GOLDEN PACIFIC ELECTRONICS, INC.
16800 E. Gale Ave, City of Industry, CA 91745 U.S.A
Phone#: 714-993-6970; 626-217-1049
Fax#:626-968-6897
Website: www.gpelectronics.com
Email: sales@gpelectronics.com

Customer:

Customer Model Number:

Product Part Number: PS-1326APL05

1. SCOPE

This document details the electrical, mechanical and environmental specifications of a switching power supply.

1.1 Description

☐ Wall Mount ☑ Desk-Top

☐ Open Frame ☐ Others

2. INPUT REQUIREMENTS

2.1 Input Voltage & Frequency

The range of input voltage is from **90Vac** to **264Vac**

	Min	Normal	Max.
Input Voltage	90Vac	100-240Vac	264Vac
Input Frequency	47Hz	50/60Hz	63Hz

2.2 Input current

The maximum input current is **1.5A** Max. at **100-240Vac** .

2.3 Inrush Current

The inrush current will not exceed **50A** at **100-240Vac** input and Max load for a cold start at 25℃.

3. OUTPUT FEATURES

3.1 Output Parameters

	Output Data	Spec. Limit			Test Condition
3.1.1	**13.5Vdc**	Min. Value	Typical	Max. Value	
3.1.2	Output Voltage	**12.825Vdc**	**13.5Vdc**	**14.175Vdc**	**0 ~2.6A** Loading
3.1.3	Output Load	**0.0A**	—	**2.6A**	
3.1.4	Ripple and Noise	—	**120mVp-p**	**200mVp-p**	20MHz Bandwidth 10uF Elec. Cap.0.1uF Cer. Cap.
3.1.5	Output Overshoot	—	—	10%	MAX. load & 100-240Vac

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3.2 Turn On Delay

During turn on and turn off, no output voltage shall exceed its nominal voltage by more than 10% and no output shall change its polarity with respect to its return line. All outputs shall reach their steady state values within 3 seconds of turn on.

3.3 Hold Up Time

10 ms minimum at 115Vac/60Hz input at maximum load, and 20 ms minimum at 230Vac/50Hz input at maximum load.

3.4 Output Transient Response

The power supply shall maintain output transient response time within 1500mV with a loading current change from 20% to 80% of maximum current and 0.5A/μs rise up /drop down test at end of output terminal.

4. PROTECTION REQUIREMENT

4.1 Over Voltage Protection

Over voltage protection shall be included in the adaptor circuit. A single component failure must not cause an over voltage.

4.2 Over Current Protection

The adaptor must have a current limiting function on the output voltage. in overload mode, the output must drop to a low voltage. The OCP 5 A

4.3 Short Circuit Protection

The adaptor must withstand a continuous short circuit on the output without damage.

5. ENVIRONMENTAL CONDITIONS

5.1 Operating

The power supply shall be capable of operating normally in any mode without malfunction happens in the following environmental conditions.

5.1.1 Operating Temperature: 0℃ ~40℃
Relative Humidity: 10% ~ 90%
Altitude: Sea level to 2,000 m.

5.1.2 Vibration: 1.0mm, 10 –55Hz, 15 minutes per cycle for each axis (X, Y, Z).

5.1.3 Cooling: Natural convection cooling.

5.2 Non - Operating

The power supply shall be capable of withstanding the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies.

5.2.1 Storage Temperature: -10℃ ~ 60℃

5.2.2 Relative Humidity: 5% ~ 95%

5.2.3 Altitude: Sea level to 2,000 m.

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5.2.4 Vibration and Shock:
The power supply shall be designed to withstand normal transportation vibration per MIL-STD-810D, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

6. RELIABILITY AND QUALITY CONTROL

6.1 MTBF
When the power supply is operating within the limits of this specification the MTBF shall be at least 50000 hours at 25℃ (MIL-HDBK-217F).

6.2 Burn-In
The power supply shall withstand a minimum of 4 hours Burn-In test under full load at 35℃ ~40℃ room temperature, after test, product shall operate normally.

6.3 Component De-rating
Semiconductor junction temperatures shall not exceed the manufacturer's maximum thermal rating.

7. MECHANICAL CHARACTERISTICS

7.1 Physical Dimensions
The detail dimension of the power supply is drawing on APPENDIX A.

7.2 Nameplate
The label of the power supply, please see APPENDIX B.

7.3 Drop test
Dropped freely from 1 m (for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor 1 time from 3 different surface, after test, it's no safety damage for product.

