Thank you for giving UL the opportunity to partner with you.
Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at https://www.ul.com/about/locations.

Please find attached the related material

For your convenience, the below describes the related updates:

If there are illegible images in this package, legible images may be found online via myUL Portal.

E497279-A1-DescriptionUL
Figure-28-Total
E497279-A1-TestRecordUL

Times change, Trust Remains™

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2019-05-09 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	QQGQ, QQGQ7 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Complementary CCN:	N/A
Product:	Power Supply
Model:	SPS 2A29VDC BBFM
Rating:	Input rating: 100-240 Vac, 50/60 Hz, 0.5 A Output rating: DC29.0V, 2.0A
Applicant Name and Address:	RAFFEL SYSTEMS L L C N112 W14600 MEQUON ROAD GERMANTOWN WI 53022 UNITED STATES

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Ryan Eischen / Project Handler Reviewed By: Mark Harkowski / Reviewer

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The product is a Class II switching power supply for use with Information Technology Equipment (ITE). All live parts are enclosed in a thermoplastic enclosure, provided with AC inlet for connection to the mains and with one output lead with connector.

Model Differences

N/A

Test Item Particulars

Equipment mobility	transportable
Connection to the mains	pluggable equipment pluggable A
Operating condition	continuous
Access location	operator accessible
Over voltage category (OVC)	OVC II
Mains supply tolerance (%) or absolute mains supply values	+10%, -10% (Manufacturer declared)
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	NA
Class of equipment	Class II (double insulated)
Considered current rating of protective device as part of the building installation (A)	20 A
Pollution degree (PD)	PD 2
IP protection class	IP X0
Altitude of operation (m)	Up to 2000 m
Altitude of test laboratory (m)	less than 2000 meters
Mass of equipment (kg)	0.6

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of : 25°C

- The means of connection to the mains supply is : Detachable power cord
- The product is intended for use on the following power systems : TN
- The equipment disconnect device is considered to be : Appliance inlet
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit : CY1 secondary
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : Battery output
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

Revision: 4427542.1069136

USL/CNL - Transfer the File E322496, Vol. X1, E322496-A10 to the File E497279, Vol. X1, E497279-A1.

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Output Marking	"LPS" or "Limited Power Source" - Optional
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)
1.7.1 Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
1.7.1 Power rating - Model	Model Number
1.7.1 Power rating - Class II symbol	Symbol for Class II construction
1.7.6 Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative

Inspect the transformer(s) listed in BD1.1 per AA1.1- (C). When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in BD1.1 be conducted at the component manufacturer.

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	**Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.**					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
All Models	T1	-	Primary-Secondary	3000	4242	1
All Models	TR1	-	Primary-Secondary	3000	4242	1
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	-					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	-					
BD1.4	**Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:**					
	-					

BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
-	-	-	-	-	-

1.5.1	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
01. Plastic enclosure	MITSUBISHI ENGINEERING-PLASTICS CORP(E41179)	FIN-7500+	HWI 0, Rated V-0, 115 degree C, minimum 1.5 mm thickness. Top enclosure and bottom enclosure was ultrasonically welded together. See Enclosure ID 7-01 for dimension.	QMFZ2	UR	
02. Appliance inlet (AC1)	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD(E225980)	ST-A03-005	250V, 2.5A, 105°C	AXUT2	UR	
02a. Appliance inlet (AC1) - Alternate	ZHEJIANG LECI ELECTRONICS CO LTD(E302229)	DB-8	250V, 2.5A, 105°C	AXUT2	UR	
Power Supply	-	-	Consists of the following components:	-	-	
03. PWB	Interchangeable	Interchangeable	Rated V-1 or better, minimum 130 degree C	ZPMV2	UR	
04. Current Fuse (F1)	Interchangeable	Interchangeable	Rated 250 Vac, 1 A. Fuse rating marked adjacent to the fuse on PWB.	JDYX	UL	
04a. Current Fuse (F1) - Alternate	SHENZHEN LANSON ELECTRONICS CO LTD(E221465)	3K	Rated 250 Vac, 1A. Fuse rating marked adjacent to the fuse on PWB.	JDYX2	UR	
04b. Current Fuse (F1) - Alternate	XC ELECTRONICS (SHENZHEN) CORP LTD (E249609)	3T	Rated 250 Vac, 1 A. Fuse rating marked adjacent to the fuse on PWB.	JDYX2	UR	

05. Bridge diode (BD1)	--	--	Minimum 600V, minimum 1.0A.	--	--	
06. Electrolytic Capacitors (EC1, EC2)	--	--	Max.10uF, 105 degree C, provided with pressure relief function. Minimum 400V	--	--	
07. Inductor (L1)	Xiamen Innov Electronics Tech Co., Ltd	0501-0027	Rated 130 degree C. See enclosure ID 4-02 for details.	--	--	
07-1. Inductor windings	Interchangeable	Interchangeable	Minimum 130 degree C.	OBMW2	UL	
07-2. Inductor bobbin	SUMITOMO BAKELITE CO LTD(E41429)	PM-9820	Phenolic. Rated V-0, 150 degree C	QMFZ2	UL	
07-3. Inductor Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD (E165111)	CT* (c)(g), PZ* (b)	130 degree C	OANZ2	UL	
08. Y-cap. (CY3)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD(E208107)	CD	Maximum 1000 pF, minimum 250 Vac, minimum 125 degree C. Located between primary and secondary, Class Y1 type	FOWX2	UL	
08a. Y-cap. (CY3) – Alternate	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD (E319473)	YOB, YOF, YOE	Maximum 1000 pF, minimum 250 Vac, minimum 125 degree C. located between primary and secondary, Class Y1 type	FOWX2	UL	
08b. Y-cap. (CY3) – Alternate	DONGGUAN CITY DAFU ELECTRONICS CO LTD (E465278)	CT7 Y1	Maximum 1000 pF, minimum 250 Vac, minimum 125 degree C. located between	FOWX2	UL	

			primary and secondary, Class Y1 type			
08c. Y-cap. (CY3) – Alternate	XIAMEN SINO FAITH ELECTRONIC TECHNOLOGY CO LTD(E328673)	HCY	Maximum 1000 pF, minimum 250 Vac, minimum 125 degree C. located between primary and secondary, Class Y1 type	FOWX2	UL	
09. Transformer (T1)	XIAMEN COST INDUSTRY AND TRADE CO LTD	0201-0670	Class A, See supplementary Enclosure Diagram ID 4-01 for details.	--	--	
09-1. Transformer (T1) – Core	--	--	Ferrite, overall size approximately 13.5 mm by 13.2 mm by 9.8mm.	--	--	
09-2. Transformer (T1) - Primary winding	Interchangeable	MW 28, MW75, MW79, MW80	Polyurethane (Polyamide)130 degree C or 155 degree C	OBMW2	UR	
09-3. Transformer (T1) - Secondary winding	TOTOKU ELECTRIC CO LTD (E166483)	TIW-2	Triple insulated wire, 130 degree C.	OBJT2	UR	
09-4. Transformer (T1) – Bobbin	SUMITOMO BAKELITE CO LTD (E41429)	PM-9820, PM-9630	Phenolic. Rated V-0, 150 degree C, minimum 0.7 mm thick. Black or brown color only.	QMFZ2	UR	
09-5. Transformer (T1) - Insulation tape	P LEO & CO LTD(E126174)	1P133(f)	130 degree C.	OANZ2	UR	
09-5a. Transformer (T1) - Insulation tape(Alternate)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD (E165111)	CT* (c)(g), PZ* (b)	130 degree C.	OANZ2	UR	
09-6. Transformer (T1) - Varnish	ELANTAS ELECTRICAL INSULATION	468-2 (d)	130 degree C.	OBOR2	UR	

	ELANTAS PDG INC (E75225)					
Alternate Power Supply:	-	-	Consists of the following components:	-	-	
03. PWB	Interchangeable	Interchangeable	Rated V-1 or better, minimum 130 degree C	ZPMV2	UR	
04c. Current Fuse (F1)	Dongguan Better Electronics (E300003)	932 Series	Rated 250 Vac, 1 A. Fuse rating marked adjacent to the fuse on PWB.	JDYX2	UR	
05. Bridge diode (BD1)	--	--	Minimum 600V, minimum 1.0A.	--	--	
06. Electrolytic Capacitors (EC1/CD1, EC2/CD2)	--	--	Max.10uF, 105 degree C, provided with pressure relief function. Minimum 400V	--	--	
07. Inductor (L1)	Xiamen Innov Electronics Tech Co., Ltd	6201-0001	Rated 130 degree C.	--	--	
07-1. Inductor windings	Interchangeable	Interchangeable	Minimum 130 degree C.	OBMW2	UL	
07-2. Inductor bobbin	Zhe Jiang Hongbo Electric (E221719)	1UEW	Phenolic. Rated V-0, 155 degree C	QMFZ2	UL	
08. Y-cap. (CY3) – Alternate	XIAMEN Baoba Electronics	Y5V	Maximum 1000 pF, minimum 250 Vac, minimum 125 degree C. located between primary and secondary, Class Y1 type	FOWX2	UL	
09. Transformer (TR1)	LONGYAN JIANQIAO ELECTRONICS CO.,LTD	EE16V04-10	Class B,	--	--	

09-1. Transformer (TR1) – Core	--	--	Ferrite, overall size approximately 13.5 mm by 13.2 mm by 9.8mm.	--	--	
09-2. Transformer (TR1) - Primary winding	Interchangeable	Interchangeable	Polyester (Polyamide)130 degree C or 155 degree C	OBMW2	UR	
09-3. Transformer (TR1) - Secondary winding	Tex E	TIW-2	Triple insulated wire, 130 degree C.	OBJT2	UR	
09-4. Transformer (TR1) – Bobbin	CHANGSHU SOUTH-EAST PLASTIC CO LTD (E136137)	T375J	Phenolic. Rated V-0, 150 degree C, minimum 0.7 mm thick. Black or brown color only.	QMFZ2	UR	
End Alternate Power Supply	--	--	--	--	--	
10. Glue	Interchangeable	Interchangeable	Minimum V-2.	QMFZ2	UR	
11. Output Cord	Interchangeable	Interchangeable	Non-detachable, minimum 80 degree C, minimum 30 V. minimum 22AWG, Maximum 3.05 m long, insulated with PVC, TFE, PTFE, SPT-1, neoprene or polyimide, marked VW-1. One end terminates with non-standard polarized connector, the other end hooked and soldered to PWB.	AVLV2	UR	
12. Strain Relief (used for output wire)	Interchangeable	Interchangeable	Integrally molded with output cord. Physically secured into the cutout of plastic enclosure.	QMFZ2	UR	

