



**Specification for Approval**

**Customer** : **AKON Co.,Ltd.**

**Part Name** : **AC ADAPTER**

**Description** : **54.0Volts / 1.2Amps**

**Model No.** : **ATS065A1-P540 (Level VI)**

**Customer P / N** :

**Product P / N** :

**Issued Date** : **04 – Dec. – 2023**

**Version** : **01**

**Issued Stamp** :

**Customer's Approval Signature**

**ADAPTER TECHNOLOGY CO.,LTD.**

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**TEL : +886-2-8226-2279**

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**Factory (China) : BOAYANG ELECTRONICS CO., LTD.**



**64.8W**  
**AC ADAPTER**  
**SPECIFICATION**

**Model No.** : **ATS065A1-P540 (Level VI)**  
\_\_\_\_\_

**Description** : **54.0Volts / 1.2Amps**  
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**Date** : **04 – Dec. – 2023**  
\_\_\_\_\_

Approved	Reviewed	Checked	Prepared	Sales



## ■ Approval Documents/Spec. Revised Records

■ Customer : AKON Co.,Ltd.

■ Model No. : ATS065A1-P540

■ Original Documents Content : SPEC. 10 Page(s) , Attachment 0 Pages

Revised Records : No.	Date	Description ( Before / After )	Page(s) Revised	Revised By (Adapter/Customer)	Remark
1	Dec./04/2023	Issue	-	Jordan	01
2					
3					
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7					
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## 1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 50 ~ 60 Hz Input, without any slide switch.
- ◆ **Output** : 54.0V / 0~1.2 A
- ◆ **Case Dimension** : 115(L) \* 48.5 (W) \* 31.6 (H) mm ±1mm
- ◆ **Efficiency** : Eff (av) ≥ 88%  
Eff ≥ 79% (At 230V/50Hz input@10% load for CoC Tier2)
- ◆ **Safety** : PSE
- ◆ **EMI** : (conduction & radiation Class B)
- ◆ **Protection** : OVP (Over Voltage Protection) 、 SCP (Short Circuit Protection) 、 OCP (Over Current Protection)
- ◆ Suitable for usage at I.T.E., industrial controller
- ◆ Meet DoE 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	1.4A Max.
2.4 Inrush Current	80A Max. / 230Vac (Cold Start At 25 °C , Full Load) ( ac source chroma 6530 )
2.5 Efficiency	Eff (av) ≥ 88 % (At 115 Vac & 230 Vac) Eff ≥ 79% (At 230V/50Hz input@10% load for CoC Tier2)
2.6 Power Consumption	Pi ≤ 0.21 W (At 115 Vac & 230 Vac & 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	54.0V ± 5%
	Current	1.2A Max.
	Regulation	51.30Vmin. ~ 54.00Vtyp. ~ 56.70Vmax.
	Ripple & Noise	560 mVpp Max.
	Total Power	64.8W 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. (47 μF) at output connector terminals. (At nominal line voltage, Full Load)



## 4. Protection :

4.1 Over Voltage Protection (OVP)	59V (Max.)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	2.7A (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 requirement :

5.1. Dielectric strength : Cut off current 10 mA

(1)	Primary to secondary	3000Vac (RMS) for 1 minute
(2)	Primary to frame ground	1770Vac (RMS) for 1 minute
※ Secondary return connected to FG		

5.2. Insulation resistance :

(1)	Primary to secondary	10 MΩ for 500Vdc
(2)	Primary to frame ground	10 MΩ for 500Vdc
※ Secondary return connected to FG		

5.3 Leakage current : Less than 5 mA (RMS) or 7.07 mA (Peak)

5.4 Grounding test : < 0.1Ω

## 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 : 220 g Typical

8.2 Cable Type : Black UL2468 22AWG

( Wire + Plug )

Plug :  $\varnothing 5.5 * \varnothing 2.5 * 9.5 \text{mm}$

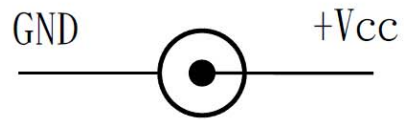
( Tuning Fork & Cannelure )

