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客户承认书
SPECIFICATION FOR APPROVAL

CUSTOMER/客户： _____

CUSTOMER P.N./客户物料号： _____

MODEL NO./产品型号： **YSG-350-24**

PRODUCT NO./产品编号： **350W 24V/14.6A 无风扇**

SAMPLE DATE/送样日期： **2021-7-29**

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核		

Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature./客户确认签字，盖章后请回传一份承认书给我司 .

拟 制：	安规工程师：	项目工程师：	批 准：

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1. Functional description/功能描述

YSG-350-24 is a 350W output closed-type power supply with a 30mm thin design and a wide input voltage range of 90 ~ 264Vac.The output voltage is single channel 24V, and the peak efficiency is as high as 93%. it is designed with an aluminum casing for good heat dissipation.The power supply has a variety of protection functions, such as input under-voltage protection, output over-current protection, output over-voltage protection and temperature protection.It conforms to the harmonics requirement of en 61000-3-2.It provides a high performance and cost-effective solution for various engineering applications.

YSG-350-24 是一款 **350W** 24V 输出封闭型电源供应器，具有 **30mm** 薄外型设计，无风扇，拨码切换宽输入电压范围 **90～264Vac**。输出电压为 24**V,**峰值效率高达 **94%**；采用铝外壳设计且具有很好的散热效果。该电源具有多种保护功能，如输入欠压保护、输出过流保护、输出过压保护、输出短路锁死保护功能；符合 **EN61000-3-2** 谐波要求;为各种工程应用提供了一个高性能和高性价比的解决方案。

2. SCOPE/简述

The document detail the electrical, mechanical and environmental specifications of a SMPS, the power supply provide 350W continuous output power.

资料详细描述了一款 **350W (**连续输出功率**)**开关电源的电气性,结构性及环境等要求。

The power supply shall meet the **RoHS** requirement.

此款电源符合 **RoHS** 要求.

2.1. Description/产品类型

SMPS Adaptor(Wall mount)/插墙式适配器　　SMPS Adaptor(Desk-top)/桌面型适配器

Open Frame/开放式结构　　■ SMPS Unit (With Case)/带铝壳型

Others/其他

3. Input Characteristics/输入特性

3.1. Input Voltage & Frequency/输入电压与频率

The range of input voltage is from 90Vac to 264Vac single phase, switching the input voltage through a switch.

输入电压范围：从 **90Vac** 到 **264Vac,** 单相输入,通过开关切换输入电压。

Items	Min/最小	Nom/额定值	Max/最大
Input Voltage/输入电压	90 Vac	100~240 Vac	264 Vac
Input Frequency/输入频率	47 Hz	50~60 Hz	63 Hz

3.2. Input AC Current/AC 输入电流

Input Voltage/输入电压	115Vac	230Vac	Full load
Input AC Current/AC 输入电流	5.5A Max	3A Max	Full load

3.3. Inrush Current (cold start)/浪涌电流(冷启动)

The energy of inrush current should not be over the I^2T of fuse & bridge diodes.

冷启动时，浪涌能量不能超过整流桥和保险丝的 I^2T，且不能有损坏。

3.4. Type Efficiency/典型效率

91% min.(average efficiency). @115Vac/60Hz input .

94% min.(average efficiency).@230Vac/50Hz input.

输入电压 **115V/60Hz** 时，平均效率不低于 **91%**。

输入电压 **230V/50Hz** 时，平均效率不低于 **94%**。

3.5. Energy Consumption /空载功耗

No load Consumption ≤0.7W(230Vac/50Hz).

在额定输入 **230Vac/50Hz** 时,空载功耗≤**0.7W**。

4. Output Characteristics/输出特性

4.1. Static Output Characteristics <Vo & R+N>/静态输出特性

Output	Rated Load/额定负载		Output Range	R+N	Remark
Rate	Min. Load	Rate.Load	输出电压范围	纹波与噪声	备 注
+24V	0.0A	14.6A	22.8V ~ 25.2V	200mVp-p	

Ripple & Noise: Measurement is done by 20MHz bandwidth oscilloscope and the output paralleled a 0.1uF ceramic capacitor and a 10uF electrolytic capacitor. (test under the condition of rated input and rated output).

