

规格承认书

SPECIFICATION FOR APPROVAL

客户签核栏CUSTOMER LINE

经办 HANDLING	审核 CHECK	批准 APPROVAL	承认签印 CONFIRMATION
日期 DATE:			

客户名称 (Customer name)

客户料号 (Material number)

产品名称 (Product name)12V2A 电源适配器 欧规

版本编号 (Version number)SG-1019W产品型号 (Product model)SG-120200024AE



请签字确认并回传本司, 签字后, 您同意本承认书内容, 所有产品将按此要求生产。
Please sign and return one copy,With your signature, you confirm all the details in this specification, and the products will be made according to below description.

备注REMARKS:

修改记录
[SPEC. Revision History]

项目 Item.	修改日期 Revision Date	修改内容 Revision Content	生效日期 Effective Date	确认 Arbiter	修改人 Revisor
1	2022-5- 14	新版发行(Initial)	2022-5- 14		

产品型号MODEL NO.:	SG- 120200024AE		Approve 核准	Check 审核	Preparation 拟制
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1. 描述 [Description]

本规格书适用于 12V2A 型号的开关电源，产品有高效率、高可靠性的特性，并具备有短路保护、过流保护等保护功能。

This specification apply to the Switching power whose model No. is 12V2A , which has a high efficiency and reliability, and have the over voltage, over current and short circuit function.

2. 电气规格 [Electrical Specification]

2.1 输入规格 (INPUT SPECIFICATION)

输入电压范围 (Input voltage range)	90Vac - 264Vac
额定输入电压 (Rated voltage)	100Vac - 240Vac
输入频率范围 (Input frequency range)	47Hz - 63Hz
额定输入频率 (Rated input frequency)	50Hz - 60Hz
额定输入电流 (Rated Input current)	0.6A max.@ full load , rated voltage
空载输入电流 (No Load Input current)	6 mA max.@ no loading , rated voltage
空载功耗 (No Load Input Power)	0.1W max.@ no loading , rated voltage
功率因数 (Power factor)	≥0.5
浪涌电流 (Inrush current)	<30A 。 peak @ 220V input, cold start

2.2 输出规格 (OUTPUT SPECIFICATION)

额定输出电压 (Vdc) Rated Output Voltage	输出电压范围 (Vdc) Output Voltage Range	纹波 & 噪声(mV) Output Ripple & Noise	额定输出电流(mA) Rated Output Current
12.0	11.4- 12.6	≤250	2000

注 Notes: 输出电压测试条件: 输出线为24AWG长度1米, 输入额定电压, 输出带额定负载&空载测试。纹波&噪声测试条件:示波器带宽设置20MHz , 输出测试端并联一只10uF电解电容和1PCS0.1uF瓷片电容The output wire is 24awg, 1m long, with rated voltage input and rated load& no-load test output.Test conditions: the oscilloscope bandwidth is set at 20MHz , A 10uF E-cap and 0.1uF ceramic-cap shall be connected to the connector in parallel.

2.3 输出电压过冲 (Output Overshoot At Turn On & Turn Off)

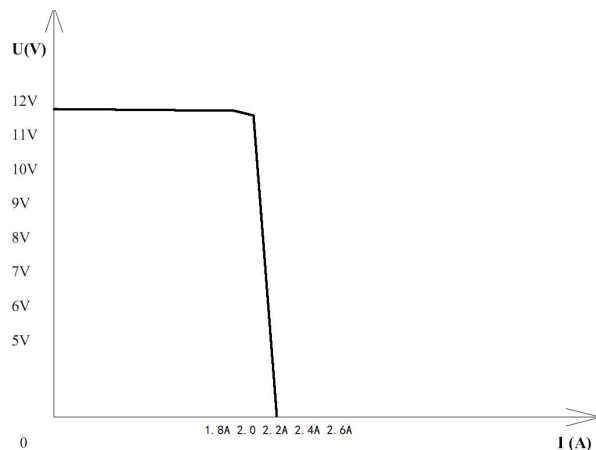
额定输出电压 (Vdc) Rated Output Voltage	输出超调电压比例 Proportion of the output voltage overshoot	
	开通 Turn on	关断 Turn off
12.0	≤5%	≤5%

