

**WH 華興變壓器製造廠有限公司**  
**WAH HING TRANSFORMER MFY. LTD.**

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***SPECIFICATION FOR APPROVAL***

<b>Customer: WAH HING TRANSFORMER MFY. LTD.</b>		
<b>Customer P/N:</b>	<b>Customer Rev.:</b>	
<b>Customer Model No.:</b>	<b>Customer ID: W050</b>	
<b>Wah Hing Model No.: S01602B</b>	<b>Wah Hing Rev.: 05</b>	
<b>Article: SWITCHING POWER SUPPLY(AC-DC)</b>		
<b>Standard: Meet EN/UL60950/EN61558-2-16</b>		<b>Safety No.:</b>
<b>Catalog No.: S05P7-1200410</b>	<b>Date:</b>	<b>6-Oct-15</b>
<i>Remarks:</i> Please note items listed in page.2 that requires your consent for deviation.		
 Eng. Dept. Paul	 Eng. Dept. 卢 闯	 Eng. Dept. 庞海洋
<b>Designed/Maker</b>	<b>Checked by</b>	<b>Approved by</b>

*Please evaluate the samples, sign this approval sheet and return to WAH HING*

Approved  
 Rejected  
 Conditional Approved

Comments:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*Customer Approved by :* \_\_\_\_\_

Signature & Date

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**Deviation and History**

*Please note items listed below does not meet your specifications and requires your consent for deviation:*

Item	Customer specification	Suggestion specification

Remarks:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

	05	Page9 nameplate change from laser printing to pad printing.	Paul Lai	6-Oct-15
	04	Page9 Revise nameplate: 1) Letter height change from 1.3mm to 1.7mm. 2) Operating frequency change from 50-60Hz to 50/60Hz.	Paul Lai	2-Sep-15
	03	Change Label.	Paul Lai	17-Jul-15
	02	Page8: 1) Height Change from 20.5mm to 21.5mm. 2) Pin Change from 0.64x0.64mm to Φ0.8mm. 3) Marking Change from Pad Printing to Laser Printing. 4) Ta Change from 50°C to 70°C Rating.	Paul Lai	12-Jan-15
	01	Standby Power changed to 0.15W max.	Paul Lai	4-Nov-13
	00	First issue.	YW XU	8-Apr-13
Item	Rev	Description	Sign	Date

History

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### 1.0 INTRODUCTION

The document specifies the AC/DC switching power supply with one output, the total output power is 5.0W Max.

The unit meet RoHS directive of the European Union.

### 2.0 INPUT CHARACTERISTICS

- 2.1 Input Voltage : AC100-240 V Performance guarantee  
Input Voltage Range : AC90-264 V
- 2.2 Input Current : 0.15Arms max. @ AC100V rated load
- 2.3 Operating Frequency : 50/60 Hz  
Operating Frequency Range : 47-63Hz Ambient temp. 25°C
- 2.4 Input Fuse Resistance : 100hm 1W fusible resistor
- 2.5 Standby power : ≤0.15W @ AC100-240V 50/60Hz

### 3.0 OUTPUT CHARACTERISTICS

- 3.1 Output Voltage : DC12V ± 10% @ AC100-240V at 0A  
: DC12V ± 5% @ AC100-240V at 410mA
- 3.2 Output Current  
Rated loading current : 410mA  
Minimum loading current : 0 A
- 3.3 Ripple and Noise : 200 mV<sub>p-p</sub> max. at full load.  
Ambient temp. 25°C
- The measurement for differential ripple and noise the output will be using oscilloscope, with 20MHz bandwidth. A 10uF electrolytic capacitor and a 0.1uF ceramic capacitor should be parallel with output load.
- 3.4 Efficiency : 72.02% min. (Energy Star V2.0)  
72.08% min. (ErP Tier 2)

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3.5 Line Regulation :  $\leq 5\%$  @ AC100-240V rated load

3.6 Load Regulation :  $\leq 10\%$  @ AC100-240V rated load

#### 4.0 PROTECTION FUNCTION

4.1 Over-current Protection : 411~600mA @ AC100-240V rated load

Over-current conditions shall cause output voltage drop close to 0 V, automatic resume function after reset the DC output lever current protection condition.

