



Shenzhen Sunlight Electronic CO., LTD

承認書

SPECIFICATION FOR APPROVAL

DOE VI AC DC Adapter 24V 1A Power Supply Switching 1000mA 24 Volt Adaptor

CUSTOMER: _____

DESCRIPTION: _____ **ADAPTER** _____

SPECS: _____ **24V1A AC/DC ADAPTER** _____

MODEL NO.: _____ **GA240010** _____

DATE: _____ **Feb-23-2015** _____

APPROVAL SIGNATURE		
DATE:	DATE:	DATE:

PLEASE RETURN TO US ONE COPY OF “SPECIFICATION FOR APPROVAL” WITH YOUR APPROVED SIGNATURE

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SPECIFICATION FOR APPROVAL

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2. FEATURE :

- INPUT : UNIVERSAL 100-240 Vac/50-60 Hz INPUT, WITHOUT ANY SLIDE SWITCH
- OUTPUT : +24.0V/0-1.0A
- DIMENSION : 81.5(D)*50.0(W)*34.5(T)
- EFFICIENCY : 86.5% TYPICAL
- SAFETY : UL/CB/GS/SAA/PSE/LVD/CCC
- EMI : FCC CLASS B / EN55022 CLASS B; CONDUCTED & RADIATED MEETED
- HIGH FREQUENCY DESIGN, LESS POWER CONSUMPTION
- OVER VOLTAGE PROTECTION, SHORT CIRCUITED PROTECTION, OVER POWER PROTECTION
- CAN BE USED AT TELCOMMUNICATION, COMPUTER, INDUSTRIAL CONTORLLER & OA SYSTEM

3. INPUT :

3.1 VOLTAGE	UNIVERSAL 100~240Vac,SINGLE PHASE
3.2 FREQUENCY	50HZ~60HZ
3.3 CURRENT	1.0A Max
3.4 INRUSH CURRENT	25A Max/110Vac;45A Max/240Vac (COLD STABT AT 25°C FULL LOAD)
3.5 EFFICIENCY	86.5% TYPICAL (AT NOMINAL LINE VOLTAGE FULL LOAD)
3.6 INPUT POWER DISSIPATION	UNDER 0.1W < ZERO LOAD 115V/60HZ INPUT
	UNDER 0.1W < ZERO LOAD 230V/50HZ INPUT

4. OUTPUT :

4.1 DC OUTPUT	VOLTAGE	+24.0V
	CURRENT	1.0A Max
	REGULATION	22.80V Min~24.0V Typ.~25.20V Max
	RIPPLE & NOISE	240mV Max
	TOTAL POWER	24.0W Max

NOTE : FOR RIPPLE & NOISE MEASUREMENT, USE A 20MHZ BAND WIDTH FREQUENCY OSCILLOSCOPF, AND ADD A 0.1uF MULTILAYER CAP. AND A LOW ESR ELECTROLYTICCAP. (10uF) AT OUTPUT CONNECTOR TERMINALS. (AT NOMINAL LINE VOLTAGE FULL LOAD)

5. PROTECTION :

5.1 OVER VOLTAGE PROTECTION	26.2V MAX. The power supply shall be hiccupped when output voltage reaches to its over voltage protection trigger point.
5.2 SHORT CIRCUIT PROTECTION	The power supply shall be hiccupped when operating any output in a short circuit condition.

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5.3 OVER POWER PROTECTION	The adapter provide protection at 120%~200% of rated output power, the adapter shall be hiccupped but not damage.
5.4 OVER CURRENT PROTECTION	2.0A MAX. The power supply shall be hiccupped when output current reaches to its over current protection trigger point.

NOTE : WHEN PROTECTION CIRCUIT IS WORKING THE POWER SUPPLY WILL HICCUPPED, ONCE THE ABNORMAL CONDITIONS ARE REMOVED. THE POWER SUPPLY WILL RESTART AUTOMATICALLY.