注 Note : 测试条件为额定输入电压下, 输出电流分别为空载及满载
The test condition as : All of output Current from Min to Max

2.4 负载特性 / 调整率 (Combined Load / Line Regulation)

额定输出电压 Rated Output Voltage (V)	最小负载 (A) Min. Loading	额定负载 (A) Rated. Loading	线性调整率 Line Regulation	负载调整率 Load Regulation
12.0	0	2.0	≤±2%	≤±3%

2.5 电流/电压特性曲线 (V/A characteristic curve) :



2.6. 启动延迟时间 (Turn on delay time) :

当输入电压 115V/60Hz 及输出额定负载时, 产品的启动时间最大为 3S.
3 Second Max. at 115Vac input and output Max. load.

2.7. 上升时间 (Rise time) :

当输入电压 115V/60Hz 及输出额定负载时, 产品的上升时间最大为 40mS.
40mS Max. at 115Vac input and output Max load.

2.8. 保持时间 (Hold up time) :

当输入电压 115V/60Hz 及输出额定负载时, 产品的保持时间最小为 5mS.
5mS Min. at 115Vac input and output Min. Load.

2.9. 平均效率 (Average Efficiency) :

在额定输入电压, 输出电流分别为额定电流的 25%、50%、75%、100%情况下, 并工作30 分钟后, 产品的平均效率 $\geq 86.2\%$, 即达到六级能效的平均效率标准。

In the regular voltage, The output current is at 25%, 50%, 75% and full load cases, The average efficiency of $\geq 86.2\%$ (warm up 30 minutes), Which meet the standards of energy efficiency level VI.

3. 保护特性 [Protection Feature]

3.1. 输出短路保护 (Output Short circuit protection) :

输入电压90V/60Hz及264VAC/50Hz, 输出满载并电子负载设置 CC 模式的情况下, 当输出端短路时并短路持续3 秒的过程中, 输入功率小于 5W; 当解除短路后, 输出电压能 3 秒钟内自动恢复正常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 after short circuit faults remove.

3.2. 过流保护 (Over current Protection) :

输入额定电压, 电子负载设置CC 模式下, 当输出端过流时, 产品进入到打嗝的保护状态; 当解除过流后, 输出电压能3 秒钟内自动恢复正常。

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

4. 可靠性要求 [Reliability Requirements]

4.1. 老化 (Burn-in)

输出额定负载100%，环境温度 40℃±5℃条件下，产品于输入电压90V/60Hz及264VAC/50Hz分别各工作 2-4 小时后，输出电压应在输出电压标准之内,整机无任何损坏现象。

The power supply shall be burn-in for 2-4 Hours under normal input and 100% rated load at 40℃±5℃

4.2. 平均故障间隔时间 (MTBF Qualification)

额定输入电压、输出满载，及25℃环境温度条件下，MTBF至少 20,000 小时。

The MTBF shall be at least 20,000hours at 25℃, Full load and nominal input condition

5. 环境要求 [Environment Requirement]

5.1 工作环境温度 (Operating ambient temperature) :

额定操作温度 (Rated operating temperature) : -10℃~25℃

最大操作温度 (operating temperature Maximum) : 45℃

注意：请勿在超过额定操作温度环境下长时间满载工作

Do not work with full load for a long time in an environment exceeding the rated operating temperature

5.2 工作温升(额定负载工作时，相对于环境温度升高的温度): 40℃ Max

Working temperature rise (temperature rising relative to ambient temperature when working under rated load): 40 °C Max

5.3 工作湿度 (Relative Humidity) :

相对湿度 25%~90%，非冷凝 Relative Humidity 25%-90%,Non – Condensing

5.4 储藏温度 (Storage Temperature) : - 10℃ ~ 70℃

5.5 储藏湿度 (Storage Humidity) :

