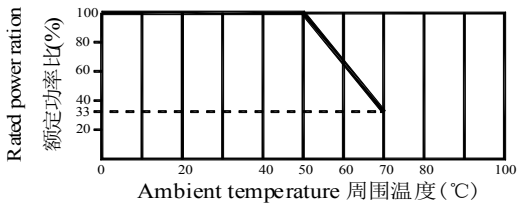
C3051N SERIES GENERAL SPECIFICATION

C3051N 系 列 规 格 书

1. GENERAL 一般事项

1.1 Scope The specification applies to model C3051N type, mainly used for consumer products	适用范围 此规格书适用于C3051N机型;
1.2 Operating temperature range: -10℃~60℃	使用温度范围: -10℃~60℃;
1.3 Storage temperature range: -30℃~70℃	保存温度范围: -30℃~70℃;
1.4 Test conditions:	试验状态:
1.4.1 Standard atmospheric conditions;	标准状态;
1.4.2 Unless otherwise specified, the standard range of atmospheric conditions for making measurements and test is as follows: ambient temperature 5~35℃, relative humidity 45~85%; air pressure 86kpa to 106kpa;	无特别规定之实验及测定时以温度 5~35℃, 相对湿度45~85%，气压 86~106kpa之标准状态测定。
1.4.3 If there is any doubt about the results, measurements shall be made within the following limit:ambient temperature 20±2℃, relative humidity 60~70%, air pressure 86kpa to 106kpa;	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）为标准测定。

2. ELECTRICAL CHARACTERISTICS 电气性能

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; Taper A, total resistance 10-25%, 50% position; 端子1-3间阻值测定， A线性，50%位置，总阻10-25%;	10KΩ±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;	Taper A (Refer to the attached) A线性 (参见附页)
2.3 Power rating 额定功率 （W）	Power rating is based on continum 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表示：  	0.2W
2.4 Rated voltage 额定电压	Rated voltage 额定电压：$E=\sqrt{PR}$ 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。 Max operation voltage 最高工作电压	200V AC 10V DC

2.5 Residual resistance 残留电阻	The resistance at each end of the position(A), resistance between terminals 1and 2,terminal 2 and 3 shall be measured. Position 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间测定之最阻值，位置A：有效回转角度；		R1～2：≤ 10Ω； R2～3：≤ 30Ω；
2.6 Slide noise 滑动噪音	Apply DC 20V between terminals 1-3 to measure the 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. Slide speed : 1 Cycles/3s. 滑动速度:1来回/3秒		68mVp-p or less ≤68mVp-p
2. 7 Insulation resistance 绝缘阻抗	Apply voltage of DC 500V and measure for 1 minute. DC 500V 1分钟	Between individual terminals and frame. 端子--固定板	50MΩ or more ≥100MΩ
2.8 Dielectric strength 耐电压	Trip current: 2mA; Measuring frequency: 50~60Hz; 500V AC for 1 minute; 电流：2mA ; 频率：50~60Hz; AC 500V 1分钟;	Between individual terminals and frame. 端子--固定板	Electrical characteristics shall be meets specified requirement. 电气性能符合规定要求；