8.3 Cable Length : 1500mm

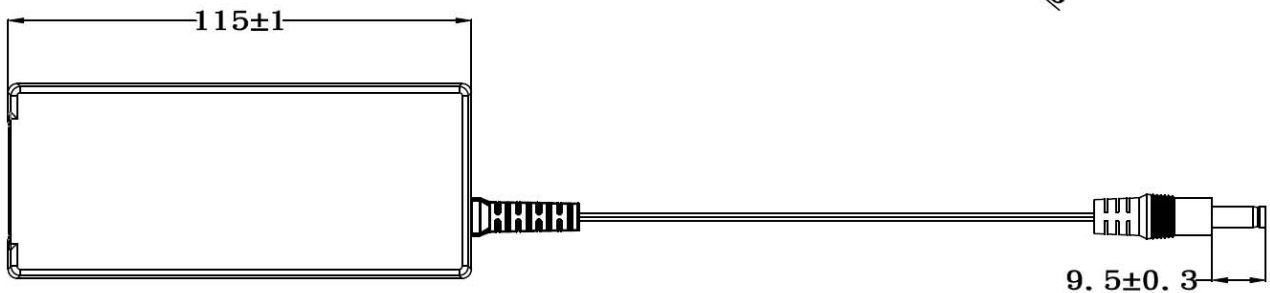
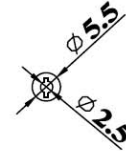
8.4 Case Dimension : 115mm(L)\*48.5mm(W)\*31.6mm(H)

8.5 Material Flammability : UL 94V-0

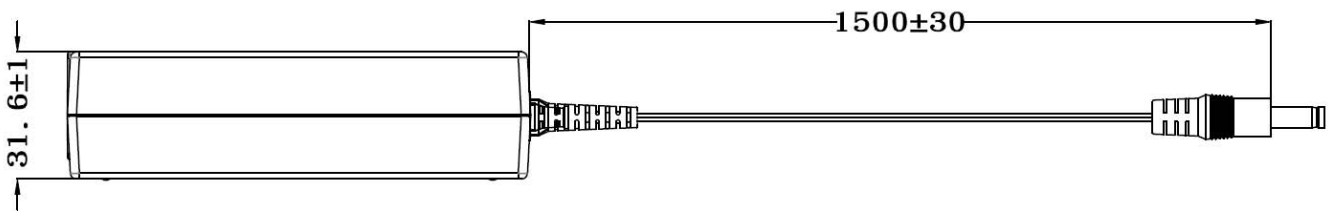
8.6 External Apperance : As drawing below ( Scale  $\rightarrow$  mm )



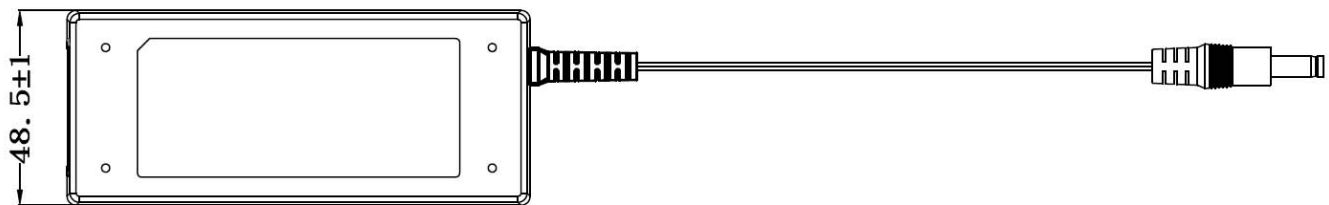
Output Cable Plug Pin Assignment



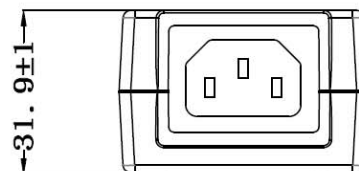
TOP VIEW



SIDE VIEW




BOTTOM VIEW



FRONT-VIEW

8.7 Spec. Label materials : Metalized polyester label ( silver Gloss )  
 Color : Black Background with Silver Printing  
 Label dimension: 79(L)\*33.5(W) 0.1mm  
 Label thickness : 75#

