



Shenzhen Sunlight Electronic CO., LTD

承認書

SPECIFICATION FOR APPROVAL

DOE VI AC DC Adapter 15V 1A Power Supply Switching 1000mA 15 Volt Adaptor

CUSTOMER: _____

DESCRIPTION: ADAPTER

SPECS: 15V1A AC/DC ADAPTER

MODEL NO.: ITXPOWER GA150010

DATE: Feb-22-2015

APPROVAL SIGNATURE		
DATE:	DATE:	DATE:

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

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2. FEATURE :

- INPUT : UNIVERSAL 100-240 Vac/50-60 Hz INPUT, WITHOUT ANY SLIDE SWITCH
- OUTPUT : +15.0V/0-1.0A
- DIMENSION : 80.0(D)*50.0(W)*35.0(T)
- EFFICIENCY : 85% 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	0.8A Max
3.4 INRUSH CURRENT	20A Max/110Vac;40A Max/240Vac (COLD STABT AT 25°C FULL LOAD)
3.5 EFFICIENCY	85% 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	+15.0V
	CURRENT	1.0A Max
	REGULATION	14.40V Min~15.0V Typ.~15.60V Max
	RIPPLE & NOISE	120mV Max
	TOTAL POWER	15W 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	16.8V 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%~240% of rated output power, the adapter shall be hiccupped but not damage.
5.4 OVER CURRENT PROTECTION	2.4A 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 CUREN

(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.
LowTemperature 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. : 30000 HOURS Min ; 25°C SEE CONDITION

8. MECHANICAL REQUIREMENT :

8.1 DIMENSION : 80.0(D)*50.0(W)*35.0(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

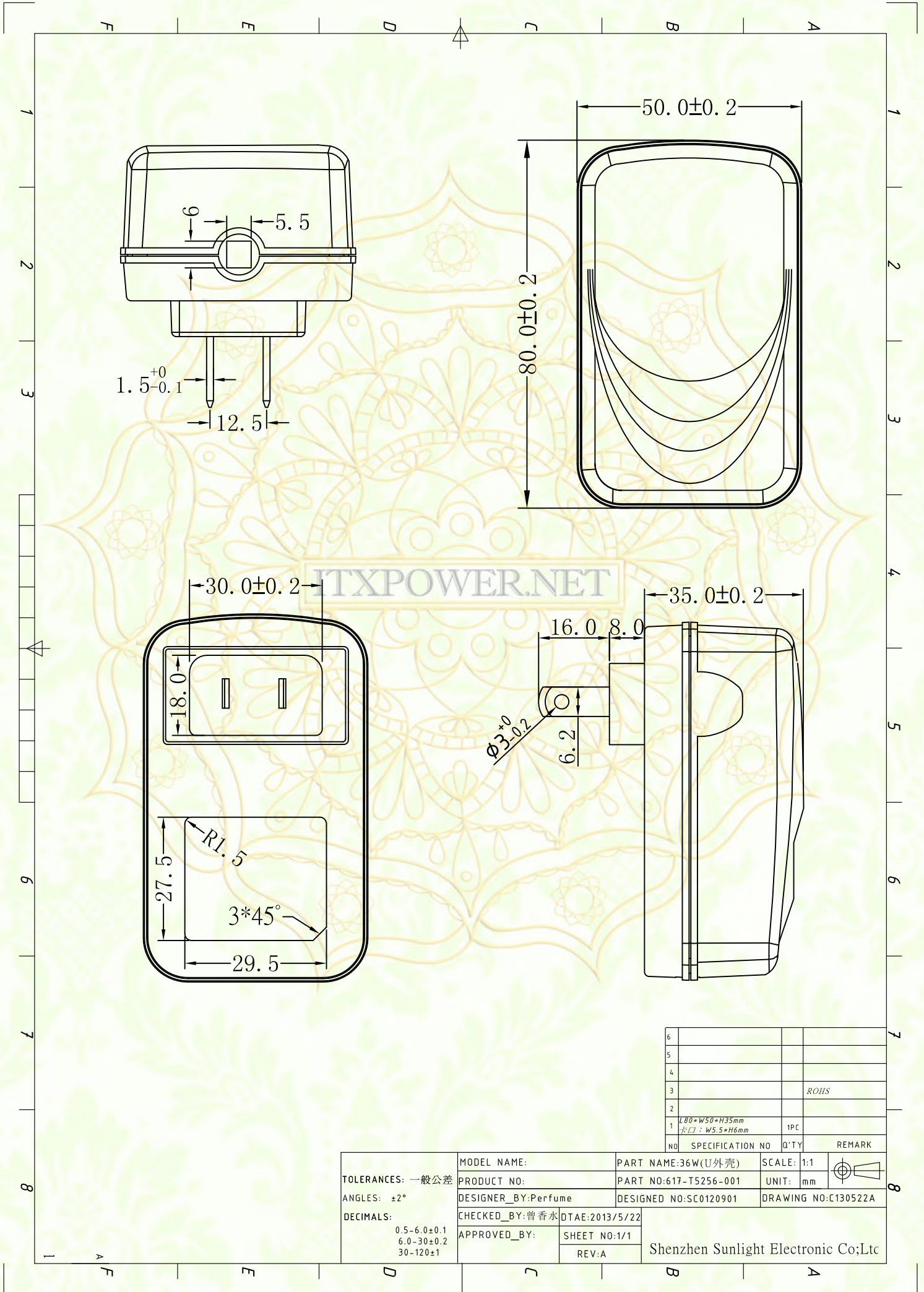
8.6 Cord Bending TEST : Hang the specified weight and swing it to one direction and return to the original position, then swing to the opposite direction and return to the original position .The strain relief shall be subjected to the specified cycles and speed. Weight 200 (g), Angle ± 60 degree, 800 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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11 . DC OUTPUT CORD DRAWING:

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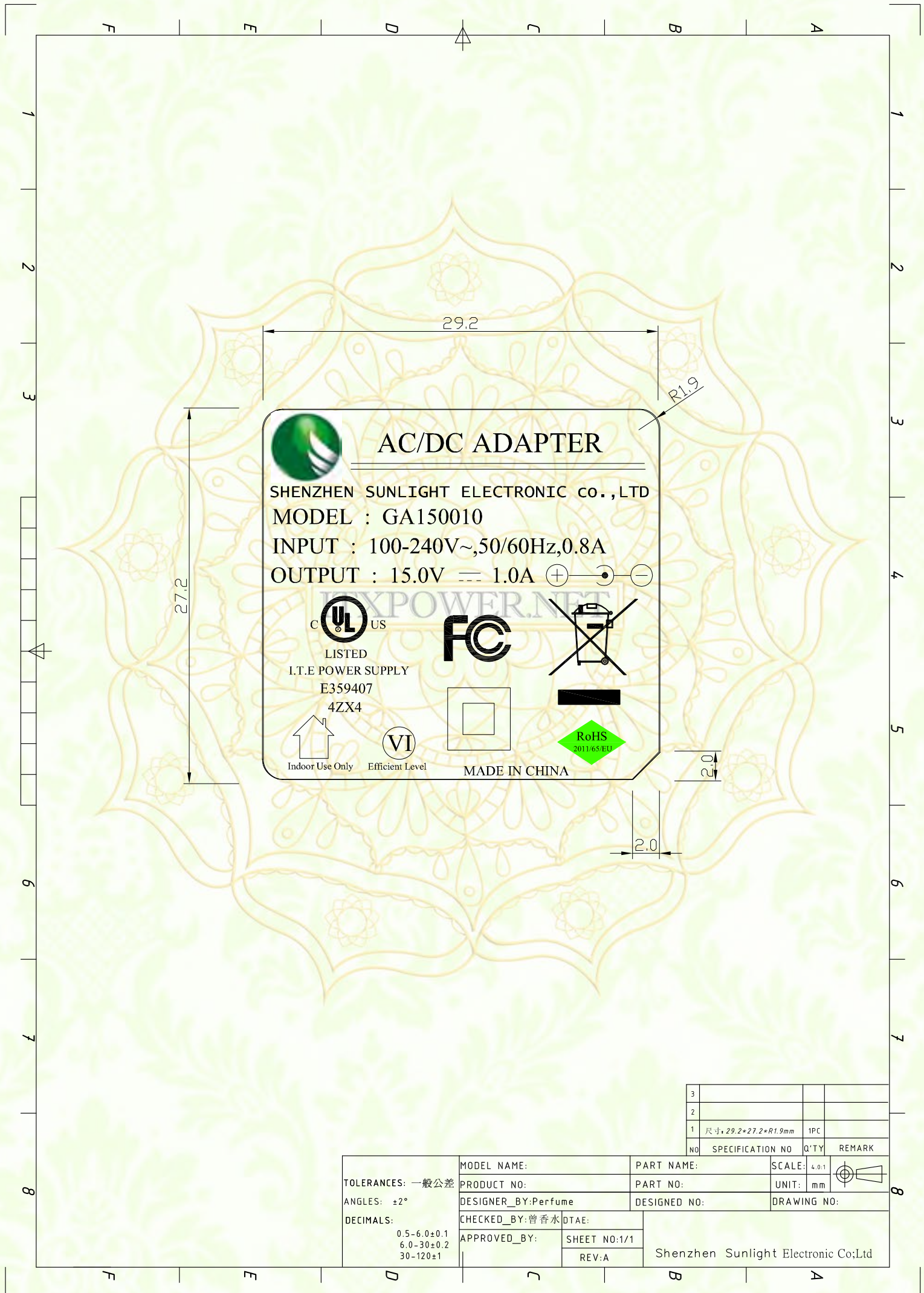
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12. RATING LABEL DRAWING :



