

承认书



SPECIFICATION FOR APPROVAL CAR CHARGER/车载充电器

客 户:

CUSTOMER: MayCableMart,LLC

产品描述:

DESCRIPTION: QC3.0+2.4A dual USB car charger

OUR MODEL NO: MCL-C88-QC3.0+2.4A

样品编号:

日期:

SAMPLE NO: MCL-C88-QC3.0+2.4A

DATE: 2018-4-20

产品颜色:

SAMPLE COLOR: Black White

符合环保项: ROHS REACH PAHS 17P 加州 65

| APPROVAL SIGNATURE/客户确认 | | |
|-------------------------|----------------|----------------|
| 核准/APPROVED BY | 审核/CHECKED BY | 检测/TESTED BY |
| | | |
| Manufacturer/制造商 | | |
| 业务/SALES | 核准/APPROVED BY | 设计/DESIGNED BY |
| Nick Lin | | |

深圳市齐鑫电子有限公司

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深圳市齐鑫电子有限公司

SHEN ZHEN QI XIN ELECTRONICS CO., LTD

型号/Our model: MCL-C88-QC3.0+2.4A

客户/Customer: MyCableMart

日期/Date: 2018/04/20

SAMPLE No: MCL-C88-QC3.0+2.4A

版本目录/Rev. List

| 版本/Rev. | 日期/Date | 描述/Description | 制订/Design |
|---------|-----------|----------------|-----------|
| A0 | 2017-4-25 | 新版本/New Rev. | ANT |
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1、描述/ DESCRIPTION:

本规格书适应于 MCL-C88-QC3.0+2.4A 型号的车载充电器.

The purpose of the document is to specify the functional requirements of MCL-C88-QC3.0+2.4A car charger.

2、输入特性/INPUT CHARACTERISTICS:

2.1 输入电压/Input Voltage:

额定电压/Rated Voltage:12~24V DC

2.3 输入电流/Input Current:

当输入直流电压为额定值的下限电压空载时,最大输入直流电流 10mA.

10mA max at any input voltage and rated, DC output no load.

当输入直流电压为额定值的下限电压负载满载时,最大输入直流电流 4A.

4A max at any input voltage and rated, DC output rated load.

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3、输出特性/OUTPUT CHARACTERISTICS:

3.1 输出功率/Power output

| 电压 Voltage | 最小负载 Min. Load | 额定负载 Rated. Load | D+ -(± 0.2V) | D-(± 0.2V) | 输出功率 Output power |
|---------------|-------------------|---------------------|-----------------|---------------|----------------------|
| QC3.0 | 0.01A | 3A | 可变 | 可变 | 18W |
| 5VDC | 0.01A | 2.4A | 2.7 | 2.7 | 12W |

3.2 负载特性,调整率/Combined Load/Line Regulation

| 电压 Voltage | 最小负载 Min. Load | 额定负载 Rated. Load | 线性调整 Line Regulation | 负载调整 Load Regulation |
|---------------|-------------------|---------------------|-------------------------|-------------------------|
| QC3.0 | 0.01A | 3A | ±2% | ±2% |
| 5VDC | 0.01A | 2.4A | ±2% | ±2% |

3.3 纹波和噪音 Ripple and Noise:

测试条件: 在输入 12/24V DC 25°C和输出最小及最大负载时, 使用示波器带宽为 20MHz 连接到车载电源的输出端, 同时输出端并联一个 47uF 的电解电容和一个 0.1uF 的瓷片电容.

At 12/24Vdc 25°C input and output Min and Max. Load, the ripple and noise are as follows when measure with Max. Bandwidth of 20MHz and Parallel 47uF/0.1uF, crossed connected at testing point.

| | |
|----------------|-------------------------------|
| 电压 | 最大纹波/最大噪音 |
| <u>Voltage</u> | <u>Ripple and Noise(Max.)</u> |
| +5VDC | 200 mV p-p |

3.4 效率/Efficiency:

当 12/24Vdc 输入电压时, 满载计算平均效率, 最小 85%.

85% Min, at 12/24Vdc input voltage, full load calculation average efficiency.