4.2 Over-voltage Protection : NA

When the output voltage is over than above value (typical), it should be protected and causing output voltage drop. operating with re-input of AC power supply after over voltage protection circuit activated.

4.3 Short circuit protection :

When the output pin is pulse shorted, it should permit the durative current flow. Removal of fault condition shall permit automatic recovery of the output voltage and there is no damage.

#### 5.0 ENVIRONMENTAL CONDITION

##### 5.1 Non-operation

5.1.1 Ambient temperature : -40/+85 °C

5.1.2 Relative humidity : 5-95 %

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

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5.2 Operating

5.2.1 Ambient temperature : 0-70 °C

5.2.2 Relative humidity : 10-90 %

The power supply shall be capable of operating continuously in any mode without performance deterioration in the above environmental condition.

6.0 SAFETY AND EMC STANDARD

6.1 Safety standard : EN61558-2-16

6.2 EMC Standard : EN55014, EN55022, EN61000

6.3 Dielectric strength

Primary to secondary : AC3750V 60S Cut off current 5mA

7.0 RELIABILITY AND QUALITY CONTROL

7.1.1 Burn-in Ambient temperature : 40 °C

7.1.2 Burn-in Time : 2 hr.

AC source 220-230Vac/50Hz, 80-100% loading.

7.2 Drop Test

Dropped the specimen from 3 ft.(914mm) height, 1 times each for a different sides onto a concrete floor at least 64 mm thick and covered with a 3.2 mm thick vinyl tile. There shall be no problem on appearance, structure, performance and safety.(except input and output pin)

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8.0 MECHANICAL

8.1 Case

8.1.1 Case Material : Plastic

8.1.2 Case Dimension : L32.6\*W27.6\*H21.5 mm

8.1.3 Case Colour : Black

8.2 Weight(Adaptor unit) : 30g (approximate)

8.3 Input plug type : Pin Diameter 0.8mm

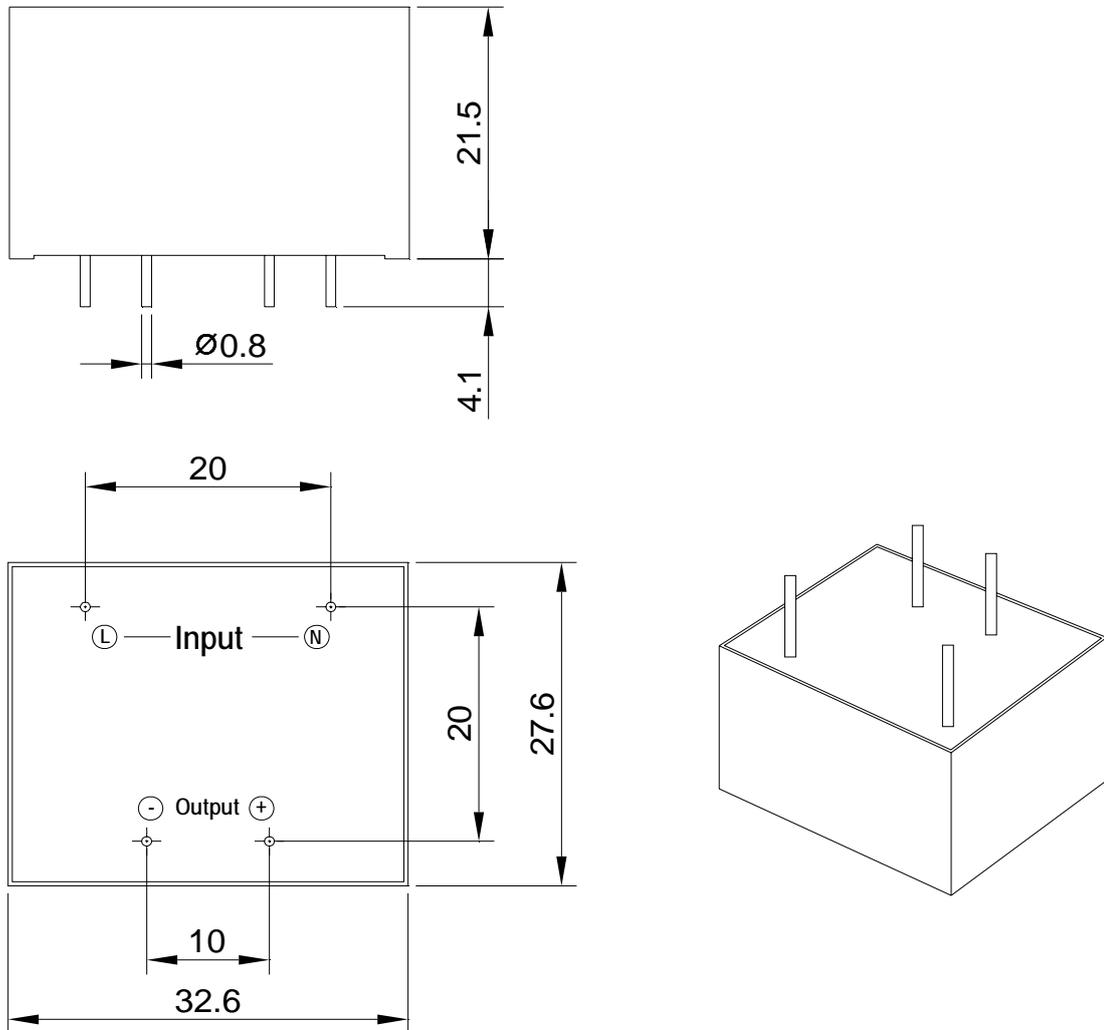
8.4 Output plug type : Pin Diameter 0.8mm

