规 格 承 认 书

SPECIFICATION FOR APPROVAL

客户名称

Customer _____

客户料号

CUSTOME _____

产品类别

Product Ty 电源适配器 Switch Power Adaptor

设计编号

Designed N _____

产品型号

Model No. AD-BSGKJ-120480-Z

样单编号

SAMPLE N _____

版　本

Version A

送样日期

Sample Da _____

客户承认签核　CUSTOMER AUTHORIZED SIGNATURE		

PLEASE SIGN AND RETURN ONE COPY 请签字确认并回传本司.

With your signature ,you agree that all contents in this approval sheet are correct and all production units will be built according to the specification described in this sheet.

签字后,您同意本承认书内容,所有产品将按此要求生产.

REMARKS: Please make sure the test about EMI with our product and your suitable terminal connection is OK Before you sign signature.

备注 :请将我们的产品与配套产品终端连接测 EMI OK 后签字.

SPECIFICATION CHANGE

Revision 版本	Change record 变更记录	Arbiter 确认者	Changed date 变更日期
A/0	Primary Release.	黎启荣	

APPROVE BY	CHECK BY	PREPARED BY

2.1 Power Supply Description 产品概述

This is a series of general purpose AC/DC adapters which convert 100Vac ~240Vac to a stabilized DC voltage of 12V with rated output current of 4A.

本通用型电源是将100Vac-240Vac 交流输入电压转换成稳定的直流电压12VDC，额定输出电流4A。

2.2 Power Supply Change Notification 变更事前通知

The vendor shall notify customer of significant design changes, prior to implementation.Howeveprocess improvements can be an exception.

有重大设计变动时,在变更实施之前,供应商将通知到客户,工艺改善可以例外。

2.3 Power Supply Frame **电源结构型式**

Wall mount 插墙式	Desk-top 桌上式
☐ Open frame 开放式结构/裸板	■ Other 其它
☐	☐

3 ELECTRICAL CHARACTERISTICS 电气性能

3.1 AC Input Voltage and Frequency 输入电压及频率

2.1.1 Rated Input Voltage 额定输入电压 : AC100-240V

2.1.2 Reliable Input Voltage 可输入电压范围 : AC90-264V

2.1.3 Rated Input Frequency 额定输入频率: 50/60Hz

2.1.4 Reliable Input Frequency 可输入频率范围 : 47-63Hz

3.2 Maximum AC Current 最大输入电流

Input rated voltage,Ouput rated load. Input AC Current 1.5Amps Maximum.

输入额定电压,输出额定负载条件下,最大输入电流为:1.5Amps.

3.3 Input Inrush Current 最大浪涌(突入)电流

Input 100VAC 60Hz,Ouput rated load(cold start) inrush Current 30Amps peak. 输入100Vac 60Hz,输出额定负载(冷启动)条件下,最大浪涌(突入)电流为:30Amps. Input 240VAC 50Hz,Ouput rated load(cold start) inrush Current 50Amps peak. 输入240Vac 50Hz,输出额定负载(冷启动)条件下,最大浪涌(突入)电流为:50Amps.

3.4 No-load Loss Power 空载功耗

Input 115/230Vac,Output no load. Maximum loss power 0.1Watts.

输入115/230Vac,输出空载,最大空载功耗为:0.1瓦.

3.5 Output Voltage 输出电压

负载 (Load)	最小负载（Min. Load）	最大负载（Max. Load）
电流(Current)	0.1A	4A
电压(Voltage)	12Vdc±5%	12Vdc±5%

3.6 Output Ripple Voltage 输出纹波电压

3.6.1

在额定输入及输出的条件下（25℃）测试输出纹波电压.

3.6.2 Peak to peak ripple is measured with an oscilloscope with a bandwidth of 20

纹波量测时示波器选用20MHz带宽限制.

3.6.3 Measurement of ripple should include a 0.1uFceramic capacitor and a 10uF

electrolytic capacitor at the input of the measuring oscilloscope.
测试时在输出端要并联一颗0.1uF的陶瓷电容和一颗10uF的电解电容.

