

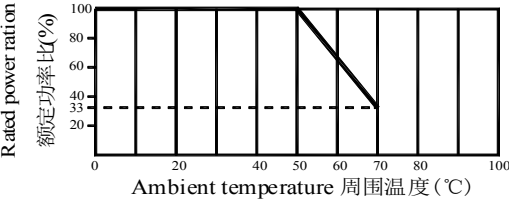
C3051N SERIES GENERAL SPECIFICATION

C3051N 系 列 规 格 书

1/3

1. GENERAL 一般事项	
1.1 Scope	适用范围
The specification applies to model C3051N type, mainly used for consumer products	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 B, total resistance 40-60%, 50% position; 端子1-3间阻值测定, B线性, 50%位置, 总阻40~60%;	10K Ω ±20% (Terminal 1-3)
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 B (Refer to the attached) B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所示: 	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 AC 50V DC 75V

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2/3

2.5 Residual resistance 残留电阻	The resistance at each end of the position(A), resistance between terminals 1 and 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: $\leq 10\Omega$; R2~3: $\leq 30\Omega$;
2.6 Slide noise 滑动噪音	Apply DC 20V between terminals 1-3 to measure the noise voltage. (rated voltage $\leq 20V$ apply by rated voltage) 在端子1-3间加直流电压20V(额定电压 $\leq 20V$, 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		Less than 100 mV
2.7 Insulation resistance 绝缘阻抗	Apply voltage of DC 250V and measure for 1 minute. DC 250V 1分钟	Between individual terminals and frame. 端子--固定板	More than 10M Ω at 250V DC
2.8 Dielectric strength 耐电压	Trip current: 2mA; Measuring frequency: 50~60Hz; 300V AC for 1 minute; 电流: 2mA ; 频率: 50~60Hz; AC300V 1分钟;	Between individual terminals and frame. 端子--固定板	Without arcing or breakdown

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 $\pm$ 0.5mm
3.2 Operating force 操作力矩	Traveling speed 20mm/sec 滑动速度 20mm/秒	standard atmospheric conditions 常温5℃至35℃	10~100gf
		-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 atmospheric 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 $\times$ L)/20mm Max
3.7 Thrust 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 characteristics 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 position 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 $\pm$ 5℃ for 3 $\pm$ 0.5s. 端子在235 $\pm$ 5℃温度的焊锡槽内浸锡3 $\pm$ 0.5秒.		Shall cover 75% minimum 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 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 $\pm$ 5℃ Application time of soldering 时间: 10 $\pm$ 1 sec		Change in total resistance is relative to the value before test: $\pm$ 5%, without case deformation of case or terminals loosening. Electrical characteristics shall be satisfied with specification. 总阻变化值: $\pm$ 5% 外观无变形, 端子无松动, 电气性能符合规定要求。