6. SAFETY AND EMI REQUIREMENT :

6.1 SAFETY REQUIREMENT

a. SAFETY : UL/CB/GS/SAA/PSE/LVD/CCC

b. DIELECTRIC STRENGTH :5mA Max. CUT OFF CURREN

(1):PRIMARY TO SECONDARY	3000Vac FOR 1 MINUTE
(2):PRIMARY TO FRAME GROUND	3000Vac FOR 1 MINUTE

c. INSULAION RESISTANCE :

(1):PRIMARY TO SECONDARY	50 M OHMS min FOR 500Vdc
(2):PRIMARY TO FRAME GROUND	50 M OHMS min FOR 500Vdc

d. LEAKAGE CURRENT :

(1) : 100VAC / 60HZ	< 0.25 mA
(2) : 240VAC / 50HZ	< 0.25 mA

6.2 EMI/EMS REQUIREMENT

a. EMI : FCC CLASS B / EN55022 CLASS B; CONDUCTED & RADIATED MEETED

b. Electron Static Discharge(ESD) :

Applicable Standard	CONDITION	SPECIFICATION
IEC/EN 61000-4-2	Contact discharge performance is 4KV; Air discharge performance is 8KV	Normal operation shall be continued

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c. Lightning Surge :

Applicable Standard	CONDITION	SPECIFICATION
IEC/EN 61000-4-5	+/- 1KV (Line to Line) +/- 2KV (Line to Ground)	Normal operation shall be continued

d. Electric Fast Transients :

Applicable Standard	CONDITION	SPECIFICATION
IEC/EN 61000-4-4	+/-1KV for Power Supply Line	Normal operation shall be continued

7. OPERATION & ENVIRONMENT PERFORMANCE:

7.1 TEMPERATURE RANGE

OPERATING	-10°C ~ +40°C
STORAGE	-40°C ~+70°C

7.2 HUMIDITY RANGE (NON CONDENSING)

OPERATING	10% ~ 90% RH
STORAGE	5% ~ 95% RH

7.3 Product operating/storage test requirement :

TEST ITEM	CONDITION	SPECIFICATION
High Temperature Storage TEST	70 degree C for 72H	There is no malfunction and deformation to be found after TEST.
High Temperature Operation TEST	40 degree C for 16H	There is no malfunction and deformation to be found after TEST.
Low Temperature Storage TEST	-20 degree C for 72H	There is no malfunction and deformation to be found after TEST.
Low Temperature Operation TEST	0 degree C for 16H	There is no malfunction and deformation to be found after TEST.

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Termal Shock Operation TEST	Apply 2 cycle from 0 degree C to +40 degree C as 24 Hours as 1 cycle	There is no malfunction and deformation to be found after TEST.
Termal Shock Storage TEST	Apply 2 cycle from -20 degree C to +70 degree C as 2 Hours as 1 cycle	There is no malfunction and deformation to be found after TEST.

7.4 COOLING : SHOULD OPERATE WITHOUT FAN

7.5 M.T.B.F. : 50000 HOURS Min ; 25°C SEE CONDITION

8. MECHANICAL REQUIREMENT :

8.1 DIMENSION : 81.5(D)*50.0(W)*34.5(T)

8.2 DROP TEST : From a height of 100cm onto concrete or similar material.
No impairment of normal function, breaking away of any parts or change

8.3 VIBRATION TEST : Non-operating but with packing. Shock acceleration 50 G, sin, 100Ms.
Directions of force : X , Y , Z . One time at 6 directions. There is no malfunction and deformation to be found after TEST.

8.4 APPEARANCE : There shall not be any remarkable defects such as clack, distortion, uneven color, dirty nameplate and its peeling

8.5 Tensile Strength of the Cord : A static load of 100N is applied to the cord for 1 minute
The cord should not be deteriorated

