



深圳市金芯微电子有限公司

SHENZHEN GOLDICWELL ELECTRONIC CO.,LTD.

产品规格书

Product specification

产品名称 Model Name	500W 控制板
型号规格 Specification	500W
产品编码 Product Code	91601500000009
文件版本 File Version	V1.0
生效日期 Effective Date	2022-03-23

客户 Customer:

审核 Checked _____ 日期 Date _____

批准 Approved _____ 盖章 Stamp _____

制造商 Manufacturers: 深圳市金芯微电子有限公司

审核 Checked 陈文思 林小琼 日期 Date 2022-03-23

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文件编号/版本 File No. /Version.

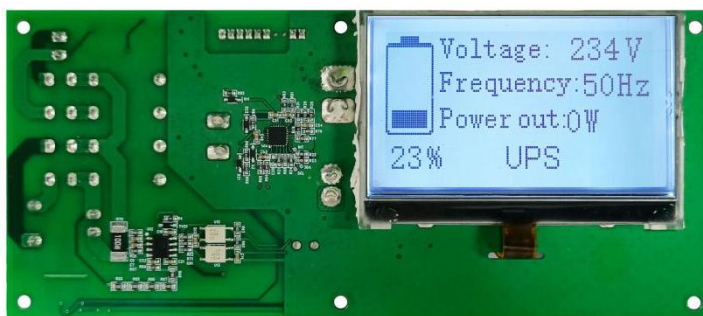
更新履历 Update history

序号 No.	版本 Version	日期 Date	更新说明 Updated instructions
1	V1.0	2022-03-23	制定 Initial release



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1. 产品描述 The product description

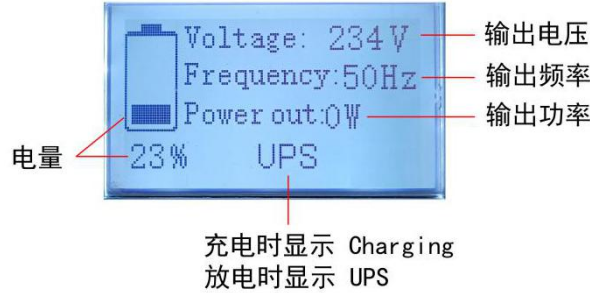
类别 Category	项目 Project	规格要求 Specifications	备注 Note
电池组 The battery pack	电芯组合方式 Combination mode of cell	6S	
	电池规格 The battery specification	标称电压: 21.6V, 充满电压: 25.2V Nominal voltage: 21.6V, full voltage: 25.2V	
输入功能 Input function	内置电源 Built-in power supply	24V3A	

1.1 基本性能 Basic performance

项目 Project	最小值 Min	标准 Standard	最大值 Max	备注 Note
整机休眠后自耗电(μ A) Power consumption after sleep (μ A)	/	/	800	关闭输出后的内部自耗电,含 AC 逆变器的耗电, 关闭 30 分钟后测试 The internal power consumption after shutting down the output, including the power consumption of the AC inverter, shall be tested after 30 minutes of shutting down
输出纹波(mVpp) DC 部分 Output ripple (mVpp) DC part	/	/	500	0-100%负载时, 输出端并接 10UF/50V 电解电容和 104/50V 瓷片电容 When the load is 0-100%, the output end is connected with 10UF/50V electrolytic capacitor and 104/50V ceramic capacitor
常开模式启动/关闭 Normally open mode start/close	按键打开/关闭显示 Button to turn on/off display			
电量指示功能 Electric quantity indicator function	按键打开/关闭显示, 充满电后电量显示 100% Button to turn on/off the display, the power display is 100% after being fully charged			
温度、湿度范围 Temperature and humidity range	存储: 0~25℃ 1 年; -10~45℃ 3 个月, -20~60℃ 1 个月; 湿度范围: 小于 75%RH Storage: 0~25℃ for 1 year; -10~45℃ 3 months, -20~60℃ 1 month; Humidity range: less than 75%RH			
尺寸 size	160*70*29mm			



1.2 LCD 屏显示功能 LCD display function



屏显符号 Screen symbols	显示符号说明 Display Symbol Description	
电量指示 Power indicator	放电时 When the discharge	显示当前剩余电量 Displays the current remaining power
	低电量指示 Low power indicator	电量低于 5%时, 逆变禁止输出 When the power is lower than 5%, the inverter forbids output 电量高于 10%时, 逆变允许输出 When the power is higher than 10%, the inverter allows output
	充电满 Charging full	充电满后静止显示 100% When fully charged, the static display is 100%

1.3 面板按键功能 Panel button function

按键操作 keystrokes	功能描述 Functional description
电源开关 Power switch	开启时, 整个系统开始工作, 并液晶屏点亮 When turned on, the whole system starts to work and the LCD screen lights up 关闭时, 整个系统关闭, 并关闭液晶屏 When off, the entire system shuts down and the LCD screen is turned off

1.4 开机启动 Powered up

1 电池电压没有过放, 或异常保护条件下执行。

The battery voltage is not overdischarge, or abnormal protection conditions.

