UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (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)
Product:	AC ADAPTER
Model:	SA028, 6931, SA021
Rating:	Input: 100-240Vac, 50/60Hz, 0.4A Output: 5Vdc, 1.0A
Applicant Name and Address:	SHENZHEN C-STAR ELECTRONIC TECH CO LTD 2, 3/F BLDG B NO. 2 BADA INDUSTRIAL PARK YONGFU RD HEPING COMMUNITY FUYONG TOWN BAOAN DISTRICT SHENZHEN GUANGDONG 518000 CHINA

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.

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

Prepared by: Jack Huang Reviewed by: Alvin Peng

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 AC Adapter is a direct plug-in type switching power supply, consists of electronic components and transformer mounted on PWB and housed within a plastic enclosure with one output. The reinforce insulation is kept between Primary input to secondary output.

Model Differences

6931 is identical to SA028 except model designation
SA021 is identical to SA028 except model designation, and Enclosure drawing.

Technical Considerations

- Equipment mobility : direct plug-in
- Connection to the mains : pluggable A (direct plug-in)
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10% / -10% (declared by manufacturer)
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : --
- Class of equipment : Class II (double insulated)
- Considered current rating of protective device as part of the building installation (A) : Building installation circuit breaker rated 20 A.
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : less than 2000 m
- Altitude of test laboratory (m) : less than 2000 m
- Mass of equipment (kg) : maximum 0.03 kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C

- The means of connection to the mains supply is: Pluggable A
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Plug
- The product was investigated to the following additional standards: (1) Blade configuration was evaluated and found compliant with standard for Wiring Devices-Dimensional Specifications, ANSI/NEMA WD 6. , (2) Direct Plug-in Equipment complies with UL1310 mechanical assembly requirements.
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output terminal
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Additional Information

For project 4787529511:
Alternate the new model designation: SA021.
Alternate the new Enclosure drawing for model SA021.

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Power rating - Class II symbol	Symbol for Class II construction  (60417-2-IEC-5172)
LPS mark (optional)	Limited Power Source or L.P.S. marked on the Marking Plate Label
Fusible Resistor	Rated resistance and power and type located on or adjacent to fuse resistor or fuseholder.

Special Instructions to UL Representative

Inspect the transformer(s) listed in Production-Line Testing Requirements (Electric Strength Test Special

Constructions) 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 Production-Line Testing Requirements (Electric Strength Test Special Constructions) be conducted at the component manufacturer.

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All models	Transformer (T1)	--	Primary to Secondary	Minimum 3000 Vac	Minimum 4242 Vdc	1 second

Earthing Continuity Test Exemptions - This test is not required for the following models:

All models

Electric Strength Test Exemptions - This test is not required for the following models:

--

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:

--

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 or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
01. Input blade	--	--	Non-polarized, solid copper or copper alloy, NEMA plug type 1-15P, integrally molded on plastic input blade holder, from any point of either blade to the plug face section of the edge is spaced minimum 5.1 mm perimeter. See enclosure ID7-03 for detail.	--	--	
02. Plastic Enclosure	SABIC INNOVATIVE PLASTICS B V E45329	CX7240 (GG)	Rated V-0, minimum thickness 1.5 mm, 115 degree C, See supplementary 7-01 for detailed dimension.	QMFZ2	UL	
02a. Plastic Enclosure	SABIC INNOVATIVE PLASTICS US L L C E121562	CX7240 (GG)	Rated V-0, minimum thickness 1.5 mm, 115 degree C, See supplementary 7-01 for detailed dimension.	QMFZ2	UL	
02b. Plastic Enclosure	SABIC JAPAN L L C E207780	CX7240 (GG)	Rated V-0, minimum thickness 1.5 mm, 115 degree C, See supplementary 7-01 for detailed dimension.	QMFZ2	UL	
03. Plug holder	SABIC INNOVATIVE PLASTICS B V E45329	CX7240 (GG)	Rated V-0, 115 degree C.	QMFZ2	UL	
03a. Plug holder	SABIC INNOVATIVE PLASTICS US L L C E121562	CX7240 (GG)	Rated V-0, 115 degree C.	QMFZ2	UL	
03b. Plug holder	SABIC JAPAN L L C E207780	CX7240 (GG)	Rated V-0, 115 degree C.	QMFZ2	UL	
04. Input wire	Interchangeable	Interchangeable	Minimum 300 V, minimum 80 degree C, minimum 24AWG, insulated with FEP, PTFE, PVC, TFE, neoprene, polyimide	AVLV2	UL	

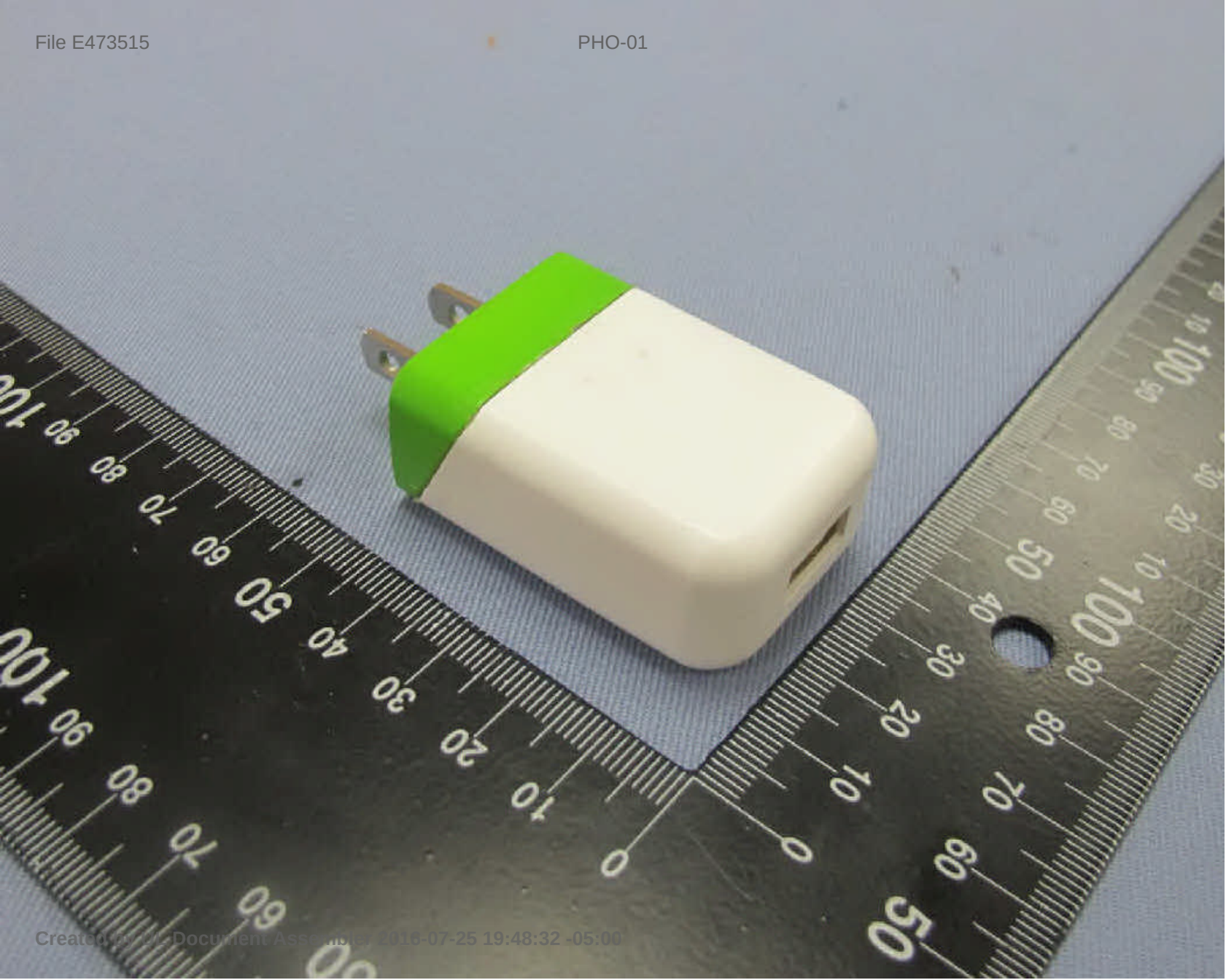
			or marked VW-1 or FT-1, secured to PWB by glue and soldering, secured to input blade by hook and soldering.			
05. Label	Interchangeable	Interchangeable	Minimum 80 degree C, Suitable for use on plastic material.	PGDQ2, or PGJI2	UL	
05. Label (Alternate)	--	--	With silk-screen or printed by laser on enclosure directly	--	--	
06. Printed Wiring Board	Interchangeable	Interchangeable	V-1 or better, 130 degree C.	ZPMV2	UL	
07. Fusible resistor (R1)	SHENZHEN GREAT ELECTRONICS CO LTD E301541	RXF-1W	10ohm, 1W	FPEW2/8	UL, CUL	
08. Bridge Diodes (BD1)	--	--	Minimum 400V, minimum 1A.	--	--	
09. Electrolytic Capacitors (C1,C2)	--	--	Each rated 2.2-4.7µF, minimum 400 V, minimum 105 degree C, provided with pressure relief function.	--	--	
10. Inductor (L1)	--	--	Rated 130 degree C.	--	--	
11. Transformer (T1)	SHENZHEN HUA ZHI CHUANG ELECTRONIC TECHNOLOGY CO LTD	EE1308B	Class B See supplementary Enclosure Diagram Id 4-01 for details.	--	--	
11-1. Transformer (T1)– Insulation system	SHENZHEN HUA ZHI CHUANG ELECTRONIC TECHNOLOGY CO LTD E334728	HZC-B	Class B (130 degree C)	OBJY2	UL	
11-2. Transformer (T1) – Core	--	--	Ferrite, overall size approximately 13.0 mm by 12.5 mm by 5.8 mm.	--	--	
11-3. Transformer (T1) - Primary winding	Interchangeable	Interchangeable	Minimum 130 degree C	OBMW2	UL	