			See Enclosure ID 7-02 for details.			
13.Marking Label	Interchangeable	Interchangeable	Rated minimum 75 degree C, suitable to its application surface.	PGDQ2/8 or PGJI2/8	UR	
13a.Marking Label (Alternate)	Interchangeable	Interchangeable	Laser carved on enclosure directly	--	--	
14. IC (IC1)	--	--	Minimum 1.0A, Minimum 600 V	--	--	
14. U2 / U3 – Alternate Charging Board only	Texas Instruments	BQ77915	Low power battery backup protection. Provides lithium battery reverse current protection.	--	--	
15. Battery pack	Xiamen Innov Electronics Tech Co., Ltd (E322496)	7Li-ion18650	Unlisted under Vol. 1, Sec. 1. Cell Model: INR18650; Capacity (Nominal), mAh/Wh: 2000mAh/ 51.8Wh; Configuration: 7-S/1-P	BBFS3	UL	
16. Heat shrinkable tube on F1	CHANGYUAN ELECTRONICS GROUP CO LTD(E180908)	CB-HFT*;CB-HFT	600V, 125C, VW-1	YDPU2	UR	
16a. Heat shrinkable tube on F1	DONGGUAN SALIPT CO LTD(E209436)	SALIPT S-901-600	600V, 125C, VW-1	YDPU2	UR	
16b. Heat shrinkable tube on F1-Alternative	Interchangeable	Interchangeable	600V, 125C, VW-1	YDPU2	UR	
17. Internal wire	Interchangeable	Interchangeable	Minimum 24 AWG, Minimum 300 V, Minimum 80 degree C, marked VW-1 or FT-1.	AVLV2	UR	

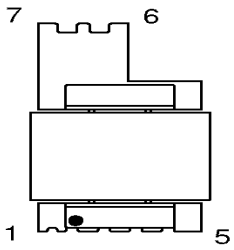
18.Power cord (Optional)	Interchangeable	Interchangeable	Detachable power supply cord, minimum 105 degree C, minimum 300V, minimum 22AWG, maximum 4.5 m and minimum 1.5 m in length. Type SVT or SPT-2. One end with NEMA 1-15P plug	ELBZ2	UR	

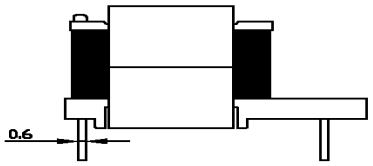
Enclosures

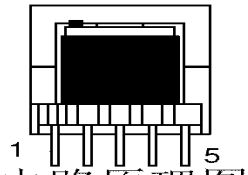
Type	Supplement Id	Description
Photographs	03-01	Overall View 1
Photographs	03-02	Overall View 2
Photographs	03-03	Overall View 3
Photographs	03-04	Overall View 4
Photographs	03-05	Overall View 5
Photographs	03-06	Overall View 6
Photographs	03-07	Overall View 7
Photographs	03-08	Internal View - PWB components Side
Photographs	03-09	Internal View - PWB Traces Side
Photographs	03-10	Internal View 1
Photographs	03-11	Internal View 2
Photographs	03-12	Internal View 3
Photographs	03-13	Battery Pack
Photographs	03-14	Battery Pack
Photographs	03-15	Power Supply Alternate Construction (Top)
Photographs	03-16	Power Supply Alternate Construction (Bottom)
Photographs	03-17	Alternate Charging Board (Top)
Photographs	03-18	Alternate Charging Board (Bottom)
Diagrams	04-01	Transformer, T1 Spec.
Diagrams	04-02	Inductor, L1 spec.
Diagrams	04-03	Alternate Charging Board Layout
Schematics + PWB	05-01	Schematic Diagram & PWB Layout - for switching power supply (Charger)
Schematics + PWB	05-02	Schematic Diagram & PWB Layout - For the control circuit of the battery pack
Schematics + PWB	05-03	Alternate Power Supply Schematic
Manuals	06-01	User Manual
Miscellaneous	07-01	Enclosure Drawing
Miscellaneous	07-02	SR spec. of output cord
Miscellaneous	07-03	Marking Label

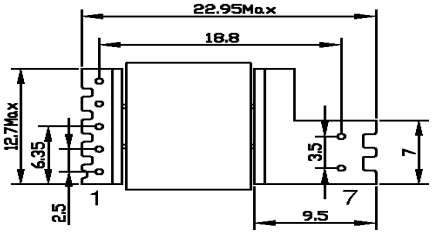
客　户		品　　名		产品代号	

1. 骨架， 磁芯规格尺寸：　（单位：mm）

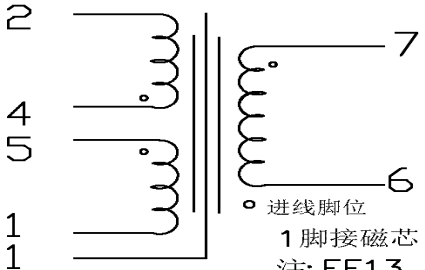






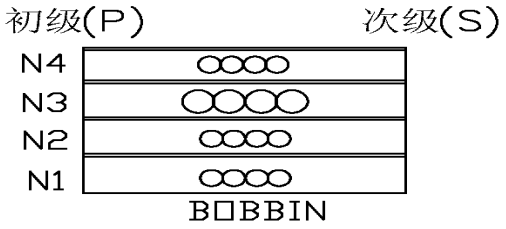


2. 电路原理图



1脚接磁芯

3. 结构示意图



注: EE13　5+2pin 加厚带挡板骨架除去pin 脚3

4. 绕线参数：绕线方式：以1—5脚朝作业者， 卷轴（骨架）按顺时针绕制

绕组名	端子号码	线　材（mm）	圈　数	层　数	绝缘TAPE	挡墙胶带及备注：
N1	4---2	2-UEW0.23	84T	3	2	
N2	1---0	2-UEW0.12	7T	1	2	均匀疏绕，最后一圈靠顶端
N3	7---6	TIWWB 0.25	25T	2	2	密绕
N4	5---1	2-UEW0.12*2	13T	1	3	次级挡墙1mm

注：1. 出入线之间不能交叉重叠，绕组有挡墙，屏蔽层引线末端须反折到中部

2. 胶带宽度不可短于骨架。胶带绕后，从外观看，胶带边沿有轻微翻起为 宜，避免铜线掉入下一层

制作	付恩平	审核		批准		版次	1.0

客　户		品　　名		产品代号	

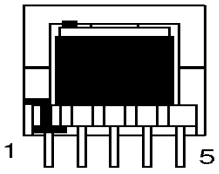
5.组立过程:

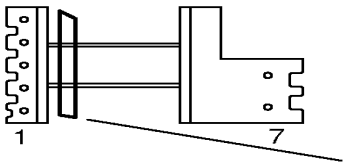
1.扎线,修剪,焊锡：注意引脚焊锡不能过久,铁氟龙套管要套到位，否则造成漆包线漆皮破损过多,耐压不良.焊锡PIN脚锡点不可高于挡板.

2.磁芯组立:初级侧放置开气隙磁芯，次级侧放置平面磁芯，保持EE接触良好,紧固.

3.磁芯固定：用MT25*10绝缘胶带包磁芯 2T;保持外观整洁,美观.

1.外观尺寸（单位：mm）





N3、N4之间要求胶带反折，
须完全隔离初次级绕线.

注：1.在TR打上0201—0670喷码！
2.N2，N4中pin1出线剪掉预留10—15mm，镀锡后紧贴磁芯;
3.引出1脚线如图示，往磁芯直角两面折线，紧贴磁芯再包胶带;

6.电气特性

测试项目	测试条件	测试端子	浸漆前要求	浸漆后要求	测试仪器
电感	10 KHz 0.3Vrms	4---2	0.9mH±5%	0.9mH±8%	TH2776LCZ METER 10.0KHz 0.3Vrms or 或相等仪器
		5---1	24uH±8%	24uH±10%	
		7---6	85uH±8%	85uH±10%	
漏感	7,6短路	4---2	45uHMAX	45uHMAX	
串联电感	1，4短路5，6短路	2———7	1.95mH±6%	1.95mH±8%	
绝缘阻抗	DC 500V	P———S S———CORE	100 MΩ	生产全检 品管抽检	CHENHWA9072A TOS—8650(f=50Hz 或相等仪器
耐电压	AC4.0KV 2mA	P———S	2S	2S	

7.含浸:

1.真空含浸,预备干燥,烘干,去渣.

8.成品:

1.不用外包胶带

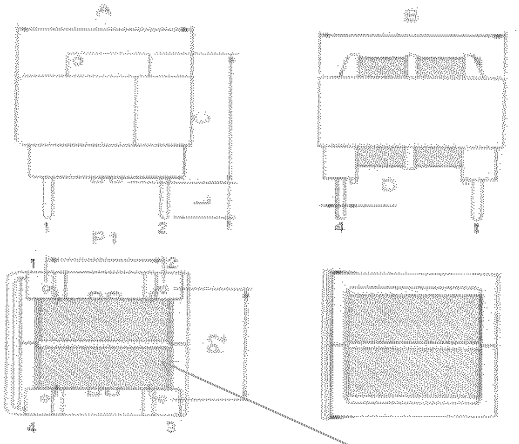
2.校正,捺印.

3.成品电气特性测试

制作		审核		批准		版次	1.1

Model No. 型号: 0501-0027	Customer 客户:
Design's NO.设计号:	Customer NO. 客户型号:

(1) CONFIGURATION DIMENSIONS(单位: mm)



A:9.5MAX

B:9.5MAX

C:10.0MAX

D:0.5±0.1

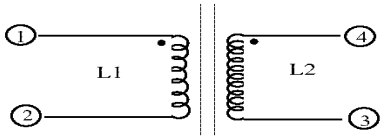
L:3.3-3.8

P1:5.0±0.3

P2:6.8±0.3

L1, L2绕完用MT25*5mm胶带包2T
磁芯组立后用MT25*3.8mm胶带包2T

(2) SCHEMATIC



L1=L2=95Ts (REF)

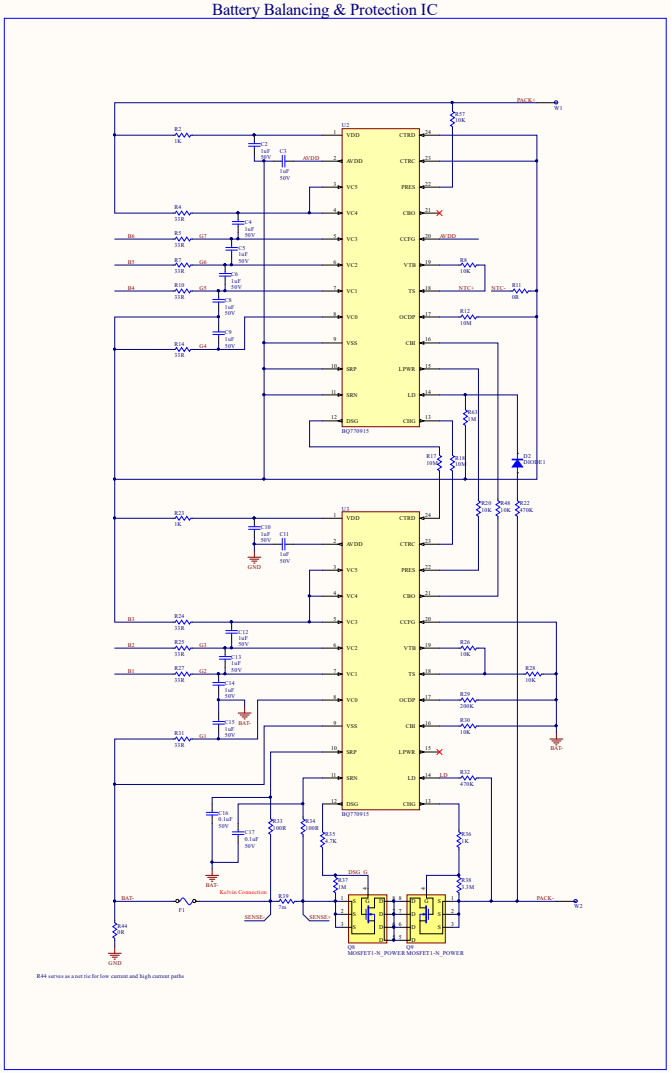
Use2 Φ0.13mm wire.

