
15.0 W
AC Adapter
SPECIFICATION

Model No. : **ATS018T-W050U (Level VI)**

Description : **5.0 Volts / 3.0 Amps**

Part No. : **ATS018TW050U415209**

Version : **A5**

Date : **08 - Nov. - 2021**

1. Feature :

- ◆ **Input** : **Universal 100 ~ 240 Vac / 50 - 60 Hz Input, without any slide switch.**
- ◆ **Output** : **+5.0 V / 0 ~ 3.0 A**
- ◆ **Case Dimension** : **72 (L) * 34 (W) * 69 (H) mm (±1mm)**
- ◆ **Efficiency** : **Eff_(av) ≥ 81.385 % Min.**
Eff ≥ 72.480 % @10% Load
- ◆ **Safety** : **PSE**
- ◆ **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 DoE Level VI/ ErP (Lot 7) / GEMS / NRCan / CEC.**

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	50 - 60 Hz
2.3 Current	0.48A Max.
2.4 Inrush Current	50A Max. / 100Vac ; 60A Max. / 230Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	Eff_(av) ≥ 81.385 % Min. (At 115 Vac & 230 Vac) Eff ≥ 72.480 % @10% Load
2.6 Power Consumption	Pi ≤ 0.10 W (at 230Vac & 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	+5.0 V ± 6 %
	Current	3.0 A Max.
	Regulation	4.7 V min. ~ 5.0 V typ. ~ 5.3 V max.
	Ripple & Noise	100 mV_{p-p} Max.
	Total Power	15.0 W 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)	12V Max.
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	7A Max.

Remark : When Short Circuit 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.

5. Safety 、 EMI and EMC Requirement :

5.1 Safety Requirement

a. Safety : PSE

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

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

(1)	Primary to Secondary	10 M Ohm for 500Vdc
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5.2 EMI Requirement : CE Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 0.25 mA

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 : By natural air

7. M.T.B.F. : 300,000 Hrs.(Calculated Hours at 25°C,By Telcordia SR-332)

8.Mechanical :

8.1 Weight : 170 g Typical

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

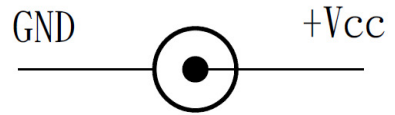
Plug : $\varnothing 5.5 * \varnothing 2.1 * 9.5 \text{mm}$
(Tuning Fork & Cannelure)