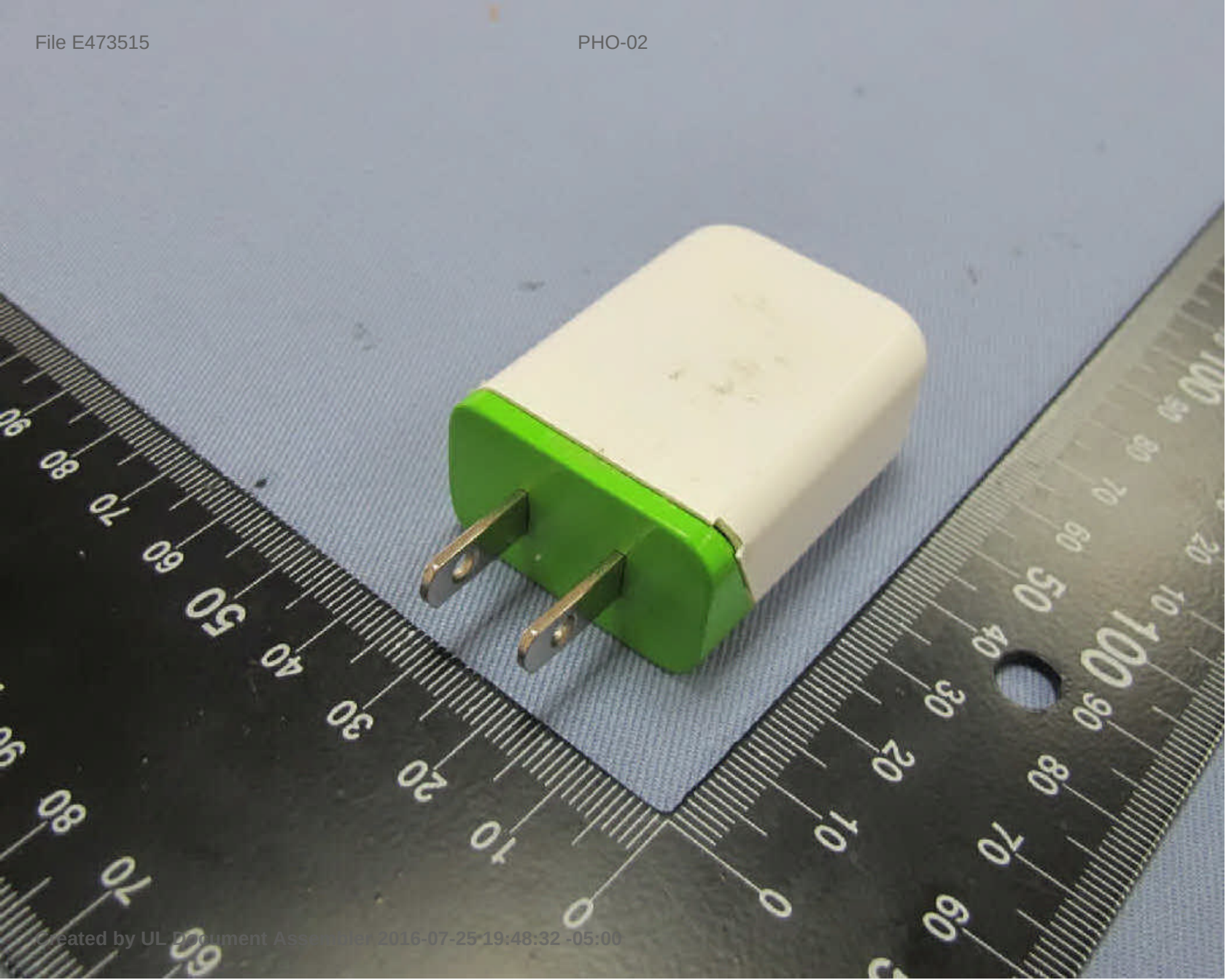
11-4. Transformer (T1) - Secondary winding	Furukawa Electricco. Ltd. E206440	TEX-E	Triple insulated wire, 130 degree C.	OBJT2	UL	
11-5. Transformer (T1) – Bobbin	SUMITOMO BAKELITE CO LTD E41429	PM-9820	Phenolic, Rated V-0, 150 degree C, minimum 0.51 mm thick.	QMFZ2	UL	
11-6. Transformer (T1) - Insulation tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD E165111	PZ, CT	130 degree C.	OANZ2	UL	
11-7. Transformer (T1) - Varnish	JOHN C DOLPH CO E317427	BC-346A	Minimum 155 degree C.	OBOR2	UL	
11-8. Transformer (T1) – Tubing	GREAT HOLDING INDUSTRIAL CO LTD E156256	TFL TFS TFS	Rated 200 degree C, minimum 150 V.	YDPU2	UL	
12. Mylar Sheet (between primary and secondary)	FORMEX, DIV OF ILLINOIS TOOL WORKS INC, FORMERLY E121855	FORMEX GK-(a)(b)(f2)	Rated V-0, minimum 0.4 mm thick, See supplementary ID7-02 for detailed dimension	QMFZ2	UL	
12a. Mylar Sheet (between primary and secondary) (Alternate)	SABIC INNOVATIVE PLASTICS B V E45329	FR60	Rated V-0, minimum 0.4 mm thick, See supplementary ID7-02 for detailed dimension	QMFZ2	UL	
12b. Mylar Sheet (between primary and secondary) (Alternate)	SABIC INNOVATIVE PLASTICS US L L C E121562	FR6, FR60 (GG), FR63 (GG), FR65 (GG), FR6(!#), FR700(GG), FR7(!#), FR8(!#), FR25A	Rated V-0, minimum 0.4 mm thick, See supplementary ID7-02 for detailed dimension	QMFZ2	UL	
12c. Mylar Sheet (between primary and secondary) (Alternate)	SABIC JAPAN L L C E207780	FR25A FR60 (GG1), FR63 (GG1), FR65 (GG1), FR7 (GG1), FR700	Rated V-0, minimum 0.4 mm thick, See supplementary ID7-02 for detailed dimension	QMFZ2	UL	
12d. Mylar Sheet	ITW ELECTRONICS	FORMEX GK-	Rated V-0, minimum 0.4 mm	QMFZ2	UL	

(between primary and secondary) (Alternate)	COMPONENTS/ PRODUCTS (SHANGHAI) CO LTD E256266	(a)(b)(f2)	thick, See supplementary ID7-02 for detailed dimension			
12e. Mylar Sheet (between primary and secondary) (Alternate)	CHENGDU KANGLONGXIN PLASTICS CO LTD E315185	KLX PP BK-10, KLX PP BK-11-1, KLX PP BK-11-2, KLX PP BK-11-3, KLX PP BK-11-83, KLX PP BK-11-HY, KLX PP BK-11-NTC, KLX PP BK-11-YM, KLX PP BK-11-KS, KLX PP BK-12, KLX PP BK-17	Rated V-0, minimum 0.4 mm thick, See supplementary ID7-02 for detailed dimension	QMFZ2	UL	
13. Glue	Interchangeable	Interchangeable	Minimum V-2.	QMFZ2	UL	
14. USB Output(Secondary SELV circuit)	Interchangeable	Interchangeable	Copper alloy pins holder housed in bodies of plastic rated V-2 minimum.	QMFZ2	UL	
14a. USB Output(Secondary SELV circuit) (Alternate)	Interchangeable	Interchangeable	Minimum 30 V.	ECBT2	UL	

Enclosures

Type	Supplement Id	Description
Photographs	3-01	Overall View 1 for model SA028, 6931
Photographs	3-02	Overall View 2 for model SA028, 6931
Photographs	3-03	internal view 1 for model SA028, 6931
Photographs	3-04	internal view 2 for model SA028, 6931
Photographs	3-05	internal view 3 for model SA028, 6931
Photographs	3-06	PWB components side view for model SA028, 6931
Photographs	3-07	PWB trace side view for model SA028, 6931
Photographs	3-08	top side of transformer
Photographs	3-09	bottom side of transformer
Photographs	3-10	Overall View 1 for model SA021
Photographs	3-11	Overall View 1 for model SA021
Photographs	3-12	internal view 1 for model SA021
Photographs	3-13	internal view 2 for model SA021
Photographs	3-14	PWB components side view for model SA021
Photographs	3-15	PWB trace side view for model SA021
Diagrams	4-01	Transformer (T1) Specification
Schematics + PWB	5-01	PWB Layout
Miscellaneous	7-01	Dimension of Plastic Enclosure (mm) for model SA028, 6931
Miscellaneous	7-02	Mylar Sheet Drawing (mm)
Miscellaneous	7-03	Input Blade Drawing (mm)
Miscellaneous	7-04	Label for model SA028, 6931
Miscellaneous	7-05	Dimension of Plastic Enclosure (mm) for model SA021
Miscellaneous	7-06	Label for model SA021





