

Specification for Approval

30W Switching Power Adapter **SPECIFICATION**

Model No. : **STD-1225P(Level V)**

Description : **12 Volts / 2.5 Amps**

Part No. : **uA30-1012**

Version : **01**

Date : **06-May.-2011**

1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ **Output** : +12V / 0~2.5A
- ◆ **Case Dimension** : 95 (L) * 58 (W) * 34 (H) mm
- ◆ **Efficiency** : Eff (av) \geq 83.63 % Min.
- ◆ **Safety** : UL / CUL / GS / CB / PSE / BSMI / RCM
- ◆ **EMI** : CE / FCC Class B ; Conduction & Radiation Meet
- ◆ **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 Energy Star V / Erp (Stage 2) / MEPS V .

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	47 ~ 63 Hz
2.3 Current	0.7A Max.
2.4 Inrush Current	60A Max. / 240Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	Eff (av) \geq 83.63 % Min. (At 115 Vac & 230 Vac)
2.6 No Load Input Consumption	Pi \leq 0.3 W (At 115 Vac & 230 Vac & No load)

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

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	+12.00V
	Current	2.5A Max.
	Regulation	+11.40Vmin. ~ 12.00Vtyp. ~ 12.60Vmax.
	Ripple & Noise	120 mV Max.
	Total Power	30W 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)	$\leq 17V$ (Shutdown Latch)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	4.8A Max.

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

5. Safety 、EMI and EMC Requirement :

5.1 Safety Requirement

a. Safety : UL / CUL / GS / CB / PSE / BSMI / RCM

b. Dielectric Strength : 10mA Max. Cut off current

Primary to Secondary	3000Vac for 1 Minute
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c. Insulation Resistance :

Primary to Secondary	10 M OHMS for 500Vdc
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5.2 EMI Requirement : CE / FCC Class B ; Conduction & Radiation Meet

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 ~ + 80 °C

6.2 Humidity Range(Non-condensing)

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

6.3 Cooling : Should operate without fan.

7. M.T.B.F. : 50,000 Hours min. (At 25°C , By MIL-HDBK-217F)

8.Mechanical :

8.1 Weight : 220 g Typical

8.2 Cable Type : Black UL2468 18AWG
(Wire + Plug)

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

(Tuning Fork & Cannelure)