相对湿度10%~90%，非冷凝Relative Humidity 10%-90%,Non -Condensing

5.6 振动 (Vibration) :

5.6.1. 测试标准 (Operating Standard) : IEC 721-3-3

3M3 5~9Hz,A= 1.5mm

9~200Hz, 加速度 Acceleration 5m/s²

5.6.2. 运输 (Transportation) : IEC 721-3-2

2M2 5-9Hz,A=3.5mm

9~200Hz,加速度

Acceleration=5m/S 200~500Hz,加

速度 Acceleration= 15m/S

5.6.3. 轴向振动 (Axes,10 cycles per axis) :

在测试过程中不能出现永久性的损坏；在电源重新开关后，产品能够恢复正常。No permanent damage may occur during testing, and The product can restore to its original situation after power off / on.

5.7 跌落试验(Dropping)(Packed)[木质地板]:

经过“高度 76 厘米，一个角/三个棱/六个面”共 10 次跌落后，产品的机构及功能正常。

After the Dropping test (1 corner,3 edges, and 6 surfaces,Height:76cm, 10times),function well.

6. 安全及EMI 要求 [Safety and EMI Requirement] :

6.1 安全方面 (Safety) : 符合以下(打✓部分) (accord with mark✓)

certificate	国家/Country	standards
☐ UL/CUL	美国/USA	UL62368
☐ UL/CUL	美国/USA	UL60950
☒ TUV/GS	欧洲/Europe	EN62368
☐ TUV/GS	欧洲/Europe	EN60950
☐ FCC	美国/USA	Class B
☒ CE	欧洲/Europe	EN62368
☒ CE	欧洲/Europe	EN61558
☐ MEPS	澳洲/Australia	AS/NZS 4665
☐ SAA	澳洲/Australia	AS/NZS 60065
☐ SAA	澳洲/Australia	AS/NZS 60950
☐ CQC	中国/China	GB4706
☐ CCC	中国/China	GB4943
☐ PSE	日本/Japan	J60950 (H22)
☐ CB	欧洲/Europe	IEC60065
☐ CB	欧洲/Europe	IEC60950
☐ C-TICK	澳洲/Australia	AS/NZS CISPR13:2004
☐ EK/KC	韩国/Korea	K60065
☐ EK/KC	韩国/Korea	K60950

6.2 EMI 标准 (EMI STANDARD) : 限值符合以下 (Meets the Limits)

6.2.1. Fcc class B rules

6.2.2. EN55032 class B rules

6.3 绝缘强度 (Dielectric Strength Testing) :

项目 (ITEM)	测试规格 (SPECIFICATION)	结果 (REMARK)
输入—输出 Primary to Secondary	3000Vac/5mA/60S	无拉弧 No arcing
输入—地 Primary to P.G	仅适用于三插 only 3 pin plug	—
输出—地 Secondary to P.G	—	—

6.3.1 高压测试 (HI-POT TEST) :

注: 测试前, 输入端的 L/N 短路, 输出端的正极/负极须分别短路并连接牢固。

Note: before testing, input L/N short circuit, make output positive and negative short circuit and connected.

6.3.2. 绝缘测试 (isolation Test) : 输入对输出之间 500Vdc/60Sec , 绝缘电阻>50M ohm 。 Input to output 500Vdc/60Sec, isolation resistance > 50M ohm

注: 测试过程中, 输入端的 L/N 短路, 输出端的正极/负极短路

Note : at the test, input L/N short circuit, make output positive and negative short circuit

7. 测试设备清单 [Test Equipment List]

项目	设备名称	制造	型号
1	变频电源 (AC power source)	HY	HY9905
2	示波器 (Oscilloscope)	UNI-T	UTD2102CEX+
3	电子负载仪 (Electronic load)	ITECH	IT8512A+
4	万用表 (Multimeter)	FLUKE	FLUKE15B+
5	功率计 (Dynamometer)	远方EVERFINE	PF9810
6	耐压接地测试仪	JINKO	JK7122
7	温度表 (Thermograph)	LUTRON	TW-902C
8	插头引线弯折试验机 (Plug lead bend test machine)	联欣	LX-817
9	盐雾试验机 (Saltsprayingtester)	联欣	LX-8827B
10	震动台 (Vibration table)	精技实验	FZD-25
11	跌落测试台 (Drop test bed)	自制	
12	数显卡尺 (Digimatic caliper)	上海量具	0- 150mm