纹波与噪声: 量测时示波器选用 **20MHz** 带宽限制,输出端要并联一颗 **0.1uF** 的陶瓷电容和一颗 **10uF** 的电解电容. **(**在额定输入及输出的条件下检测**)** 。

4.2. Line/ Load Regulation/线性/负载调整率

Output	Load Condition/负载条件		Line Regulation	Load Regulation	Remark
Rate	Min. Load	Rate.Load	线性调整率	负载调整率	备 注
+ 24V	0.0A	14.6A	± **3 %**	± **3%**	

4.3. Turn - on Delay Time/开机延迟时间

3S max. @115Vac to 230Vac input & Full load.

输入电压 **115Vac to 230Vac** 满载时，开机延迟时间不超过 **3S**。

4.4. Hold-up Time/关机维持时间

10mS min. @ Full load &115Vac/60Hz input turn off at worst case.

输入电压 **115Vac/60Hz** 满载时，关机时间最差情况不小于 **10** 毫秒。

10mS min. @ Full load &230Vac/50Hz input turn off at worst case.

输入电压 **230Vac/50Hz** 满载时，关机时间最差情况不小于 **10** 毫秒。

4.5. Rise Time/上升时间

80 mS max. @ Full load &115Vac/60Hz and 230Vac/50Hz input.

在 **115Vac/60Hz** 和 **230Vac/50Hz** 输入满载时，上升时间不超过 **80** 毫秒。

4.6. Fall Time/下降时间

30 mS max. @ Full load.

满载时，下降时间不超过 **30** 毫秒。

4.7. Output Overshoot / Undershoot/输出过冲/欠冲

10 % max. When the power on or off, when it is the full input voltage and full load.

开关机时，输出过冲/欠冲均不大于 **10%**。

4.8. Output Load Transient Response/输出负载瞬态响应

Output voltage within 22.8～25.2V for load step from 25% to 50% to 25%,50% to 75% to 50% R/S: 0.25A/uS, Transient Response Recovery Time :200uS，Dynamic response overshoot 10%.

输出电压在 22.8～25.2 **V** 之间,负载变化: 从 **25% to 50% to 25%, 50% to 75% to 50%**斜率: **0.25A/uS**, 动态响应恢复时间：**20mS**, 动态响应过冲±**10%**。

5. Protection Requirements/保护要求

5.1. Over Current Protection/过流保护

Over Power Point Limited: 105%~150% Full load (@115/230Vac)

过流保护点限制:**105%~150%** 满载（**115**～**230Vac**）

The output shall hiccup when the over current applied to the output rail, and shall be self-recovery when the fault condition is removed.

当过流作用于输出时，输出将锁死，当故障情况消除时，重新启动恢复。

5.2. Short Circuit Protection/短路保护

The input power shall decrease when the output short.the power supply shall no damage, and shall be auto-recovery when the fault condition is removed.

当输出短路时，输入功率应减小。电源不应损坏，故障排除后重新启动恢复。

5.3. Over Voltage Protection/过压保护

In the case of 90 ~ 264Vac input space time load and full load,22V < OVP < 27V, and can not be damaged.

在 **90**～**264Vac** 输入时空载和满载情况下，输出过压保护大于 **27V,**小于 **22V**，且不能损坏。

5.4. Over temperature protection/过温保护

When the temperature exceeds 110±5℃, turn off the output voltage and automatically recover when the temperature drops to 75℃.

当温度超过 **110**±**5**℃时，关闭输出电压，温度下降到 **75**℃后自动恢复。

6. Environment Requirements/环境要求

6.1. Operating Temperature and Relative Humidity/操作温/湿度要求

Operating temperature:-30℃ to +70℃

工作温度：**-30**℃ **to +70**℃

Operating Relative humidity:10%RH to 90%RH

工作湿度：**10%RH to 90%RH**

6.2. Storage Temperature and Relative Humidity/存储温/湿度要求

Storage Temperature:-40℃ to +80℃

储存温度：**-40**℃ **to +85**℃

Storage relative humidity:10%RH to 95%RH non-condensing

存储湿度：**10%RH to 95%RH**

6.3. Sea level shall be low 2.000 meters/低于 2000 米.

6.4. Vibration/振动

10 to 500Hz sweep at a constant acceleration of 2.0G(Displacement amplitude: 3.5mm),10 minutes per cycle, 60 minutes on the X, Y and Z axis.

以 **2.0G** 恒定加速度(位移幅值:**3.5mm**)扫频 **10 - 500Hz**，每循环 **10** 分钟，**X**、**Y**、**Z** 轴 **60** 分钟。

7. Reliability Requirements/可靠性要求

7.1. Burn-in/老化

The power supply shall be burn-in for 2 Hours under rated input and 80% Full load at 40℃

±5℃.