8. SAFETY

8.1 Safety Standard
The power supply shall be certified under the following international regulatory standards.

Item	Country	Certified	Standard	Present
UL	USA	APPROVED	UL60950-1 2nd /UL62368-1	V
CUL	Canada	APPROVED	CSA C22.2 NO.60950-1/62368-1	V
FCC	USA	APPROVED	PART 15 CLASS B	V
TUV/GS	Europe	APPROVED	EN 60950-1 2nd /EN60065/EN62368-1	V
CE	Europe	APPROVED	EN 60950-1 2nd/EN60065	V
BS/UK	Britain		BS EN 60950-1 2nd/EN60065	
SAA	Australia		AS/NZS 60950-1/NZS60065	□
CCC	China		GB9254/GB8898/GB4943	□
KC	Korea		K60950	
PSE	Japan		J60950 (H27)/J60065(H26)	□
Others				

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8.2 Insulation Resistance

Input to output: 10 MΩ min. at 500 VDC.

8.3 Dielectric Strength (Hi-Pot)

Primary to Secondary DC2121V or AC1500V 10mA 1 minute for type test, 3 seconds for product.

8.4 Leakage Current

The leakage current shall be less than 0.35mA for Class I when the power supply is operated maximum input voltage and maximum frequency.

9. EMC STANDARDS

9.1 EMI Standards

The power supply shall meet the radiated and conducted emission requirements for EN55022 CLASS B,FCC PART 15 CLASS B.

9.2 EMS Standards(EN55024)

The power supply shall meet the following EMS standards.

9.2.1 IEC61000-4-2 Electrostatic Discharge (ESD)

Static – discharge test by contract or air should be conducted with Static – discharge teeter, energy storage capacitance of 150pF, and discharge resistance of 330Ω.
8KV air discharge, 4KV contact discharge, Performance Criterion B.

9.2.2 IEC61000-4-3 Radiated Electromagnetic Fields(RS)

Radio- frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz,3V/m, 80%AM(1KHz), Performance Criterion A.

9.2.3 IEC61000-4-4 Electrical Fast Transient / Burst (EFT)

Power Line to Line: 1KV
Performance Criterion B.

9.2.4 IEC61000-4-5 Lightning Surge Attachment

Lightning Surge voltage of differential and common modes shall be applied across AC input lines and across input and frame ground.
Power Line to Line (Common Mode): 1KV
Power Line & Neutral to Earth (Different Mode): /

9.2.5 IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)

Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1KHz, Performance Criterion A.

9.2.6 IEC61000-4-11 Voltage Dips/Short Interruption/Variations

Voltage Dips, 30% reduction- 10ms, Performance Criterion B, 60% Reduction – 100ms, Performance Criterion C, Voltage Interruptions>95% Reduction- 5000ms, Performance Criterion C.

10. OTHER REQUIREMENTS

10.1 Hazardous Substances

The components and used materials shall be in compliance with

☑ EU Directive 2011/65/EU "RoHS 2"

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10.2 Energy Efficiency

The power supply shall meet the following EMS standards.

10.2.1 The No-Load power consumption shall be less than **0.1W** at input **115/230 Vac.**

10.2.2 The average active mode efficiency shall be higher than **87.35%** at input **115/230 Vac.**

10.2.3 International Efficiency Level **VI**

10.2.4 This power supply is therefore in compliance with the requirements of

□ California Energy Commission for external power supplies (CEC)

☑ Energy Star requirements for external power supplies(EPS Version 3.0)

☑ EU Code of Conduct Energy requirements of external power supplies

□ Australian and New Zed Energy Performance Requirements for external power supplies (MEPS)

□ China Energy Efficiency requirements for external power supplies (GB20943)