100%



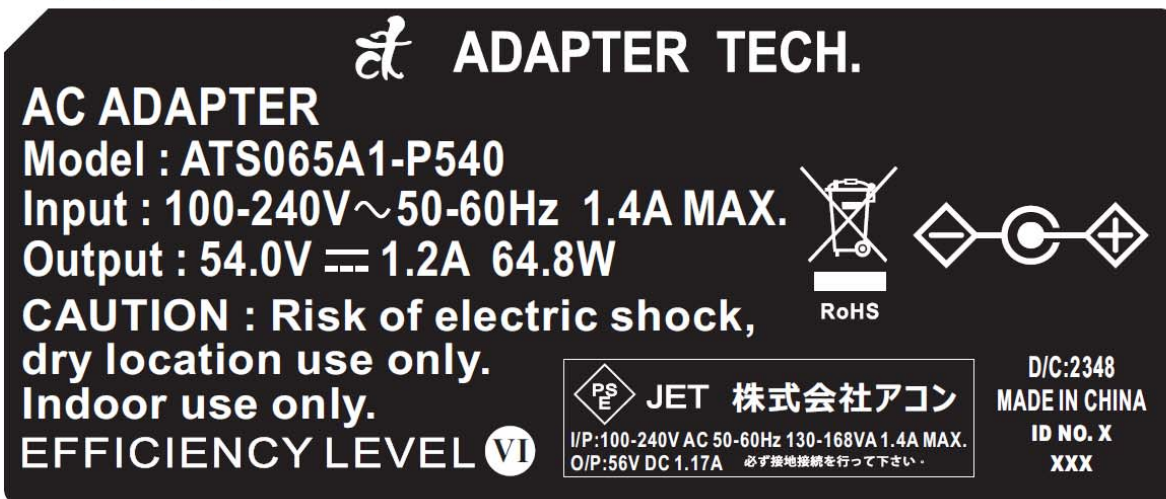
**ADAPTER TECH.**  
**AC ADAPTER**  
 Model : ATS065A1-P540  
 Input : 100-240V~50-60Hz 1.4A MAX.  
 Output : 54.0V = 1.2A 64.8W  
**CAUTION : Risk of electric shock,**  
**dry location use only.**  
**Indoor use only.**  
**EFFICIENCY LEVEL VI**

**RoHS**

**JET 株式会社アコン**  
 D/C:2348  
 MADE IN CHINA  
 ID NO. X  
 XXX

I/P:100-240V AC 50-60Hz 130-168VA 1.4A MAX.  
 O/P:56V DC 1.17A 必ず接地接続を行って下さい。

200%



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 O/P:56V DC 1.17A 必ず接地接続を行って下さい。

"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.:



## A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	51.3 V ~ 56.7 V	53.26 V	53.27 V	53.26 V
115Vac / 50 % Load	51.3 V ~ 56.7 V	53.26 V	53.27 V	53.26 V
132Vac / 50 % Load	51.3 V ~ 56.7 V	53.26 V	53.27 V	53.26 V
180Vac / 50 % Load	51.3 V ~ 56.7 V	53.23 V	53.24 V	53.23 V
230Vac / 50 % Load	51.3 V ~ 56.7 V	53.23 V	53.24 V	53.23 V
264Vac / 50 % Load	51.3 V ~ 56.7 V	53.23 V	53.24 V	53.23 V

## B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	88 % Min.	89.65 %	89.66 %	89.65 %
230Vac	89 % Min.	89.58 %	89.59 %	89.58 %
230Vac@10% load	79 % Min.	86.41 %	86.42 %	86.41 %

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

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	51.3 V ~ 56.7 V	53.40 V	53.41 V	53.40 V
115Vac / 50 % Load	51.3 V ~ 56.7 V	53.26 V	53.27 V	53.26 V
115Vac / 100 % Load	51.3 V ~ 56.7 V	53.09 V	53.10 V	53.09 V
230Vac / 0 % Load	51.3 V ~ 56.7 V	53.40 V	53.41 V	53.40 V
230Vac / 50 % Load	51.3 V ~ 56.7 V	53.23 V	53.24 V	53.23 V
230Vac / 100 % Load	51.3 V ~ 56.7 V	53.08 V	53.09 V	53.08 V





