



SPECIFICATION FOR APPROVAL

CUSTOMER :	01061 REV.00
ARTICLE:	SWITCHING MODE POWER SUPPLY
STANDARD :	Open Board
MODEL NO. :	DSO602-120500W
DYS PART NO.:	DSO602-2120500-15403B
TYM PART NO.:	
INPUT :	100-240V AC 50/60Hz
OUTPUT:	12.0V DC 5.0A

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REV.00

Date: 2015/04/03

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1. Record of Revision:

REVISION	DESCRIPTIONS OF CHANGE	DATE	ACTOR
REV.00	New document	2015/04/03	黄建兰

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2. Descriptions:

These are a series of general purpose AC/DC adapters which convert 100Vac ~ 240Vac to a stabilized DC voltage of 12.0V with rated output current of 5000mA. Please connect the electrical power first and then add the load when using this SMPS.

The switching mode power supply meets the requirements of lead free and ROHS.

3. Input Feature:

3.1 Input Voltage and Frequency

The power supply shall meet all specifications when powered from the following sources.

Rating Voltage	Line Frequency	Minimum Voltage	Maximum Voltage
100-240V AC	50/60Hz	90V AC	264V AC

3.2 Efficiency

The minimum average efficiency shall be 87.0% under 115Vac/230Vac input and output full load after 30 minutes.

3.3 Input Current

The maximum input current shall be less than 1.5A.

3.4 Input In-rush Current

Peak inrush current shall be limited to 60A.

3.5 Input Leakage Current

The leakage current shall not exceed 0.25mA.

4. Output Feature:

4.1 Output Voltage and Current

The switching mode power supply shall have one regulated DC output voltage: 12.0V DC.

The table below defines the total regulation banding for the output, which includes line regulation, load regulation, transient response, and effects due to environmental conditions and aging. Voltage shall be measured at its output connector.

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Output	Output Current Range		Output Voltage Range		Ripple & Noise
	Min	Max	Min	Max	Max.
+12.0V	0.0A	5.0A	11.4V	12.6V	150mVpp

Ripple & Noise Test: Add 0.1uF/50V ceramic capacitor and 10uF/50V aluminum electrolytic capacitor across the output terminal. Measured with 20MHz Bandwidth Oscilloscope.

4.2 Dynamic Response

The load current of the output is changed between 25% and 75% under full load at 0.5A/ms; the excursion of the output shall not exceed 10% of the nominal output voltage. The output voltage shall be within 10% of the steady state voltage in 1ms.

4.3 Startup and Turn- on Delay

The switching mode power supply shall be able to start up into a resistive load up to the maximum rated current with maximum load capacitance of 1,000uF. The elapsed time between the application of input power and the attainment of output voltage to the nominal value shall not exceed 3 seconds.

5. Protection Feature:

5.1 Over Current Protection

The switching mode power supply shall withstand a continuous over current without damage. It may be applied before power-up, or after power-up. The switching mode power supply shall perform normally again after the over current is removed.

5.2 Short Circuit Protection

Short circuit will not cause the switching mode power supply to damage, or any safety hazards. It shall perform normally again after the short circuit is removed.

6. Safety Standards:

6.1 Safety

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The switching mode power supply has approved by the following safety standards:

* UL 60950 EN60950

6.2 Dielectric Strength (HI-POT)

Input to Output Terminal: 4242Vdc 3Sec \leq 5mA.

Input to Case: 4242Vdc 3Sec \leq 5mA.

When DC voltage of 4.242KV is applied, and the voltage applied to the insulation under test, it gradually rises from zero to the prescribed voltage in 1s, and holds at the value for 3s between the input and output, and between the input and housing, the current sensitivity shall be less than 5mA, after the test, the switching mode power supply shall exhibit no electrical and mechanical abnormalities.

7. Reliability:

7.1 Burn-in

The burn-in test will be performed at least 3 hours at 25 degrees centigrade under full load.

7.2 MTBF

When the operation is complying with this specification, the MTBF of switching mode power supply will be 25K hours at 25 °C.