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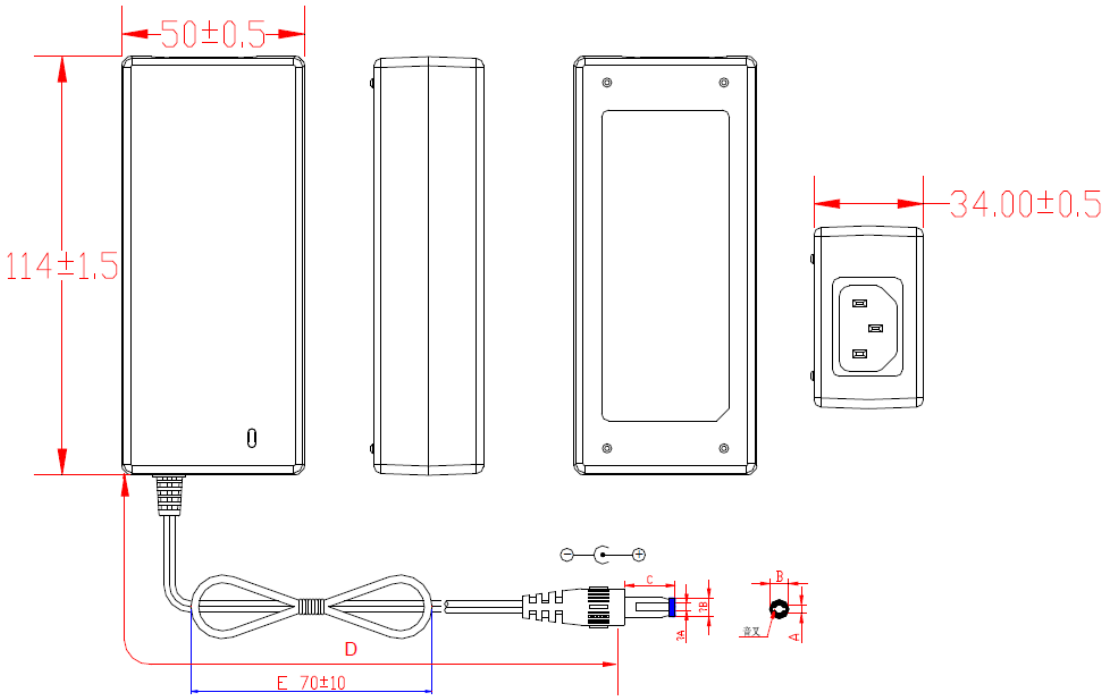
External View



Unit : mm

	ΦA	ΦB	C	D
DIMENSION	2.1	5.5	12	1830
TOLERANCE	+0.1/-0	±0.1	±0.5	+50/-0
REMARK1	AWG18# 2C UL2468 BLACK "Tunning fork with groove"			
REMARK2	FG ground isolated from the DC- plug			

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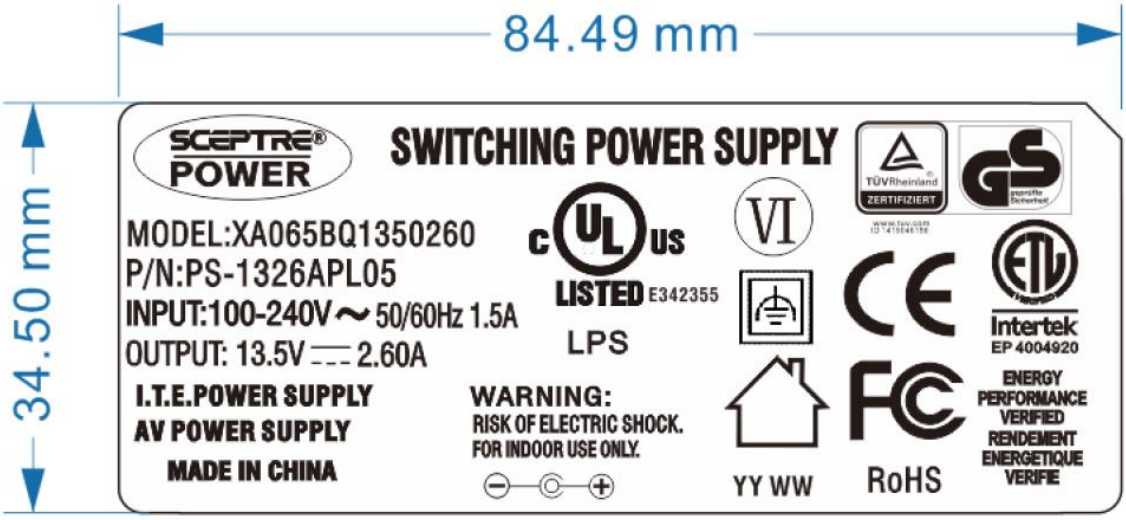
Nameplate



Unit: mm
Tolerance: +0/-0.2