3			
2			
1	尺寸: 29.2*27.2*R1.9mm	1PC	
NO	SPECIFICATION NO	Q'TY	REMARK

TOLERANCES: 一般公差 ANGLES: ±2° DECIMALS: 0.5-6.0±0.1 6.0-30±0.2 30-120±1	MODEL NAME:	PART NAME:	SCALE: 4.0:1	
	PRODUCT NO:	PART NO:	UNIT: mm	
	DESIGNER_BY: Perfume	DESIGNED NO:	DRAWING NO:	
	CHECKED_BY: 曾香水 DTAE:	Shenzhen Sunlight Electronic Co;Ltd		
APPROVED_BY:	SHEET NO:1/1	REV:A		

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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	3016424223700	客户编号				室 温		25℃			
产品型号	GA150010	产品编号		SAD1510-20		日 期		2015.01.12			
输入电压/频率	100Vac-240Vac		50/60Hz		输出电压/电流			15V 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	14.40V-15.60V	15.18	15.18	15.19	15.19	/	/	/	/	PASS	
空载纹波与噪声	≤120mV	26	20	27	23	/	/	/	/	PASS	
满载电压	14.40V-15.60V	14.98	14.97	14.98	14.98	/	/	/	/	PASS	
满载纹波与噪声	<120mV	98	98	89	96	/	/	/	/	PASS	
最大输入电流	<1000mA	339	303	129	119	/	/	/	/	PASS	
短路保护	无损坏,可恢复 OK/NG	OK	OK	OK	OK	/	/	/	/	PASS	
过流保护	>1.2A <2.4A	1.55	1.56	2.12	2.13	/	/	/	/	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	16.5	15.9	15.3	15.1	/	/	/	/	PASS	
下降时间	< 30 ms	26.3	27.7	25.9	26.9	/	/	/	/	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 > 84.13% 空载功耗 < 0.10W	输入电压	100%	75%	50%	25%	平均效率	10%负载效率 > 74.13%	空载输入功耗	PASS	
		115Vac	85.08%	85.22%	85.23%	84.06%	84.89%	78.56%	0.05W	PASS	
		230Vac	85.41%	85.21%	84.53%	81.91%	84.26%	74.81%	0.08W	PASS	
DC输出短路30分钟	264V输入	短路30分不损坏: <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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16. SAFETY LICENSE : (UL+FCC)

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