8.3 Cable Length : 1500mm

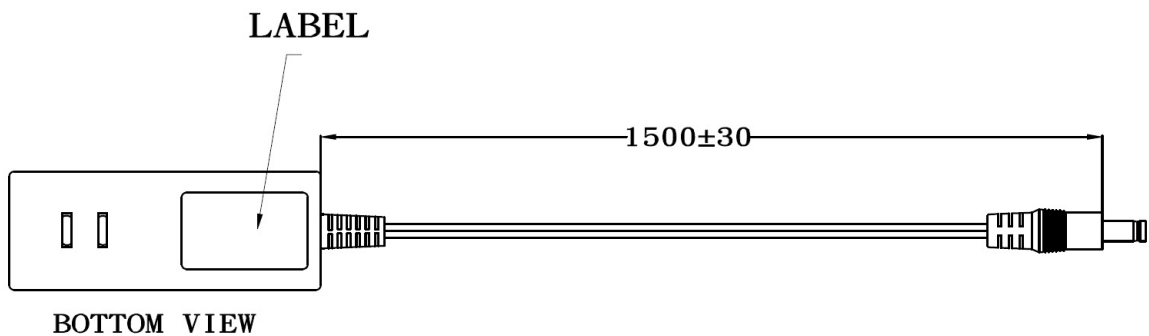
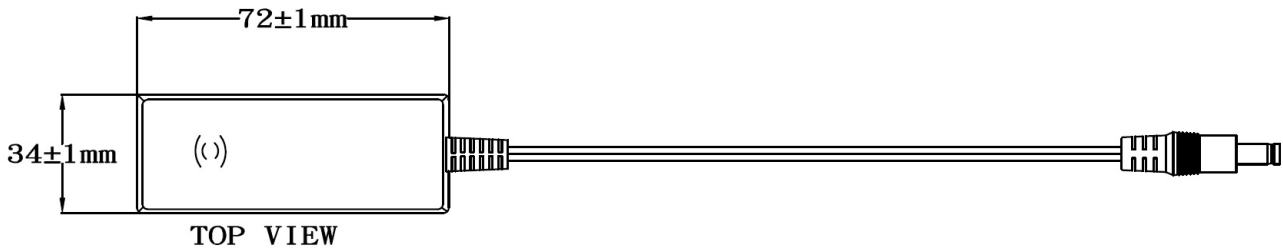
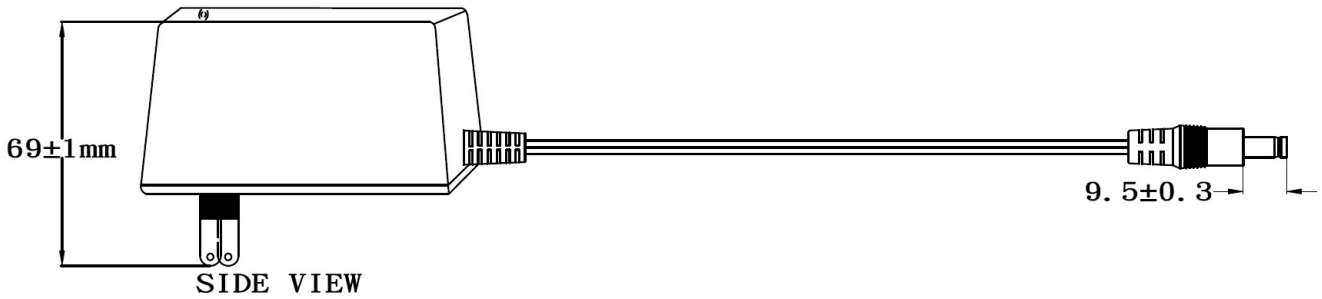
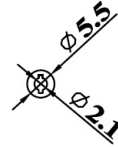
8.4 Case Dimension : 72 (L) * 34 (W) * 69 (H) mm ($\pm 1 \text{mm}$)

8.5 Material Flammability : UL 94V-0

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



Output Cable Plug Pin Assignment



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

100%



300%



"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.

Label Part No. : 9443084374

A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
115 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
132 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
180 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
230 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
264 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	81.385 % min.	82.551 %	82.088 %	82.013 %
230 Vac	81.385 % min.	81.719 %	81.674 %	81.450 %
230Vac@10% load	72.480 % min.	77.681 %	77.925 %	76.485 %

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

E_1 =efficiency with 25% rated load , E_2 = efficiency with 50% rated load
 E_3 =efficiency with 75% rated load , E_4 = efficiency with 100% rated load

C. Load Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 0 % Load	4.70 ~ 5.30 V	5.221 V	5.202 V	5.223 V
115 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
115 Vac / 100 % Load	4.70 ~ 5.30 V	4.928 V	4.876 V	4.872 V
230 Vac / 0 % Load	4.70 ~ 5.30 V	5.221 V	5.202 V	5.223 V
230 Vac / 50 % Load	4.70 ~ 5.30 V	5.070 V	5.037 V	5.032 V
230 Vac / 100 % Load	4.70 ~ 5.30 V	4.936 V	4.874 V	4.872 V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 100 % Load	100 mV _{p-p} max.	31.4 mV _{p-p}	33.2 mV _{p-p}	32.4 mV _{p-p}
230 Vac / 100 % Load	100 mV _{p-p} max.	32.8 mV _{p-p}	34.8 mV _{p-p}	33.6 mV _{p-p}

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
100 Vac / 100 % Load	50 A max.	32.4 A	33.2 A	30.4 A
230 Vac / 100 % Load	60 A max.	52.4 A	53.2 A	50.4 A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	7A Max.	4.71 A	4.65 A	4.69 A
230 Vac	7A Max.	4.61 A	4.54 A	4.58 A

G. Short Circuit Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac	Auto recovery	Ok	Ok	Ok
230 Vac	Auto recovery	Ok	Ok	Ok

H. Input Power Consumption(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115 Vac / 0 % Load	≤ 0.10 W	0.036 W	0.040 W	0.039 W
230 Vac / 0 % Load	≤ 0.10 W	0.060 W	0.059 W	0.065 W