Input	Output Rated Voltage	Output Current	Output Ripple & Noise
100Vac-240Vac	+12V	4A	180mVp-p Max.

3.7 Time Sequence 时序特性

3.7.1 Turn-On Delay Time(T_D) **开机输出延迟时间**:
The maximum cold start turn-on delay shall not exceed 3 second at input 100-240Vacand the rated load condition.

在输入100-240Vac,额定负载情况下,最大冷启动打开的延迟不会超出3秒.

3.7.2 Hold-Up Time(T_H) **关机输出维持时间**:
3.7.2.1 The maximum turn-off hold-up time shall be least 5mS at input 100Vac

在输入100Vac及额定负载情况下,关机输出维持时间不低于5mS.

The maximum turn-off hold-up time shall be least 10mS at input 240Vacand the rated load condition.

在输入240Vac及额定负载情况下,关机输出维持时间不低于10mS.

3.7.3 Output Rise Time(T_R) **输出上升时间**:
Input 100Vac/240Vac and rated load, The rise time shall not exceed 100mS that the outp voltage rise from 10% to 90% rated voltage.
在输入100Vac/240Vac,输出额定负载条件下,输出电压由10%额定电压上升至90%额定 电压的上升时间不会超过100mS.

3.8 Capacitive load testing 容性负载测试
The output is connected to 0-100uF capacitor with different load output at startup output monotonically rise.

输出接0-100uF的电容带不同载输出启动时输出单调上升.

3.9 Output Overshoot 输出过冲

3.9.1 10% Rated Voltage Max. when the power turn on.
当电源开机时,过冲电压值最大为额定电压值的10%.

3.9.2 10% Rated Voltage Max. when the power turn off.
当电源关机时,过冲电压值最大为额定电压值的10%.

Output Rated Voltage	Overshoot Voltage(V) Turn on Turn off

+12V	10%	10%

3.10 Output transient response 输出瞬态响应

Output Voltage Tolerance Limited 范围	Rate 斜率	Load change 输出电压 负载变化12Vdc±10%
	0.25A/μs	20% to 80% Load

Transient response measurements shall be made with a load changing repetition rate of 100Hz to 测量瞬态响应与负载改变的频率应在100Hz至10kHz。

3.11 Protection Function 保护功能

3.11.1 Over Voltage Protection 过压保护

The power supply shall protect itself from any over voltage condition.

电源在过压情况下可自动保护。

3.11.2 Over Current Protection 过流保护

The power supply shall protect itself from any over current condition.

it can be automatically restored to be normal when the overcurrent condition removed,the Overcurrent output current is between 1.2-2A .

电源在过流情况下可自动保护,当过流情况解除后,可自动恢复正常。过流保护在输出电流的1.2-2A之间.

3.11.3 Short Circuit Protection 短路保护

Shorting of output will not cause power supply to damage, or any safety hazard.The power supply shall resume normal operation after the short is removed.

输出短路时电源不会损坏,不会有任何的安全危险,短路解除后电源恢复正常工作.

3.11.4 Input Protection 输入保护

The power supply has a current fuse to protect itself.

该电源由一颗电流保险丝来达到输入保护.

3.12 Average Efficiency 平均效率

Input 115/230Vac. and 100%,75%,50%,25% Rated Load condition. Averageefficiency (η): 86% Min(Level V).

在输入115/230Vac,输出100%,75%,50%,25%额定负载,平均效率 (η): 86% Min(V级).

4.1 Temperature 温度

4.1.1 Storage temperature (Non-operating) **可存储温度(非操作状态)**:
-20 to 80 degrees C [-20]至 [80]摄氏度.
Typical values:25 degrees C. 典型值:25摄氏度.

4.1.2 Operating temperature Limits **可操作温度**:
0 to 40 degrees C. [0]至 [40]摄氏度.
Typical values:25 degrees C. 典型值:25摄氏度.

4.2 Relative Humidity **相对湿度**

4.2.1 Storage Humidity (Non-operating) **存储湿度(非操作状态)**:

5% to 90% RH (Non-condensin [5%] 至 [90%],无凝水状态.

4.2.2 Operating Humidity Limits **操作湿度**:

5% to 90% RH (Non-condensin [5%] 至 [90%],无凝水状态.