2 开机后 LCD 全屏图标点亮, 自检所有的功能 OK 后, 进入待机状态。

After the startup, the LCD full-screen icon lights up. After the self-check all functions are OK, it enters the standby state.

3 待机状态时显示要求: 默认显示电量标, 电量百分比; 10% 以上 AC、DC 放电允许开启。

Standby state display requirements: the default display of power standard, power percentage; More than 10% AC and DC discharge can be turned on.

4 如开机时电池处在过放状态, 则只能充电激活, 开机是无法启动的。

If the battery is in overdischarge state when it is turned on, it can only be activated by charging, and cannot be started when it is turned on.

1.5 端口定义 Port definitions

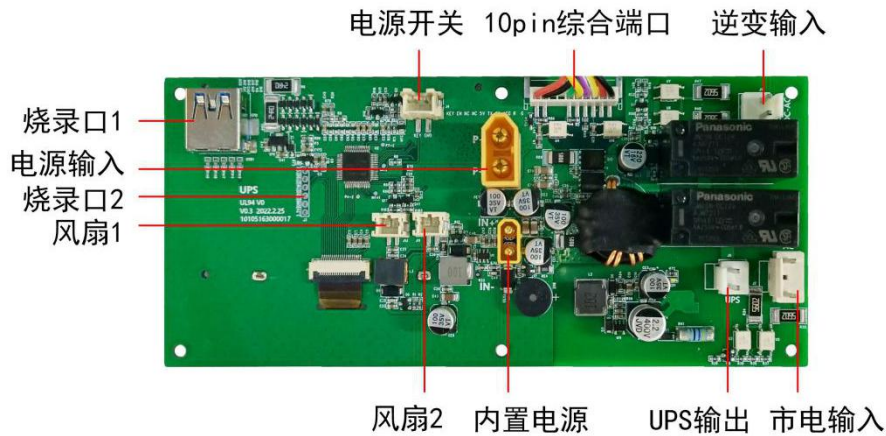








图 Figure	位号 A no.	端口说明 The port that
	J5	<p>10pin 综合端口 (如图, 从左往右)</p> <p>10pin integrated port (as shown, from left to right)</p> <p>p1-KEY : AC 按键保留 AC keys reserved</p> <p>p2-EN : AC 开启开关 AC switch</p> <p>p3-NC : 空</p> <p>p4-NC : 空</p> <p>p5-5V : 供电 The power supply</p> <p>p6-TXD : 发送数据 To send data</p> <p>p7-RXD : 接收数据 Receive data</p> <p>p8-ACG : 指示灯共阴公共 Indicator lights are in common shade</p> <p>p9-R : 逆变器输出红色指示灯(红色指示灯亮表示逆变器故障)</p> <p>Inverter output red indicator (red indicator on indicates inverter failure)</p> <p>p10-G : 逆变器输出绿色指示灯(绿色指示灯亮表示逆变器正常输出)</p> <p>Inverter output green indicator (green indicator on indicates normal inverter output)</p>
<p>正极  负极</p>	J6	<p>电源输入端口 (如图, 从左到右)</p> <p>Power input port (as shown, from left to right)</p> <p>p1-P+</p> <p>p2-P-</p>
	J3	<p>烧录口 (如图, 从左往右依次)</p> <p>Burning mouth (as shown, from left to right)</p> <p>p1-3.3V</p> <p>p2-GND</p> <p>p3-TDO</p> <p>p4-TMS</p> <p>p5-TDI</p> <p>p6-TCK</p>



<p>正极  负极</p>	J9	<p>内置电源端口 (如图, 从左往右依次) Built-in power port (as shown, from left to right) p1-IN+ p2-IN-</p>
	J4	<p>电源开关 (如图, 从左往右依次) Power switch (as shown, from left to right) p1-KEY p2-GND</p>
<p>正极  负极</p>	J11 J13	<p>2 个风扇端口 (如图, 从左往右依次) Two fan ports (as shown, from left to right) p1-+ p2--</p>

1.6 AC 输出功率及功率因数说明 AC output power and power factor description

1 面板显示 AC 功率的是视在功率, 计算是电压与电流的乘积。

Panel display AC power is the apparent power, the calculation is the voltage and current product.

