



Specification for Approval

Customer :

Part Name : AC ADAPTER

Description : 12Volts / 3.3 Amps

Model No. : STD-1233PA (RoHS/CEC)

Customer P / N :

Product P / N :

Issued Date : 13-June-2007

Version : 1.0

Issued Stamp :

Customer's Approval Signature

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<p style="text-align: center;">40W Switching Power Adapter SPECIFICATION</p>

Model No. : **STD-1233PA (RoHS/CEC)**

Description : **12 Volts / 3.3 Amps**

Part No. :

Version : **1.0**

Date : **13-June-2007**

Approved	Checked	Prepared



1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ **Output** : +12V / 0~3.3 A
- ◆ **Case Dimension** : 115(L) * 53 (W) * 38 (H) mm
- ◆ **Efficiency** : Eff. (av) 83.11%
- ◆ **Safety** : UL / CUL / GS / PSE / BSMI
- ◆ **EMI** : CE 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	1.1A Max.
2.4 Inrush Current	30A Max. / 100Vac ; 60A Max. / 240Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	Eff. (av) 83.11 % (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi 0.5 W (At 240Vac & No Load)

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

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

3. Output :

3.1 DC Output	Voltage	+12V ± 5%
	Current	3.3A Max.
	Regulation	11.4Vmin. ~ 12.0Vtyp. ~ 12.6Vmax.
	Ripple & Noise	100 mV Max.
	Total Power	40W Max.

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



4. Protection :

4.1 Over Voltage Protection (OVP)	V out *(105%~150%)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	I out *(102%~170%)

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 / GS / PSE / BSMI
- b. Dielectric Strength : 10mA Max. Cut off current

(1)	Primary to Secondary	3000Vac for 1 Minute
(2)	Primary to Frame Ground	1500Vac for 1 Minute

c. Insulation Resistance :

(1)	Primary to Secondary	10 M Ohm for 500Vdc
(2)	Primary to Frame Ground	10 M Ohm for 500Vdc

5.2 EMI Requirement : CE 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 ~ + 60 °C

6.2 Humidity Range(Non-condensing)

Operating	20% ~ 80% RH
Storage	10% ~ 90% RH

6.3 Cooling : By natural air.

7. M.T.B.F. : 50,000 Hrs.(At 25°C , Full Load)

8. Mechanical :

8.1 Weight : 278 g Typical

8.2 Cable Type : Black UL2468 AWG18

(Wire + Plug)

Plug : $\phi 5.5 * \phi 2.1 * 9.5\text{mm}$

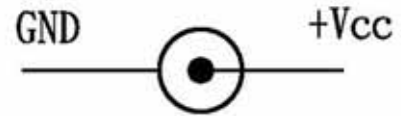
(Tuning Fork Cannelure)