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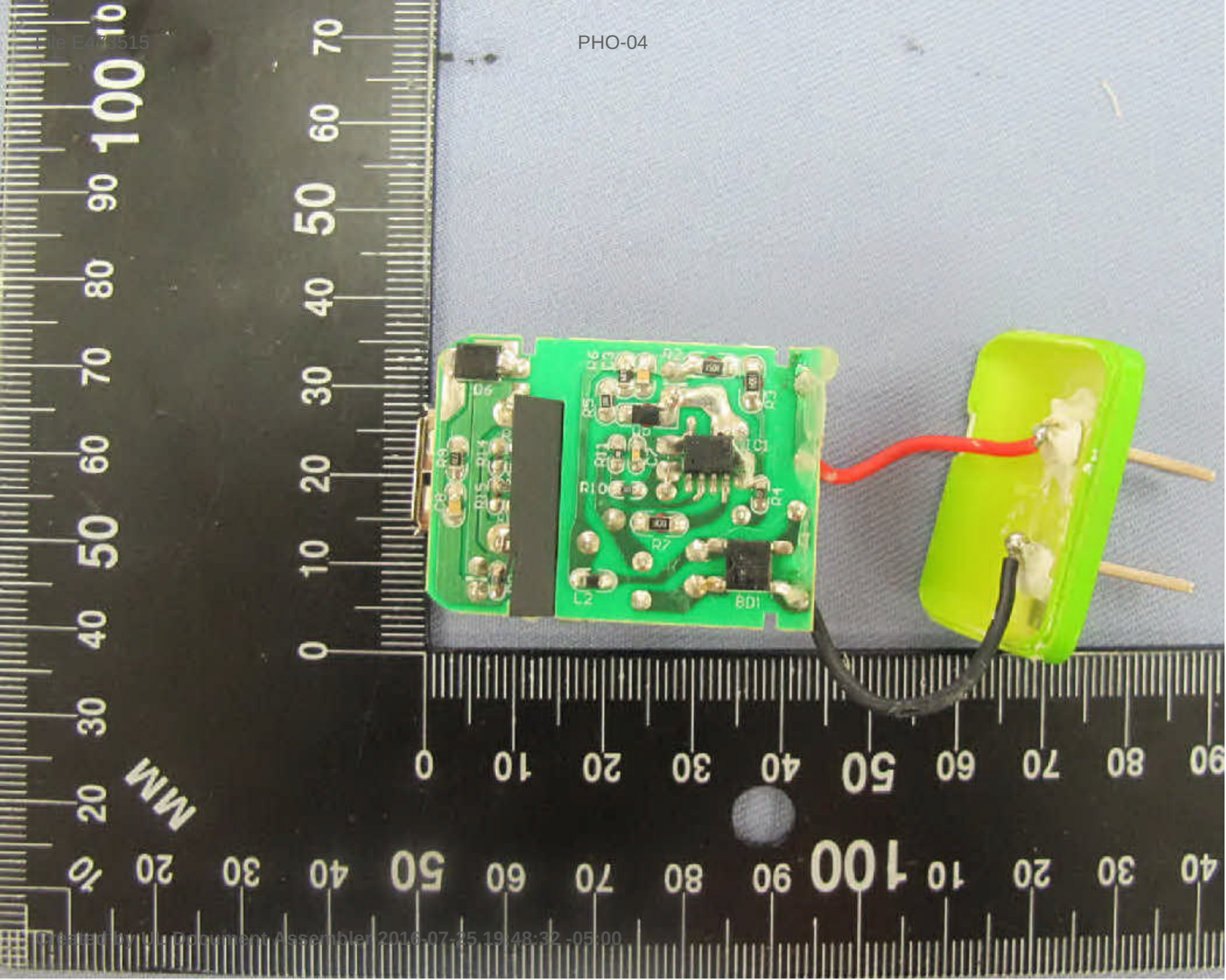
PHO-04



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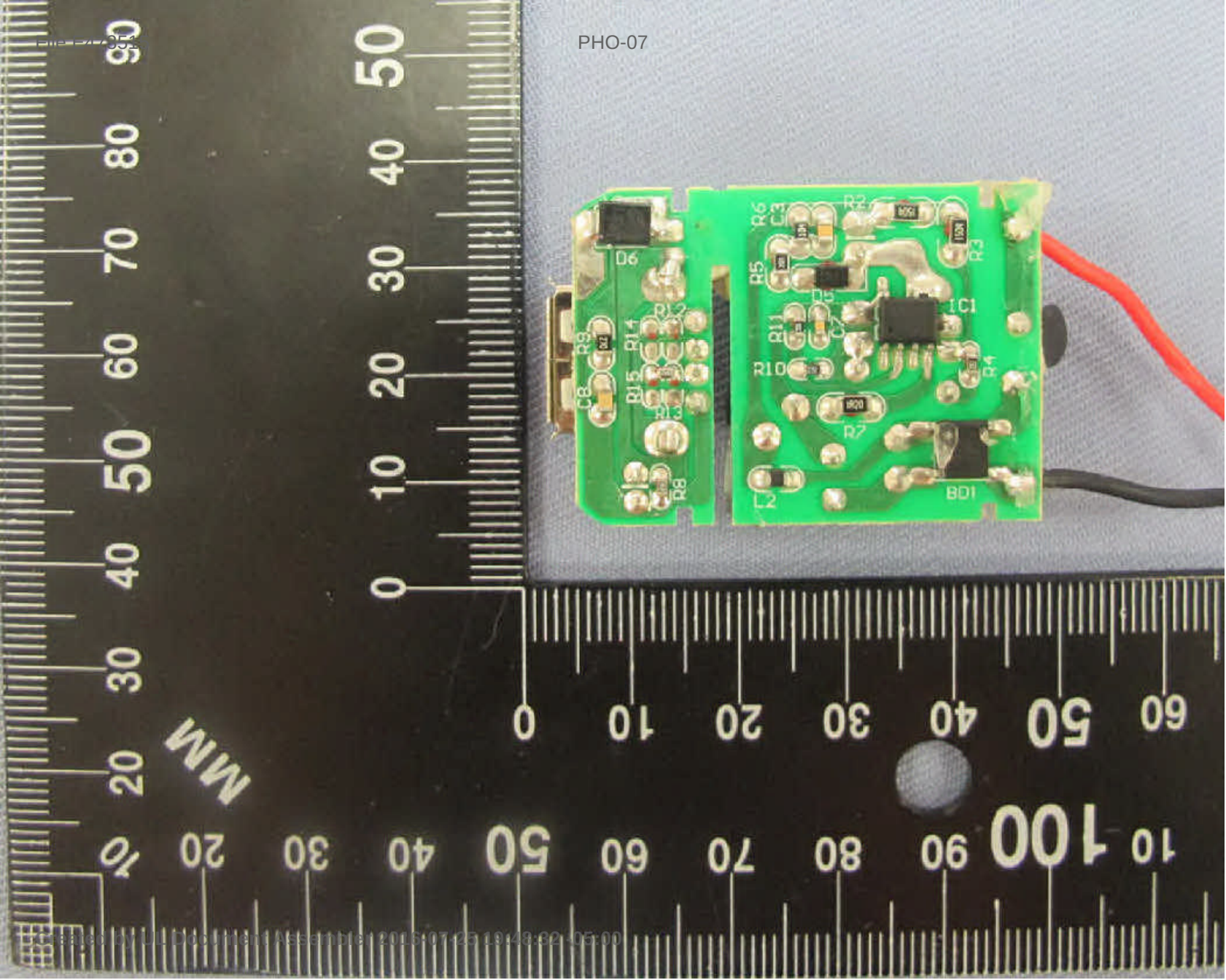
D6
R12
R14
R9
C8
R15
R13
R8
R6
C3
R2
R3
R5
D5
IC1
R11
C4
R10
R4
R7
L2
BD1
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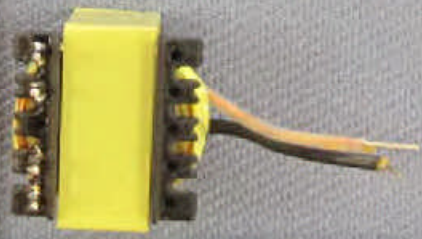
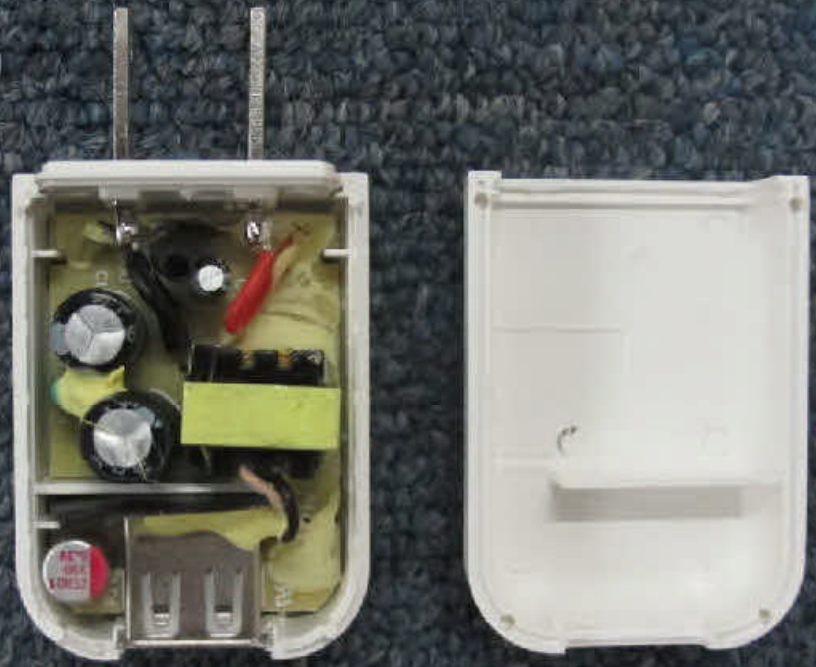
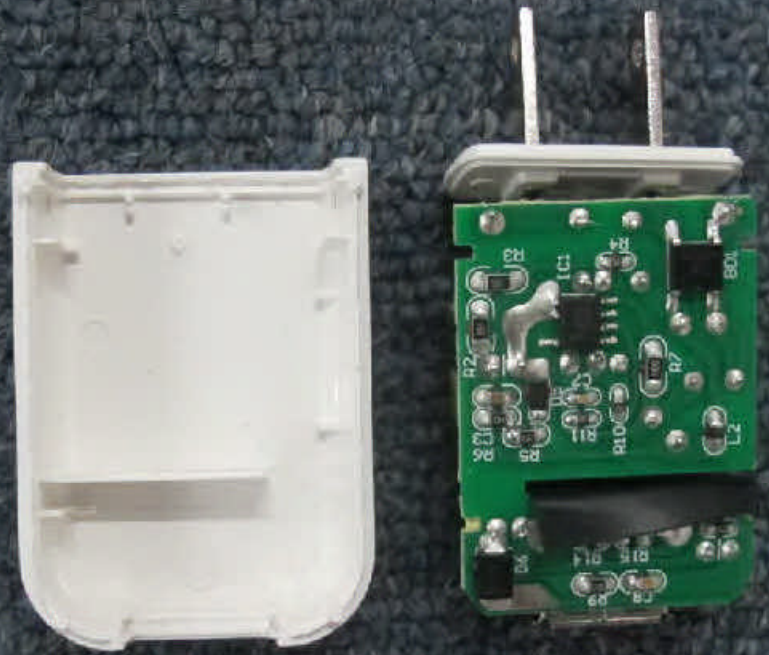
90
100