电源在 **40**℃±**5**℃额定输入、**80%**满负荷情况下老化 **2** 小时。

7.2. E-caps lifetime

The E-caps used in this power supply must be with lifetime of 3 years @ 25℃of full load. @ 200Vac / 60Hz and / or 240Vac /50Hz.

本电源使用的电解电容寿命必须在 **25**℃满负荷时使用寿命为 **3** 年。**@ 200Vac / 60Hz** 和/或 **240Vac /50Hz**。

7.3.MTBF：

≥200 K Hrs MIL-HDBK-217F (25℃).

平均无故障时间 **20** 万小时以上，标准 **MIL-HDBK-217F (25**℃**)**。

8. EMI/EMS Standards/EMI/EMS 标准

8.1. EMI Standards/EMI 标准

EMI	Standards	Margin Measurements
Radiated Emission	EN55032 EN55035 GB/T9254 GB17625.1	≥3dB
Conduction Emission	EN55032 EN55035 GB/T9254 GB17625.1	≥3dB

8.2. EMS Standards/EMS 标准

8.2.1.EN 61000-4-2,electrostatic discharge(ESD) requirement/静电抗扰度要求

Discharge characteristic/静电规格	Test level/测试条件	Test criteria/测试标准
Air discharge/空气放电	+/- 8KV	A
Contact discharge/接触放电	+/- 4KV	A

8.2.2.EN 61000-4-3,radiated electromagnetic field susceptibility(rs)/辐射骚扰场强

Test level/测试条件	Test criteria/测试标准
10V/m (r.m.s)	A
30-1000MHz,80% AM(1KHz) sine-wave	

8.2.3.EN 61000-4-4,electric fast transients(burst) immunity requirement/电快速瞬变脉冲群

Coupling/测试端口	Test level/测试条件	Test criteria/测试标准
AC-input/交流输入	0.5KV	A
AC-input/交流输入	1KV	A

8.2.4.EN 61000-4-5,surge capability requirement/浪涌抗扰度要求

Surge voltage/雷击电压	Test criteria/测试标准
Common mode/共模 +/- 2KV	A
Differential mode/差模 +/-4KV	

8.2.5.EN 61000-4-6, Induced radio frequency fields conducted disturbances immunity requirement/电源端子传导骚扰实验

Test level/测试条件	Test criteria/测试标准

3V	A
0.15-30 MHz,80%AM(1KHz)	

8.2.6. Assessment criteria /评估标准

Acceptance criteria 可接受标准	Performance 性能
A	Agreed operational behavior within the specified limits 性能不允许变化；如果性能会发生变化，则变化的范围在产品规格书规定的范围内.
B	Time limited functional diminishment or malfunction during the tests is permitted. The function is self-reactivated by the unit following completion of the tests. 设备在测试过程中,性能降低允许在产品规格书要求范围内,干拢消除后,设备能恢复正常,不允许出现复位和任何方式的人工干预.
C	Malfunction is permitted .The function can be reactivated either by reconnection to the mains or by operator intervention. 在测试过程中，设备允许出现业务中断，测试完毕后允许自行恢复或者人工干预恢复（包括硬件上干预）；测试中只允许初级防护器件损坏，并且更换损坏的初级防护器件后，设备能恢复正常

9. Safety Standards/安规标准

9.1. Dielectric Strength(Hi-pot)/介电耐压强度(高压)

I/P- O/P: 3KVac / 5mA max. / 60 second .

输入对输出**: 3KVac / 5mA max. / 60 秒.**

I/P-FG: 2KVac / 5 mA max. / 60 second .

输入对地**: 2KVac / 5 mA max. / 60 秒**

O/P-FG: 0.5K Vac / 5 mA max. / second.

输出对地**: 0.5KVac / 5 mA max. / 60 秒.**

9.2. Leakage Current/漏电流

3.5mA max. at 250Vac / 50Hz.

输入 **250V AC,**漏电流小于 **3.5mA**。

9.3. Insulation Resistance/绝缘阻抗

I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH

输入对输出、输入对地、输出对地，在 **25**℃ **70**％的湿度分别施加 **500Vdc** 进行测试，阻抗大于 **100** 兆欧姆**.**

9.4. Regulatory Standards/安规标准

Type/安规	Country/国家	Standard/标准	State/状况	Note/备注
CCC	China	GB4943.1	Meet	
CE	Europe	EN62368-1	Meet	
FCC	Europe	EN62368-1	Meet	

10. Mechanical Outline Drawing/外观示意图

215L*115W*30H mm