8. 铭牌 [LABEL]

铭牌位置：默认产品正面居中位置
铭牌工艺：激光镭雕工艺

规范要求：字体应清晰可见，不允许镭雕或印刷字符断线或掉漆，重影，错误，位置偏移，字符歪斜，变形等不一致缺陷。

Nameplate position: default product front center position
Nameplate process: laser radium carving process

Specification requirements: the font shall be clear and visible, and no inconsistent defects such as broken line or paint falling off of radium engraved or printed characters, ghosting, error, position offset, character skew, deformation and so on are allowed.

POWER ADAPTER

Model: SG-120200024AE

Input: 100-240V~50/60Hz 0.6A MAX

Output: 12.0V $\equiv$ 2.0A 24.0W



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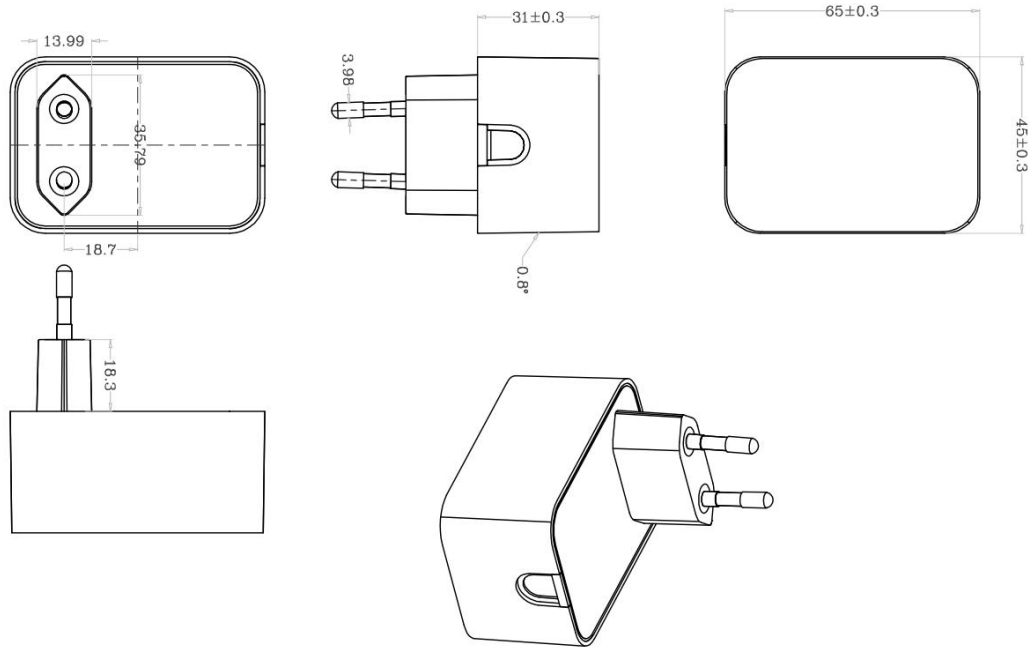
9. 结构参数 [MECHANICAL REQUIREMENT]:

9.1 输入连接 (Input Connector) : 2pin 插脚 (Two 2 pin plug)

