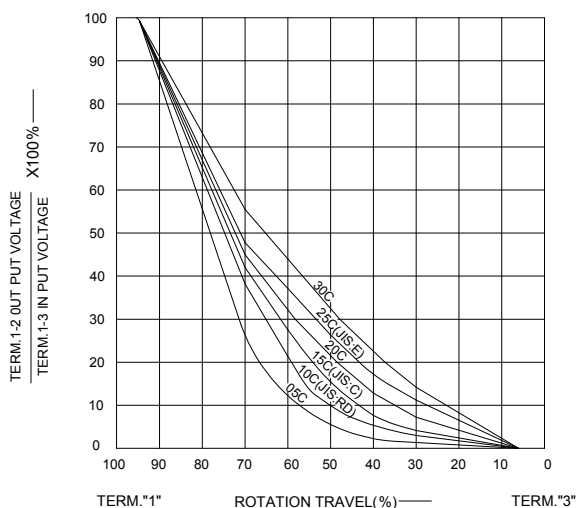
TAPERS A SERIES



TAPERS A & C WITH 50% TAP



TAPERS C SERIES



TAPERS M & N