4.3 The Sea Level Altitude **海拔高度**

4.3.1 Storage Altitude **可存储海拔度(非操作状态):**

0 to +5,000m above the sea lev [0]至 [5,000]米.

4.3.2 Operating Altitude **可工作海拔度:**

0 to +2,000m above the sea lev [0]至 [2,000]米.

4.4 Cooling Method **冷却方法**

Natural convection or Forced air 自然冷却或通风冷却

5 Reliability 可靠性

5.1 MTBF: Mean Time Between Failure 平均故障间隔时间

The power supply shall be designed and manufactured to have more than20,000 operating hours (about 2.28 years for 24-hour-operation a day) of mean time between failure (MTBF) at 90% of confidence level while operating under the prevailing conditionsbelow.

在如下条件,该电源设计和制造平均故障间隔时间(MTBF)将超过20,000个操作时间(大约操作24小时/每天/2.28年),信心指数为90%。

AC Input Voltage:	115/230Vac
输入电压:	115/230Vac
Output Load:	of Rated load
输出负载:	额定负载条件
Ambient Temperature:	at 25 degrees C Room Temperature
环境温度:	室温25摄氏度

5.2 Insulation Resistance 绝缘阻抗

Test Points	检测部位	Condition & Specification 条件及规格
to Output	输入-输出	DC500V 30MΩ min. (at ambient temperature 25 degreeInput DC500V 30MΩ 最小. (在室温25摄氏度,湿度90%条件下).
to Case	输入- 外壳	DC500V 30MΩ min. (at ambient temperature 25 degreeInput DC500V 30MΩ 最小. (在室温25摄氏度,湿度90%条件下).
Output To Case	输出 - 外壳	Non Isolated

5.3 Hi-Pot 绝缘耐压

Test Points	检测部位	Condition & Specification 条件及规格
Input to Output	输入-输出	3000Vac 50Hz, 60S, ≤10mA.Input to
Case	输入- 外壳	3000Vac 50Hz, 60S, ≤10mA.

When AC voltage of 3KV is applied, and the voltage applied to the insulation under test is gradually raised from zero to the prescribed voltage in 60s,and held at that value for 60s bthe input and outpu and between the input and housing, the current sensitivity shall be le 10mA. After this test, the adapter shall exhibit no electrical and mechanical abnormalities.voltage of 3.75KV,2s and sensitivity current 10mA shall be applied to the product line).

在输入端对输出端及输入端对外壳间施加了3KV电压,并且测试中施加在绝缘上的电压是在2s内由0V逐渐上升到规定值,然后保持60S,电流灵敏度设置在10mA。经过以上测试,电源应 不发生电气及机械上的异常.(注: 在生产线批量生产时以3.75KV,2s 10mA进行测试).

5.4 Leakage Current 漏电流

The leakage current shall not exceed 0.25mAwhen power supply is operated maximuminput voltage and maximum load.

当电源供应器操作在最大输入及最大负载情况下，其漏电流应小于0.25mA,

5.5 Low Temperature Storage 低温存储 a

Keep the parts unpacked without connecting to the power for 96 hours at -20℃. Ecectric characte tested and appearance after resuming 1 hours at room temperature. The electri performance anc appearance should be normal. .

产品不包装,不通电.在-20℃条件下保存96小时,常温恢复1小时后,进行外观、电气性能检测 产品电气性能及外观应是正常的.

5.6 High Temperature Storage 高温存储

Keep the parts unpacked without connecting to the power for 96 hours at 80℃. Ecectricacharacte tested and appearance after resuming 1 hours at room temperature. The electri performance anc appearance should be normal.

产品不包装,不通电.在80℃条件下保存96小时,常温恢复1小时后,进行外观、电气性能检测. 产品电气性能及外观应是正常的.

5.7 Low Temperature Operating 低温操作

Keep the parts unpacked without connecting to the power, Adjust the temperature of the incuba by the speed of 1 ° C / min. to 0 ° C for 48 hours, 3 times a power-on test, and then continued to maintain the power-on State, to the end of the experiment; test time about 48 hour (loac about 46 hours), check the electrical function after resuming 2 hours at room temperature;The electrica performance should be normal.