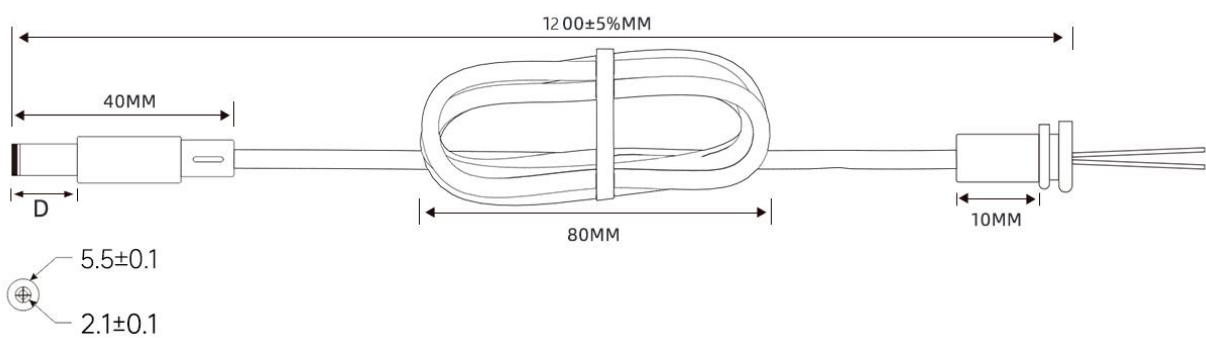
9.2 外壳 (Enclosure) :

外壳尺寸 (The power supply size:) :L * W * H = 65 mm * 45 mm * 31 mm

9.3 外壳尺寸图 (Dimension) :



9.4 (Dimension) : 线材规格



9.5 输出线输出极性 (Polarity):内正外负(Inside plus outside minus)

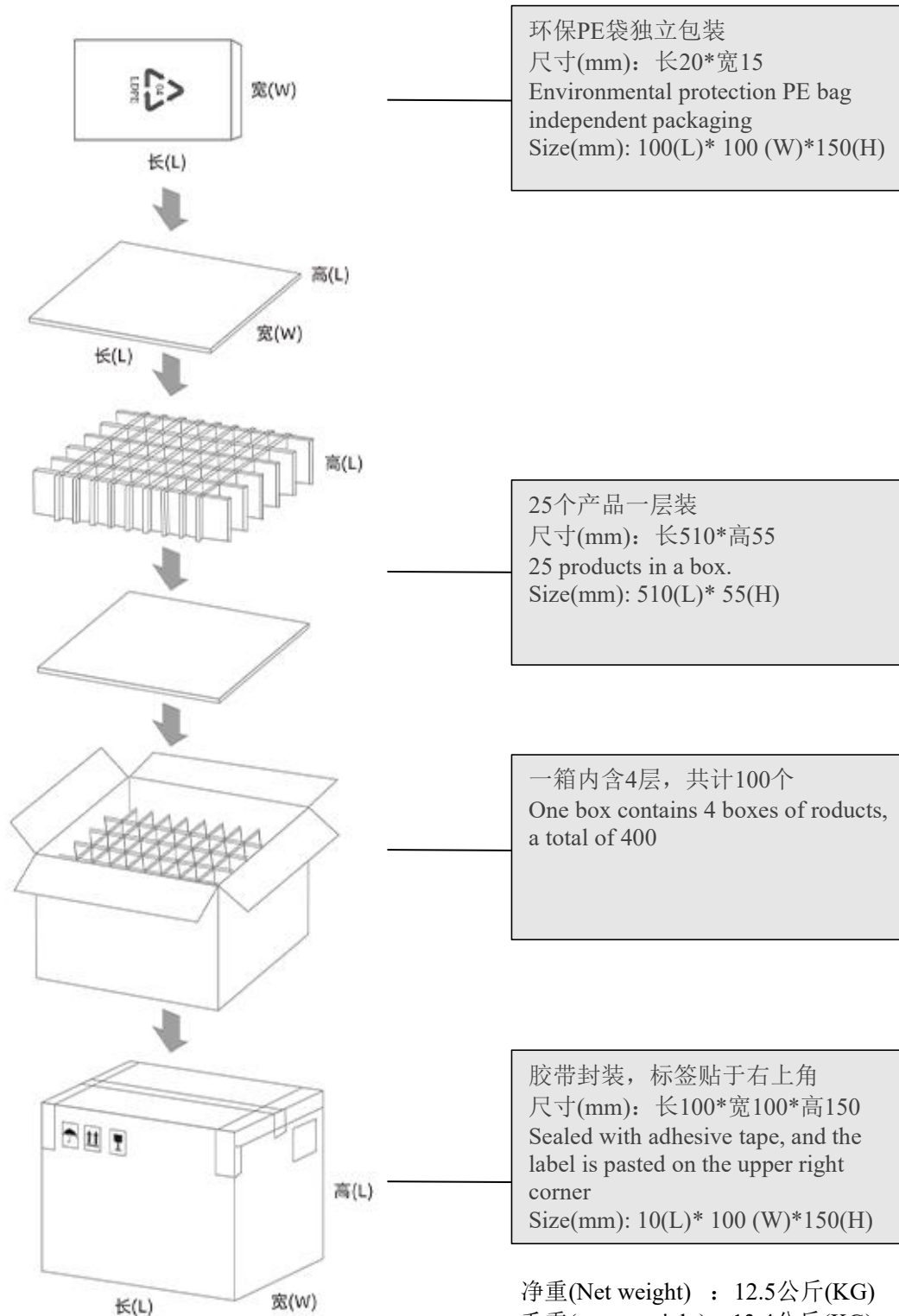
10. 重量 [Weight]