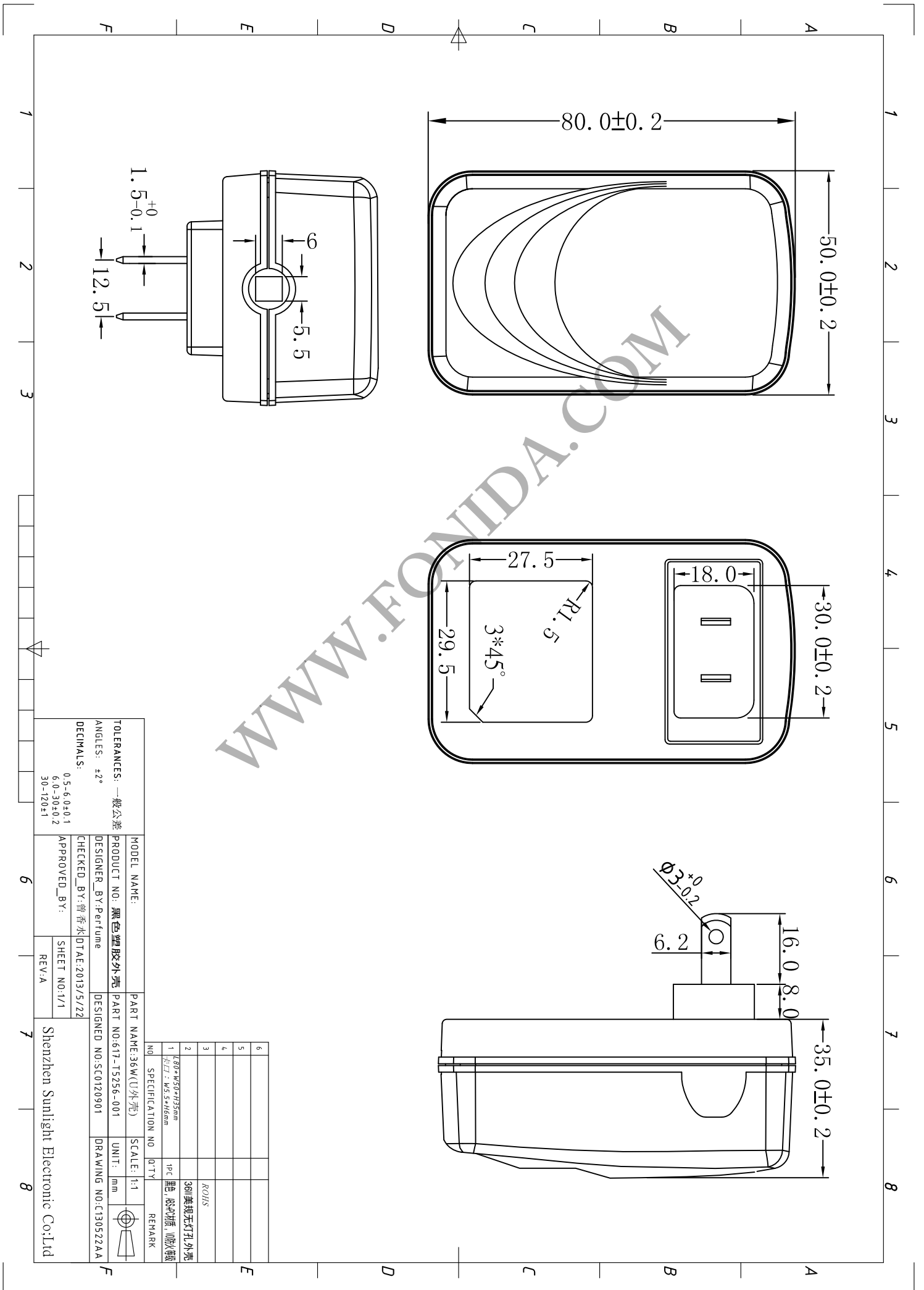
8.6 Cord Bending TEST : Hang the specified weight and swing it to one direction and return to the original position, then swing to the opposite direction and return to the original position .The strain relief shall be subjected to the specified cycles and speed. Weight 200 (g), Angle ± 60 degree, 800 times, Cycles in every minute 30, Distance 300mm.