● WINDING START

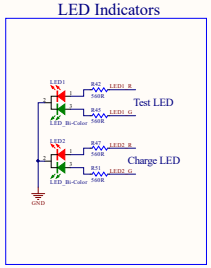
Model No. 型号: 0501-0027				Customer 客户:
Design's NO.设计号:				Customer NO. 客户型号:
(3) WINDING SPECIFICATION				
NO	COIL	TERMINAL	WIRE	TURNS
1	L1	1----2	2-UEW0.13	绕满(95Ts参考)
2	L2	4----3	2-UEW0.13	绕满(95Ts参考)
3				
4				
5				
6				
7				
8				
9				
(4) ELECTRICAL CHARACTERISTICS				
NO	PARAMETER	TERMINAL	SPECIFICATION	TEST INSTRUMENT:
1	INDUCTANCE	L1,L2	30mH MIN	TH 2776 DIGITAL LCZ METER @ 1 KHz @ 1 Vrms or EQUIVALENT
		| L1-L2 |	500uH MAX	
2	DC RESISTANCE	1----2	2.0Ω MAX	NATIONAL VP-2941A DIGITAL MILLIOHM METER or EQUIVALENT
		4----3	2.0Ω MAX	
3	RATED CURRENT	0.35A 50Hz		

The following Page(s) are related to Diagrams-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

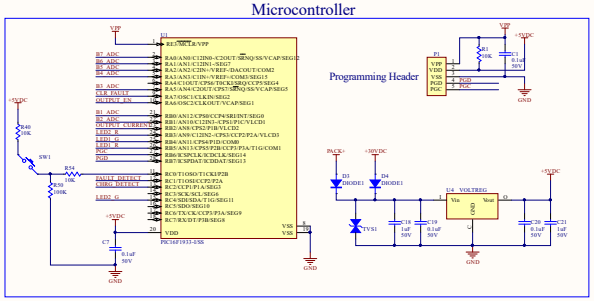
Battery Balancing & Protection IC



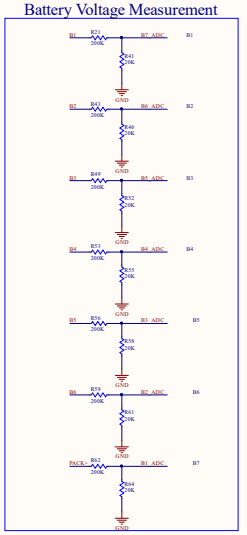
LED Indicators



Microcontroller

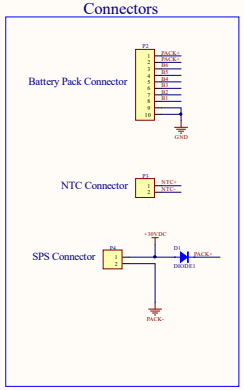


Battery Voltage Measurement

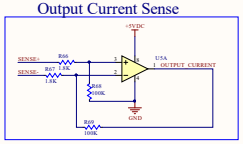


RENAME THESE NETS

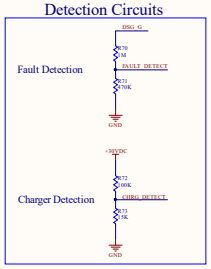
Connectors



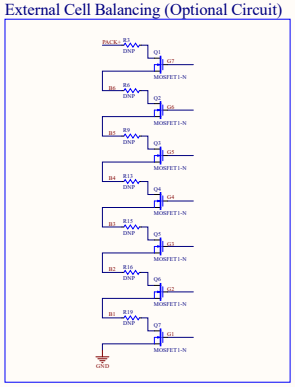
Output Current Sense



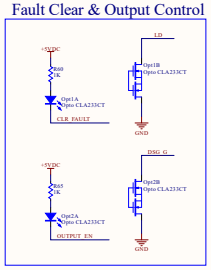
Detection Circuits



External Cell Balancing (Optional Circuit)



Fault Clear & Output Control



SPS 2A29VDC BBFM 03 - REV B

Title: SPS 2A29VDC BBFM 03		
Size: D	Number	Revision: B
Date: 1/3/2020	Sheet 1of 1	
File: K:\Product Files\...\SPS 2A29VDC BBFM 03.SchDoc		

User guide

Thanks for your purchasing our switch power supply. Please read this instruction carefully before to use this product.

Specifications:

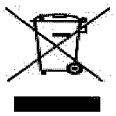
1. Operating Temperature：25 °C
2. POWER SUPPLY
3. Model No.: SPS 2A29VDC BBFM
4. Input: 100– 240V~, 50/60Hz, 0.5A
5. Output voltage & current: DC29V, 2A
6. P/N: SPS 2A29VDC BBFM

Warnings:

1. Please put a place out reach of the children.
2. Keep away from inflammable materials and heat sources.
3. The adapter is used as power supply for household appliances.
4. Do not expose this unit to rain or moisture.
5. For indoor use only.
6. Do not open the unit avoid electric shock.
7. Dry location use only.
8. The protective devices cannot be resetted or replaced after a short-circuit or an overload
9. A 10 % over or under voltage may appear in the supply and the rated output of the transformer.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.

Meaning of crossed –out wheeled dustbin:



Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
Contact you local government for information regarding the collection systems available.

If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

When replacing old appliances with new ones, the retailer is legally obligated to take back your old appliance for disposals at least free of charge.

"Use with a power supply cord, Type SPT-1, 22 AWG, two conductors, rated minimum 105℃, 300 V, VW-1. One end terminates in an attachment plug of 15 A, 125 V (NEMA 1-15P) or 15 A, 250 V (NEMA 2-15P), the other end terminates in a molded-on connector which mates with the Power Appliance Inlet. Minimum 2.3m in length."

Battery Specification requirements:

1 battery pack full of electric voltage is 29.4-29.75V;

2 the battery pack is composed of 5 2000mAh/ 3.7V lithium ion core, and the battery is provided with a protection control circuit;

3 aluminum battery fast discharges current is greater than 10A 5C discharge;

4 provide aluminum battery charging current is 400mA.

Warnings:

1.Please do not drop the battery in conditions of over-hot or fire environment.

2.Do not short circuit the battery, over charge or over discharge.

3.Do not crash the battery with any over-weight machine.

4.Do not drop the battery into the sea water or water, or make it humidity.

5.Do not make mistake for the positive pole and negative pole.

6.Do not disassembly or repair the battery.

7.Do not put them together with necklaces, coins, clips and any other metallic parts.

8.Do not make the battery damaged or become deformed

9.Do not connect the battery to the charger which is not matched to this battery.

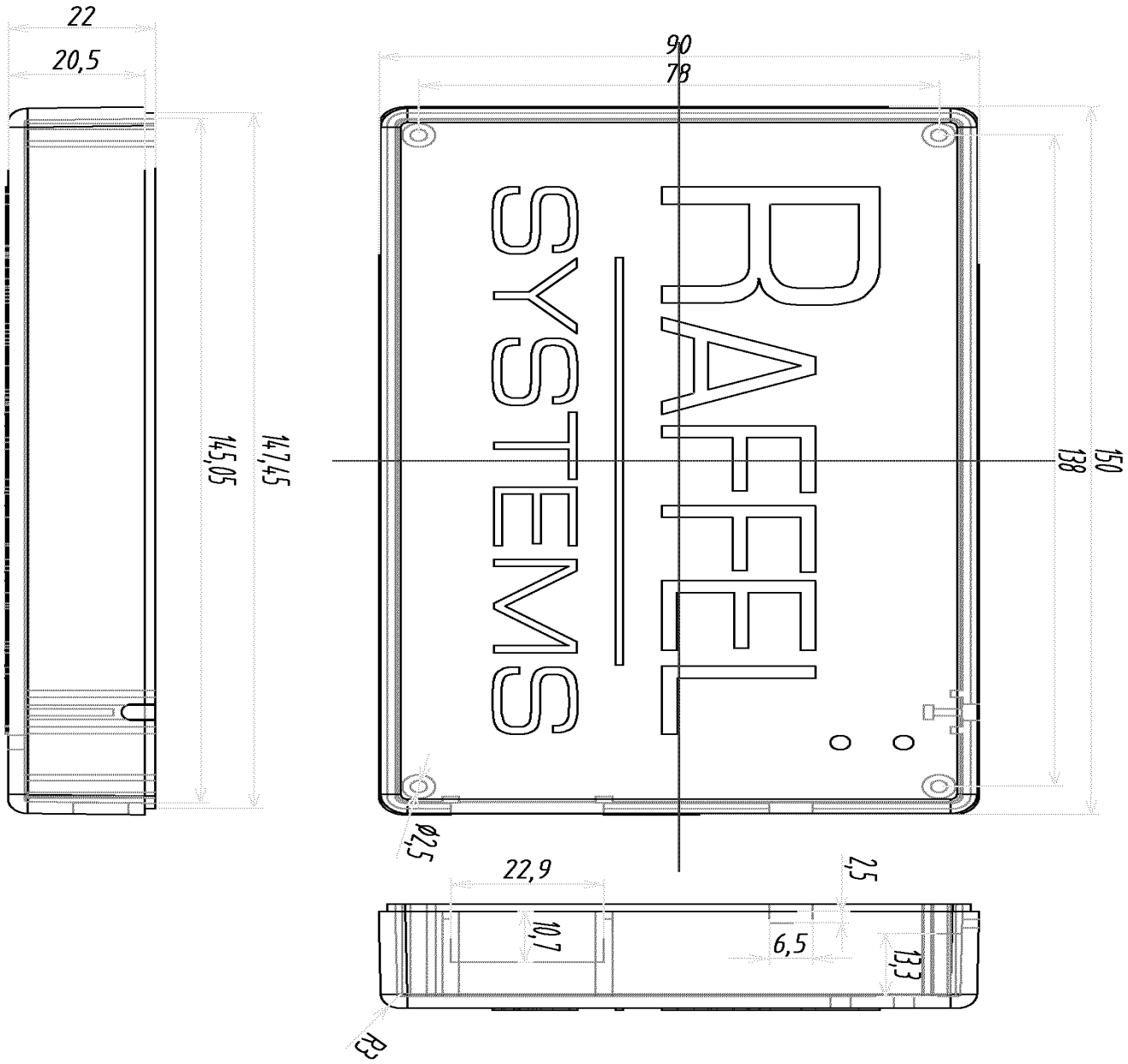
10.Do not touch the battery which is leaked.

