

24 Watt
Switching Power Adapter
SPECIFICATIONS

Model No. : RPR-1202A0-P5

Description : 12 Volts / 2.0 Amps

Version : 1.0

Date : 28-Aug-2008

CIRCUIT-TEST
ELECTRONICS
(A Division of R.P. Electronic Components Ltd.)

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1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ **Output** : +12V / 0~2.0 A
- ◆ **Case Dimension** : 72 (L) * 34 (W) * 69 (H) mm
- ◆ **Efficiency** : Eff (av) \geq 78.6 % Min.
- ◆ **Safety** : UL / CUL / PSE / BSMI / CB
- ◆ **EMI** : FCC Class B ; Conduction & Radiation Met.
- ◆ **Protection** : OVP (Over Voltage Protection), SCP (Short Circuit Protection), OCP (Over Current Protection)
- ◆ **High frequency design, less power consumption.**
- ◆ **Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.**
- ◆ **Meet CEC Specification .**

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	47 ~ 63 Hz
2.3 Current	0.58A Max.
2.4 Inrush Current	30A Max. / 100Vac ; 45A Max. / 240Vac (Cold Start At 25 °C, Full Load)
2.5 Efficiency	Eff (av) \geq 78.6% Min. (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi \geq 0.5 W (At 240Vac & No Load)

$$\text{Eff (av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

3. Output :

3.1 DC Output	Voltage	+12V \pm 5%
	Current	2A Max.
	Regulation	11.4Vmin. ~ 12.0Vtyp. ~ 12.6Vmax.
	Ripple & Noise	100 mV Max.
	Total Power	24W Max.

Remark : For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1 μ F multilayer Cap. and a Low ESR Electrolytic Cap. (10 μ F) at output connector terminals. (At nominal line voltage, Full Load)

4. Protection :

4.1 Over Voltage Protection (OVP)	15V (MAX)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	4A (MAX)

Remark : When Short Circuit Protection or Over Current Protection is activated,the power supply will shutdown automatically.

Once the abnormal condition resulting in the failure being removed, the power supply will restart accordingly. When

Over Voltage Protection is activated, the power supply will shutdown latch.

5. Safety、 EMI and EMC Requirement :

5.1 Safety Requirement

- a. Safety : UL / CUL / PSE / BSMI / CB
 b. Dielectric Strength : 10mA Max. Cut off current

(1)	Primary to Secondary	3000Vac for 1 Minute
c. Insulation Resistance :		
(1)	Primary to Secondary	10 M Ohm for 500Vdc

5.2 EMI Requirement : FCC Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 0.25mA

6. Operation and Environment Performance :

6.1 Temperature Range

Operating	+ 0°C ~ + 40°C
Storage	- 20 °C ~ + 70 °C

6.2 Humidity Range(Non-condensing)

Operating	15% ~ 95% RH
Storage	5% ~ 95% RH

6.3 Cooling : By natural air

7. M.T.B.F. : 100,000 Hrs.(At 25°C, By MIL-HDBK-217F)

8.Mechanical :

8.1 Weight : 165 g Typical

8.2 Cable Type : Black UL2468 AWG18
(Wire + Plug)

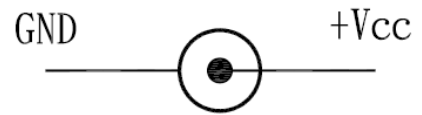
Plug : $\phi 5.5 \times \phi 2.1 \times 12\text{mm}$
(Tuning Fork & Cannelure)