将样品放到温箱中,产品不包装,不通电,按1℃/min的速度调节温箱温度至0℃,保持48小时后,进行3次上电测试,然后持续保持上电工作状态,至实验结束; 实验时间共48小时(带载约46小时), 试验结束后,常温恢复2个小时,检查电气功能. 产品电气性能及外观应是正常的.

5.8 High Temperature Operating 高温操作

Keep the parts unpacked without connecting to the power, Adjust the temperature of the incuba

by the speed of 1 ℃ / min. to 40 ° C for 48 hours, 3 times a power-on test, and then continued to maintain the power-on State, to the end of the experiment; test time about 48 hour (load about 46 hours), check the electrical function after resuming 2 hours at room temperature; The electrical performance should be normal.

将样品放到温箱中,产品不包装,不通电,按1℃/min的速度调节温箱温度至40℃,保持48小时后,进行3次上电测试,然后持续保持上电工作状态,至实验结束;　实验时间共48小时(带载约46小时), 试验结束后,常温恢复2个小时,检查电气功能. 产品电气性能应是正常的.

5.9 High & Lower Temperature Cycle 高低温循环

Sample connecting to the power incubator humidity rose to 90% within 1 hour, the temperature maintained at 0℃; Within three hours the temperature rose to 40 ℃, humidity 90%, to maintain 9 hours; Then drop the temperature within 3 hours to 0 ° C, humidity 90% to maintain 9 hours; The above is a cycle, a total of two cycles. The indicators & functions shall be normal in the testprocess and the end of the test.

样品通电,温箱湿度在1小时内升到90%,温度保持在0℃;再将温度在3小时内上升到40℃,湿度在90%,保持9小时;将温度在3小时内下降到0℃,湿度在90%,保持9小时;　以上为一个循环,共进行2个循环. 产品在测试过程中以及测试结束后,要求指标、功能全部正常.

6 SAFETY STANDARD 安全标准

6.1 SAFETY STANDARD 安全标准

* Meet EN60950-1 or EN62368-1

6.2 ELECTROMAGNETIC COMPATIBILITY (EMC) 电磁兼容性

6.2.1 EMI 电磁干扰

This power supply shall compliance with the following Criterion 本电源将遵照以下标准:

6.2.1.1 Conduction Emission 传导干扰度

* EN55032/EN55035

6.2.1.2 Radiated Emission 辐射干扰度

* EN55032/EN55035

This power supply shall compliance with the following Criterion 本电源将遵照以下标准:

6.2.2.1 ESD 静电抗扰度

Standard: * IEC62368-1

AIR DISCHARGE at 8KV, CONTACT DISCHARGE at 4KV.

6.2.2.2 EFT 脉冲群抗扰度

Standard: * IEC60950-1　　±1KV

6.2.2.3 Surge 雷击浪涌

differential mode: 1KV　　common mode: 1KV

The common mode must test with end application. 共模雷击搭配客户产品测试.

Remarks: EMC-SPECIFICATION test with the Pure resistance as load to test,and we only responsible for the product we supplied.

电磁兼容性测试是以纯电阻作为负载测试的，我们只对单品测试负责。

7 MECHANICAL CHARACTERISTICS 机械性能

7.1 Bending Test 摇摆(弯曲)测试

Test the metallurgical equipment with fixed plug,handing weight is 500g, ±60 degrees from side to side, swing 45 times per minute, swing more than 2000 times(Remark: +/60 degrees, that is to say 120 degrees for a cycle,counting 1 times)

以测试冶具固定Plug,吊重500g,左右摇摆±60度,每分钟摇摆45次，摇摆2000次以上(注:±6即120度为一个循环,算1次)

7.2 Tensile Strength Test 拉力测试

put the weight of 4 kg on SR for 1 minute, SR should not shift or damage. put the weight of 7 kg on DC Cable after 1 minute,inner core shall not break .