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4、保护功能/PROTECTION FUNCTION:

4.1 短路电路保护/Short circuit protection:

该电源供给器在短路解除时能正常工作恢复.

The power supply will be auto recovered when short circuit faults remove.

4.2 过流保护/Over current Protection:

过流故障排除后,电源将自动恢复正常工作.

The power supply will be auto recovered when over current faults remove.

5、环境要求/ENVIRONMENTAL REQUIREMET:

5.1 工作温度/Operating Temperature:

TA=25°C, TC=65°C, 满载,正常工作.

TA=25°C, TC=65°C, Full load, Normal operation.

5.2 储藏温度/Storage Temperature:-20°C to 60°C

带外壳/With package

5.3 工作湿度/Relative Humidity:

5%(0°C)~90%(40°C),72 小时,满载,正常工作.

5%(0°C) ~ 90%(40°C) RH, 72Hrs, Full load, Normal operating.

5.4 振动/Vibration:

1. 测试标准:国际电工电子委员会

Operating: IEC 721-3-3 3M3

5~9Hz, A=1.5mm

加速度(9~200Hz,Acceleration 5m/S2)

2. 运输/Transportation:

IEC 721-3-2 2M2

5-9Hz, A=3.5mm

9~200Hz,加速度 Acceleration=5m/S2

200~500Hz,加速度 Acceleration=15m/S2

3. 轴向振动/The axial test

轴向测试: 频率为 10-55HZ, X/Y/Z 每个方向上扫频循环次数为 10 次, 总时间 30 分钟, 外观电性正常

When frequency is 10-55 HZ, x/y/z direction of each frequency sweep cycles for 10 times. The total time is 30 minutes, electrical property normal appearance.

在测试过程中不能出现永久性的损坏.

No permanent damage may occur during testing.

在电源开启和关闭后,样机能够恢复到最初条件.

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The SAMPLE has to restore to its original situation after power off/on.

5.5 跌落试验/Dropping Packed:

跌落高度为 1000mm;

Drop the height is 1000mm.

测试台面是厚 13mm 的夹木板, 离地面高 19-20mm

The horizontal surface Consists of hardwood at least 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor.

5.6 插拔测试/Insertion force test

插拔力度在 9.5-12N, 插拔力度 5 次后力度不少于 3N, 插拔 1500 次 (每小时 500 次) 力度不小于 1.5N; 插头以及插座必须通过 5000 次插拔测试, 插头注塑件外观允许磨损, 结构仍然保持完整, 且电气导通性能完好;

Insertion and extraction force in 9.5-12 n , insertion and extraction force after five times still need strength of not less than 3 n, insertion and extraction force 1500 times (500 times per hour) strength of not less than 1.5 n; Plug and socket must pass the insertion force test of 5000 times, plug injection parts surface allows the wear and tear, structure remains intact, and the electric conduction performance in good condition.

5.7 盐雾测试/ Salt spray test

盐水浓度为 5%, 持续喷雾 8 小时, 桶内温度为 35℃, 实验结束后取出, 在常温下搁置 1 小时后, 再检查电源外观, 外露金属以及电镀件不生锈;

When the brine strength is 5%, Continuous spray 8 hours, the temperature is 35 °C in the barrel, after the experiment, put aside at room temperature after 1 hour, check the appearance, exposed metal and chrome does not rust.

6、安全及 EMC 要求/SAFETY AND EMC REQUIREMENT:

6.1 安全: 符合标准

Safety: accord standard with

6.2 EMI 标准/EMI STANDARD

Meets the Limits of/测试符合

<1>. EN55032 class B rules

<2>.

<3>.

<4>.