8.3 Cable Length : 1800mm

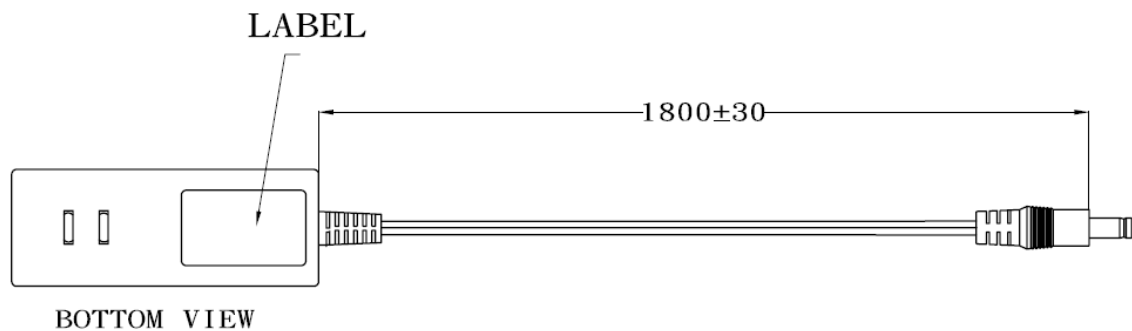
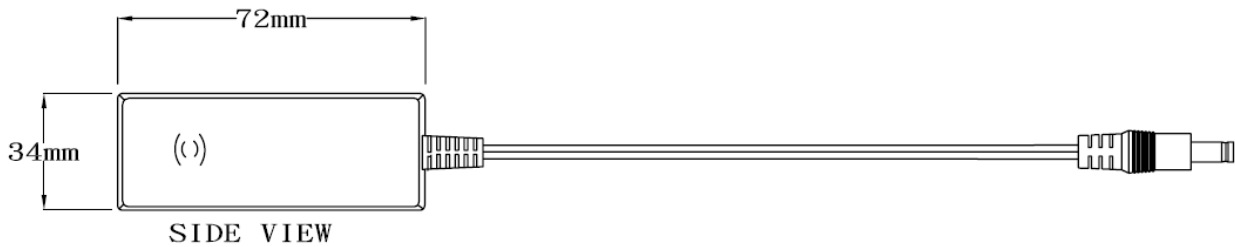
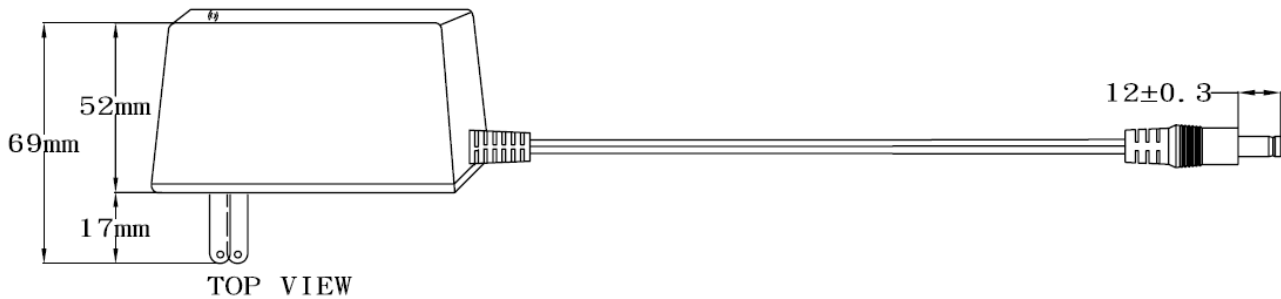
8.4 Case Dimension : 72mm(L)*34mm(W)*69mm(H)

8.5 Material Flammability : UL 94V-0

8.6 External Apperance : As drawing below (Scale \pm mm)



Output Cable Plug Pin Assignment



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8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
Color : Silver Background with Black Printing
Label Dimension : 34.5mm(L)*24.5mm(W)+/-0.1mm
Label Thickness : #75

100%



"XXX"

Label supplier's code.
It is accurate that the number of words depends on the real finished product.

ID NO."X"

Label manufacturer's code.
It is accurate that the number of words depends on the real finished product.