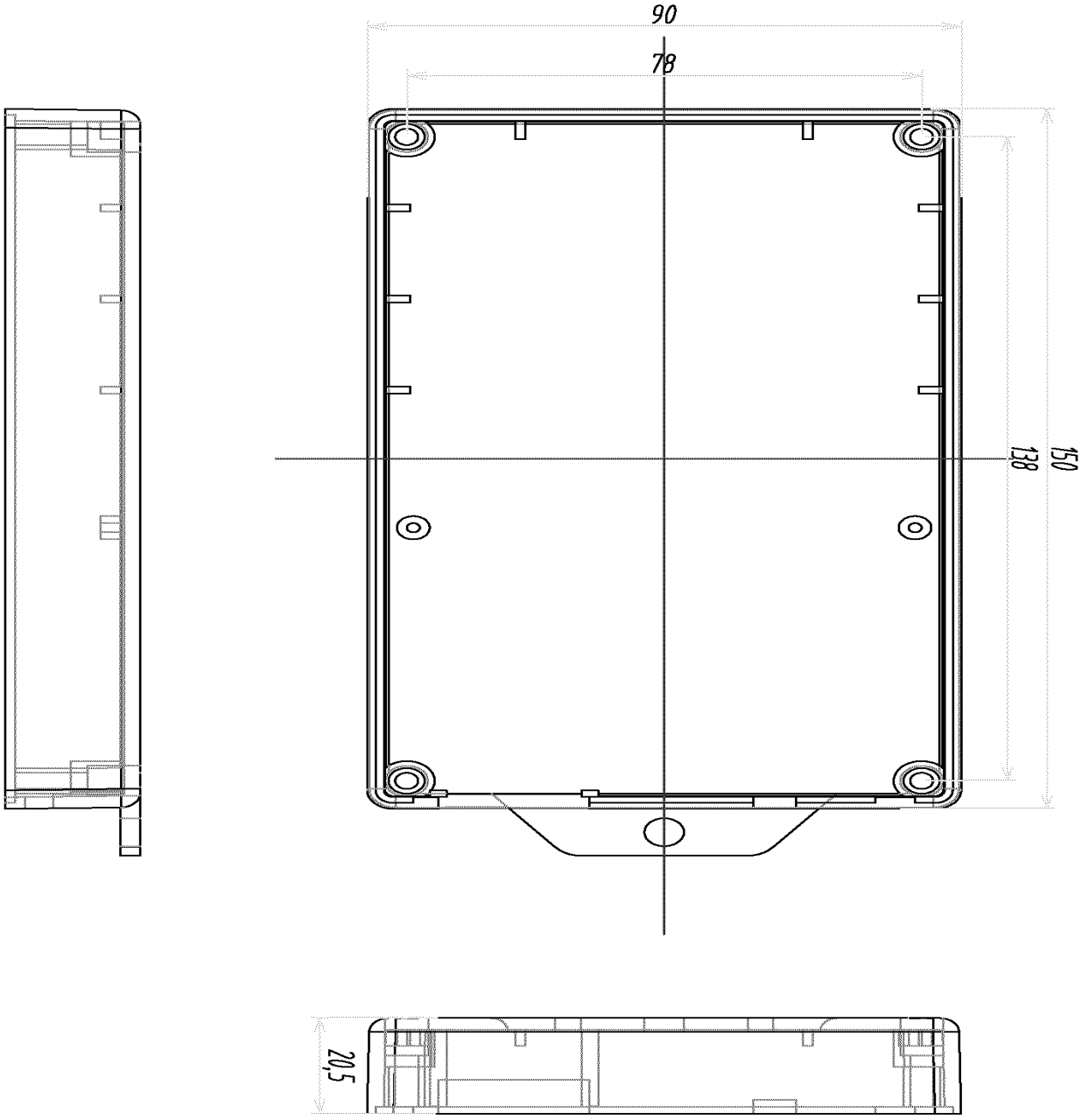
11.Do not use this battery to any other equipment.

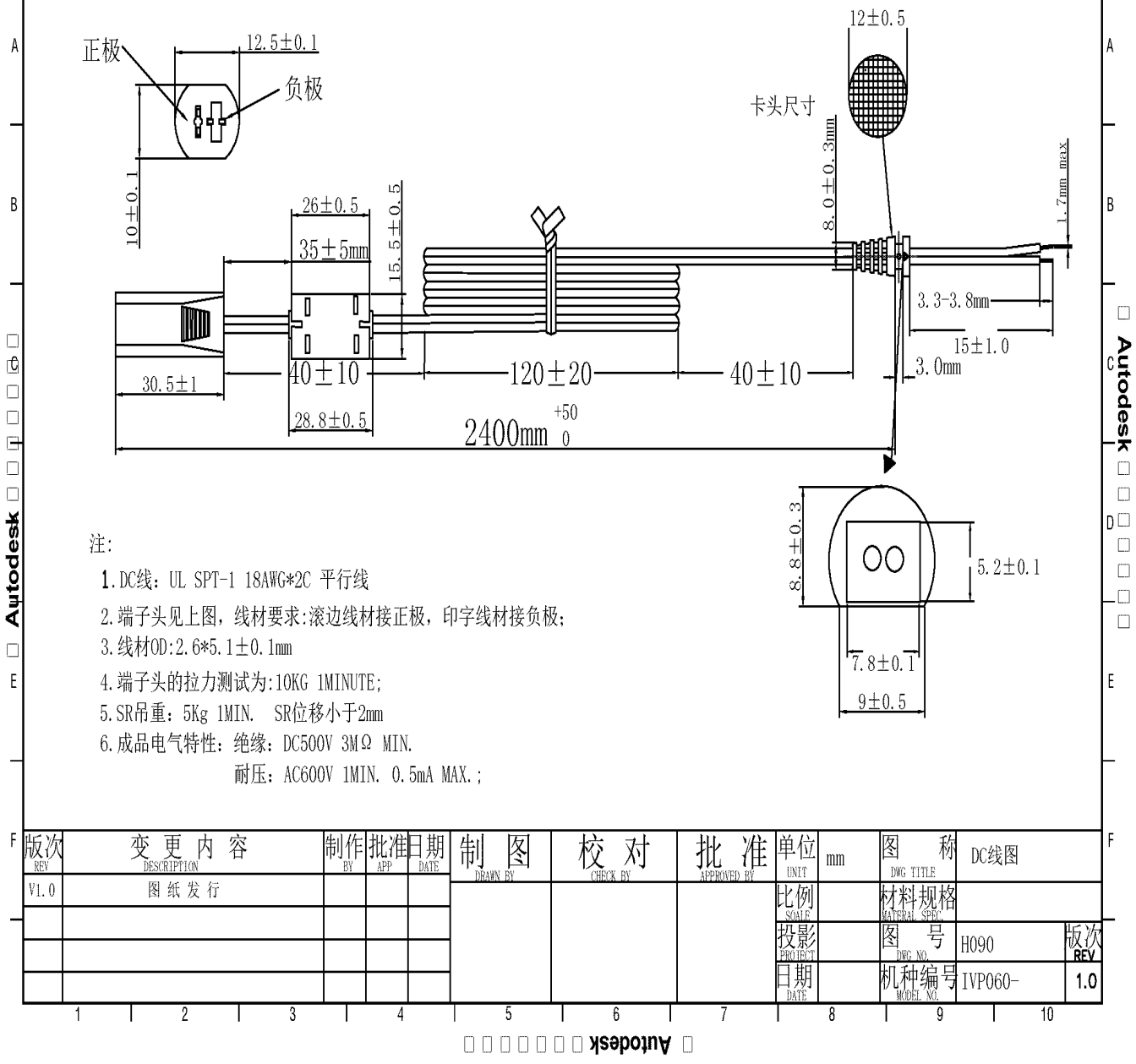
Product installation:

The product installation: POWER SUPPLY products can be installed on the table top or massage chair or the wall.

POWER SUPPLY at least 2 screws installed on the desktop or massage chair or wall; And the label is under the product.



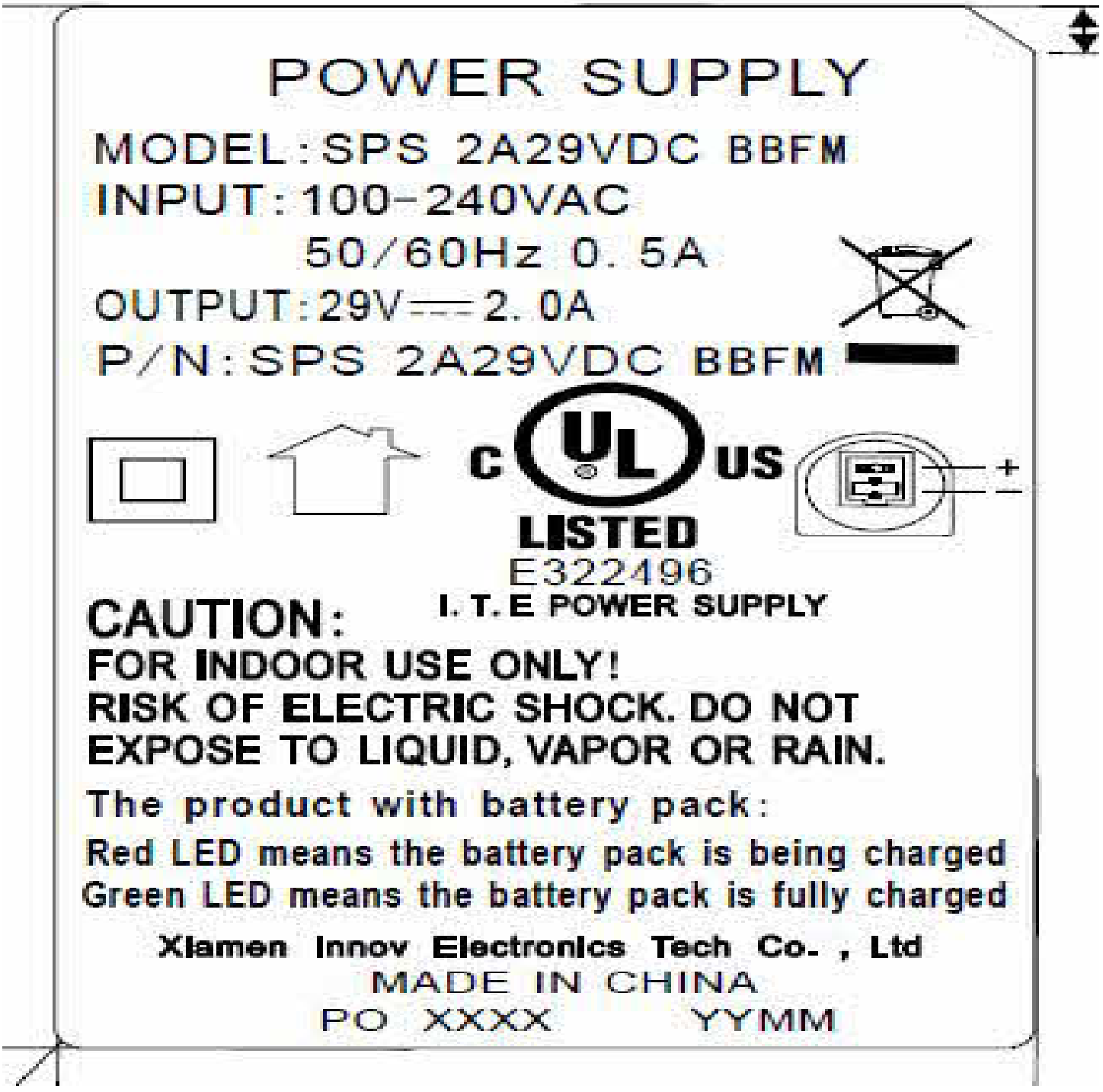




注:

1. DC线：UL SPT-1 18AWG*2C 平行线
2. 端子头见上图，线材要求:滚边线材接正极，印字线材接负极;
3. 线材OD:2.6*5.1±0.1mm
4. 端子头的拉力测试为:10KG 1MINUTE;
5. SR吊重：5Kg 1MIN. SR位移小于2mm
6. 成品电气特性：绝缘：DC500V 3MΩ MIN.
   耐压：AC600V 1MIN. 0.5mA MAX.;