9. PRODUCT GUARANTEE : AFTER SHIPMENT 12 MONTHS.

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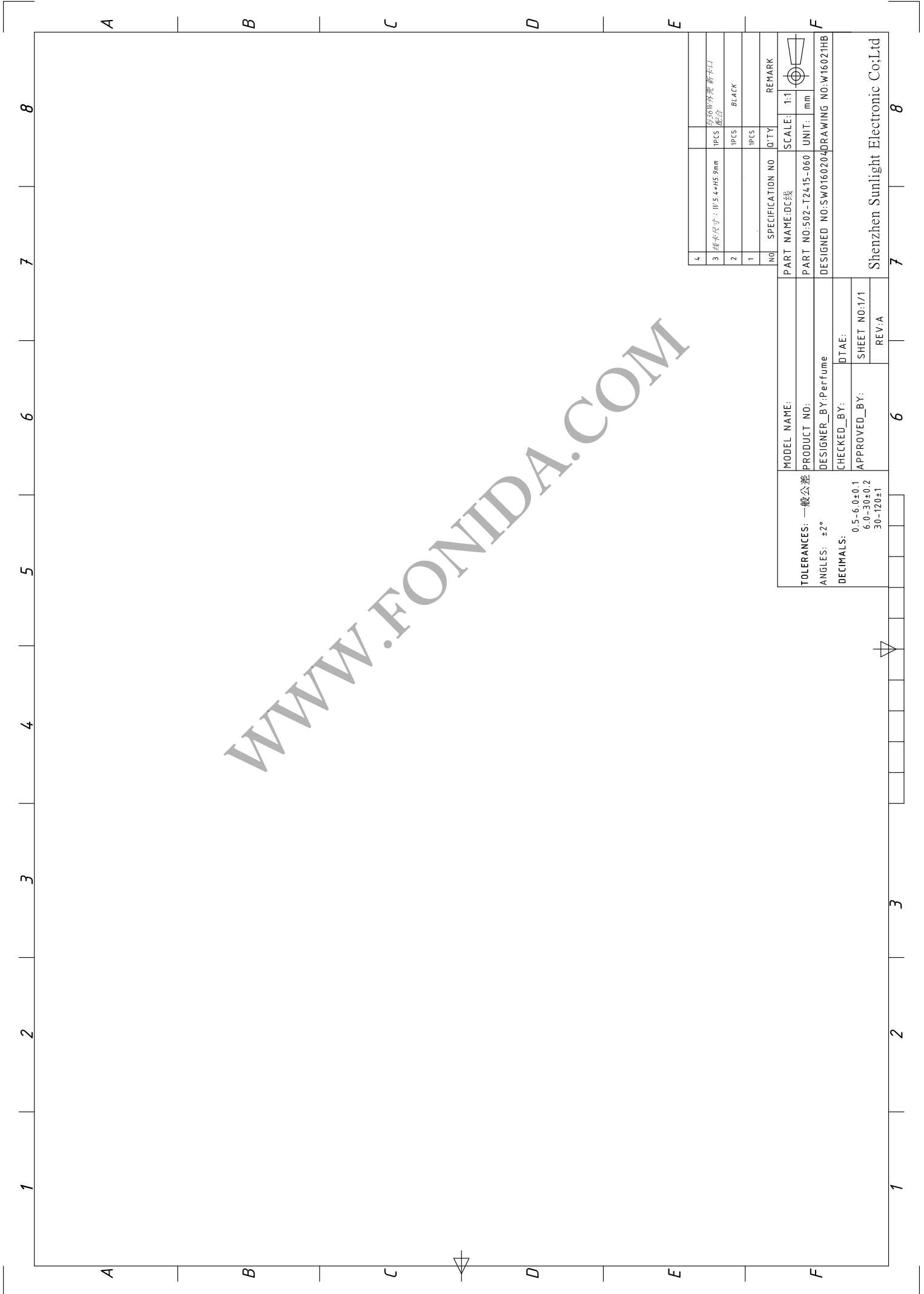
10. PRODUCT OUTLINE DRAWING:



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SPECIFICATION FOR APPROVAL

11. DC OUTPUT CORD DRAWING:

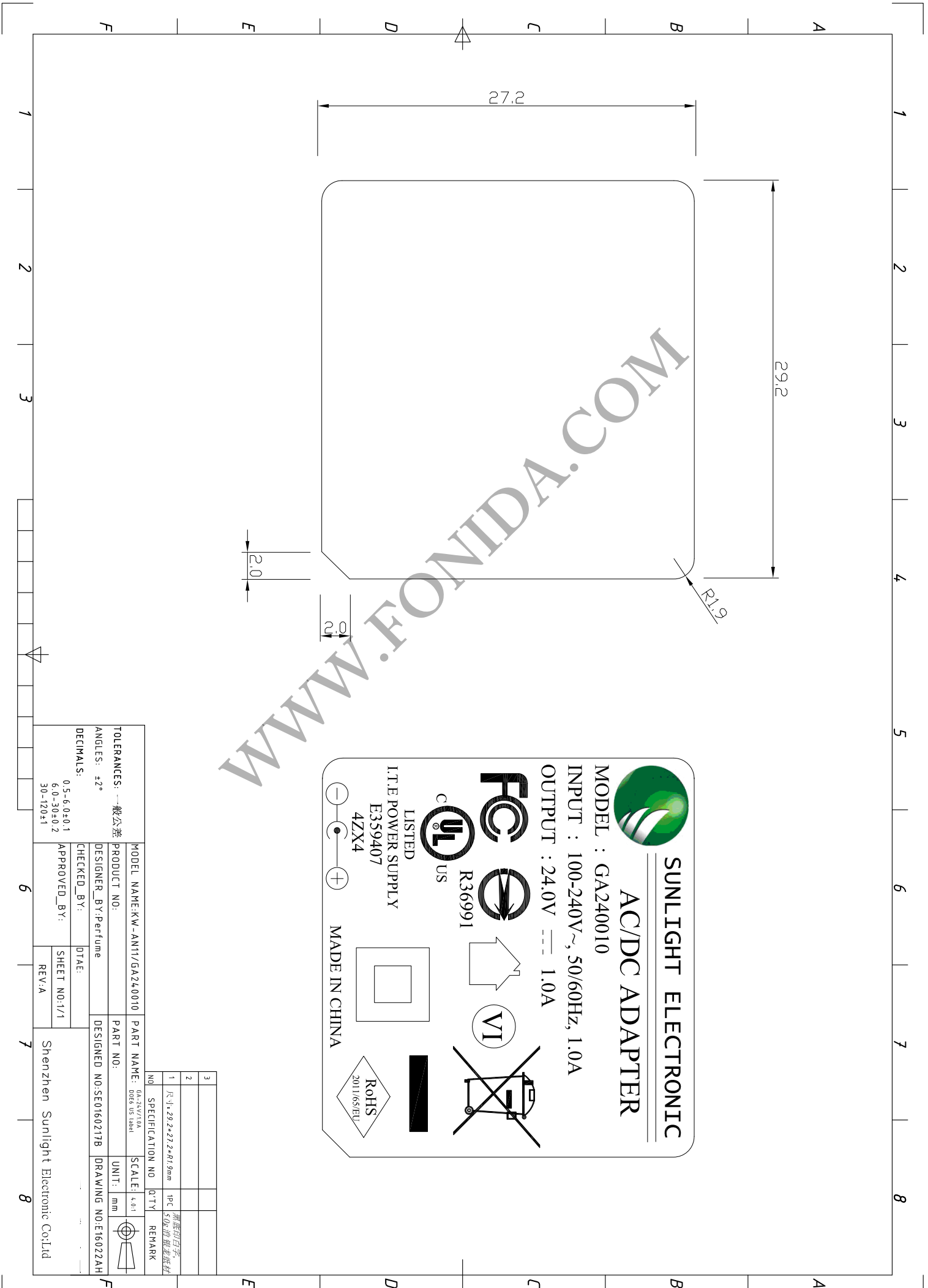


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