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8.7 Dimensions And Diagram



Notice:

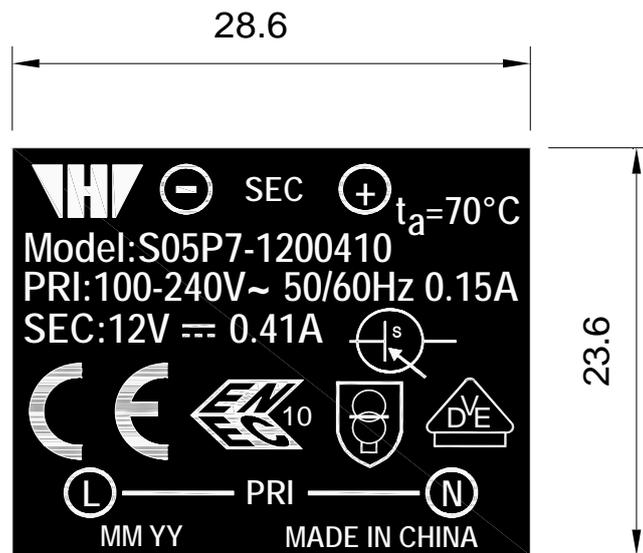
1. Unit: mm
2. The otherwise tolerance is follows:  $\pm 1.0$

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9.0 PROPOSED ARTWORK MARKING



Date Code:MM=Month,YY=Year

Notice:

1. Unit : mm
2. Method : Pad Printing on Top of Enclosure
3. Colour : Letter in white, background in black
4. The otherwise tolerance is follows:  $\pm 0.5$

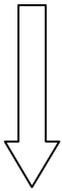
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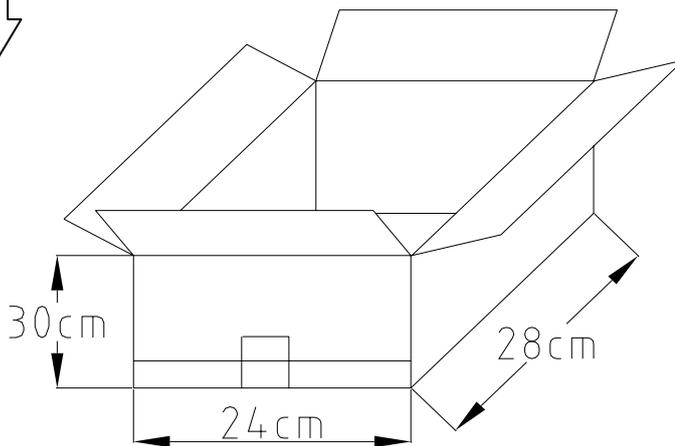
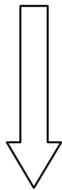
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10.0 APPENDIX

10.1 Packing



36PCS/layer



5 layers  
total 180 pcs

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