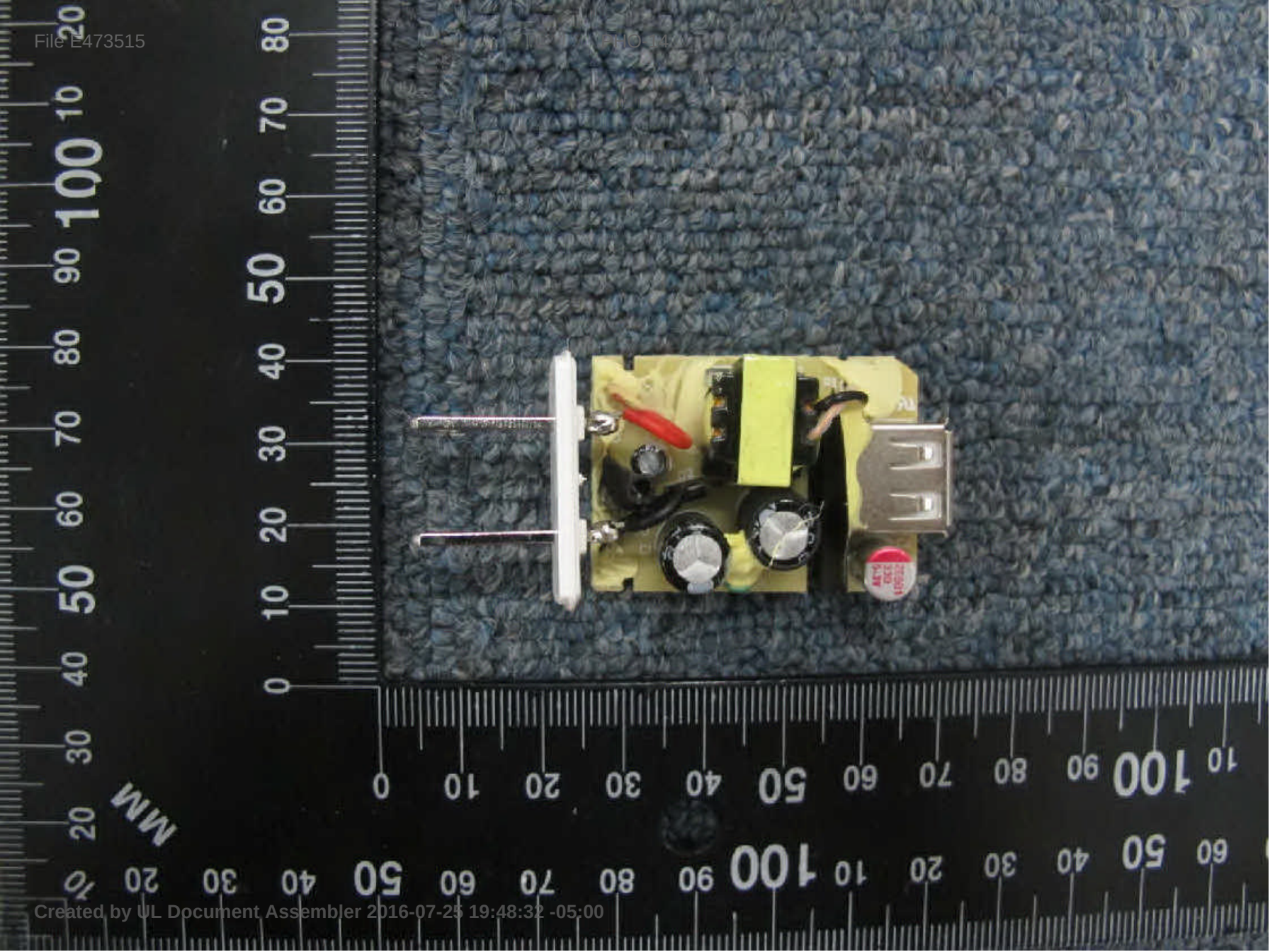
PHO-08

PHO-09









深圳市协兴电子有限公司

承认书

SPECIFICATION FOR APPROVAL

客户名称/CUSTOMER: SHD

物料名称/PRODUCT NO.: 变压器

协兴编号/XIEXING NO.: XX20150154A

客户规格型号/CUSTOMER DESCRIPTION: EE13-Ø0.15*1P*123Ts-1.40mH

客户物料代码/CUSTOMER NO.: EE1308B

客户承认栏 CUSTOMER APPROVAL			
质量部 QUALITY	工程部 R&D		采购部 PURCHASE

供应商承认栏 SUPPLIER APPROVAL		
核准 APPROVED	检验 CHECKED	承办 DRAWING
辜灵巧	王平	孙源

深圳市协兴电子有限公司 工程部

公司:深圳市协兴电子有限公司

SUPPLIER:SHENZHEN XIEXING ELECTRONICS CO.,LTD

地址:深圳市宝安区石岩镇台湾工业区万华大厦 4 楼

ADD:4th Floor,WanhuaBuilding,Taiwan′ s industrial zone,
Shiyan Town,Bao′ an District,Shenzhen

电话/TEL:0755-27642483

传真/FAX:0755-27642659

深圳市协兴电子有限公司

变更履历表/MODIFY LIST

序号 NO.	日期 DATE	变更内容及原因 Modify content and cause	版本 REV.	承办 DRAWING	校准 CHECKED	批准 APPROVED
1	2015-06-11	首次发行/ FIRST ISSUED	1.0	孙源	王平	辜灵巧