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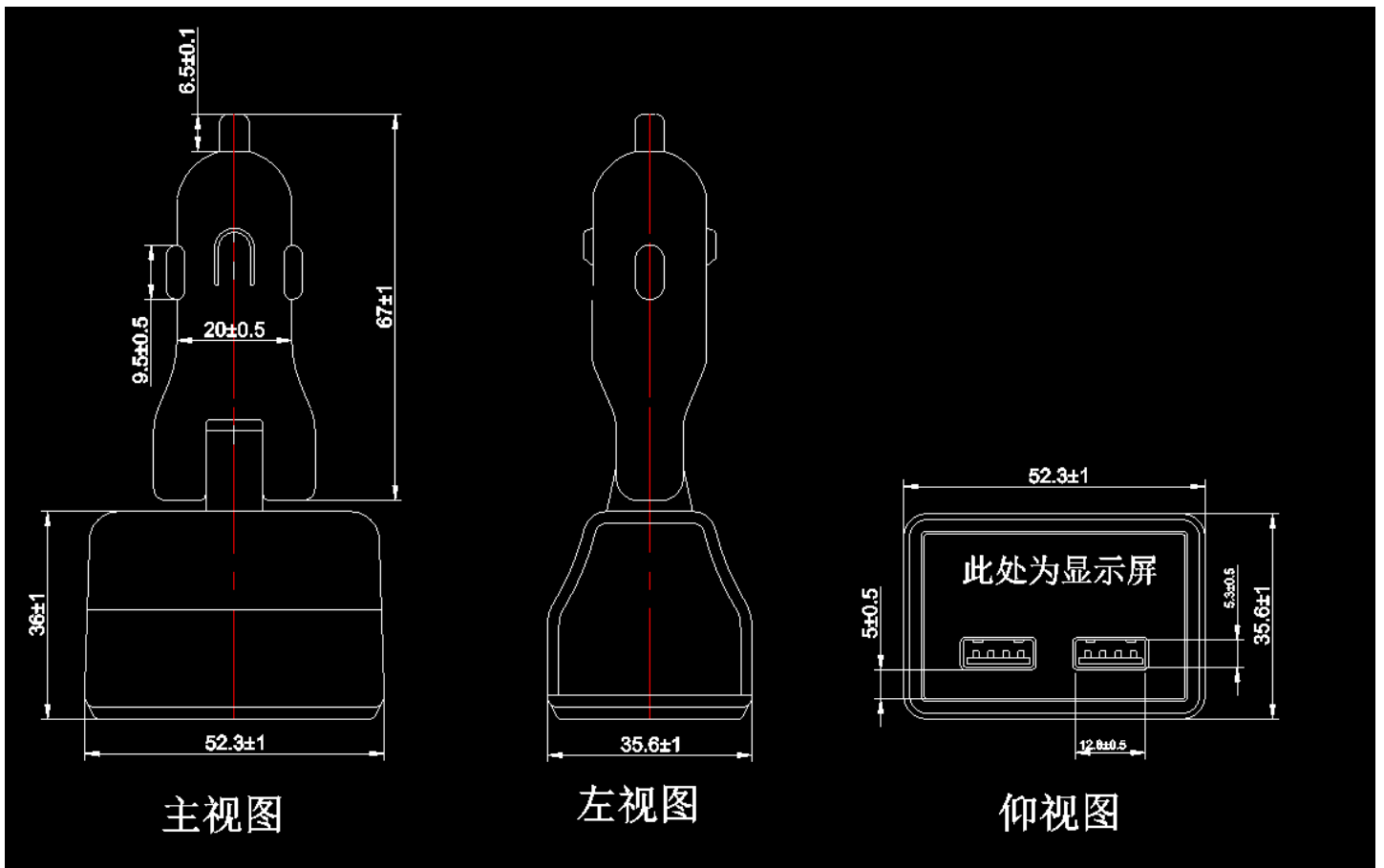
日期/Date: 2018/04/20