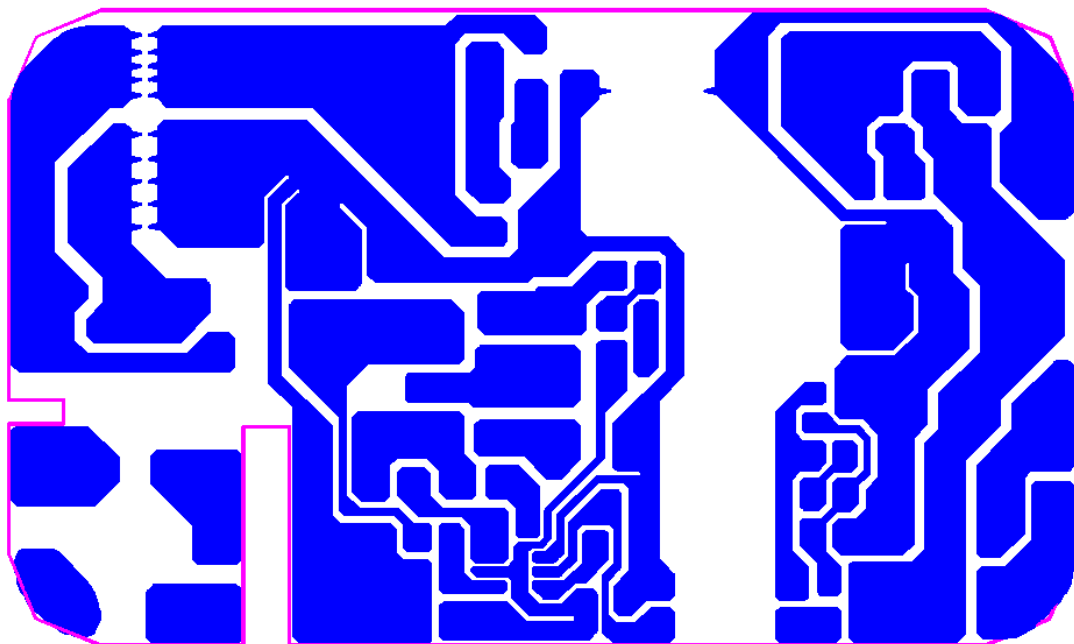
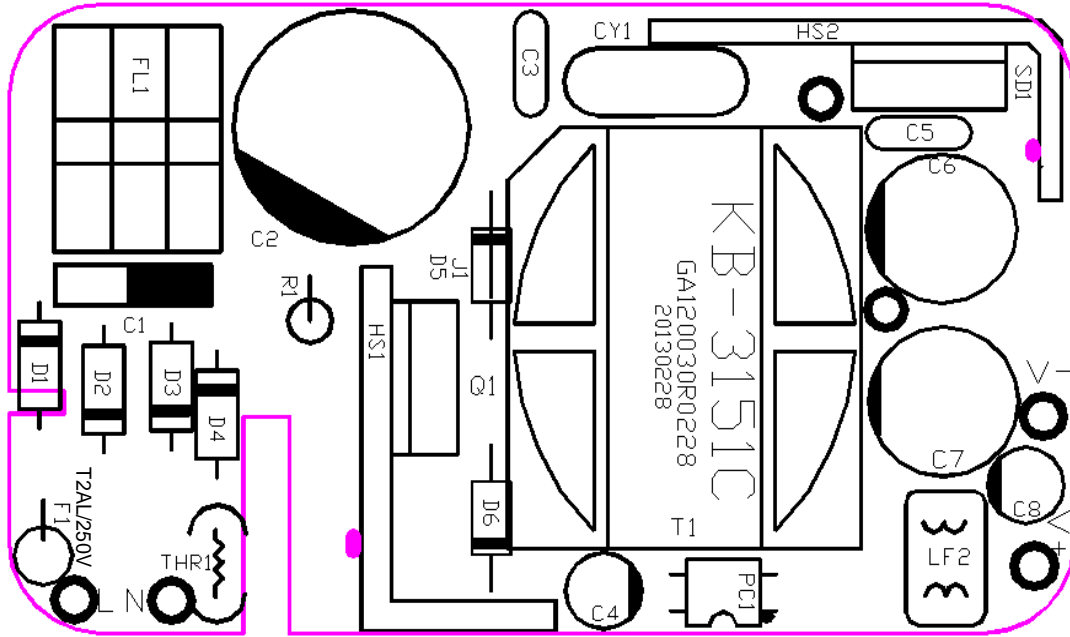
12. RATING LABEL DRAWING :



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13. PCB LAYOUT :