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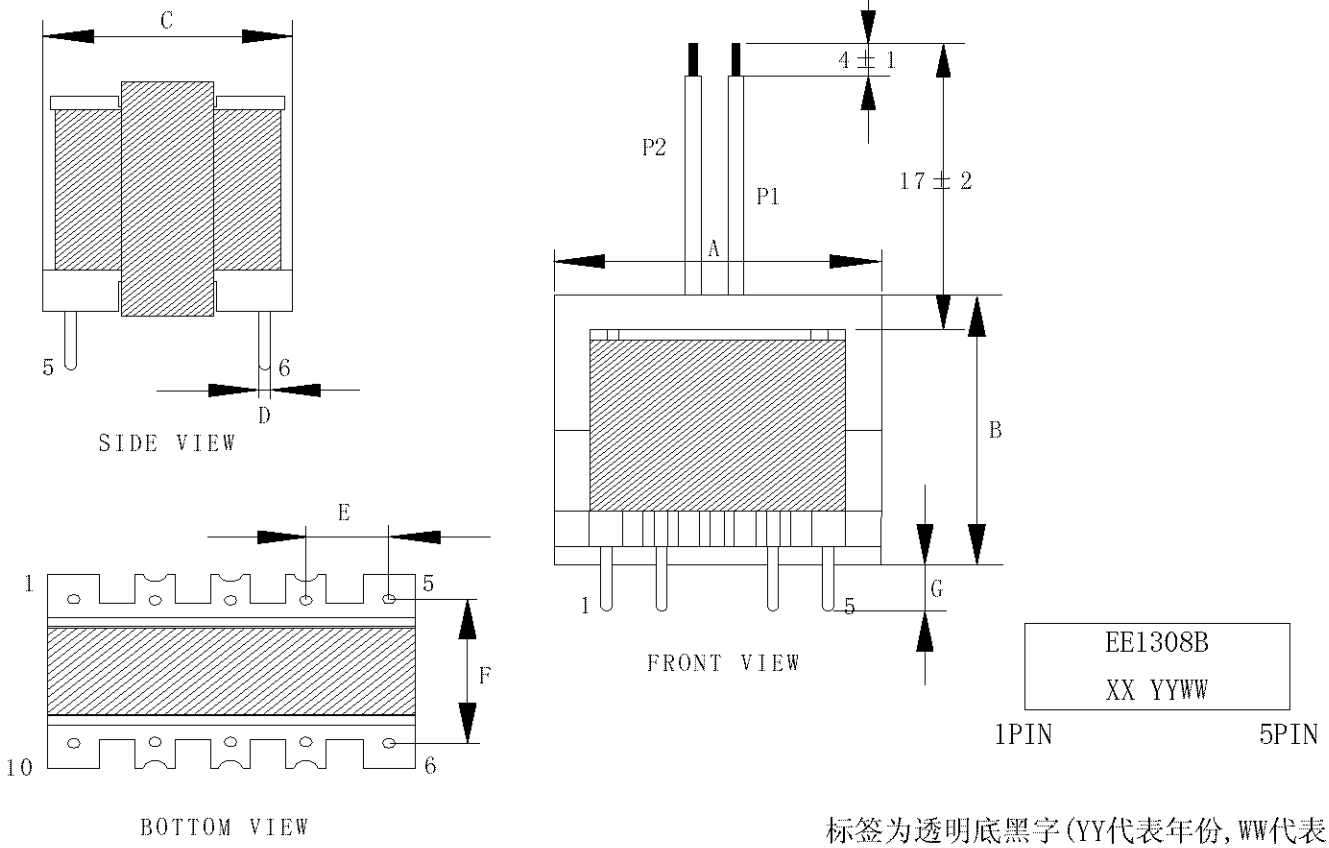
1.OUTLINE DIMENSION: (UNIT: mm)/外形尺寸(单位:mm)



标签为透明底黑字(YY代表年份,WW代表周期)

A	B	C	D	E	F	G
15.0MAX	14.0MAX	14.5MAX	ϕ 0.60 ± 0.1	2.5 ± 0.3	8.5 ± 0.5	3.6 ± 0.4

NOTE:

1.PIN 3.6.7.8.9.10 去除.

2.绕线方向: PIN 朝右绕制.

3.初级不须加铁氟龙套管,次级须加.

4.磁芯外包 5.5mm 胶带 3Ts,磁芯须开气隙.(气隙放于顶部)

5.所有绝缘胶带为淡黄色.

6.F1.F2 为飞线,从 PIN6-10 边顶部引出.

(F1 加透明铁氟龙套管;F2 加黑色铁氟龙套管)

7.F1.F2 总长度为 18 ± 2,焊锡长度为 4 ± 1.

8.产品须真空含浸.

9.N1.N4 为铜线绕组屏蔽.

DRAWING	CHECKED	APPROVED	CUSTOMER	SHD
孙源	王平	辜灵巧	CUSTOMER NO:	EE1308B
			REV.	1.0
			DATE:	2015-06-11
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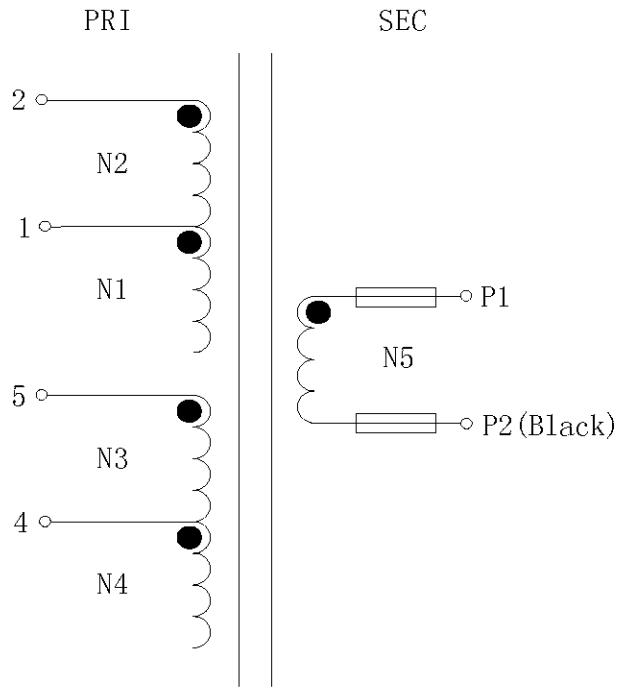
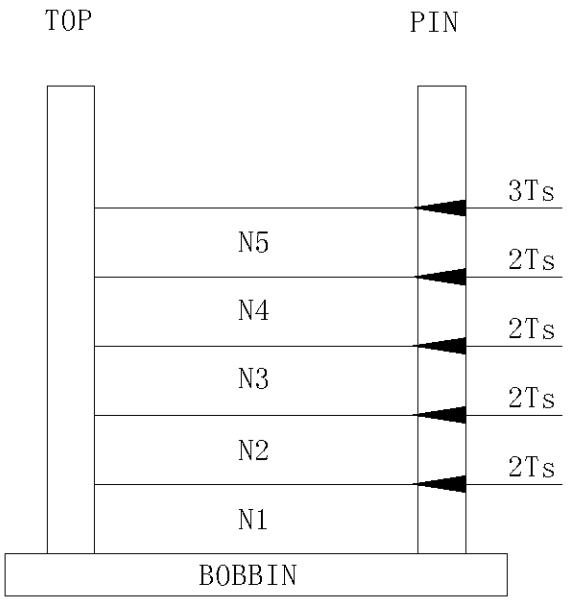
2.CIRCUIT DIAGRAM/原理图



3.CONSTRUCTION DIAGRAM/内部结构图



4.WINDING INFORMATIONS TABLE/绕制明细表

WINDIG 绕组	Top 挡墙	Pin 挡墙	S-F 起头-收尾	WIRE 线规	TURNS 圈数	TAPE TURES 胶带圈数	WINDING CONDITION 绕线方式
N1	/	/	1 -	2UEW℃0.15*1P	41Ts	7.8*2Ts	密绕
N2	/	/	2 - 1	2UEW℃0.15*1P	123Ts	7.8*2Ts	密绕
N3	/	/	5 - 4	2UEW℃0.15*2P	22Ts	7.8*2Ts	密绕
N4	/	/	4 -	2UEW℃0.15*1P	5Ts	7.8*2Ts	散绕
N5	/	/	P1 - P2	DRTIW-B℃0.45*1P	11Ts	7.8*3Ts	密绕
/	/	/	/	/	/	/	/

DRAWING	CHECKED	APPROVED	CUSTOMER	SHD
孙源	王平	辜灵巧	CUSTOMER NO:	EE1308B
			REV.	1.0
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5.CHARACTERISTIC/电气性能

NO. 序号	ITEM 项目	TEST POINT 测试点	TECHNICAL CRITERION 技术标准	TEST CONDITION & INSTRUMENT 测试条件&仪器
5.1	INDUCTANCE 电感	L(2-1)	1.40mH ±7%	LCZ1062A(仪器内阻为100Ω) 1KHz/0.25V AT 25℃
5.2	HI-POT 抗电强度	PRI - SEC	AC3500V	CS2670A 5mA 10SEC 50HZ
		SEC - CORE	AC1000V	
		/	/	
5.3	INSULATION RESISTANCE 绝缘电阻	PRI - SEC	100MΩ MIN	VG2679 DC 500V
		SEC - CORE	100MΩ MIN	
		/	/	

Between-20^{0}C to 80^{0}C test inductance and resistance on the basis of 25^{0}C, The variation shall not exceed 20%