在DC线的SR卡上施以4Kg之重量1分钟，产品无短路，无开路，围卡无松脱。
在DC线线体上施以7Kg之重量1分钟后，检查内芯不可有拉断现象。

7.3 Drop Test 跌落测试

The adapter shall exhibit no abnormality in mechanical or electrical performance when it idropped 6 times to hardwood(20mm thickness) from a height of 1m, with each of the 6 different sides of the adapter 1 times. The electrical and mechanical performance shbe norma after the tested. Small nicks or slight deformations in the corners of the housing or cracks nc penetrating the inside may be accepted. (at:25℃±5℃).

适配器经过落地测试后应无机械或电气性能异常,从1m垂直高度自由跌落到20mm厚度的硬木质板上(硬木质板应放置于水泥基座或同等无弹性的地面上),共跌落6次,6个不同面各 1次. 测试后产品电气和机械功能正常,外观或角落有轻微的变形或出现不穿透裂纹是可以

接受的(在25℃±5℃)。

7.4 Vibration test specifications non-operating with packing 振动测试(未运行,带包装)

10Hz to 55Hz with sweep at a breadth 2.0mm for 20 Minutes for each of the perpendicular axes X,Y,Z. After the test the electrical performance shall be normal.

振动频率: 10Hz-55Hz; 振幅:2mm; X、Y、Z三个方向各20分钟; 振动测试后产品电气性能应是正常的.

7.5 Salt spray test 盐雾测试

The most typical of sample surface exposed, Sample pretreatment at 35 ° C for 2 hours inof the sa spray test; Concentration of 5% NACL solution, 35 degrees under the condition continuous spray 4 hours, and then moved out for 16 hours to dry. The electrical performshould be normal.

将样品最典型的表面暴露在外, 样品在盐雾测试前在35℃进行2小时的预处理; 浓度5% NA 溶液,35度条件下连续喷雾48个小时,然后移出进行16小时晾干, 产品电气性能应是正常的.

7.6.1 Input Connection 输入连接**:**

7.6.1.1 Wall plug or Cord to Cord Type 插墙式或导线式

■ For CE	■ For UL	■ | For CCC For PSE
	For UK 3PIN 两铜一塑	| For KoreaFor IRAM
	■ For SAA	| For ETL
For Brazil	For FCC	| Others

7.6.1.2 Socket and Termainal Type 母座或端子式

■ 2PIN Socket	3PIN Socket	| Terminal type

7.6.2 Output Connector **输出连接**:

7.6.2.1 Output Plug **输出插头**

5.5*2.5*10音叉

7.6.2.2 Polarity **极性**

红正黑负

7.6.3 Input & Output Cord **输入输出线材**:

7.6.3.1 Length and Cord **长度及颜色**

线长1500mm±30,BLACK

7.6.3.2 Specifition **规格**

UL2464,22AWG/2C

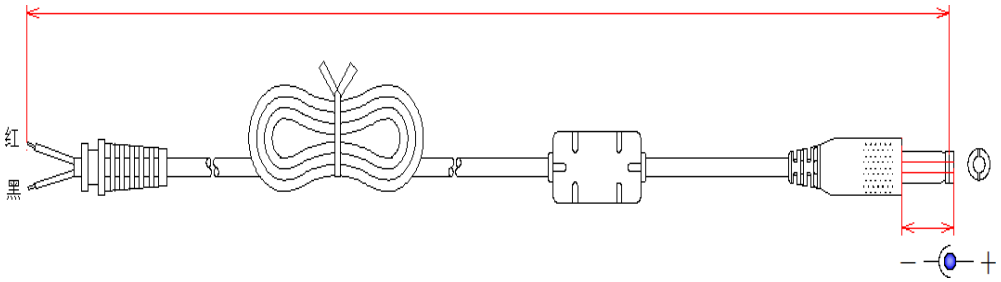
7.7 Unit Weigth 产品单重

The weight of the unit power supply shall be about 180g g(Ref).

产品单重大约: 180 g 克 (供参考).

7.8 Dimension 物理尺寸

See appearance figure 详见外观图.



8.3 Overall Drawing 外观图

外壳(Enclosure):WHITE(LEAD FREE) 外壳：黑色外壳尺寸

(The power supply size):