电源成品重量大约为 (The weight of the power supply shall be about) 125 g

11. 包装图 [Package Drawing]

11.1 外箱尺寸 (Outer box size) : L * W * H = 520mm * 270mm * 250mm

11.2 数量 100 PCS/箱 (quantity Pcs/box) :



12. 测试项目及判定标准 [Test items and criteria]

序号 No	测试项目 Test item	测试条件 Test condition ☐ Input 100v AC 60Hz ☒ Input 240v AC 50Hz	判定标准 Test standard	测试类型 Test type	备注 Notes
1	空载电压 No load Voltage	LOAD = 0A	11.40- 12.60V	☒ 全检 All test ☐ 抽检 Spot check	
2	满载电压 FULL load Voltage	CC MODE :load=2.0A	11.40- 12.60V	☒ 全检 All test ☐ 抽检 Spot check	
3	恒流电流 constant current	CV MODE :U=10V	2.0-2.4A	☒ 全检 All test ☐ 抽检 Spot check	
4	过流保护 OCP	CC MODE :load=2.5A	SHUT DOWN	☒ 全检 All test ☐ 抽检 Spot check	
5	短路测试 Short circuit test	LOAD = 2A: Short	SHUT DOWN	☒ 全检 All test ☐ 抽检 Spot check	
6	纹波&噪音 Ripple& Noise mV p-p	CC MODE :load=2.0A	≤250mV	☒ 全检 All test ☐ 抽检 Spot check	
7	工作效率 Efficiency	25%,50%,75%, 100% 2.0A	Average $\eta \geq 86.2\%$	☒ 全检 All test ☐ 抽检 Spot check	
8	待机功耗 Standby Power	LOAD = 0A	P ≤0.1W	☒ 全检 All test ☐ 抽检 Spot check	
9	耐压测试 Hi-pot test	Secondary / primary 3300Vac/5mA/2S	< 5 mA.	☒ 全检 All test ☐ 抽检 Spot check	
9A	耐压测试 Hi-pot test	Secondary / primary 3 0 0 0 Vac/ 5 mA/ 6 0 S for type test	< 5 mA.	☐ 全检 All test ☒ 抽检 Spot check	
10	老化 Burn in	load=2.0A 4Hours	无冒烟,起火,外壳 变形及过热现象 No odor smoke fire plastic deformation and excessive heat happen	☒ 全检 All test ☐ 抽检 Spot check	

注*:

产品后期可能存在PCB 版本升级、优化或者工艺改善而不会影响到产品的外观和电气性能和符合相关安全认证的情况下，则本公司保留可能不另行通知的权力。

Note : if the PCB version upgrade, optimization or process improvement may occur in the later stage of the product without affecting the appearance and electrical performance of the product and compliance with relevant safety certification, the company reserves the right not to be notified.

END