DRAWING	CHECKED	APPROVED	CUSTOMER	SHD
孙源	王平	辜 灵巧	CUSTOMER NO:	EE1308B
			REV.	1.0
			DATE:	2015-06-11
			PAGE:	5 OF 6

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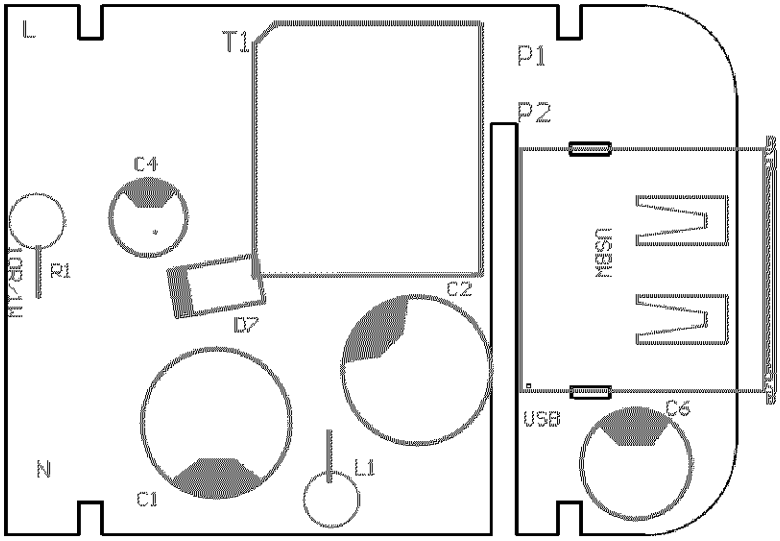
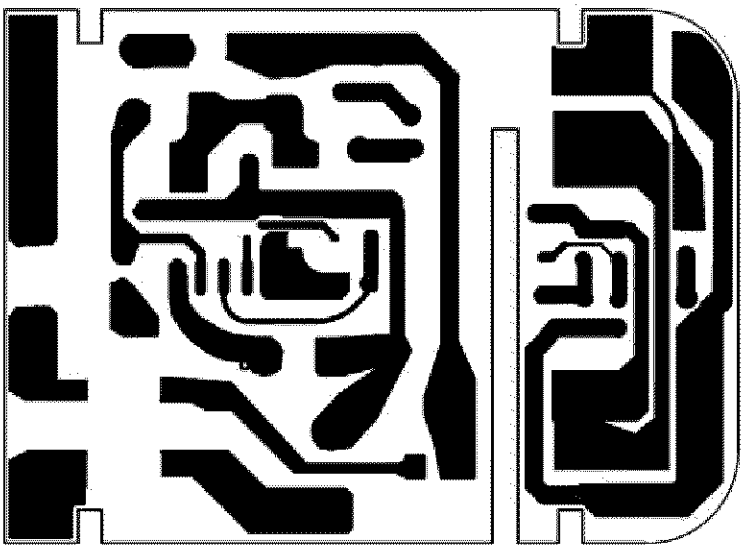
6.MATERIAL LITS/材料明细表

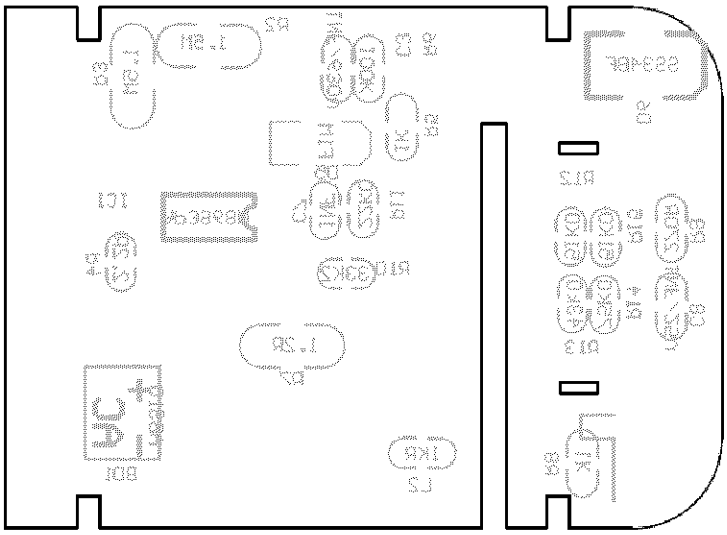
№.	ITEM	MATERIAL	SUPPLIER	U.L. NO.
1	CORE 磁芯	TYPE:EE-13 TD4	ZHEJIANG TONGDA MAGNETISM INDUSTRY CO.,LTD 浙江通达磁业有限公司	/
		HC40	SHENZHEN HUACI ELECTRIONICS CO.,LTD 深圳市华磁电子有限公司	/
2	BOBBIN 骨架	TYPE:EE-13 MATERIAL:T200HF 94V-0 150℃	CHANG CHUN PLASTICS CO.,LTD 长春人造树脂股份有限公司	E59481
3	WIRE 漆包线	2UEW/130，130℃	SHANTOU SHENGANG ELECTRICAL INDUSTRIAL CO.,LTD 汕头深港电子材料有限公司	E239508
		2UEW/155，155℃	ZHEJIANG HONGBO TECHNOLOGY CO.,LTD 浙江洪波科技股份有限公司	E221719
4	TAPE 胶带	JY312(#) 130℃	SUZHOU MAILADUONA ELECTRIC MATERIAL CO.;LTD 苏州市麦拉多纳电子材料有限公司	E188295
5	VARNISH 凡立水	E962，130℃	ZHUHAI CHANGXIAN CHEMICAL TECHNOLOGY CO.,LTD 珠海长先化学科技有限公司	E335405
6	Multi-layer Insulated Winding Wire 三层绝缘线	DRTIW-B，130℃	SHENZHEN DARUN SCIENCE AND TECHNOLOGY CO.,LTD 深圳市大润科技有限公司	E335841
7	TUBE 套管	LING FREE PTFE TUBE 150V 200℃	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO LTD 东莞市领飞五金塑胶制品有限公司	E352366
/	/	/	/	/

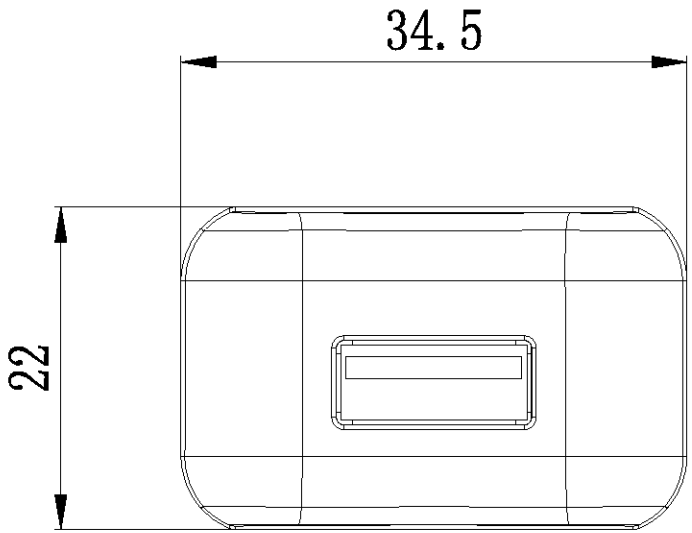
The transformer must be manufactured to comply with the ROHS directive , use only Pb-free solder。

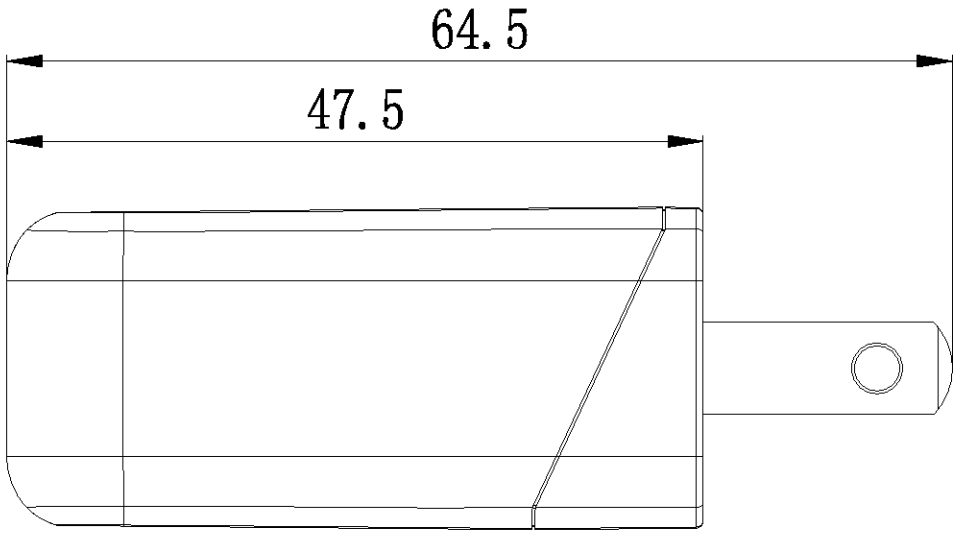
DRAWING	CHECKED	APPROVED	CUSTOMER	SHD
孙源	王平	辜灵巧	CUSTOMER NO:	EE1308B
			REV.	1.0
			DATE:	2015-06-11
			PAGE:	6 OF 6