3. Mechanical characteristics 机械性能

Item 项 目	Conditions 条 件		Specifications 规 格
3.1 Total travel slide 全滑动行程	Travel for effective slide. 有效滑动行程		30±0.5mm
3. 2 Operating force 操作力矩	Traveling speed 20mm/sec 滑动速度 20㎜/秒	standard atmospheric conditions 常温5℃至35℃	20~120gf
		-10℃	
		60℃	
3.3 Number of detents click 定位数目			■ without Detent ☐ 1C（Center Detent中段功能） ☐ Other其它_____C
3.4 Click force 定位点力矩	Measured at standard aatmospheric conditions 标准状态下测定; Speed: 20mm/sec 滑动速度: 每秒20mm;		50~200gf
3.5 Stop strength 止档强度	The following torsion moment load of 5Kgf.cm shall be applied to the shaft for 5 sec at both ends(after fixation); 固定后于旋转前后两端末加5Kgf.cm力保持5秒;		Electrical characteristics shall be satisfied with specification. 电气性能符合规定要求
3.6 Lever wobble 滑柄偏摆量	Apply 0.5kgf force perpendicular to the handle at the position of 5mm to the end of the top handle; 在手柄顶端5 mm处垂直于手柄施加0.5 kgf的力；		2(2×L)/20mm Max
3.7 Thurst and tensile lever 推柄挤压引张强度	Thrust and tensile static load of 3kgf.cm shall be applied to the potentiometer in the lever directions for 10 sec; 于推柄垂直之端面方向、挤压或引张方向加3kgf.cm静荷重10秒以上；		Without damage such as bad sliding and breaking or play in the lever, electrical characterstics shall be satisfied. 柄不能有破损、滑动异常；
3.8 Terminal strength 端子强度	After fixed add 0.5kgf static force along to the terminal posiston and keep 10sec. 固定后沿端子方向加0.5kgf静载荷力并保持10秒；		Electrical characteristics shall be satisfied with specification. 电气性能符合规定要求

4. ENDURANCE CHARACTERISTICS 耐久性能

Item 项 目	Conditions 条 件	Specifications 规 格
4.1 Solderability 焊锡性	The terminals shall be immersed into solder bath at 235±5°C for 3±0.5s. 端子在235±5℃温度的焊锡槽内浸锡3±0.5秒.	Shall cover 75% minimum of the surface being immersed. 浸渍面须有75%以上焊锡付着;
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 side through PCB. Preheating: surface temperature of substrate shall be settled within 100℃ in one minute. 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℃以下，1分钟以内. Wave soldering 波峰焊条件: Temperature 温度 : 260°±5°C Application time of soldering 时间: 10 ±1 sec	Change in total resistance is relative to the value before test:±5%, without case deformation of case or terminals loosing. Electrical characteristics shall be satisfied with specification. 总阻变化值：±5% 外观无变形，端子无松动，电气性能符合规定要求。

4.3 Resistance to heat 耐热性	After 240±8 hours of storage in the constant temperature tank at 80±2°C, it should be kept at room temperature for 1 hour. After the water drop is removed, it should be measured within 1 hour。 在温度80±2℃恒温槽中放置240±8小时后，置于常温常湿1小时。除去水滴后，在1小时内测定。	Change in total resistance is relative to the value before test: +5/-30%; 总阻变化值：初期值的+5/-30%;
4.4 Resistance to cold 耐寒性	After 96±4 hours of storage in the constant temperature tank at -30±3℃, it should be kept at room temperature for 1 hour. After the water drop is removed, it should be measured within 1 hour。 在温度-30±3℃恒温槽中放置96±4小时后，置于常温常湿1小时。除去水滴后, 在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 temperature is 40±2°C, and humidity is 90-95%. After placed in the constant temperature and humidity tank for 94±4 hours, it should be kept at room temperature for 1 hour. After the water drop is removed, it should be measured within 1 hour. 温度40±2℃, 湿度90-95℃。在恒温槽中放置94±4小时后，置于常温常湿环境中1小时。除去水滴后, 在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% Insulation resistance：10MΩ or more （250VDC） 绝缘阻抗：≥10MΩ （250VDC）
4.6 Change of temperature 温度循环试验	Under the following conditions, after the test for 5 consecutive cycles of temperature, it should be kept at room temperature for 1 hour. After the water drop is removed, it should be measured within 1 hour. 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。	Change in total resistance is relative to the value before test : +5/-20% 总阻变化值：初期值的+5/-20% Insulation resistance: 100MΩ or more 绝缘阻抗: ≥100MΩ Dielectric strength: without damage to parts arcing or breakdown etc. 形. 情形 Appearance: There shall be no deformation or cracks of molded part. 外观：塑胶部分无形成破裂.
4. 7 Endurance 耐久性	The axis rotates at a speed of 600 cycles per hour (1 cycle round and back), rotates for 5,000 to 8,000 cycles in 24 hours, and the effective rotation angle is over 90%, a total of 15,000 ±200 cycles. 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.	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 Residual resistance： R1~2: 40Ω or less R2~3: 60Ω or less 残留电阻: R1~2: ≤40Ω R2~3: ≤60Ω
4.8 Salt mist 盐雾	35±2°C, concentration: 5±1% (by weight) for 24h.	Clean with water, no apparent rust and discoloration. 清水清洁后，无明显锈蚀与变色;
4.9.Vibration 振动	F:10Hz and 50Hz, X,Y,Z 3 directions, 2h/each -To be operated mechanically. 频率:10Hz和50Hz X，Y，Z三个方向，各2H	No sliding abnormality Electrical characteristics are as usual. 机械操作无滑动异常，电气特性和初始一样