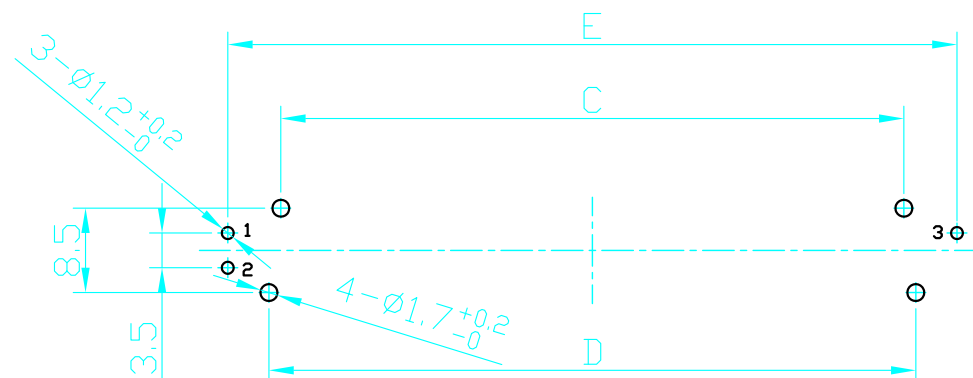
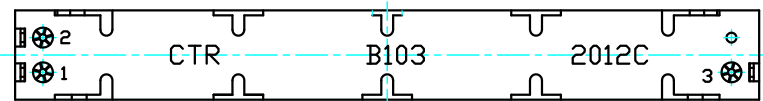
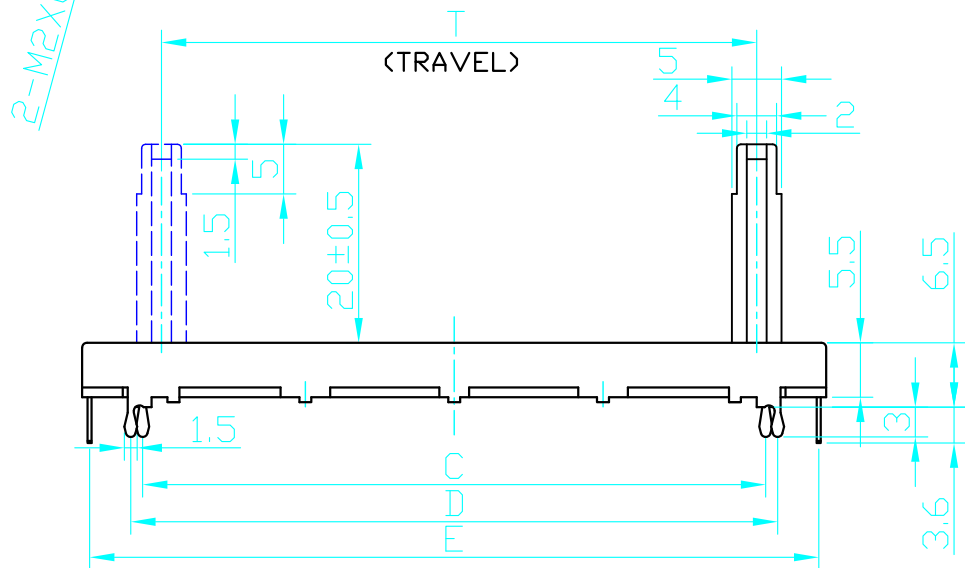
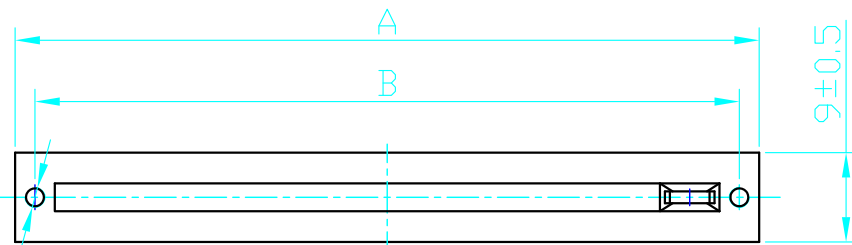
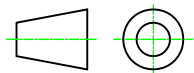
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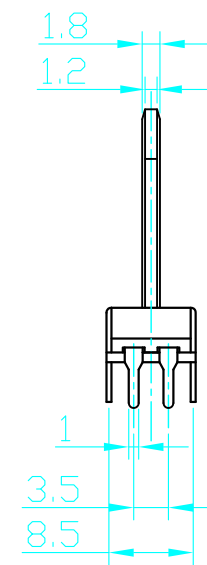
3/3

4.3 Resistance to heat 耐热性	After 240±8 hours of storage in the constant temperature tank at 80±2℃, 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℃, 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)			
4.6Change of temperature 温度循环试验	Temperature 温度 70±3℃	Duration 放置时间 5H	To the value before test : +5/-20% 总阻变化值：初期值的+5/-20%			
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℃, concentration: 5±10% (by weight) for 24h. Then clean with water		No apparent rust and discoloration. 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			
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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
						DOCUMENT NO.文号：
						C3051N

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P.C.B MOUNTING HOLE DETAIL



20 1 2 C
COUNTRY OF ORIGIN: C (CHINA)
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)

东莞市长泰尔电子有限公司
DONG GUAN CHANG TAI ER ELECTRONICS CO.,LTD.

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

未注尺寸公差
Gen.tolerance

0<L≤10: ±0.3

10<L≤50: ±0.5

50<L≤100: ±1.0

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 2022.02.15 李能全	工程 2022.02.15 喻钊	工程 2022.02.15 彭先炎
图号 Dwg.NO.	C3051N-CE20B5.0-B103-1P0							

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

阻抗变化特性 Resistance tapers

