



ELECTRONICS

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SPECIFICATION

Customer's: MG

Customer's part number:

Description/ Input: 100~240VAC 50/60Hz Output: 12VDC 1A

Our model no/ ST121A

Date/ 2016-4-21

Sample no./

Ver1.0

APPROVAL SIGNATURE		
APPROVED BY	CHECKED BY	TESTED BY

APPROVAL		
DESIGN:	CHECK:	APPROVAL:

E. C. LIST

Rev.	Description of change		Changed date	ECN No.
	Before	After		
Ver1.0			2016-4-21	

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1、SCOPE:

This specification is to specify the functional requirements of ST121A switching power supply.

2、INPUT CHARACTERISTICS:

2.1 Input Voltage:

Rated Voltage:100-240Vac

Variation Range:90-264Vac

2.2 Input Frequency:

Rated Frequency: 50/60Hz.

Variation Frequency:47-63Hz

2.3 Input Current:

0.5Amps Max. input current at any input AC voltage and output full load.

2.4 Inrush Current:

40 Amps Max. Cold start at 240Vac input, rated output load and 25°C ambient.

2.5. Ac Leakage Current:

0.25mA Max. at 240Vac input.

3、 OUTPUT CHARACTERISTICS:

3.1 Power output

Voltage	Min. Load	Rated Load	Peak	Output power
12Vdc	0.01A	1A		12W

3.2 Combined Load/Line Regulation

Voltage	Min. Load	Rated Load	Line Regulation	Load Regulation
12Vdc	0.01A	1A	±1%	±5%

3.3 Ripple and Noise:

Under nominal voltage and nominal load, the ripple and noise are as follows when measure with Max. Bandwidth of 20MHz and parallel 10uF electrolysis capacitor and 0.1uF ceramic capacitor crossed connect at testing point.

<u>Voltage</u>	<u>Ripple and Noise (Max.)</u>
+12Vdc	120mV p-p

3.4 Turn on delay time:

5Second Max. at 115Vac input and output Max. load.

3.5 Rise time:

40mS Max. at 115Vac input and output Max load.

3.6 Hold up time:

5mS Min. at 115Vac input and output Max. Load.

3.7 Efficiency:

Average efficiency 82.9% minimum at 25%, 50%, 75% & 100% of full-loading and 230Vac input
(After warm up 30 minutes).
no load input watt \leq 0.1W

3.8 Overshoot:

10% Max. When power supply at turn on or turn off.

4、 PROTECTION REQUIREMENT:

4.1 Short circuit protection:

Power adapter shall have self-limiting protection to protect against short circuit or overload conditions. No damage to the power adapter shall result from a continuous or intermittent short circuit condition. It will be auto-recovered when the failure is removed.

4.2 Over current Protection:

After output current of power supply reach 1.2~2A, the over current protection shall operate, the power supply will be auto recovered when over current faults remove.

5、 ENVIRONMENTAL REQUIREMET:

5.1 Operating Temperature:

0℃ to 45, Full load, Normal operation.

5.2 Storage Temperature: -40℃ to 85℃ With package

5.3 Relative Humidity:

5% (0℃) ~95% (40℃) RH, 72Hrs, Full load, Normal operating.

5.4 Vibration:

1. Operating: IEC 721-3-3 3M3

5~9Hz, A=1.5mm

(9~200Hz, Acceleration 5m / S)

2. Transportation:

IEC 721-3-2 2M2

5-9Hz, A=3.5mm

9~200Hz, Acceleration=5m / S

200~500Hz, Acceleration=15m / S

3. Axes, 10 cycles per axis.

No permanent damage may occur during testing.

The product has to restore to its original situation after power off / on.

5.5 Dropping Packed:

Samples should be finished products. Drop them freely to the surface of hardwood three times and the contact area should be the part easiest to get damaged.

76cm height, free fall on the 20mm thick planks, the appearance allowed to wear but can not have cracks, input plug is not loose, crooked, various functions were normal.

6. Reliability Requirements

6.1. Burn-in

The power supply shall be burn-in for 2-4 Hours under normal input and 80% rated load at $40^{\circ}\text{C} \pm 5^{\circ}\text{C}$