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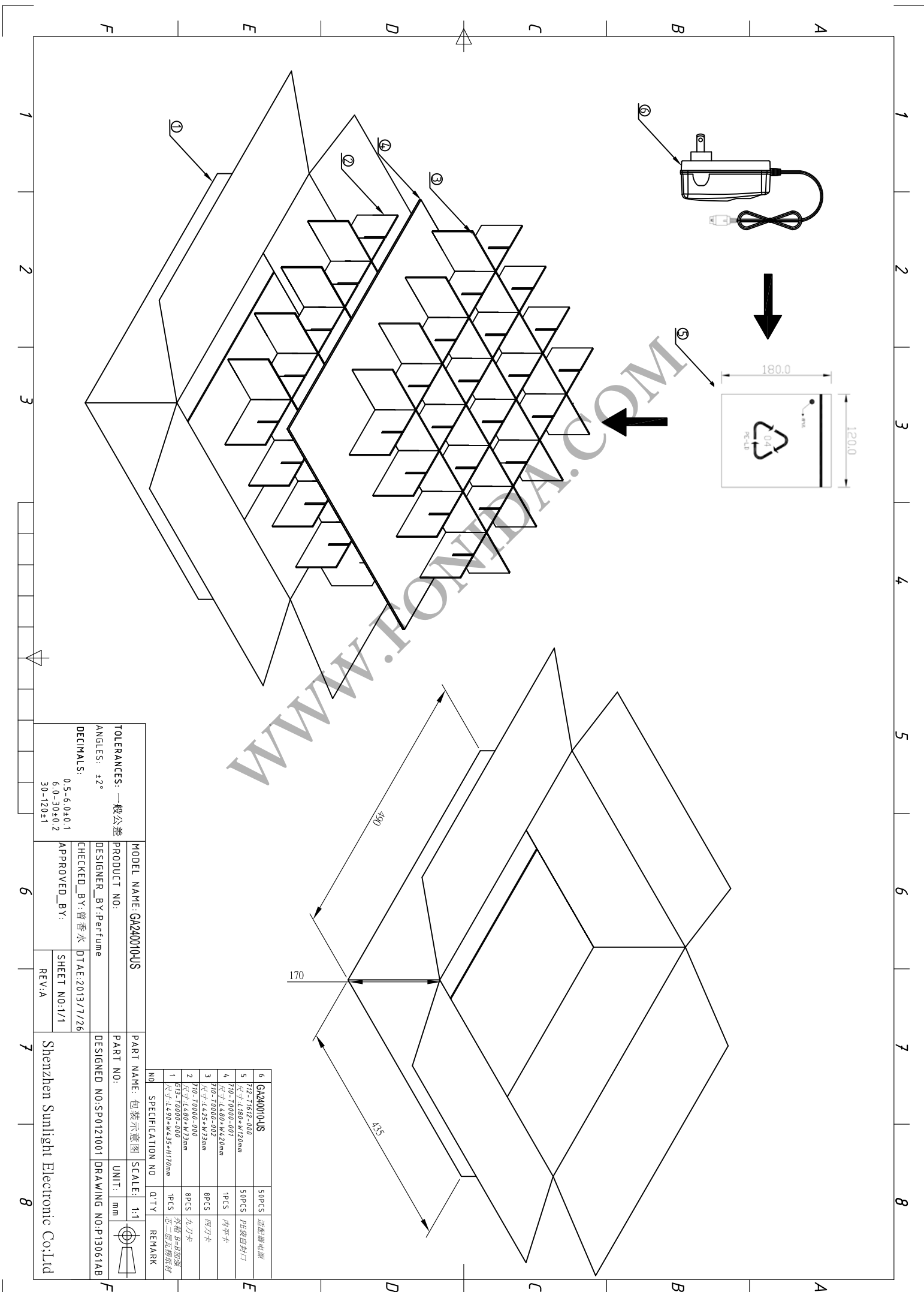
14.TEST REPORT:

电源适配器样品测试报告											
客 户		客户编号		室 温	25℃						
产品型号	GA240010	产品编号	SAD1512-21	日 期	2015.02.17						
输入电压/频率	100Vac-240Vac	50/60Hz	输出电压/电流				24V 1.0A				
测试内容		1#样机				2#样机				判定	
测试项目	测试标准	90V	100V	240V	264V	90V	100V	240V	264V	PASS/NG	
空载电压	22.80V-25.20V	24.28	24.28	24.28	24.28	/	/	/	/	PASS	
空载纹波与噪声	≤240mV	50	46	47	47	/	/	/	/	PASS	
满载电压	22.80V-25.20V	23.96	23.96	23.96	23.96	/	/	/	/	PASS	
满载纹波与噪声	≤240mV	116	116	105	105	/	/	/	/	PASS	
最大输入电流	<1000mA	409	398	189	176	/	/	/	/	PASS	
短路保护	无损坏, 可恢复 OK/NG	OK	OK	OK	OK	/	/	/	/	PASS	
过流保护	>1.2A <2.0A	1.31	1.31	1.56	1.57	/	/	/	/	PASS	
过压保护 (光耦开环)	<1V/满负载	OK	OK	OK	OK	/	/	/	/	PASS	
启动延迟时间	< 4 s	3	2.8	2	2	/	/	/	/	PASS	
输出保持时间	> 10 ms	√	√	√	√	/	/	/	/	PASS	
上升时间	< 20 ms	16.3	15.1	15.6	15.2	/	/	/	/	PASS	
下降时间	< 30 ms	25.3	26.7	23.9	24.9	/	/	/	/	PASS	
开机过冲	< 5 %	0	0	0	0	/	/	/	/	PASS	
雷击电压	共模: (L/N-GND)	± 2KV			差模: (L-N)		± 1KV			PASS	
绝缘强度测试	AC3.0KV 60S	< 5mA	泄漏电流 0.6mA: 绝缘击穿: <input type="checkbox"/> 有 <input checked="" type="checkbox"/> 无								PASS
绝缘阻抗测试	DC500V 60S	>100MΩ	绝缘阻抗 100MΩ: 绝缘击穿: <input type="checkbox"/> 有 <input checked="" type="checkbox"/> 无								PASS
泄漏电流测试	264V	<0.25mA	泄漏电流 0.06mA								PASS
能效测试	平均效率> 86.205% 空载功耗<0.10W	输入电压	100%	75%	50%	25%	平均效率	10%负载效率>76.205%	空载输入功耗	PASS	
		115Vac	86.78%	87.52%	86.93%	85.96%	86.79%	81.06%	0.05W	PASS	
		230Vac	87.81%	87.13%	86.23%	84.91%	86.52%	77.81%	0.08W	PASS	
DC输出短路30分钟	264V输入	短路30分钟不损坏: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG: 可恢复工作: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG								PASS	
90V/264V输入时满载开关机测试	各10次	正常开机: <input checked="" type="checkbox"/> OK <input type="checkbox"/> NG								PASS	
PASS											
测 试				核 准			KIKIN				