	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±3°C	30 min (分)
4	standard atmospheric conditio 常温	10 to 15 min(分)

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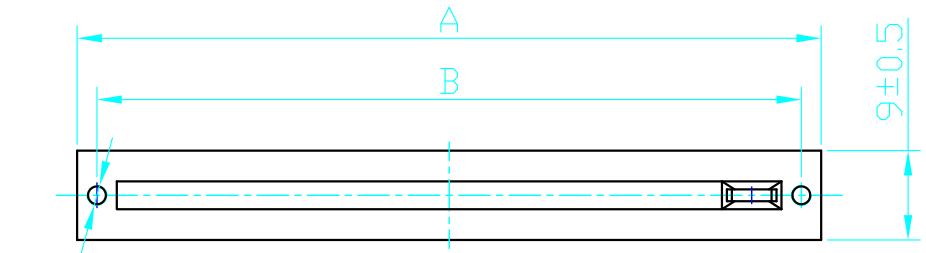
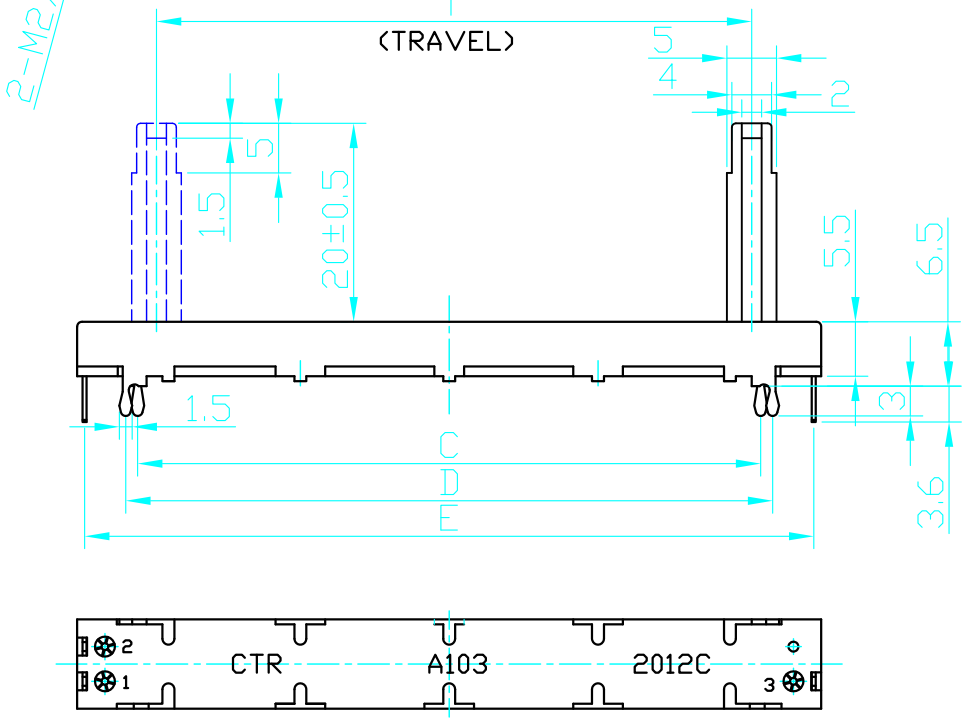
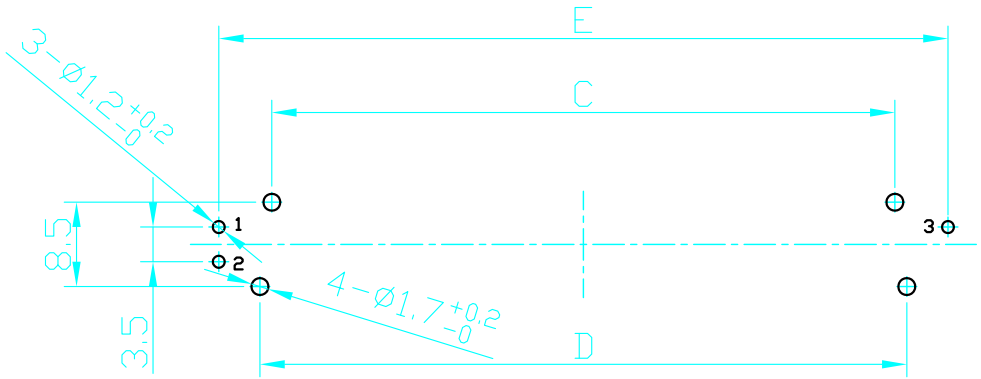
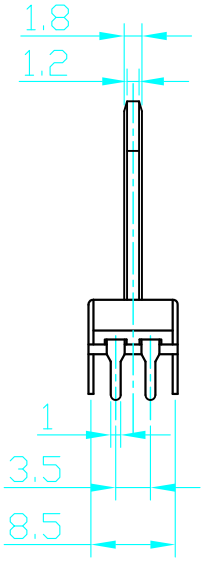
REVISION变更记事：	更改时间	DSGD.主 办	CHKD.审 查	APPD.核 准	TITLE标题：Slide Series Potentiometer 直滑系列电位器
		工程部 2021.02.02 李能全	工程部 2021.02.02 喻钊	工程部 2021.02.02 彭先炎	DOCUMENT NO.文号：C3051N