300%

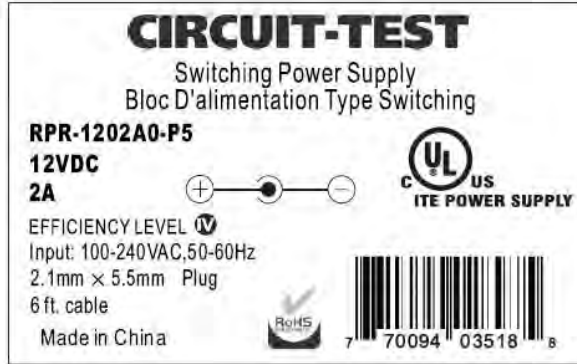


Label Part No. : 9443012820

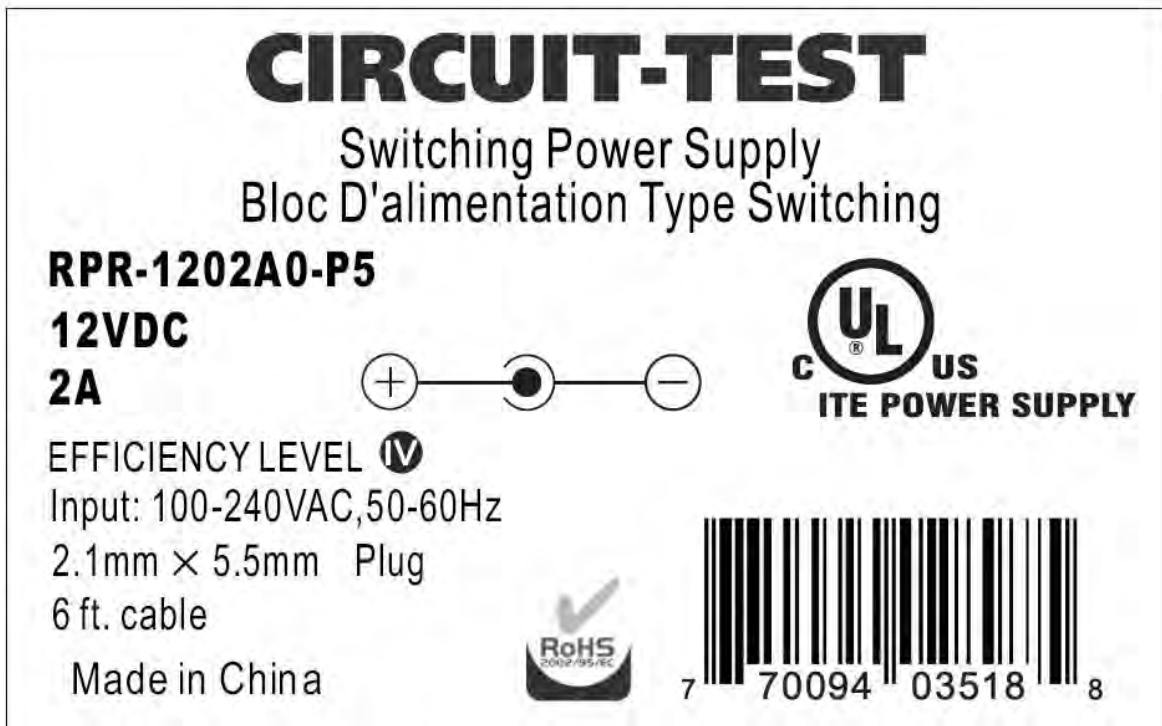
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8.8 Spec. Label Color : White Background with Black Printing
Label Dimension : 50mm(L)*80mm(W)+/-0.1mm

100%



200%



Label Part No. : 9443012830

A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.4~12.6 V	11.949 V	11.948 V	11.950 V
115Vac / 50 % Load	11.4~12.6 V	11.950 V	11.949 V	11.951 V
132Vac / 50 % Load	11.4~12.6 V	11.950 V	11.949 V	11.951 V
180Vac / 50 % Load	11.4~12.6 V	11.950 V	11.947 V	11.950 V
230Vac / 50 % Load	11.4~12.6 V	11.950 V	11.949 V	11.949 V
264Vac / 50 % Load	11.4~12.6 V	11.950 V	11.949 V	11.950 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	78.6 % min..	80.89 %	81.11 %	80.98 %
230Vac	78.6 % min..	81.9 %	81.43 %	81.33 %

$$\text{Eff (av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

C. Load Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	11.4~12.6 V	12.075 V	12.073 V	12.074 V
115Vac / 50 % Load	11.4~12.6 V	11.950 V	11.948 V	11.949 V
115Vac / 100 % Load	11.4~12.6 V	11.824 V	11.825 V	11.822 V
230Vac / 0 % Load	11.4~12.6 V	12.075 V	12.077V	12.073 V
230Vac / 50 % Load	11.4~12.6 V	11.950 V	11.952V	11.948 V
230Vac / 100 % Load	11.4~12.6 V	11.824 V	11.822 V	11.822 V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	100mVpp Max	56.7mVpp	55.4mVpp	55.1mVpp
230Vac / 100 % Load	100mVpp Max	57.5mVpp	58.8mVpp	56.7mVpp

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	30A Max	28.1A	27.6A	28.3A
230Vac / 100 % Load	45A Max	42.9A	43.5A	42.1A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	4A Max.	2.688 A	2.658 A	2.701A
230Vac / 100 % Load	4A Max.	3.011 A	2.912 A	3.001A

G. Short Circuit Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Auto Recovery	OK	OK	OK
230Vac / 100 % Load	Auto Recovery	OK	OK	OK

H. Input Power Consumption(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 0 % Load	≥ 0.5 W	0.25W	0.24W	0.25W