2 有功功率是保持用电设备正常运行所需的电功率, 也就是将电能转换为其他形式能量(机械能、光能、热能)的电功率。

Active power is the electrical power needed to keep electrical equipment running properly, that is, to convert electrical energy into other forms of energy (mechanical, light, heat).

3 视在功率 $\times \cos\phi$ ($\cos\phi$ 指功率因数)=有功功率, 负载功率因数最大是 1, 纯电阻性负载如白炽灯泡、电炉, 则可以带载不超过 500W。

Apparent power $\times \cos\phi$ ($\cos\phi$ refers to the power factor)= active power, the maximum load power factor is 1, pure resistive load such as incandescent bulb, electric furnace, can carry not more than 500W.

4 电感性负载电路的功率因数都小于 1, 如电视、电脑、风扇、日光灯、节能灯等, 则最大使用功率=500W*功率因数。

The power factor of inductive load circuit is less than 1, such as TV, computer, fan, fluorescent lamp, energy-saving lamp, the maximum use power = 500W* power factor.

5 常用设备的功率因数: 电子计算机主机、电风扇为 0.8; 电子计算机外部设备为 0.5; 电饭锅、电烤箱、电炒锅、白炽灯为 1.0; 直管日光灯为 0.5; 电视机、节能灯、DVD 为 0.85。

The power factor of common equipment: electronic computer host, electric fan is 0.8; Electronic computer external equipment is 0.5; Electric rice cooker, electric oven, electric frying pan and incandescent lamp are 1.0; 0.5 for straight fluorescent lamps; TV sets, energy-saving lamps and DVDS were 0.85.

2. 工作环境参数 Working environment parameters

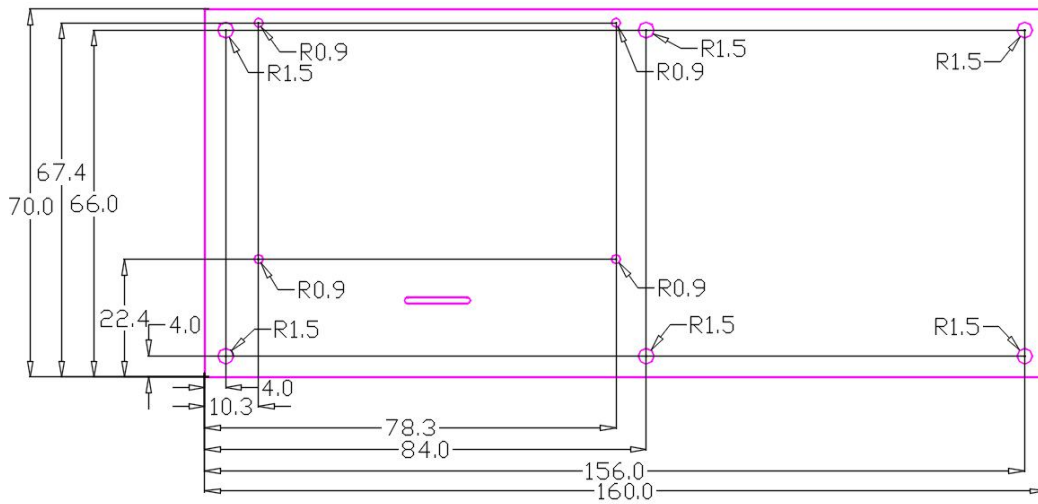
项目 Project	最小值 Min	标准 Standard	最大值 Max	备注 Note
工作温度 Working temperature	-10℃	---	40℃	产品正常工作的环境温度 Ambient temperature at which the product works normally
存储温度 Storage temperature	-20℃	---	70℃	产品不工作在存储温度范围内, 适用于存储 The product does not work in the storage temperature range, suitable for storage
工作湿度 Working humidity	0%	---	65%	产品正常工作的环境湿度 Ambient humidity for normal operation of the product



存储湿度 Store humidity	0%	---	70%	产品不工作在存储湿度范围内, 适用于存储 The product does not work in the storage humidity range, suitable for storage
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3.图 Figure

3.1 安装孔及 PCB 尺寸 Mounting hole and PCB size



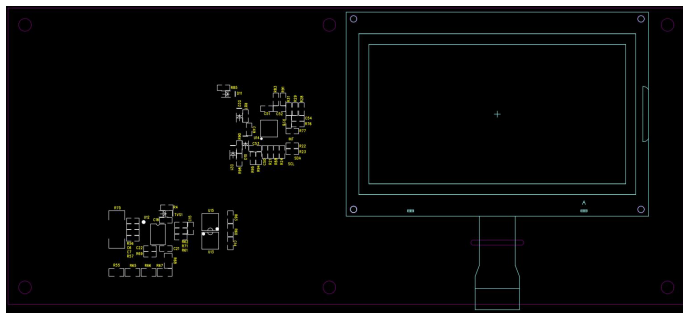
尺寸:长(160mm)*宽(70mm)