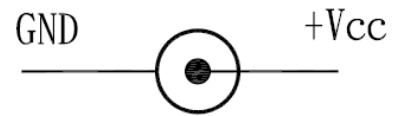
Cable Drawing No. : ADT-0527

8.3 Cable Length : 1500mm

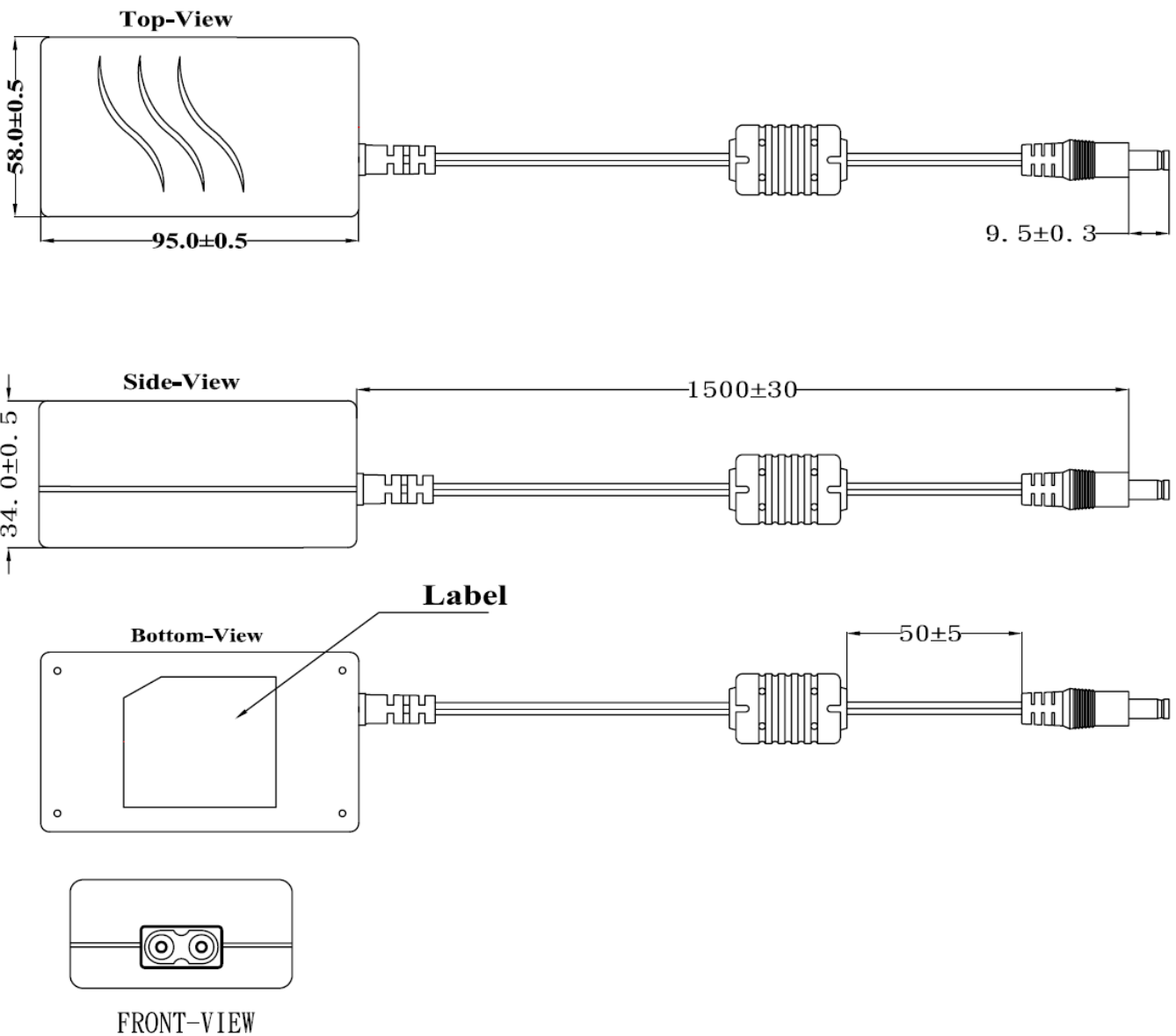
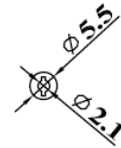
8.4 Case Dimension : 95mm(L)*58mm(W)*34mm(H)

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 : 49mm(L)*39mm(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"

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

200%



A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	11.40 ~ 12.60 V	12.003V	12.098V	12.051V
115Vac / 50 % Load	11.40 ~ 12.60 V	12.003V	12.098V	12.051V
132Vac / 50 % Load	11.40 ~ 12.60 V	12.003V	12.098V	12.051V
180Vac / 50 % Load	11.40 ~ 12.60 V	12.007V	12.083V	12.048V
230Vac / 50 % Load	11.40 ~ 12.60 V	12.007V	12.083V	12.048V
264Vac / 50 % Load	11.40 ~ 12.60 V	12.007V	12.083V	12.048V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	83.63 % Min.	84.10 %	84.22 %	84.45 %
230Vac	83.63 % Min.	84.24 %	84.55 %	84.70 %