P.C.B MOUNTING HOLE DETAIL



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WEEK CODE：1（1st Week）、2（2nd Week）、3（3rd Week）、4（4th Week）、5（5th Week）

MONTH CODE：1（Jan.）、2（Feb.） ··· O(Oct.）、N（Nov.）、D（Dec.）

YEAR CODE：20(2020)、21（2021）、22（2022）、23（2023）、24（2024）

MODEL	T	A	B	C	D	E
C3051	30	45	41	32.8	35.2	43.8

未注尺寸公差 Gen.tolerance
0＜L≤10：±0.3
10＜L≤50：±0.5
50＜L ≤100：±1.0

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DONG GUAN CHANG TAI ER ELECTRONICS CO.,LTD.

比例 Scale	1:1	版本 Edition	1.0	单位 Unit	mm	设 计 Designed By	审 核 Checked By	批 准 Approved By
品 名 Type Name	直滑式电位器					工程部 2021.02.02 李能全	工程部 2021.02.02 喻钊	工程部 2021.02.02 彭先炎
图 号 Dwg.NO.	C3051N-CE20B5.0-A103-0P0							

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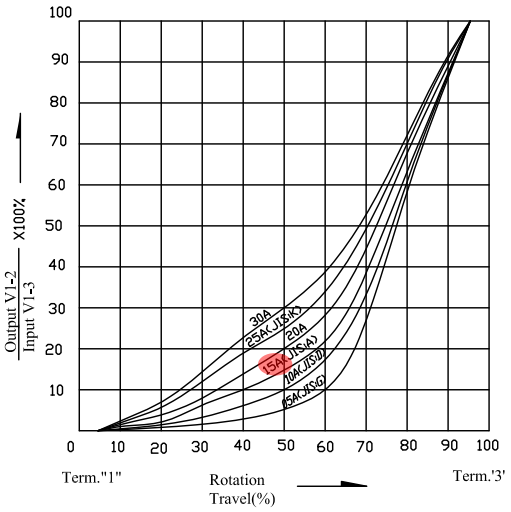
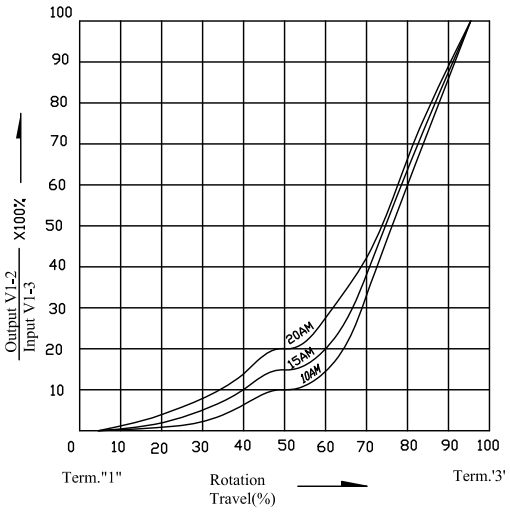
DONG GUAN CHANG TAI ER ELECTRONIC CO., LTD.

阻抗变化特性
Resistance tapers

TAPERS (A) SERIES



TAPERS (A) WITH 50% TAP



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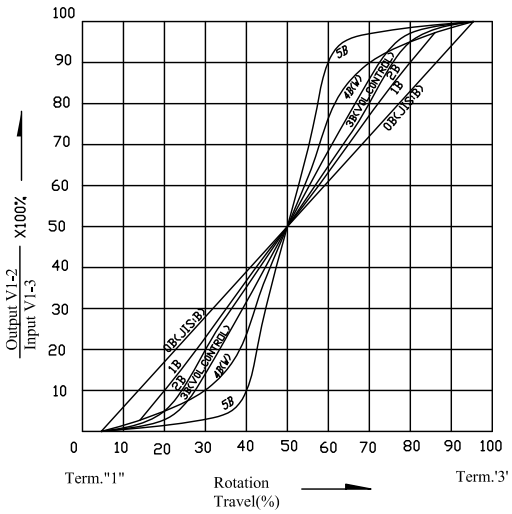

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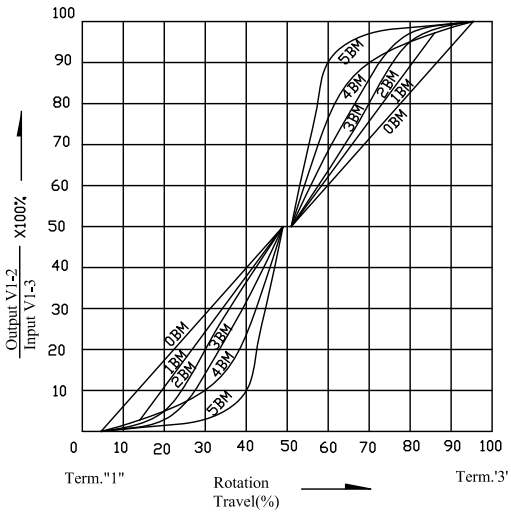

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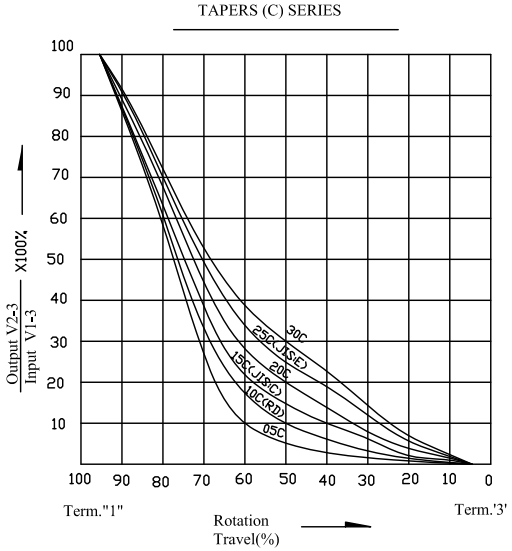

TAPERS (M) & (N)