6.2. MTBF Qualification

The MTBF shall be 50,000 hours at 25°C , full load and nominal input condition

7. SAFETY AND EMI REQUIREMENT:

7.1 Safety: accord with

certificate	Country	standards	
<input type="checkbox"/> UL/CUL	USA	UL60065	
<input type="checkbox"/> UL/CUL	USA	UL60950	
<input type="checkbox"/> ETL/CUS	USA	IEC/EN60950	
<input type="checkbox"/> TUV/GS	Europe	EN60065	
<input type="checkbox"/> TUV/GS	Europe	EN60950	
<input type="checkbox"/> FCC	USA		
<input type="checkbox"/> CE	Europe	EN60065	
<input type="checkbox"/> CE	Europe	EN60950	
<input type="checkbox"/> IRAM	Argentina		
<input type="checkbox"/> MEPS	Australia	AS/NZS 4665	
<input type="checkbox"/> SAA	Australia	AS/NZS 60065	
<input type="checkbox"/> SAA	Australia	AS/NZS 60950	
<input type="checkbox"/> CCC	China	GB8898	
<input type="checkbox"/> CCC	China	GB4943	
<input type="checkbox"/> PSE	Japan		
<input type="checkbox"/> CB	Europe	IEC60065	
<input type="checkbox"/> CB	Europe	IEC60950	
<input type="checkbox"/> C-TICK	Australia	AS/NZS CISPR13:2004	
<input type="checkbox"/> EK/KC	Korea	K60065	
<input type="checkbox"/> EK/KC	Korea	K60950	

7.2 EMI STANDARD

Meets the Limits of

<1>.FCC Part 15 class B rules

<2>.EN55022, EN55013 class B rules

7.3 EMS STANDARD

EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge(ESD): 8kV air discharge, 4kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient/Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 1kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips

7.4 Hi-Pot Test

Hi-pot test shall meet with the following table test requirements, 100% production test must be performed for each test item and be maintained at that level for a minimum of 5 seconds without failure.

ITEM	SPECIFICATION	REMARK
Primary to Secondary	3000Vac/5mA/5s	No arcing
Primary to P.G		No broken
Secondary to P.G		

7.5 Insulation resistance

ITEM	SPECIFICATION	REMARK
Primary to Secondary	>50M Ω ; DC500V	
Primary to P.G	>50M Ω ; DC500V	For class I power adapter

8、Test Equipment List

1		VI-mEAS	S7210
2		LW	L212CH
3		TET	L100
4		UNI-T	UT5I
5			PF9810
6		LUTRON	TW-902C
7			LX-817
8			LX-8827B
9			FZD-25
10		SOKON	PT8000
11			
12			0-150mm
13	RoHS		EDX 1800B
14			PF9810

9、MECHANICAL REQUIREMENT:

9.1 Enclosure:

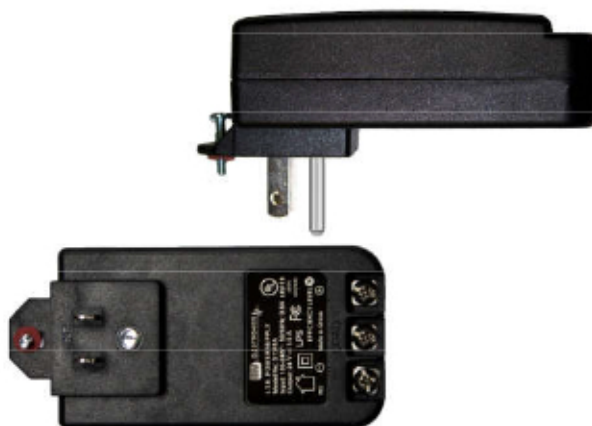
L109.55x W54.9x H41.18mm;

The power supply size: L109.55x W54.9x H41.18mm;