Size: L (160mm)* W (70mm)

3.2 元器件丝印图 Silkscreen of components

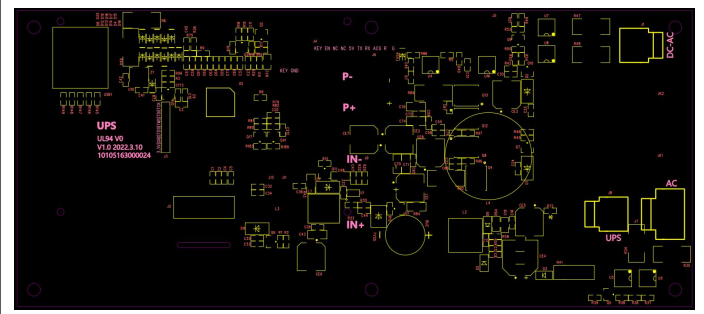
顶层丝印图

Top screen printing



底层丝印图

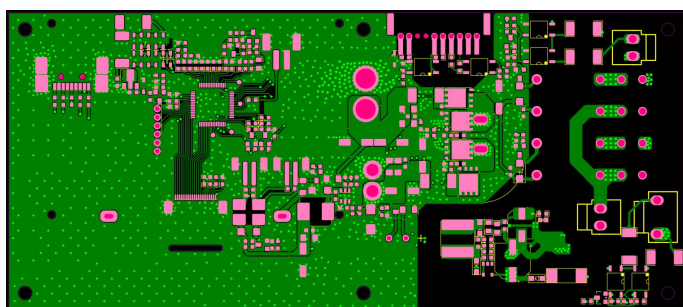
Bottom screen printing



3.3 布线图 Wiring diagram

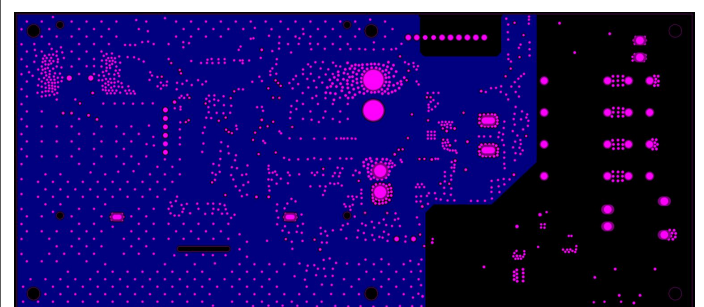
1 层

1 layer



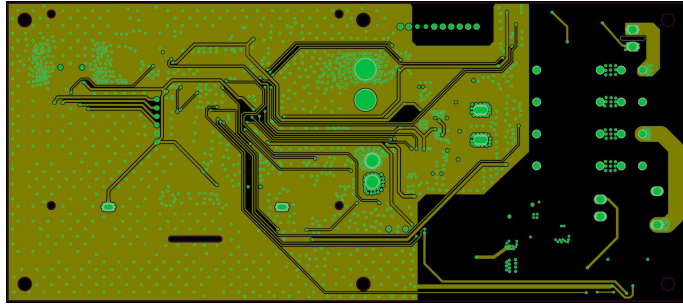
2 层

2layer

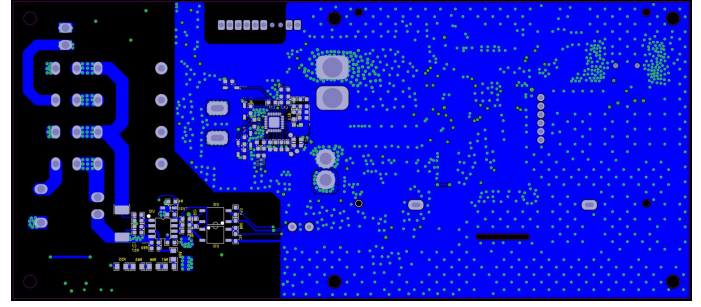




3 层
3 layer



4 层
4 layer



4.包装规格 Packing specification

外箱尺寸: 601*336*157mm

Outer box size: 601*336*157mm

箱内刀卡尺寸: 长刀卡 590*140mm / 短刀卡 325*140mm

Knife card size in the box: long card 590*140mm/short card 325*140mm

材质: K636K

Material: K636K

包装方式: 一箱装 14 个, 每个板子气泡袋包裹, 刀卡隔开

The packing way: box of 14, each board wrapped in bubble bags, separated by knife cards