SAMPLE No: MCL-C88-QC3.0+2.4A

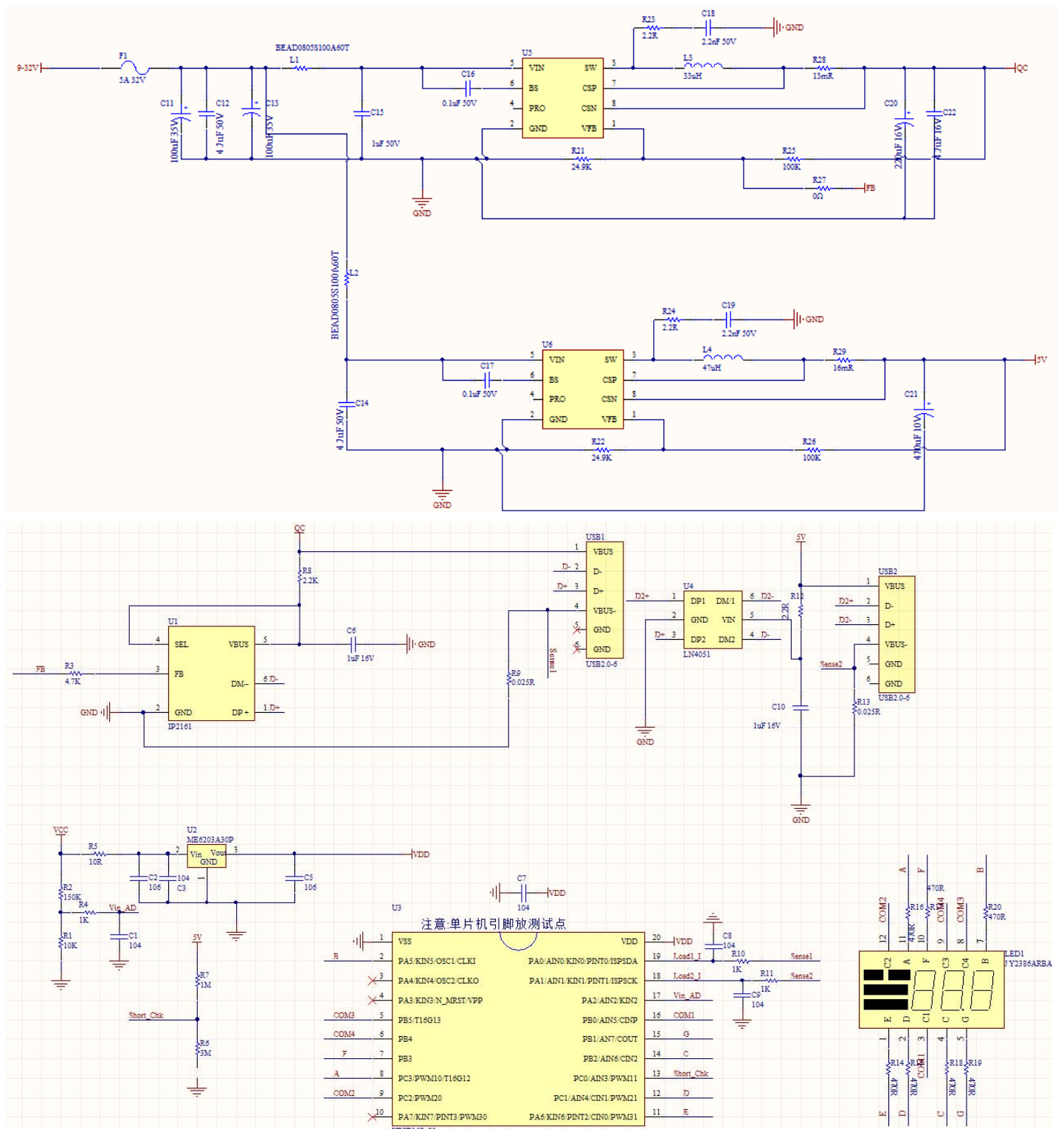
7、结构参数/MECHANICAL REQUIREMENT:

外壳尺寸:

Housing size:



8、原理图：SCH



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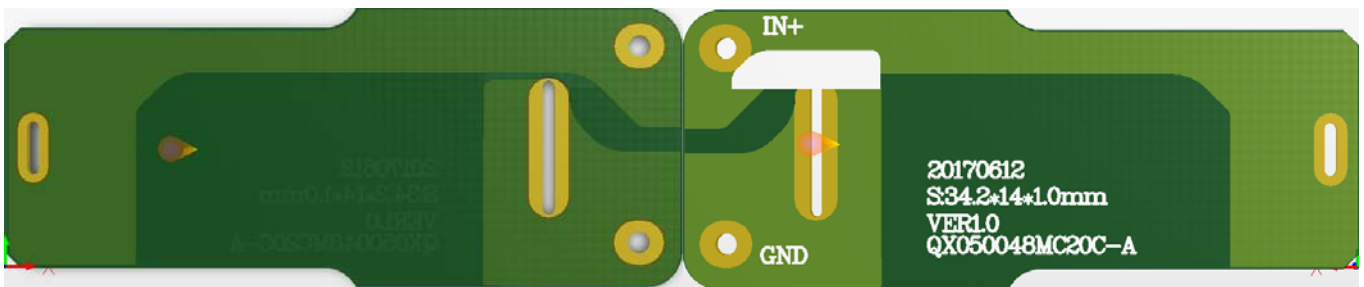
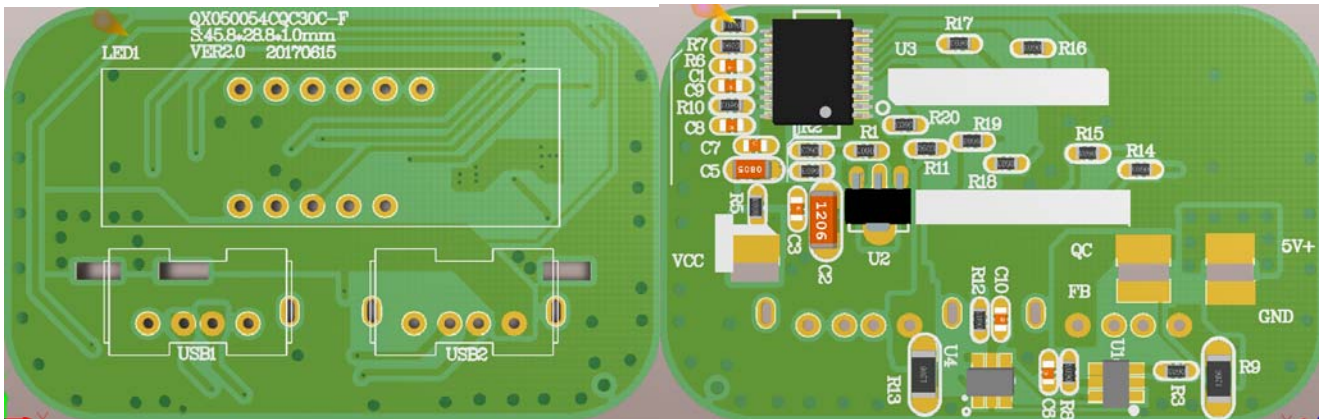
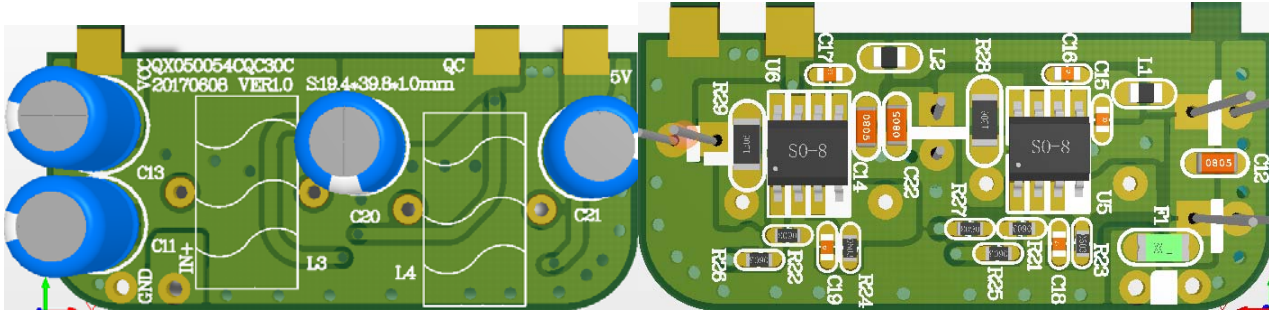
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9、Layout:



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10、测试报告/ELECTRICAL TEST REPORT:

| No 序号 | Test item 测试项目 | Test condition 测试条件 | Standard spec 标准规格 | Test data 测试数据 | | | | | Unit 单位 | Judge 判定 |
|--------------|----------------------------------|---|---|-------------------|---------|---------|---------|---|------------|---------------|
| | | | | 1 (USB1) | 1(USB2) | 2(USB1) | 2(USB2) | 5 | | Pass/ Fail |
| 1 | Output Voltage 输出电压 | Vin12Vdc 输入 12Vdc | 5Vdc±5% | 4.92 | 5 | 4.95 | 5.03 | | V | Pass |
| 2 | Output Voltage 输出电压 | Vin12Vdc 输入 12Vdc | CC:USB1 3A USB2:2.4A | 4.82 | 4.86 | 4.86 | 4.95 | | V | Pass |
| 3 | Ripple & Noise mVp-p 纹波&杂讯 | Vin 12Vdc 输入 12Vdc | 200mVp-p | 64 | 46 | 62 | 50 | | mVp-p | Pass |
| 4 | Standby Power 待机功耗 | Vin 12Vdc Io=0 输入 12Vdc | 0.3W max | 0.0864 | | 0.0862 | | | W | Pass |
| 5 | Short circuit test 短路测试 | Vin12 V dc 输入 12Vdc 空 载 | No odor smoke fire plastic deformation and excessive heat happen. 无冒烟,起火,外壳变形及过 热现象 | OK | OK | OK | OK | | / | Pass |
| 6 | OCP 过电流保护 | Vin 12Vdc 输入 12Vdc | A Max | 3.45 | 2.81 | 3.47 | 2.85 | | A | Pass |
| 7 | Output Voltage 输出电压 | Vin24 V dc Io=0 输入 24Vdc 空 载 | 5Vdc±5% | 5.12 | 5.01 | 5.06 | 5.02 | | V | Pass |
| 8 | Output Voltage 输出电压 | Vin24 V dc Io=Rated Current 输入 24 V dc 负载 | CC:USB1 3A USB2:2.4A | 4.81 | 4.85 | 4.92 | 4.87 | | V | Pass |
| 9 | Ripple & Noise mVp-p 纹波&杂讯 | Vin24Vdc Full load 输入 24Vdc 额 定电流 | 200mVp-p | 82 | 52 | 85 | 62 | | mVp-p | Pass |
| 10 | Line Regulation 线性调整率 | Vin=12V~24V Io=Rated Current 输入 12V~24V | ±2% | OK | OK | OK | OK | | / | Pass |
| 11 | Line Regulation 线性调整率 | Vin=12V Io=Rated Current 额定电流 | ±2% | OK | OK | OK | OK | | / | Pass |
| 12 | Standby Power 待机功耗 | Vin24V dc Io=0 输入 24Vdc | 0.3W max | 0.163 | | 0.161 | | | | Pass |
| 13 | Short circuit test 短路测试 | Vin 24V dc 输入 24Vdc | No odor smoke fire plastic deformation and excessive heat happen. 无冒烟,起火,外壳变形及过 热现象 | OK | OK | OK | OK | | | Pass |
| 14 | OCP 过电流保护 | Vin 24V dc 输入 24Vdc | A Max | 3.47 | 2.83 | 3.45 | 2.83 | | A | Pass |
| 15 | Average Efficiency 平均效率 | Vin12-24Vdc 输入 12-24Vdc | 85% | 87 | | 87.2 | | | | % |
| 16 | Burn in 老化 | Input:24Vdc/ Full Load 4hrs 输入 24Vdc/满载 4 小时 (环境温度 25 度) | | OK | OK | OK | OK | | | Pass |
| 17 | Drop test 跌落 | Heigh:1m Three*faces (once on each plane) 高 1 米,3 个面,每面 1 次. | | OK | OK | OK | OK | | | Pass |
| REMARK 备注 | | | | | | | | | | |