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

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	11.40 ~ 12.60 V	12.150V	12.239V	12.197V
115Vac / 50 % Load	11.40 ~ 12.60 V	12.003V	12.098V	12.051V
115Vac / 100 % Load	11.40 ~ 12.60 V	11.857V	11.955V	11.905V
230Vac / 0 % Load	11.40 ~ 12.60 V	12.150V	12.226V	12.193V
230Vac / 50 % Load	11.40 ~ 12.60 V	12.007V	12.083V	12.048V
230Vac / 100 % Load	11.40 ~ 12.60 V	11.863V	11.942V	11.901V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	120mV Max.	41 mV	45 mV	43 mV
230Vac / 100 % Load	120mV Max.	38 mV	42 mV	41 mV

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	60A Max.	44.60 A	45.08 A	46.59 A

F. 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

G. No Load Input Power Consumption

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	≤ 0.3 W	0.24W	0.19W	0.21W
230Vac / 0 % Load	≤ 0.3 W	0.28W	0.25W	0.21W

H. Over Current Protection

Test Result :

Test condition	(Output power level)Spec.	Reading 1	Reading 2	Reading 3
115Vac	≤ 4.8 A	3.8A	3.82A	3.77A
230Vac	≤ 4.8 A	3.75A	3.81A	3.84A

Efficiency Test Report

- A. Model Number** : STD-1225P (12.0V /2.5A/30W)
- B. DC Power Cord** : UL2468 , 18AWG , 1.5M
- C. Average Efficiency** :
- Energy Star V $(0.0626 * \ln(\text{Nameplate OutputW}) + 0.622) = 83.49 \% \text{ Min.}$
- Erp (Stage 2) $(0.063 * \ln(\text{Nameplate OutputW}) + 0.622) = 83.63 \% \text{ Min.}$
- MEPS V $(0.0626 * \ln(\text{Nameplate OutputW}) + 0.622) = 83.49 \% \text{ Min.}$
- D. NO Load Power Consumption :**
- Energy Star V 0.3W max.
- Erp (Stage 2) 0.3W max.
- MEPS V 0.3W max.
- E. Testing Dequpment :**
1. AC Power Source : " Zentech " 2700M-10
2. Electronic Load : " PRODIGIT " 3311C
3. Power Meter : " IDRC " CP-290
4. Digital Meter : " FLUKE " 45
- F. AC Input Voltage** : 115Vac/60Hz

Load Conditions Reported Quantity	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	0%* I ₀
Rms Output Current(mA)	2500mA	1875mA	1250mA	625mA	0mA
Rms Output Voltage(V)	11.874V	11.938V	12.001V	12.062V	12.124V
Active Output Power(W)	29.69W	22.38W	15.00W	7.54W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	0.540A	0.421A	0.297A	0.160A	0.106A
Rms Input Power(W)	34.89W	26.00W	17.25W	8.64W	0.18W
Voltage T.H.D.(%)	0.17	0.15	0.14	0.15	0.11
True Power Factor	0.559	0.537	0.504	0.467	0.143
Power Consumed by UUT(W)	5.21W	3.62W	2.25W	1.10W	0.18W
Efficiency	85.08%	86.09%	86.97%	87.23%	*
Average Efficiency	86.34%				*

- G. AC Input Voltage** : 230Vac/50Hz

Load Conditions Reported Quantity	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	0%* I ₀
Rms Output Current(mA)	2500mA	1875mA	1250mA	625mA	0mA
Rms Output Voltage(V)	11.877V	11.939V	12.002V	12.064V	12.126V
Active Output Power(W)	29.69W	22.39W	15.00W	7.54W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.338A	0.258A	0.176A	0.096A	0.016A
Rms Input Power(W)	34.42W	25.80W	17.27W	8.83W	0.26W
Voltage T.H.D.(%)	0.16	0.14	0.11	0.10	0.09
True Power Factor	0.448	0.435	0.425	0.398	0.071
Power Consumed by UUT(W)	4.73W	3.41W	2.27W	1.29W	0.26W
Efficiency	86.27%	86.77%	86.87%	85.39%	*
Average Efficiency	86.32%				*

Tester : Chihwei