8.3 Cable Length : 1800mm

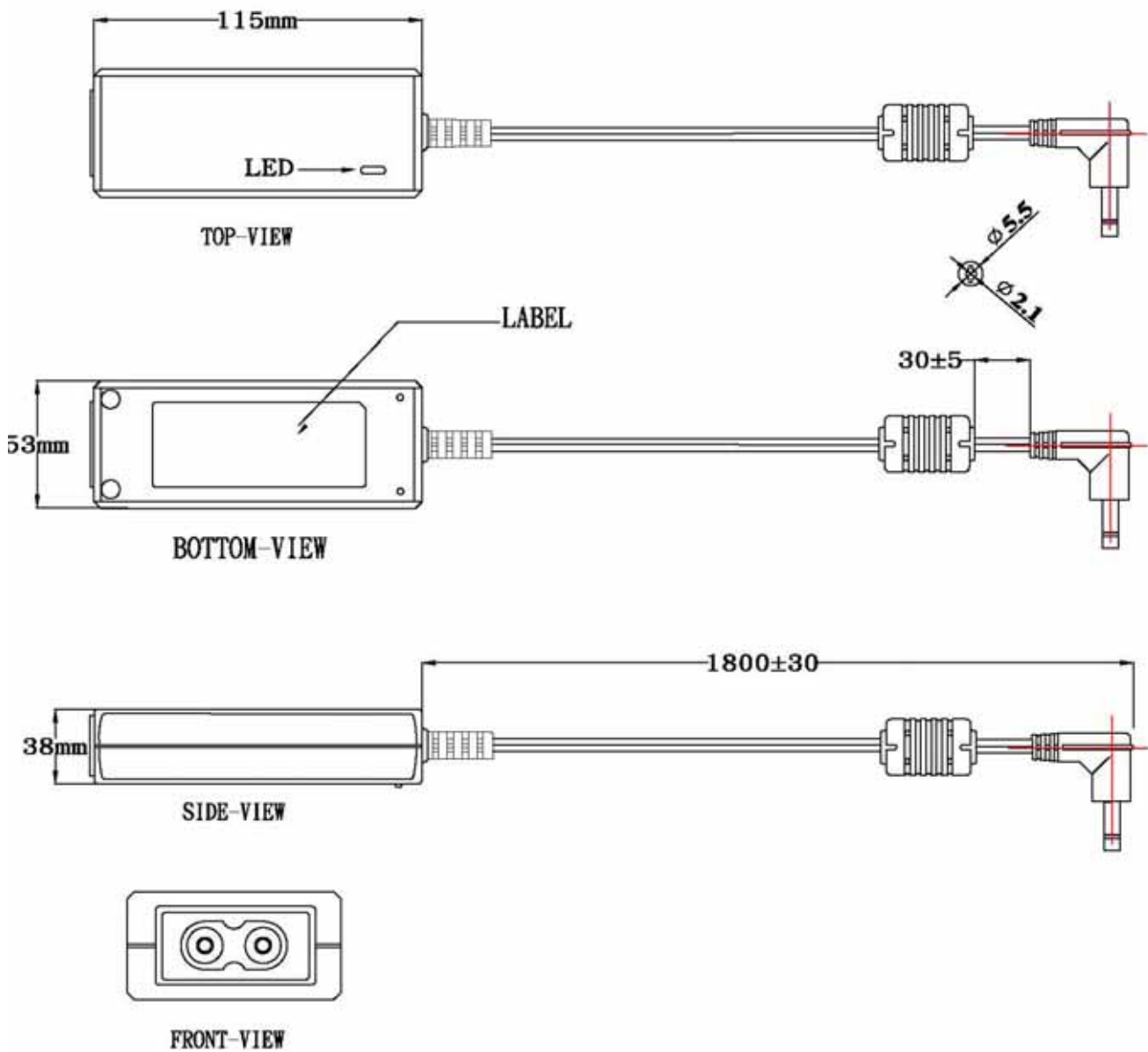
8.4 Case Dimension : 115mm(L)*53mm(W)*38mm(H)

8.5 Material Flammability : UL 94V-0

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



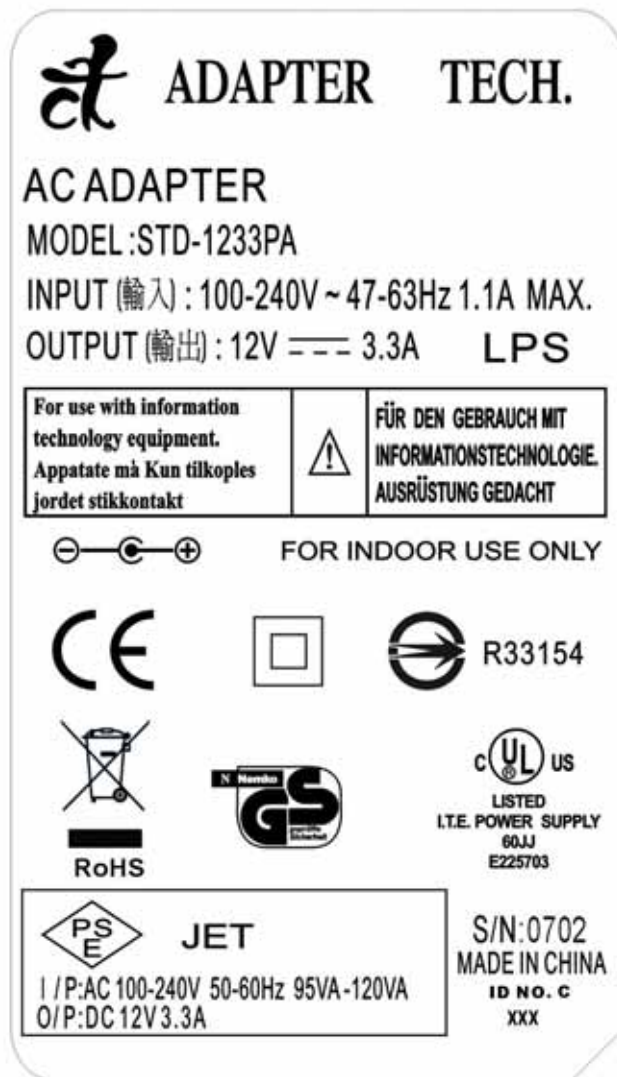
Output Cable Plug Pin Assignment



8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
 Color : Silver Background with Black Printing
 Label Dimension : 70.8mm(L)*40.4mm(W)+/-0.1mm

100%

200%



"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.