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15. PACKING DRAWING :



NO	SPECIFICATION NO	Q.TY	REMARK
6	GA240010-US	50PCS	逆变器电源
5	P12-T1612-000	50PCS	P2袋密封胶
4	P10-T0000-001	1PCS	内平卡
3	P10-T0000-002	8PCS	网刀卡
2	P10-T0000-000	8PCS	九刀卡
1	P10-T0000-000	1PCS	外筒 B=8mm 内二层 尼龙材料

MODEL NAME: GA240010-US		PART NAME: 包装示意图		SCALE: 1:1
PRODUCT NO:		PART NO:		UNIT: mm
DESIGNER BY: Perfume		DESIGNED NO: SP0121001		DRAWING NO: P13061AB
CHECKED BY: 曾香水		DTAE: 2013/7/26		
APPROVED BY:		SHEET NO: 1/1		
TOLERANCES: 一般公差		REV: A		
ANGLES: ±2°				
DECIMALS:				
0.5-6.0±0.1				
6.0-30±0.2				
30-120±1				

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16. SAFETY LICENSE : (UL+FCC)



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SHENZHEN SUNLIGHT ELECTRONIC CO LTD

E359407

A AREA 3F BLDG B

XINSHIDAI GONGRONG

INDUSTRIAL AREA NO 2

SHENZHEN, GUANGDONG 518108 CHINA

AC-DC Adaptor, Model(s) GAxxxxyy (xxx can be 033-240 indicates output voltage from 3.3V to 24V, yyy can be 010-150 indicates output current from 0.1A to 1.5A)

GAxxxxyy (xxx can be 033-300 indicates output voltage from 3.3V to 30.0V, yyy can be 001-050 indicates output current from 0.1A to 5.0A)

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SPECIFICATION FOR APPROVAL



VERIFICATION OF CONFORMITY

According to **FCC part 15**

Ref. No.: **2014NT07031041**

Product: AC/DC ADAPTER

Trade Mark: 

Applicant: Shenzhen Sunlight Electronic Co.,Ltd

Address: A Area, 3F, Building B, Xinshidai Gongrong Industrial Area, NO.2, Shihuan Road, Shilong Community, Shiyan Streets, Bao'an District, Shenzhen City, Guangdong

Manufacturer: Shenzhen Sunlight Technologies Co.,Ltd

Address: B Area, 3F, Building B, Xinshidai Gongrong Industrial Area, NO.2, Shihuan Road, Shilong Community, Shiyan Streets, Bao'an District, Shenzhen City, Guangdong

Model: GA050050, GA120030, GA240015, GAXXXYYY

The test sample of product has been passed, the test according to requirements of the following standards:

Standard(s):
47 CFR FCC Part 15:2012
ANSI C63.4:2009

Test report(s) No.:
NTEK-2014NT07031041E

The Sample was tested to conform to the applicable FCC Rules and Regulations. The method of testing was in accordance to the most accurate measurement standards possible, and that all necessary steps have been enforced to assure that all production units of the same equipment will continue to comply with the Federal Communications Commission's requirements.



Approved by/Date: _____



Jul. 10, 2014

Department Manager

Shenzhen NTEK Testing Technology Co., Ltd.

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Tel: (86)-0755-61156588 Fax: (86)-0755-61156599 Http: www.ntek.org.cn