L
T1
P1
P2
C4
R1
D7
C2
USB
C6
N
C1
L1

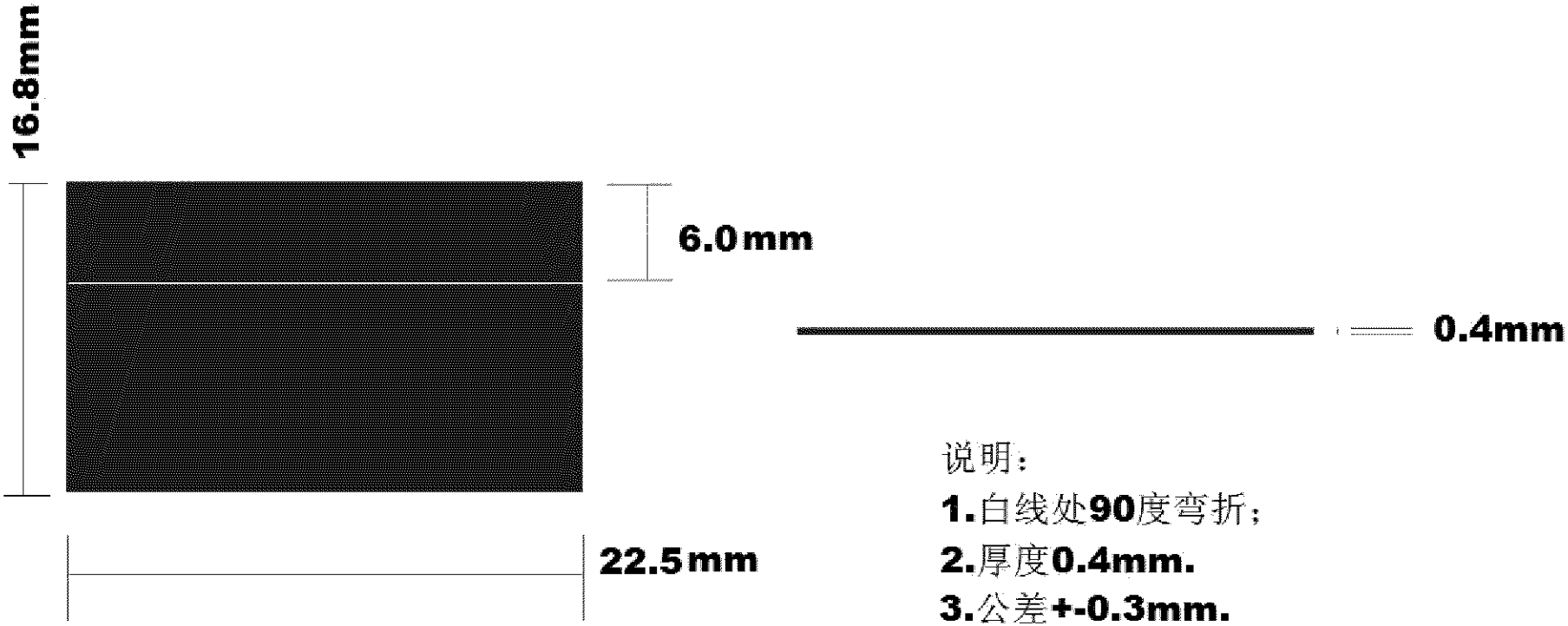








Unit: mm



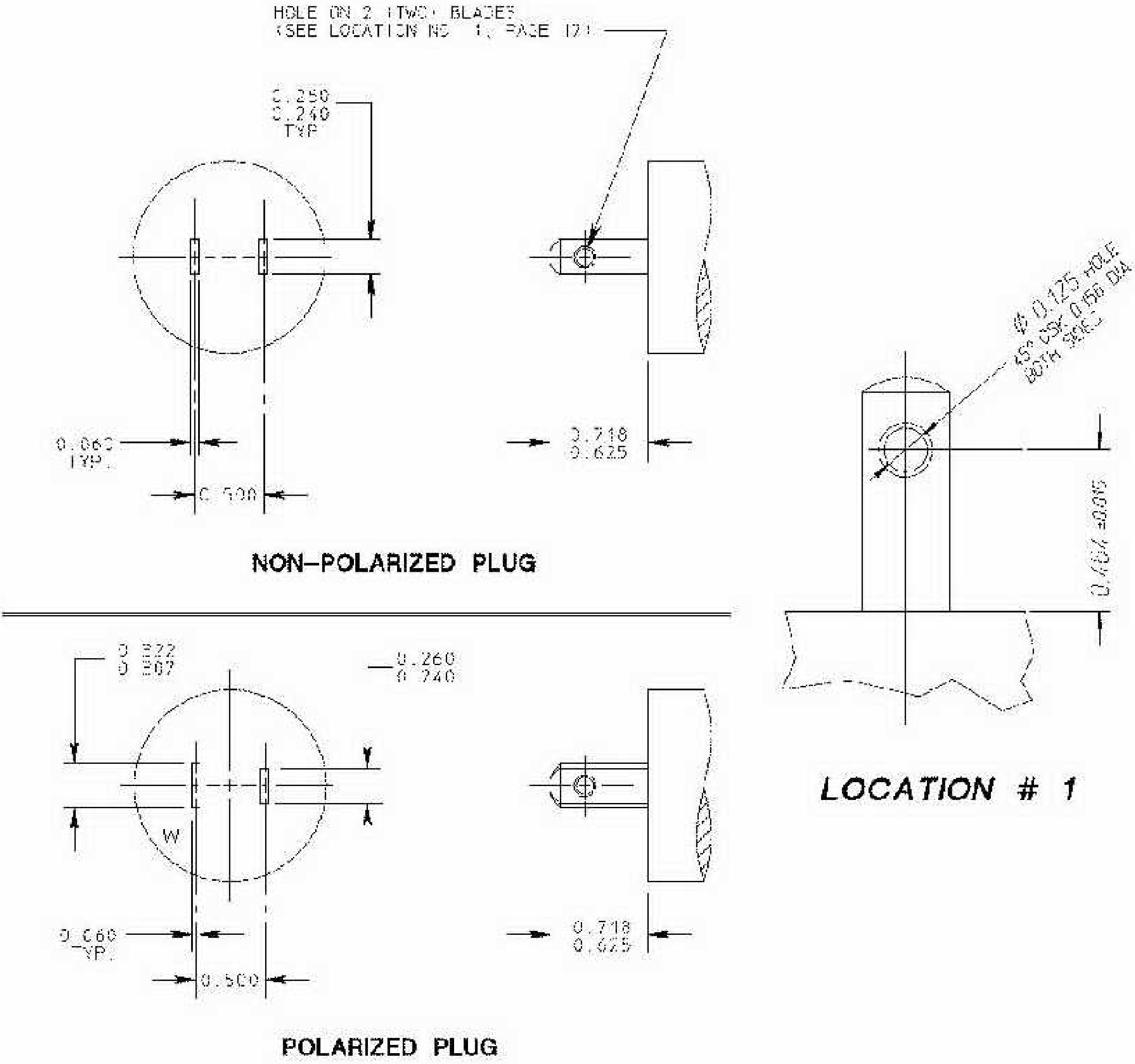
说明：

1.白线处90度弯折；

2.厚度0.4mm.

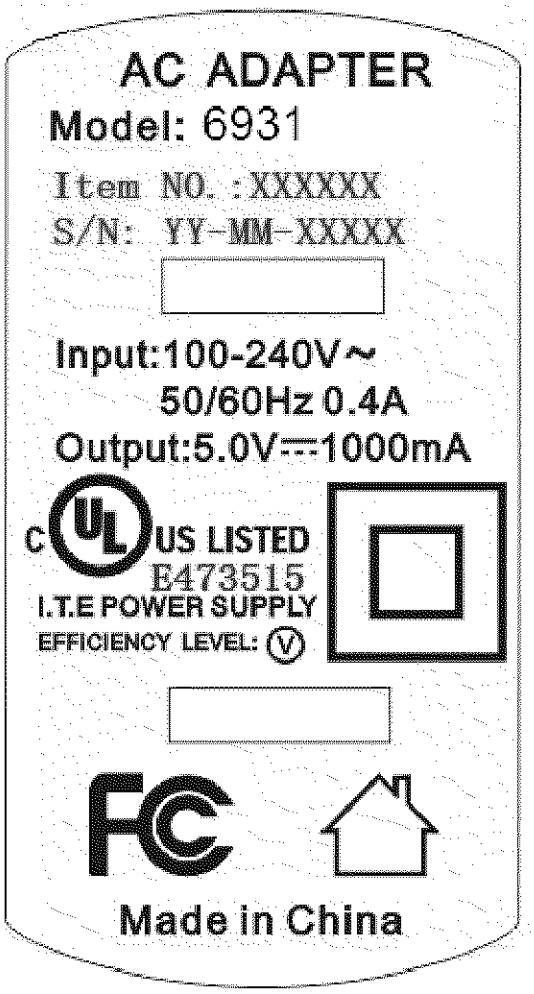
3.公差+-0.3mm.