Efficiency Test Report

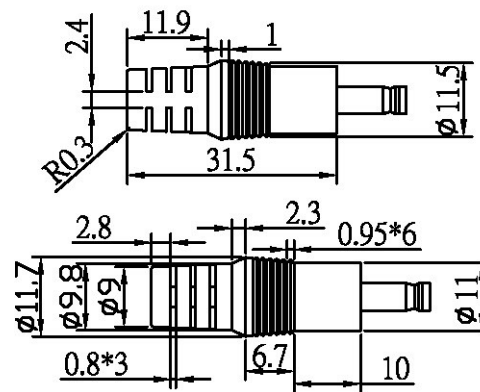
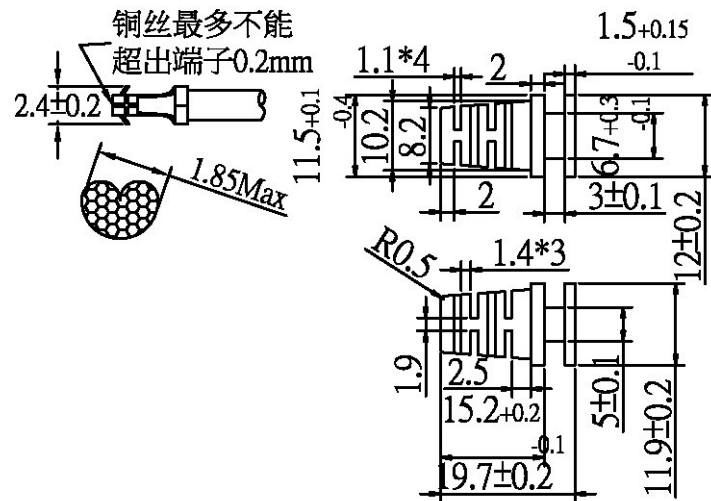
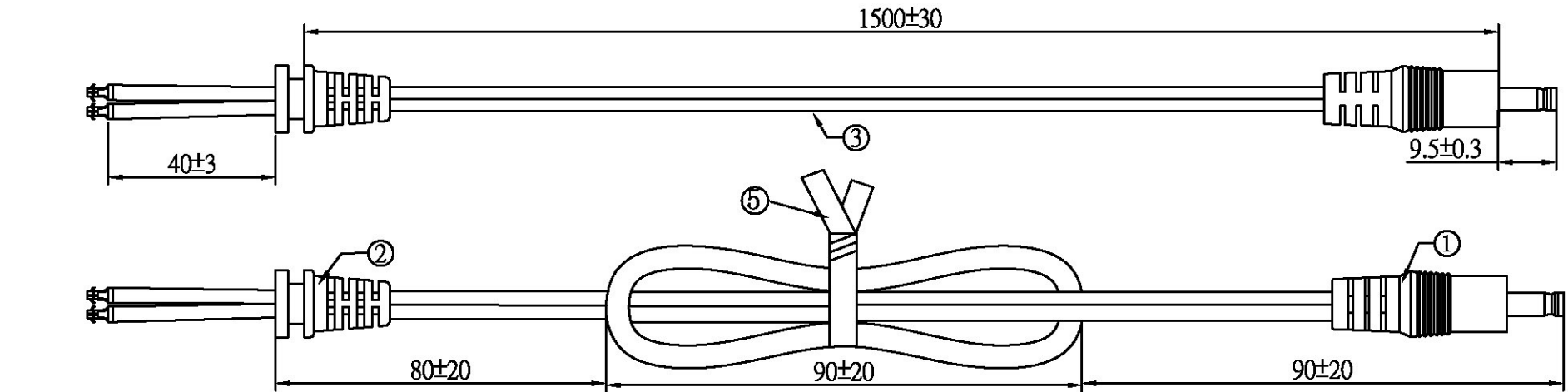
- A. Model Number** : ATS018T-A/P/W050Z 5.0V 3.00A 15.00W
- B. DC Power Cord** : UL2468 18AWG , 1.5M
- C. Average Efficiency** :
- Erp (Lot 7) $0.0834 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.609 = 81.385\%$ Min.
- DoE Level VI $0.0834 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.609 = 81.385\%$ Min.
- GEMS Level VI $0.071 \cdot \ln(P_{out}) - 0.0014 \cdot P_{out} + 0.67 = 81.385\%$ Min.
- CoC Tier 2 $0.0834 \cdot \ln(P_{no}) - 0.0011 \cdot P_{no} + 0.609 = 81.835\%$ Min.
- CoC Tier 2 (10% Load) $0.0834 \cdot \ln(P_{no}) - 0.00127 \cdot P_{no} + 0.518 = 72.480\%$ Min.
- D. NO Load Power Consumption** :
- Erp (Lot 7) **0.10W Max.**
- DoE Level VI **0.10W Max.**
- GEMS Level VI **0.10W Max.**
- CoC Tier 2 **0.075W Max.**
- E. Testing Equipment** :
- a. AC Power Source : " Zentech " 2700M-10
- b. Electronic Load : " PRODIGIT " 3311C
- c. Power Meter : " YOKOGAWA " WT-210A
- d. Digital Meter : " FLUKE " 45
- F. AC Input Voltage** : 115Vac/60Hz