A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.4 V ~ 12.6 V	11.990 V	12.127 V	12.111 V
115Vac / 50 % Load	11.4 V ~ 12.6 V	11.990 V	12.127 V	12.111 V
132Vac / 50 % Load	11.4 V ~ 12.6 V	11.990 V	12.127 V	12.111 V
180Vac / 50 % Load	11.4 V ~ 12.6 V	11.990 V	12.127 V	12.111 V
230Vac / 50 % Load	11.4 V ~ 12.6 V	11.989 V	12.126 V	12.111 V
264Vac / 50 % Load	11.4 V ~ 12.6 V	11.989 V	12.126 V	12.111 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	83.11 % Min.	85.09%	84.84%	84.34%
230Vac	83.11 % Min.	86.21%	84.96%	85.10%

$$\text{Eff. (av)} = \frac{E1 + E2 + E3 + E4}{4}$$

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

C. Load Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	11.4 V ~ 12.6 V	12.135 V	12.308 V	12.282 V
115Vac / 50 % Load	11.4 V ~ 12.6 V	11.990 V	12.127 V	12.111 V
115Vac / 100 % Load	11.4 V ~ 12.6 V	11.845 V	11.946 V	11.945 V
230Vac / 0 % Load	11.4 V ~ 12.6 V	12.135 V	12.308 V	12.282 V
230Vac / 50 % Load	11.4 V ~ 12.6 V	11.989 V	12.126 V	12.111 V
230Vac / 100 % Load	11.4 V ~ 12.6 V	11.845 V	11.947 V	11.945 V



D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	100mV Max.	70 mV	76 mV	73 mV
230Vac / 100 % Load	100mV Max.	60 mV	65 mV	64 mV

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	30A Max	23.0 A	22.4 A	22.0 A
230Vac / 100 % Load	60A Max	46.0 A	46.0 A	45.0 A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Iout*(102%~170%)	144 %	141 %	144 %
230Vac / 100 % Load	Iout*(102%~170%)	144 %	143 %	145 %

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	0.21 W	0.22 W	0.20 W



CEC TEST REPORT

Date: 09-May-2007

- A. Model Number : STD-1233P (12V / 3.3A)
- B. DC Power Cord : UL2468 , 18AWG , 1.5M
- C. Dimension (L*W*H) : 115(L) * 53(W) * 38(H) mm
- D. Average Efficiency : 83.11% min.
- E. NO Load Power Consumption : 0.5W max.
- F. Testing Dequpment :
- a. AC Power Source : " Zentech " 2700M-10
 - b. Electronic Load : " PRODIGIT " 3311C
 - c. Power Meter : " Zentech " 2100
 - d. Digital Meter : " FLUKE " 45
- G. AC Input Voltage : 115Vac/60Hz

Load Conditions	100% * I ₀	75% * I ₀	50% * I ₀	25% * I ₀	0% * I ₀
Reported Quantity					
Rms Output Current(mA)	3300mA	2475mA	1650mA	825mA	0mA
Rms Output Voltage(V)	11.845V	11.918V	11.990V	12.062V	12.135V
Active Output Power(W)	39.09W	29.50W	19.64W	9.95W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	0.763A	0.595A	0.428A	0.240A	0.015A
Rms Input Power(W)	46.70W	34.80W	23.00W	11.50W	0.15W
T.H.D.	*	*	*	*	*
True Power Factor	0.533	0.508	0.470	0.421	0.089
Power Consumed by UUT(W)	7.61W	5.30W	3.37W	1.55W	0.15W
Efficiency	83.70%	84.76%	85.37%	86.53%	*
Average Efficiency	85.09%				*

- I. AC Input Voltage : 230Vac/50Hz

Load Conditions	100% * I ₀	75% * I ₀	50% * I ₀	25% * I ₀	0% * I ₀
Reported Quantity					
Rms Output Current(mA)	3300mA	2475mA	1650mA	825mA	0mA
Rms Output Voltage(V)	11.845V	11.917V	11.989V	12.062V	12.135V
Active Output Power(W)	39.09W	29.49W	19.78W	9.95W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.486A	0.374A	0.257A	0.143A	0.022A
Rms Input Power(W)	45.90W	34.30W	22.90W	11.40W	0.20W
T.H.D.	*	*	*	*	*
True Power Factor	0.410	0.400	0.389	0.349	0.038
Power Consumed by UUT(W)	6.81W	4.81W	3.12W	1.45W	0.20W
Efficiency	85.16%	85.99%	86.38%	87.29%	*
Average Efficiency	86.21%				*

Approved : _____

Tester : _____