## D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	560 mVpp Max.	68.6 mV	69.6 mV	67.6 mV
230Vac / 100 % Load	560 mVpp Max.	70.2 mV	71.2 mV	69.2 mV

## E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	80A Max	73.8 A	74.7 A	73.5 A

## F. Output Current Protection

Test Result Test Result

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	2.7A (Max)	177 %	178 %	177 %
230Vac	2.7A (Max)	188 %	189 %	188 %

## 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

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	$\leq 0.21$ W	0.091 W	0.092 W	0.091 W
230Vac / 0 % Load	$\leq 0.21$ W	0.136 W	0.137 W	0.136 W



# Adapter Technology Co., Ltd.

## Efficiency Test Report

- A. Model Number : ATS065A1-A,P.G540 54.0V 1.20A 64.80W
- B. DC Power Cord : UL2468 22AWG , 1.5M
- C. Average Efficiency :
- Erp ( Lot 7 ) 88.000% Min.
- DoE Level VI 88.000% Min.
- GEMS Level VI 88.000% Min.
- CoC Tier 2 89.000% Min.
- CoC Tier 2 (10% Load) 79.000% Min.
- D. NO Load Power Consumption :
- Erp ( Lot 7 ) 0.21W Max.
- DoE Level VI 0.21W Max.
- GEMS Level VI 0.21W Max.
- CoC Tier 2 0.15W 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 Reported Quantity	Load Conditions					
	100%* I <sub>0</sub>	75%* I <sub>0</sub>	50%* I <sub>0</sub>	25%* I <sub>0</sub>	10%* I <sub>0</sub>	0%* I <sub>0</sub>
Rms Output Current(mA)	1200mA	900mA	600mA	300mA	120mA	0mA
Rms Output Voltage(V)	53.090V	53.190V	53.260V	53.330V	53.370V	53.400V
Active Output Power(W)	63.71W	47.87W	31.96W	16.00W	6.40W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V	115V
Rms Input Current(A)	1.319A	1.063A	0.714A	0.358A	0.153A	0.022A
Rms Input Power(W)	71.930W	53.350W	35.450W	17.750W	7.190W	0.091W
True Power Factor (PF)	0.525	0.494	0.457	0.430	0.392	0.396
Total Harmonic Distortion of the input current	142.3A%	155.6A%	178.5A%	218.2A%	243.4A%	15.6A%
Power Consumed by UUT(W)	8.222W	5.479W	3.494W	1.751W	0.786W	0.091W
Active Efficiency	88.569%	89.730%	90.144%	90.135%	89.074%	*
Average Efficiency	89.645%				89.074%	*

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

Load Conditions Reported Quantity	Load Conditions					
	100%* I <sub>0</sub>	75%* I <sub>0</sub>	50%* I <sub>0</sub>	25%* I <sub>0</sub>	10%* I <sub>0</sub>	0%* I <sub>0</sub>
Rms Output Current(mA)	1200mA	900mA	600mA	300mA	120mA	0mA
Rms Output Voltage(V)	53.080V	53.150V	53.230V	53.310V	53.360V	53.400V
Active Output Power(W)	63.70W	47.84W	31.94W	15.99W	6.40W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V	230V
Rms Input Current(A)	0.804A	0.613A	0.423A	0.240A	0.105A	0.035A
Rms Input Power(W)	70.790W	53.220W	35.620W	18.010W	7.410W	0.136W
True Power Factor (PF)	0.383	0.379	0.373	0.358	0.339	0.019
Total Harmonic Distortion of the input current	245.7A%	259.1A%	260.2A%	261.8A%	195.1A%	6.6A%
Power Consumed by UUT(W)	7.094W	5.385W	3.682W	2.017W	1.007W	0.136W
Active Efficiency	89.979%	89.882%	89.663%	88.801%	86.413%	*
Average Efficiency	89.581%				86.413%	*

Tester : Jordan