Load Conditions	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	10%* I ₀	0%* I ₀
Reported Quantity						
Rms Output Current(mA)	3000mA	2250mA	1500mA	750mA	300mA	0mA
Rms Output Voltage(V)	4.835V	4.915V	4.991V	5.069V	5.114V	5.147V
Active Output Power(W)	14.51W	11.06W	7.49W	3.80W	1.53W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	0.304A	0.238A	0.176A	0.105A	0.050A	0.010A
Rms Input Power(W)	18.115W	13.392W	9.053W	4.596W	1.921W	0.036W
True Power Factor (PF)	0.517	0.489	0.447	0.378	0.331	0.031
Total Harmonic Distortion of the input current	145.0A%	159.7A%	180.4A%	216.2A%	233.1A%	33.2A%
Power Consumed by UUT(W)	3.610W	2.333W	1.567W	0.794W	0.386W	0.036W
Active Efficiency	80.072%	82.577%	82.696%	82.719%	79.885%	*
Average Efficiency	82.016%				79.885%	*

G. AC Input Voltage : 230Vac/50Hz

Load Conditions	100%* I ₀	75%* I ₀	50%* I ₀	25%* I ₀	10%* I ₀	0%* I ₀
Reported Quantity						
Rms Output Current(mA)	3000mA	2250mA	1500mA	750mA	300mA	0mA
Rms Output Voltage(V)	4.833V	4.915V	4.992V	5.069V	5.114V	5.147V
Active Output Power(W)	14.50W	11.06W	7.49W	3.80W	1.53W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	0.221A	0.182A	0.128A	0.071A	0.035A	0.016A
Rms Input Power(W)	18.016W	13.371W	9.064W	4.624W	1.975W	0.055W
True Power Factor (PF)	0.356	0.320	0.309	0.283	0.243	0.015
Total Harmonic Distortion of the input current	232.1A%	254.7A%	260.6A%	248.2A%	163.8A%	7.3A%
Power Consumed by UUT(W)	3.517W	2.312W	1.576W	0.822W	0.441W	0.055W
Active Efficiency	80.478%	82.707%	82.613%	82.218%	77.681%	*
Average Efficiency	82.004%				77.681%	*

Tester : Wei



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條紋	印字

注意:此圖面所需材料符合"ROHS"標準

- ① 5.5*2.1*21音叉車溝黑色半邊,外模P-184號模(二次成型),用料外PVC60P黑色(YY-PV-00009)
- ② SR-101號模,用料PVC60P黑色,吊重:1米/20磅/60秒
- ③ UL 2468 18AWG(0.16*41) BK OD:2.2*4.4 裁線長度:1560+10/-0
- ④ PE无鐵芯紮帶10CM黑色(YY-ES-00001)
- ⑤ 1.8双钩机板端*2PCS(进文提供:P1815-A)
- ⑥ 單位:MM

1.0mm以下	±0.1mm	15.0mm以下	±0.80mm
2.0mm以下	±0.15mm	20.0mm以下	±0.80mm
3.0mm以下	±0.20mm	30.0mm以下	±1.0mm
10.0mm以下	±0.50mm	30.0mm以上	±1.2mm

料號	R44M1G15012C		
客戶		制圖	
頁數	01	審核	
		批准	

02	SR后留尺寸	2015/08/29
01	新出	2015/04/15
版次	變更內容	日期

圖號	ADT-3426	日期	2015/08/29
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