版次 REV	变更内容 DESCRIPTION	制作 BY	批准 APP	日期 DATE	制图 DRAWN BY	校对 CHECK BY	批准 APPROVED BY	单位 UNIT	mm	图称 DWG TITLE	DC线图	
V1.0	图纸发行							比例 SCALE		材料规格 MATERIAL SPEC		
								投影 PROJECT		图号 DWG NO.	H090	版次 REV
								日期 DATE		机种编号 MODEL NO.	IVP060-	1.0


POWER SUPPLY
MODEL:SPS 2A29VDC BBFM
INPUT:100-240VAC
50/60Hz 0.5A
OUTPUT:29V⎓2.0A
P/N:SPS 2A29VDC BBFM
c UL us
LISTED
E322496
I.T.E POWER SUPPLY
CAUTION:
FOR INDOOR USE ONLY!
RISK OF ELECTRIC SHOCK. DO NOT EXPOSE TO LIQUID, VAPOR OR RAIN.
The product with battery pack:
Red LED means the battery pack is being charged
Green LED means the battery pack is fully charged
Xiamen Innov Electronics Tech Co., Ltd
MADE IN CHINA
PO XXXX YYMM

Photographs-01 Page-1

Photographs-02 Page-1

Photographs-03 Page-1

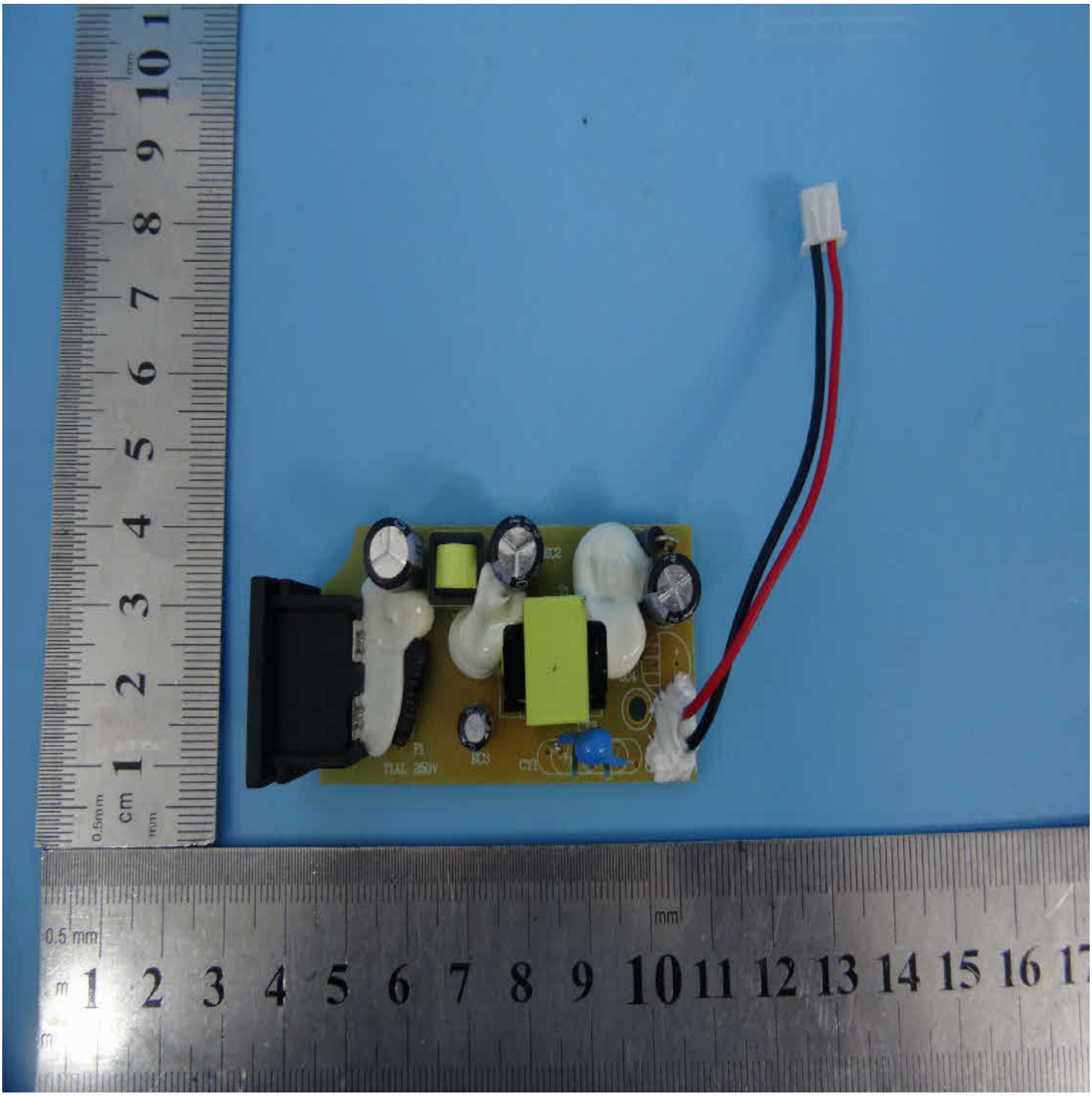
Photographs-04 Page-1

Photographs-05 Page-1

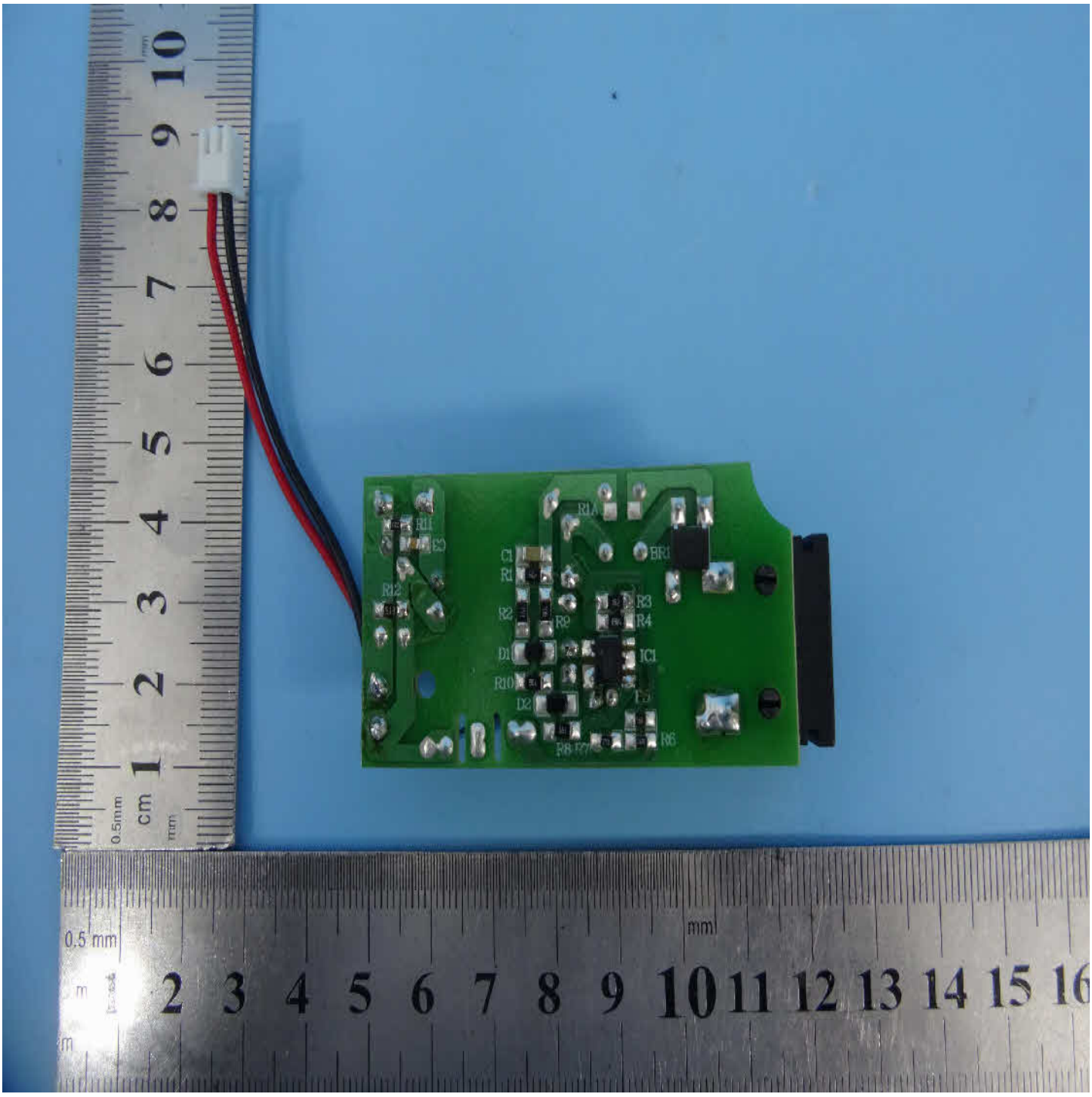
Photographs-06 Page-1