8. Mechanical Specifications:

Weight: About 182g

Dimensions: Refer Outline on page 8

9. Environmental Conditions:

The switching mode power supply shall meet all requirements of this specification on any

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combination of operation ambient conditions and after exposure to any combination of non-operation ambient conditions specified in this section.

9.1 Temperature

Operating Temperature: 0°C~40°C

Storage Temperature: -20°C~ 60°C

9.2 Humidity

Operating Humidity: 10%~90%(non condensing)

Relative Humidity: 5%~95% (non condensing)

10. Main Measurement Equipments:

- A. AC Source: YOKOGAWA JL-1005A-500W
- B. Power Meter: Everfine YF9901
- C. Electronic Load: Yokogawa IT8511
- D. Oscilloscope: Matrix Mos-620CH 20MHZ
- E. Digital Multimeter: Victor Vc890D
- F. DC Power: RS1305DN
- .G. HI-POT Tester: CHANGSHENG CS2670
- H. Insulation Resistance Tester: TRANST TR7122

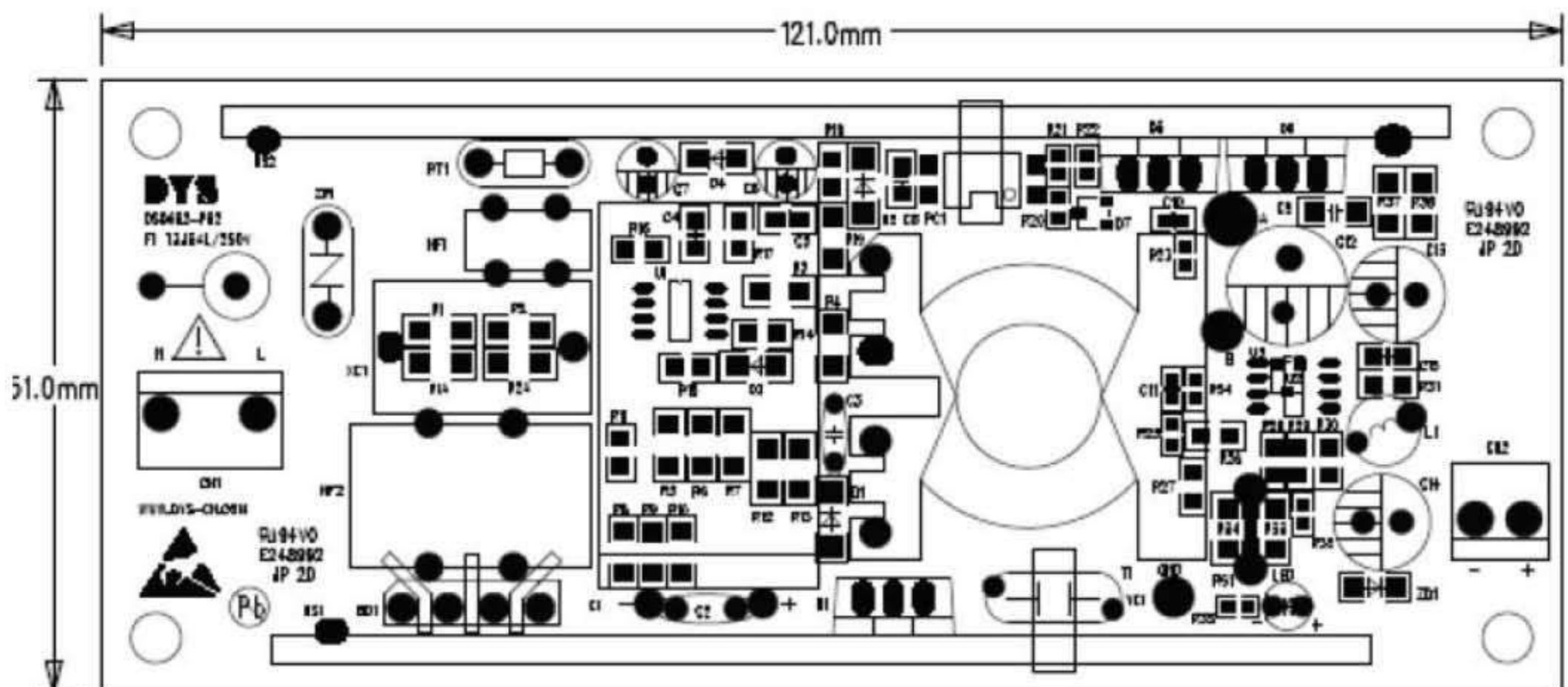
11. Open Board:

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12. Package Drawing:

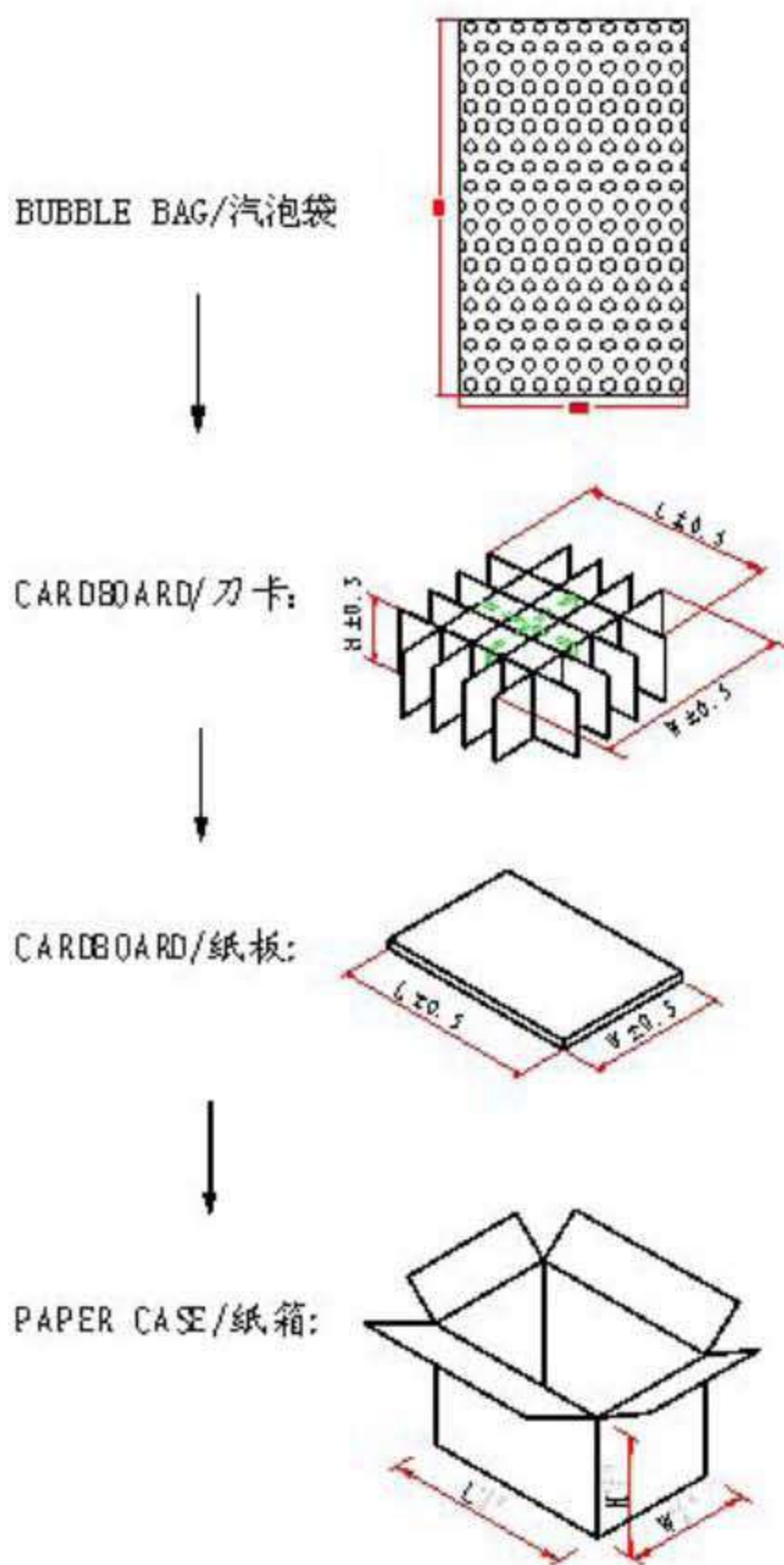
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MECHANICAL DIMENSION:

	L(mm)	W(mm)	H(mm)
BUBBLE BAG	160	130	
CARDBOARD	460	30	
CARDBOARD	290	30	
CARDBOARD	460	290	
PAPER CASE	470	300	190

PACKING METHOD:

PACKING METHOD	12PCS/LAYER * 5 LAYERS
QTY	60PCS
N.G	10.92Kg
G.W	11.42Kg

13. Sample Test Report:

Customer:01061	Product Name: Swithing Mode Power Supply	P/N:DYS062-050150-15403B
Product Specification: AC100-240V 50/60Hz DC 12.0V/5.0A		Safety: OPEN Board
Item	Testing Title	Test Result
		Sample Number and Test Result

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	Items	Condition		1	2	3	4	5	PASS
Basic Electrical Characteristics	1、No load voltage	AC90V/50Hz	DC 12.0 V \pm 0.6V	12.11	12.11	12.17	12.15		PASS
		AC180V/50Hz	DC 12.0 V \pm 0.6V	12.13	12.12	12.18	12.15		PASS
		AC264V/50Hz	DC 12.0 V \pm 0.6V	12.14	12.12	12.18	12.15		PASS
	2、Full Load voltage	AC90V/50Hz	DC 12.0 V \pm 0.6V	11.67	11.68	11.80	11.83		PASS
		AC180V/50Hz	DC 12.0 V \pm 0.6V	11.67	11.67	11.78	11.83		PASS
		AC264V/50Hz	DC 12.0 V \pm 0.6V	11.67	11.77	11.78	11.83		PASS
	3、Full Load input power	AC90V/50Hz	FULL LOAD (W)	66.8	68.7	69.2	69		PASS
		AC180V/50Hz	FULL LOAD (W)	66.9	67.0	67.6	67.8		PASS
		AC264V/50Hz	FULL LOAD (W)	67.1	67.0	67.5	67.4		PASS
	4、Efficiency	AC115V/50Hz	\geq 87.00 % (Average Of 25/50/75/100% Loads)	88.01	88.10	88.41	88.52		PASS
		AC230V/50Hz	\geq 87.00 % (Average Of 25/50/75/100% Loads)	87.94	88.26	88.47	88.78		PASS
	5、Ripple & noise	AC90V/50Hz	\leq 150 mV(FULL LOAD)	50	50	50	50		PASS
		AC180V/50Hz	\leq 150 mV(FULL LOAD)	50	50	50	50		PASS
		AC264V/50Hz	\leq 150 mV(FULL LOAD)	50	50	50	50		PASS
	6、Standby power		< 0.5 W	0.2	0.2	0.2	0.2		PASS
	7、Short-circuit test		No output when short circuit happens work normally after recovery (240Vac)	6.5	6.9	7.0	6.3		PASS
	8、over-current protection		6.5 - 10.2 A (240Vac)	9.40	9.14	9.36	8.45		PASS
	9、Noise test		40db MAX	OK	OK	OK	OK		PASS
	10、Hi-pot test		DC4242V 60S<5mA	OK	OK	OK	OK		PASS
	11、Temperature rise		At normal temperature 25℃, case surface temperature rise \leq 55℃	OK	OK	OK	OK		PASS
	12、DC Cable size								PASS
Test status	1、High temperature		□ 60℃ ■ 80℃ ■ 48H □ 96H	OK	OK	OK	OK		PASS
	2、Low temperature		■ -20℃ □ -40℃ ■ 48H □ 96H	OK	OK	OK	OK		PASS
	3、Constant humidity		■ 40℃ 95%RH ■ 48H □ 96H	OK	OK	OK	OK		PASS
	4、Plugfest(male to female)		3000 times Min	OK	OK	OK	OK		PASS
	5、Burn-in test		\geq 8hours AC100/240V each 4H full load	OK	OK	OK	OK		PASS