9.2 Input Connector:

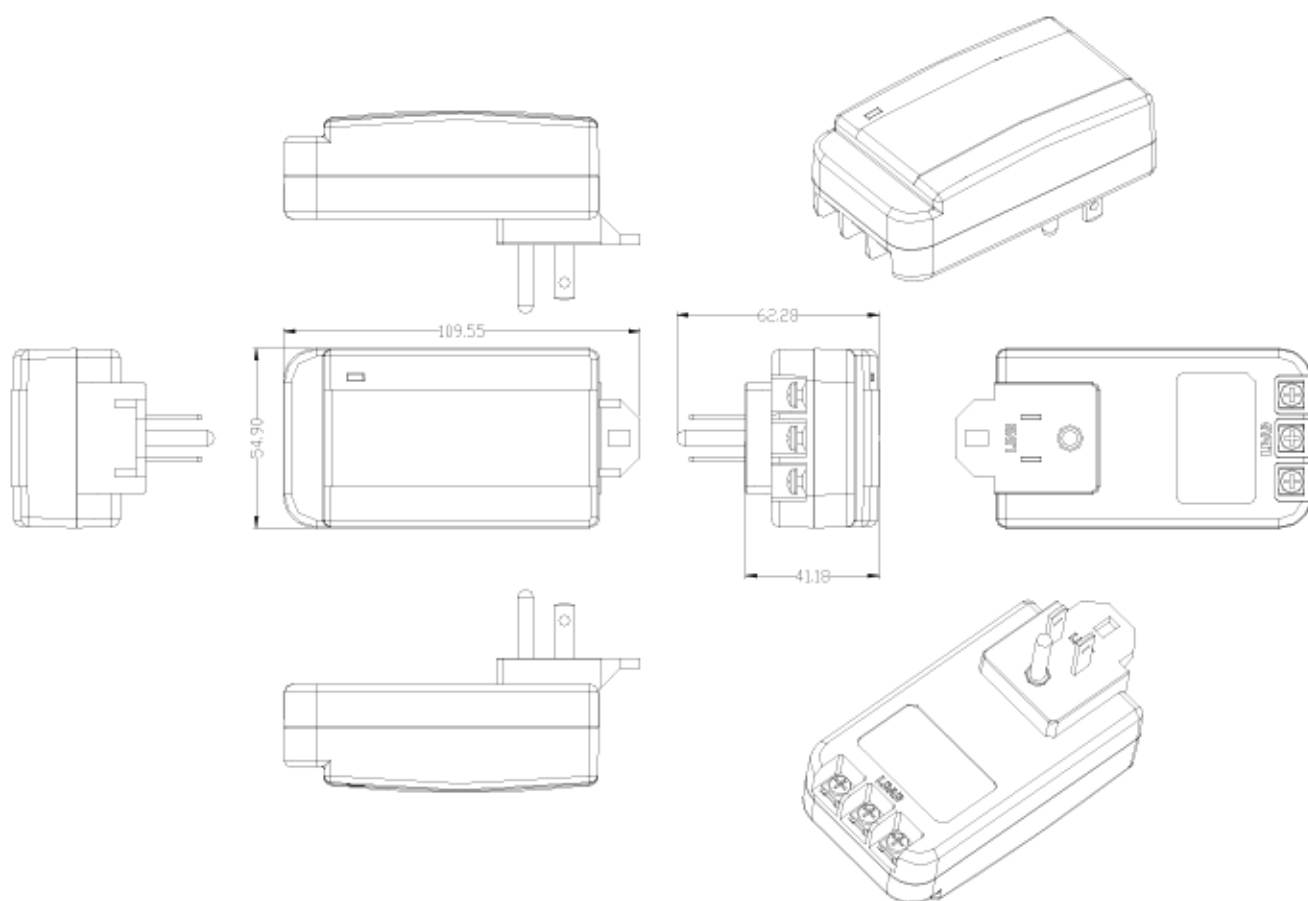
2 Two pin input plug.

9.3 Photograph of the product

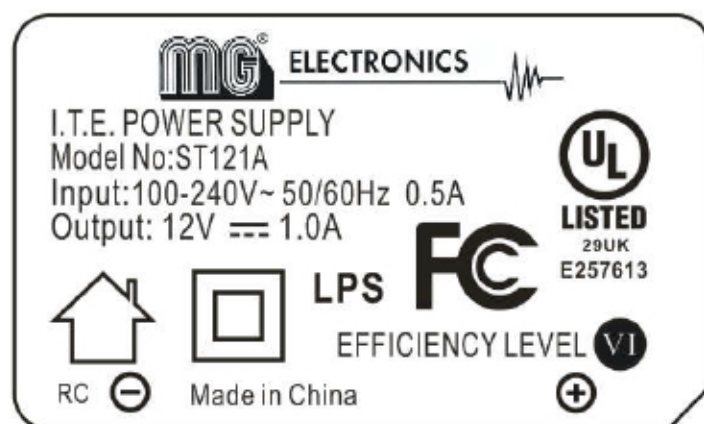


10、OUTLINE DIMENSION:

unit in: mm



11、 LABEL:



39.5×23.5 mm

12、PACKING:

Unless special requirement of customer, the packing style shall be performed according to company style.

12.1 inner package

white box bag: 113*56*65mm.

12.2 paper-box.: 58.5*30.5*28 cm; 100pcs

12.3 Outer package notes include the information

Customer Name, LOT Number, Model No

Date, and so on.

1		2		3		4		5		6	
A											
B											
C											
D											

Top view dimensions: 270mm (width), 570mm (length), 4mm (thickness).

Side view dimensions: 585mm (length), 305mm (width), 280mm (height).

585X305X280mm		1PCS	K=K
570X290X6mm		2PCS	A&A

Model:				Technical Requirements			
Rev: A		Date: 2010/05/03					
Dwg No:		Page: 1/1					
Unit: mm		Scale:					
Material: K=K		Status: Design					
Confirmed by:		Designed by:					