Photographs-07 Page-1

Photographs-08 Page-1



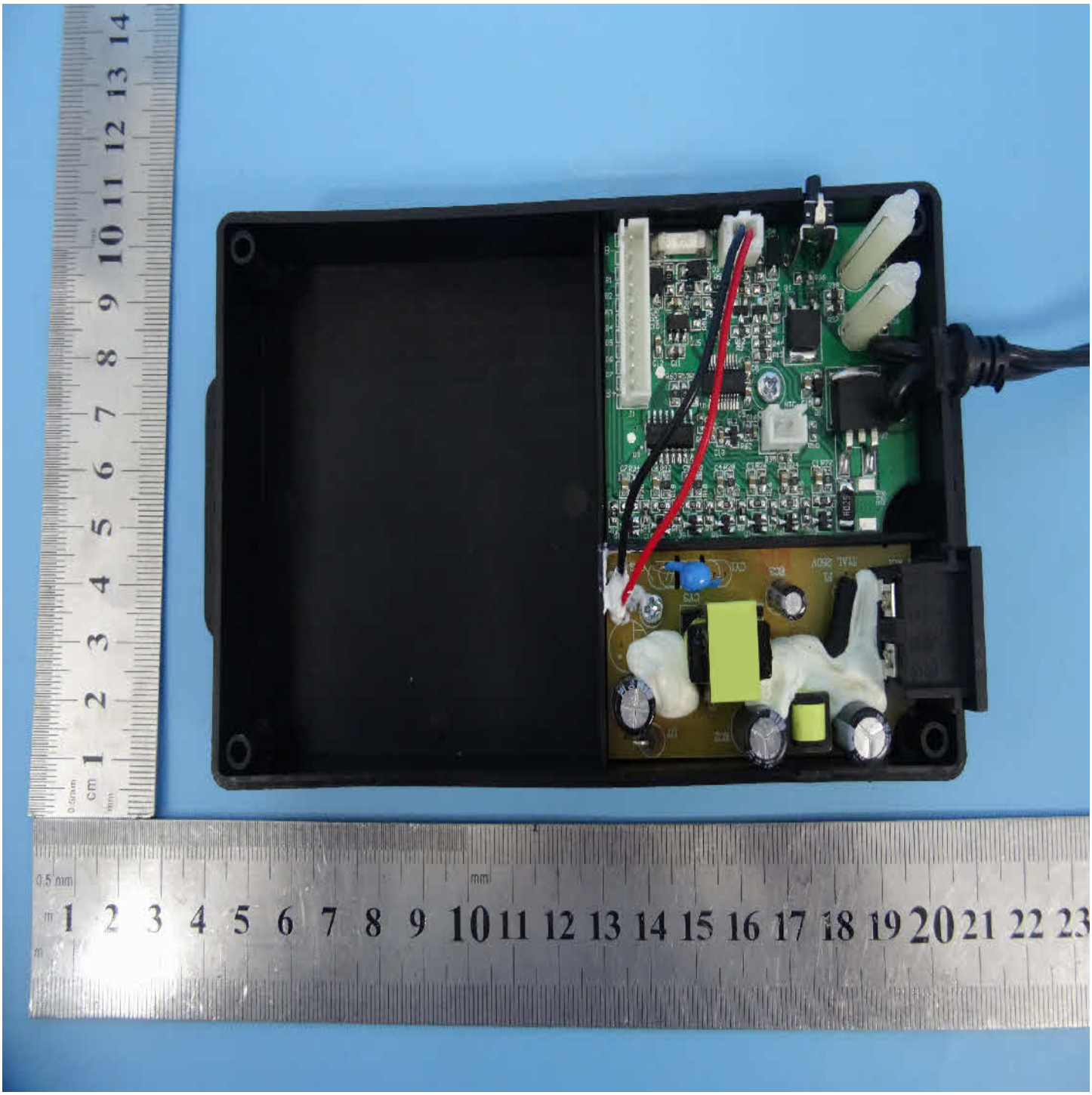
Photographs-09 Page-1



Photographs-10 Page-1

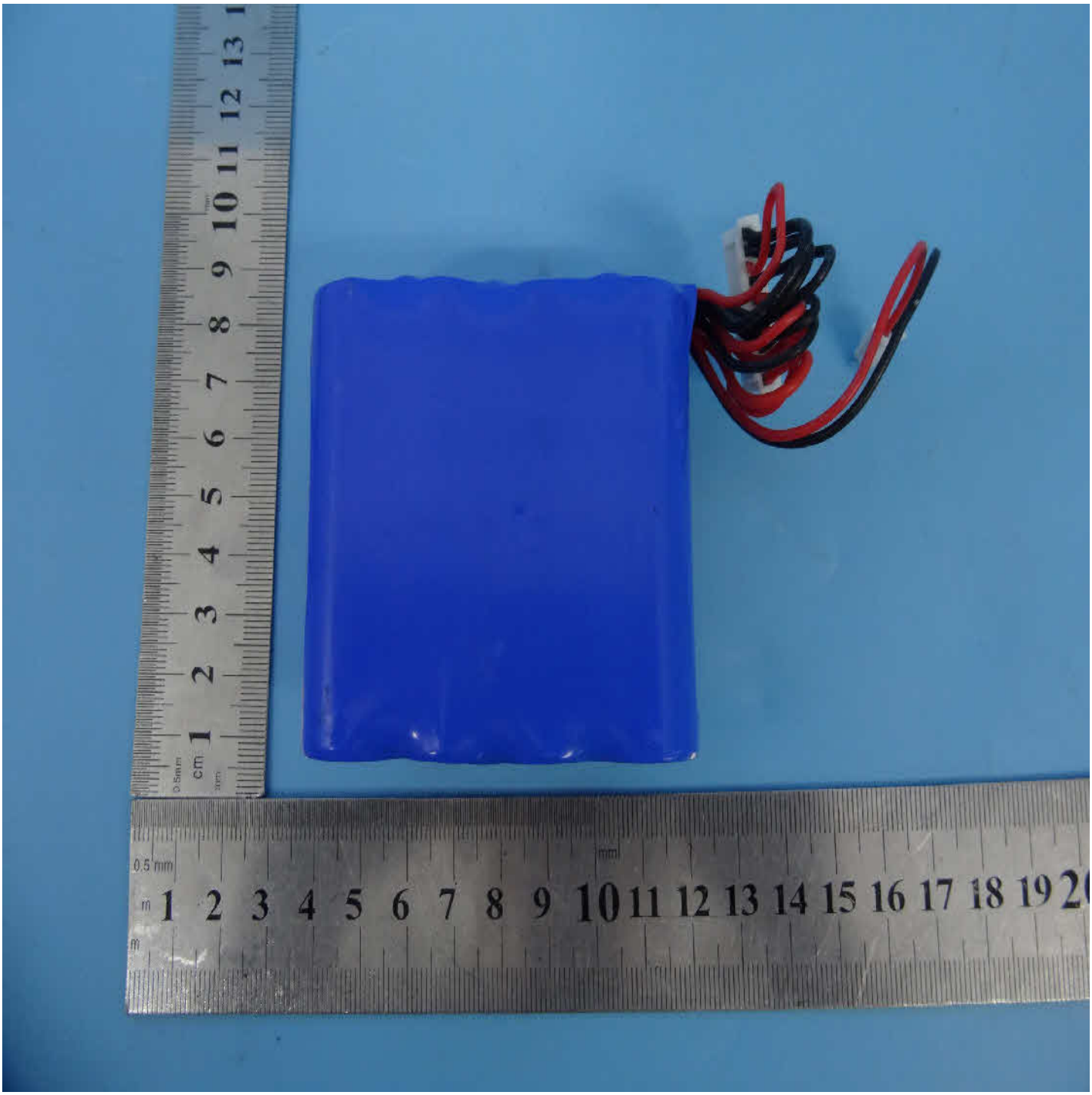
Photographs-11 Page-1

Photographs-12 Page-1



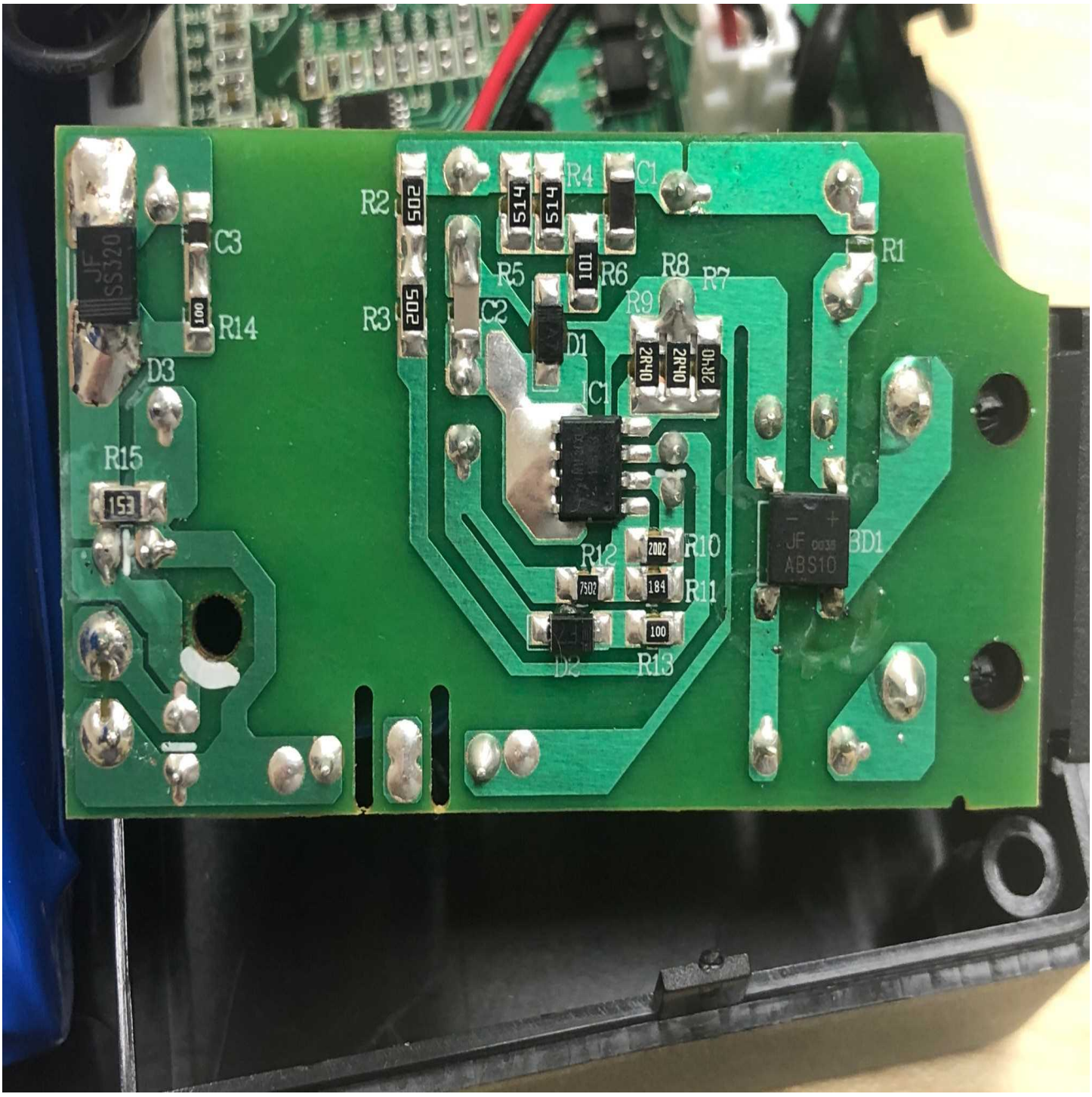
Photographs-13 Page-1

Photographs-14 Page-1

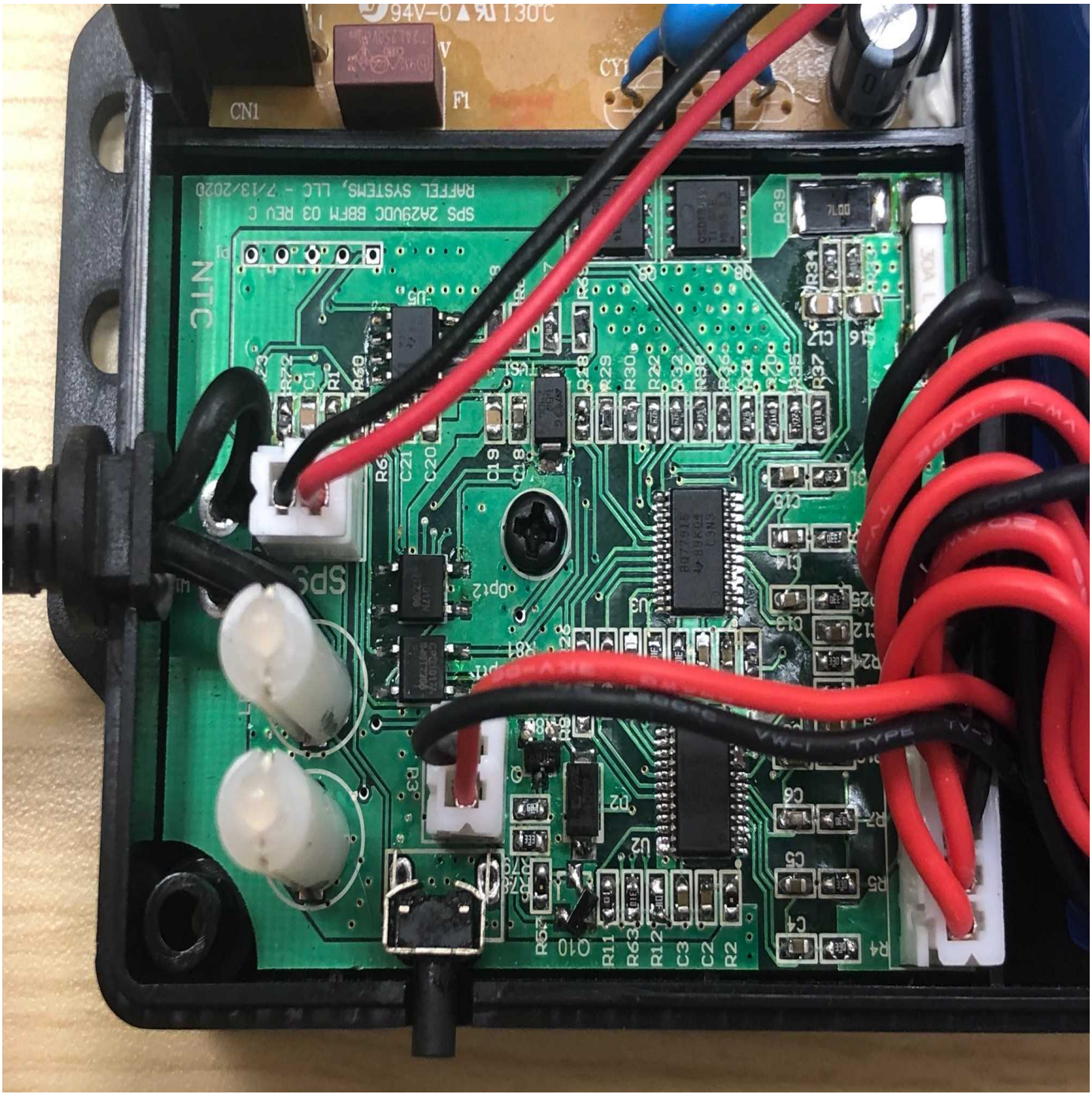


Photographs-15 Page-1

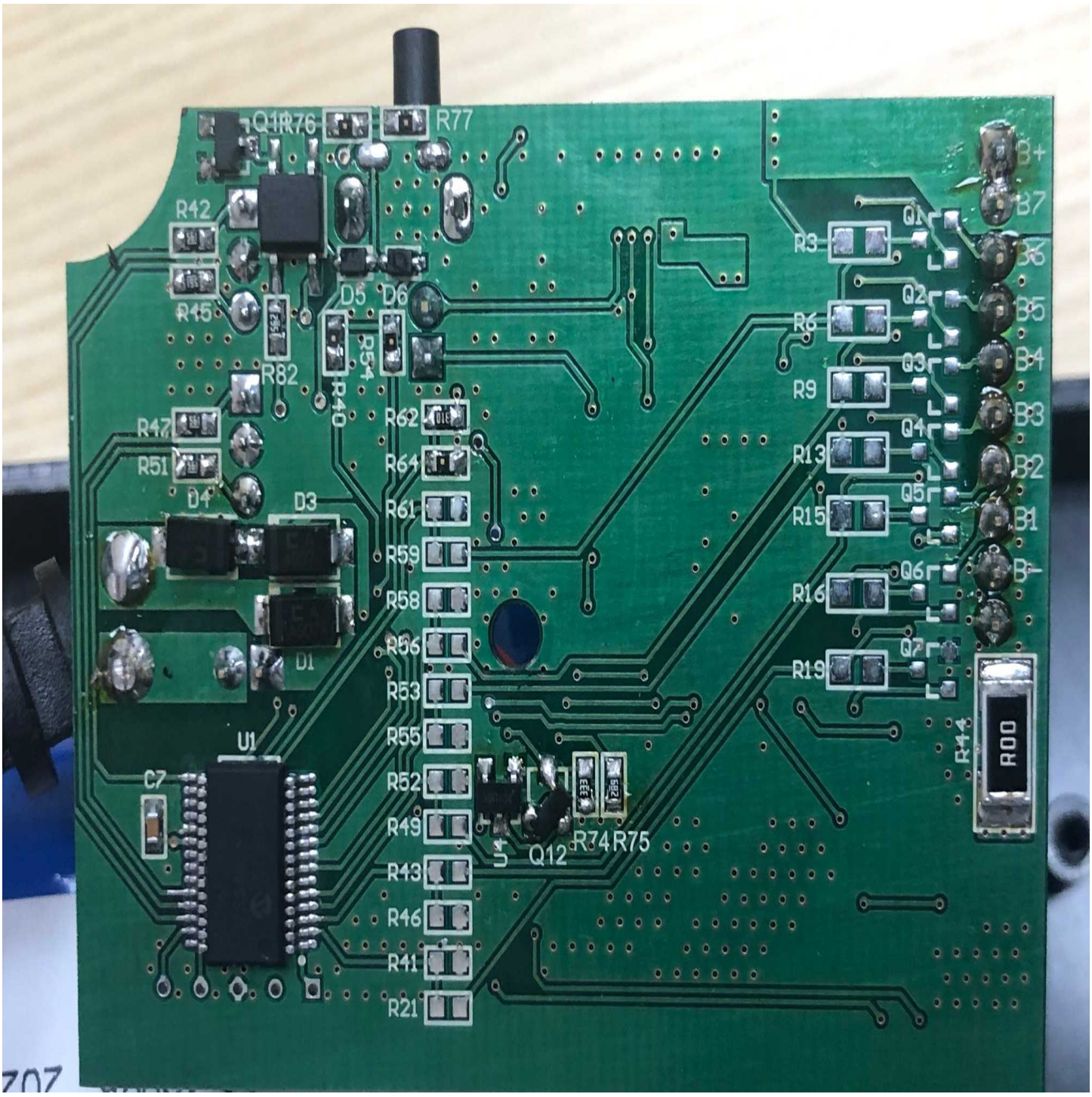
Photographs-16 Page-1



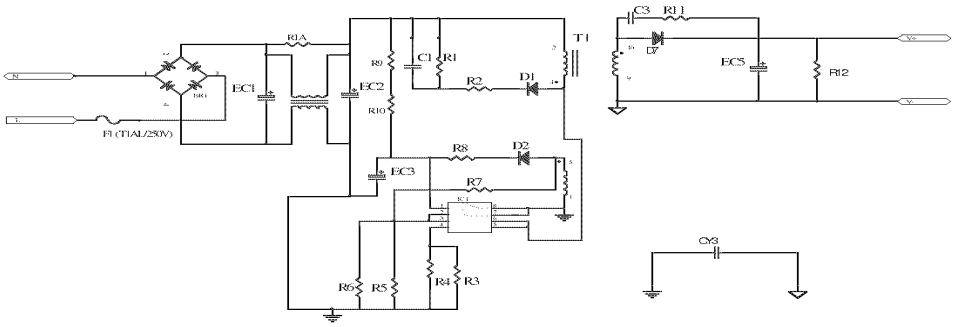
Photographs-17 Page-1

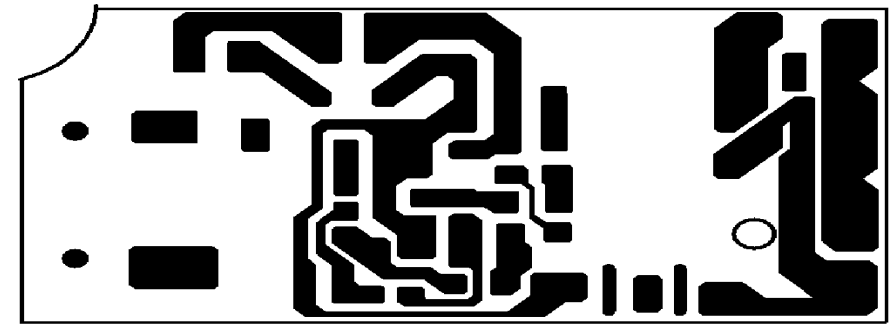


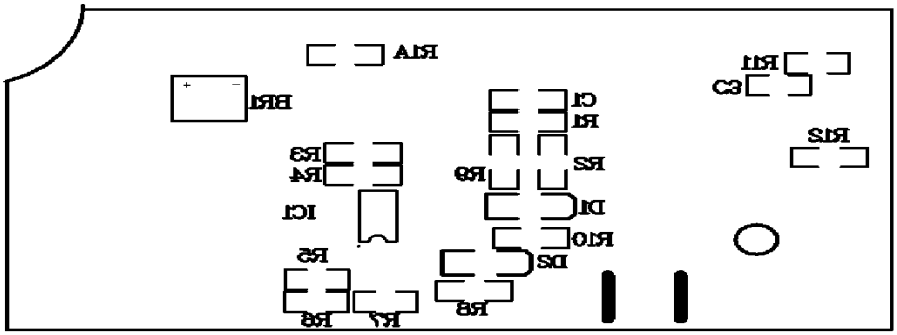
Photographs-18 Page-1

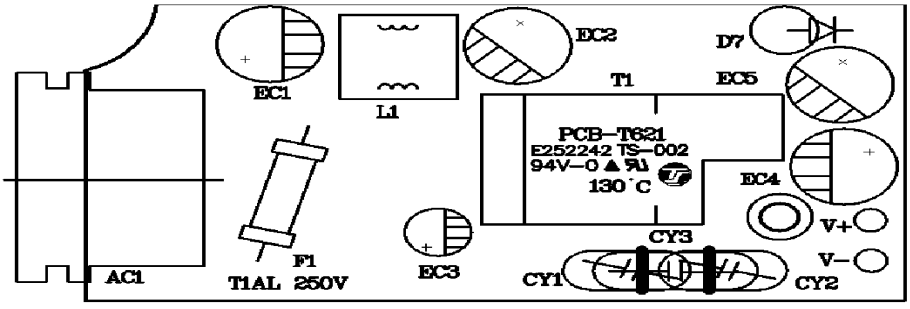


Schematics-01 Page-1

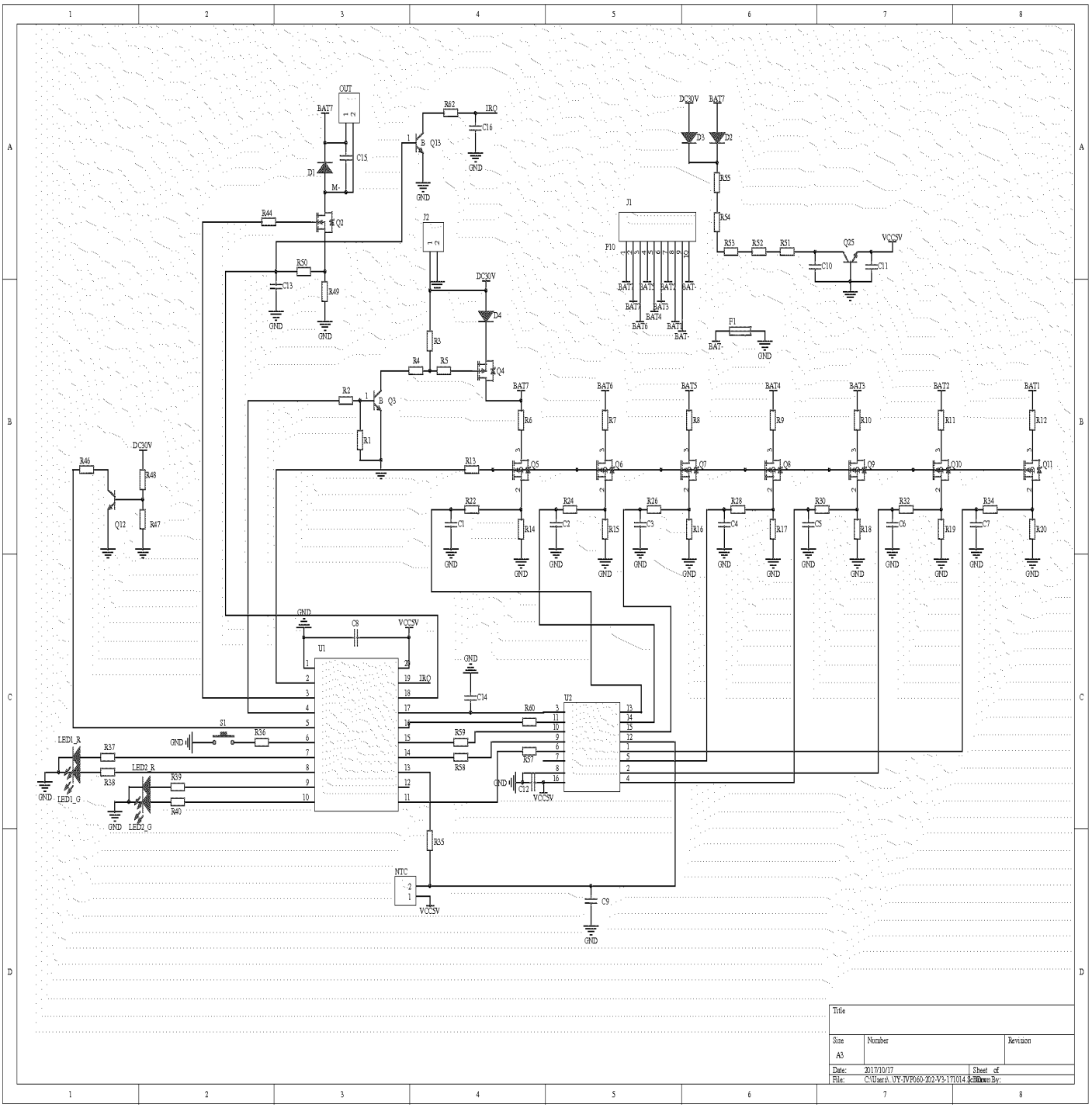




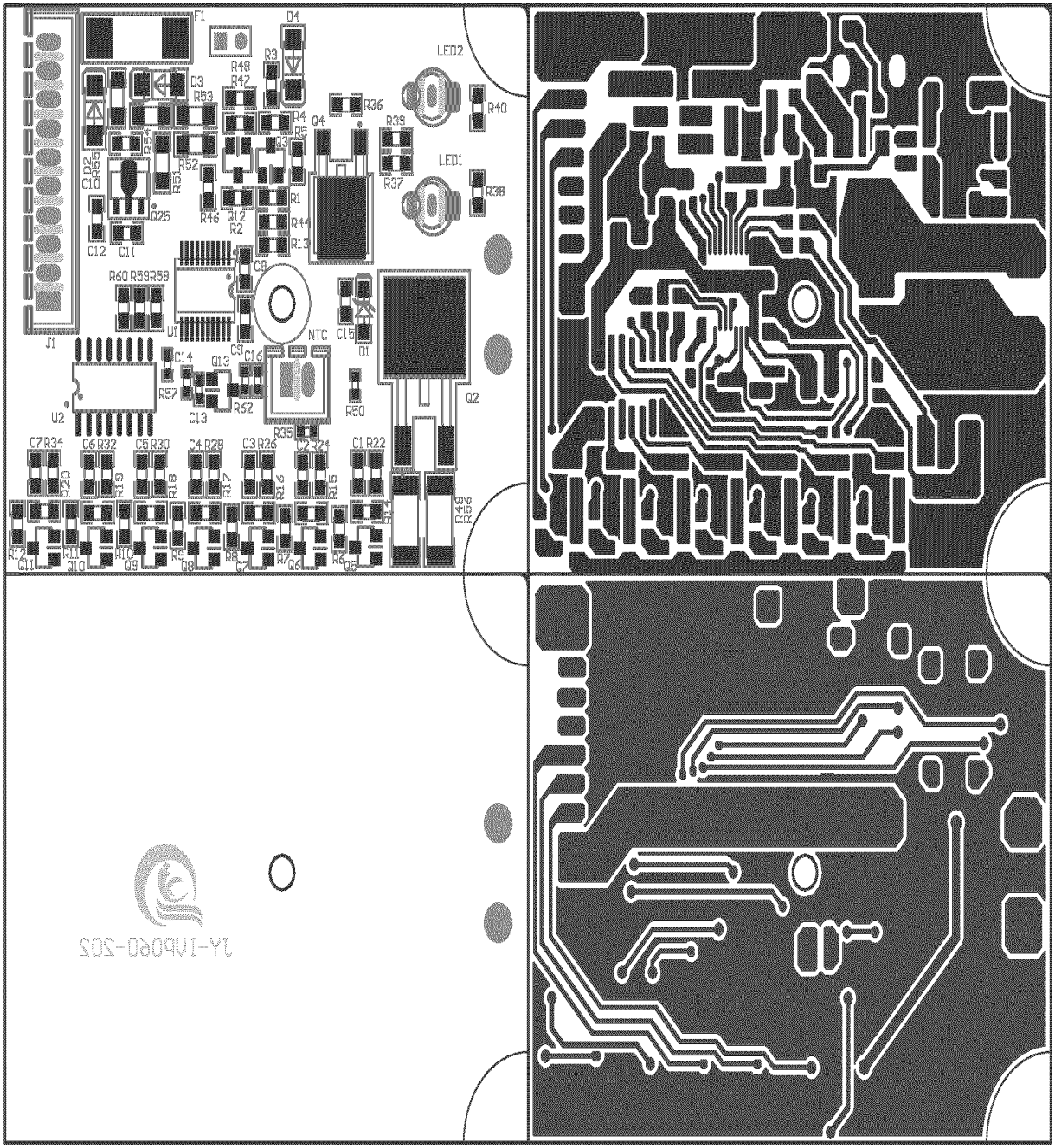




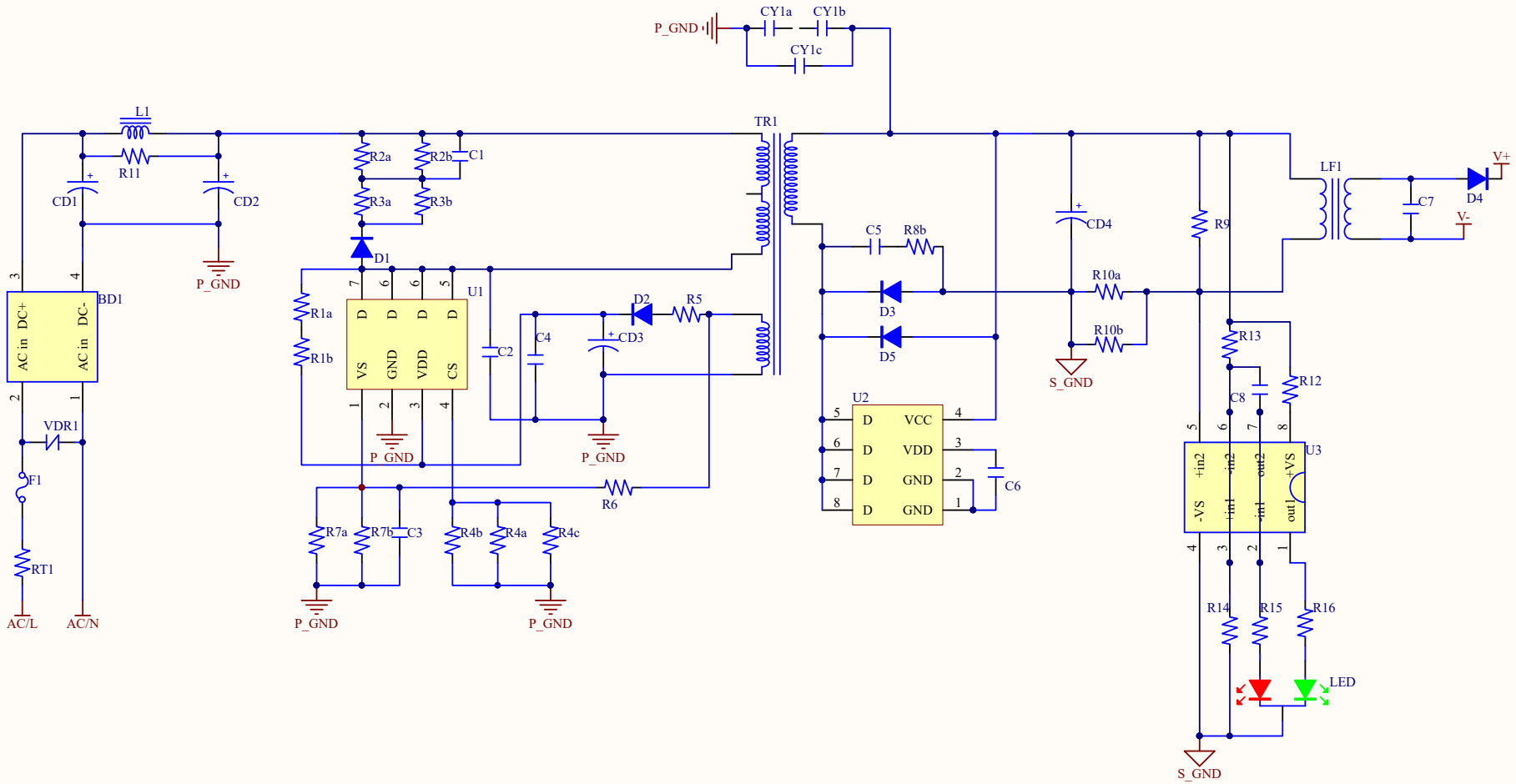
Schematics-02 Page-1



Schematics-02 Page-2



The following Page(s) are related to Schematics-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



Title	Schematic	
Size: A4	Number: SPS 0.5A30VDC	Revision: A
Date: 9/22/2020	Sheet of	
File: C:\Users\..\SPS 0.5A30VDC_SCH.SchDoc	Drawn By:	

Test Record No. 1

Tests on Model SPS 2A29VDC BBFM is not required due to transferring file from Applicant XIAMEN INNOV ELECTRONICS TECH CO LTD., E322496-A10, Vol. X1.

The following tests were conducted:

Tests performed (name of test and test clause): None	**Testing location: None**
The following tests were waived: None	**Rationale for Waiving**

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description

Test Record No. 2

Model SPS 2A29VDC BBFM was used for test purposes for the evaluation of an alternate construction with alternate power supply board and charging circuitry. Alternate construction employs same input/output ratings as previous evaluation. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, limited testing was conducted and it has been determined that the product continues to comply with the standard.

The following tests were conducted:

Tests performed (name of test and test clause):	**Testing location:** UL Northbrook, 333 Pfingsten Road, Northbrook, IL, 60062-2096, USA
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	
Transformer and Wire /Insulation Electric Strength (2.10.5.13)	
Battery (4.3.8)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	
Electric Strength (5.2.2)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	
Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)	
Power Supply Output Short-Circuit/Overload (5.3.7)	
The following tests were waived:	**Rationale for Waiving**

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description
Datasheet	02-01	Datasheets
Attachment	02-02	Dual Language CRD