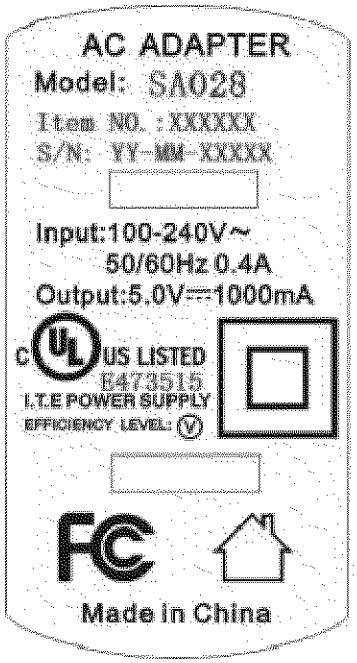
UNIT: INCH

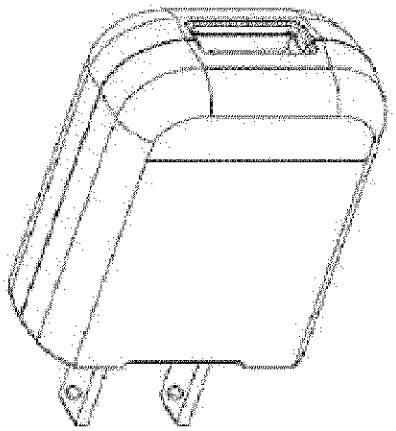


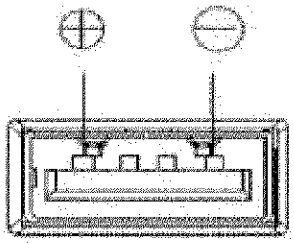
NOTES:

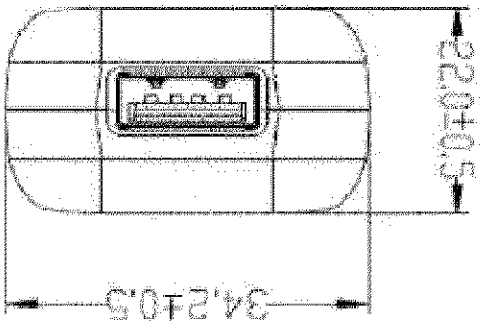
1– HOLE IN FLAT BLADE IS OPTIONAL, AND IT IS INTENDED FOR MANUFACTURING PURPOSES ONLY. HOWEVER IF USED IT MUST BE LOCATED AS PER DIMENSIONS SHOWN ABOVE.

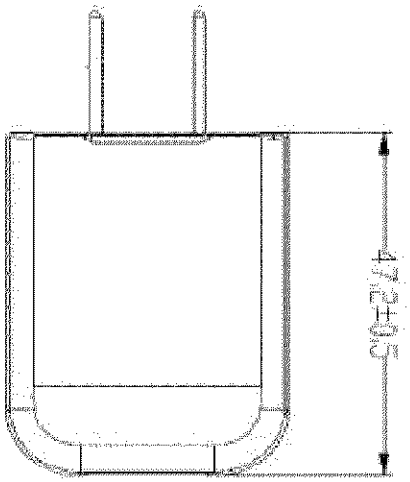

AC ADAPTER
Model: 6931
Item NO. :XXXXXX
S/N: YY-MM-XXXXX
Input:100-240V~
50/60Hz 0.4A
Output:5.0V⎓1000mA
c UL US LISTED
E473515
I.T.E POWER SUPPLY
EFFICIENCY LEVEL: V
FC
Made in China

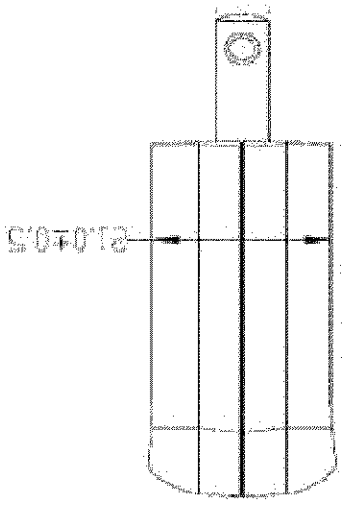

AC ADAPTER
Model: SA028
Item NO. : XXXXXX
S/N: YY-MM-XXXXX
Input:100-240V~
50/60Hz 0.4A
Output:5.0V⎓1000mA
c UL us LISTED
E473515
I.T.E POWER SUPPLY
EFFICIENCY LEVEL: V
Made in China





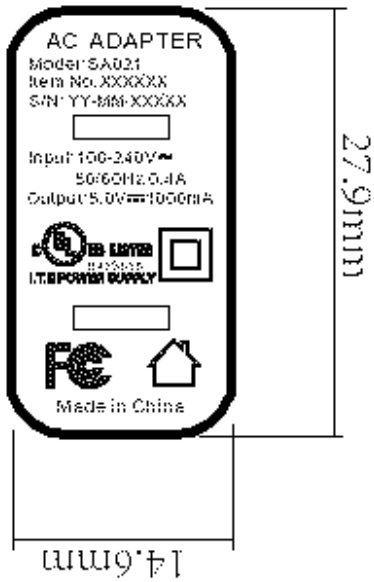

34.2±0.5
22.0±0.5


47.2±0.5


21.0±0.5

SA021 - 外置电源

2016.06.28



Test Record No. 1

Testing of SA028, 6931 were not considered necessary based upon previous evaluation under CB Scheme.
The CB Scheme IEC60950 Test Certificate no. DK-46906-UL and Report Ref. No. 15PNC06085 01001, dated 2015-07-03 were prepared by UL Demko.
CB certificate was issued by UL Demko, Borupvang 5A DK-2750 Ballerup, DENMARK, submitted via the CB Scheme.

The following tests were waived:

Test	Rationale for Waiving
Guide Information Page - Maximum Output Voltage, Current, and Volt Ampere Measurement (1.2.2.1)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Input: Single-Phase (1.6.2)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Durability of Marking (1.7.11)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Limited Power Source Measurements (2.5)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Humidity (2.9.1, 2.9.2, 5.2.2)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Steady Force (4.2.1 - 4.2.4)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Drop (4.2.6, 4.2.1)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Stress Relief (4.2.7, 4.2.1)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Direct Plug-In Equipment-Moment (4.3.6)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Direct Plug-In Blade Securement (4.3.6)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Direct Plug-In Security of Input Contacts (4.3.6)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Direct Plug-In Resistance to Crushing (4.3.6)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Direct Plug-In Rod Pressure (4.3.6)	Tests were based on CB report 15PNC06085 01001 and CB

	certificate DK-46906-UL
Heating (4.5.1, 1.4.12, 1.4.13)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Ball Pressure (4.5.5, 4.5)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Electric Strength (5.2.2)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Component Failure (5.3.1, 5.3.4, 5.3.7)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL
Power Supply Output Short-Circuit/Overload (5.3.7)	Tests were based on CB report 15PNC06085 01001 and CB certificate DK-46906-UL

Test Record No. 2

The manufacturer submitted representative production samples of AC Adapter, Model SA021 for investigation.

- For the tests WEIGHT AND MOMENT DETERMINATION: (DIRECT PLUG-IN UNIT) in the datasheet, conducted in accordance with UL1310 according UL 60950 PAG and indicated that the tests and evaluation are acceptable by UL1310 according UL 60950 PAG.

- Unless otherwise indicated, all tests were conducted by Dongguan UTL Electronic Technology Co Ltd under DAP (WTDP) Program.

- Unless otherwise indicated, only limited tests were conducted on Model SA021.

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

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Power Supply Reference Page	
Humidity (2.9.1, 2.9.2, 5.2.2)	
Steady Force (4.2.1 - 4.2.4)	
Drop (4.2.6, 4.2.1)	
Stress Relief (4.2.7, 4.2.1)	
Direct Plug-In Equipment-Moment (4.3.6)	
Direct Plug-In Blade Securement (4.3.6)	
Direct Plug-In Security of Input Contacts (4.3.6)	
Direct Plug-In Resistance to Crushing (4.3.6)	
Direct Plug-In Rod Pressure (4.3.6)	
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)	

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 a part of this Test Record. NOTE: These supplements are only available to the Applicant via the CDA system.

Type	Supplement Id	Description
Attachment	2-01	CRD
Datasheet	2-02	Datasheet

Project No. 4787529511 File E473515 Page 1

Compliance Review Conducted by: Jack Huang (Printed Name) Jack Huang (Signature) Date 2016-07-10

CONSTRUCTION COMPLIANCE REVIEW RECORD

Sample Identification -

Sample Card No.	Date Received	Sample No.	Manufacturer, Product Identification and Ratings
4787529511	2016-07-05	A1	ShenZhen C-Star Electronic Tech. co., Ltd AC ADAPTER Model No.: SA021 Input rating: 100-240Vac, 50/60Hz, 0.4A Output rating: 5.0Vdc, 1.0A

[x] Indications of compliance apply to all samples identified with specific indications of compliance included for construction differences of the different samples.

Measurement Instrument Information -

Inst. ID No.	Instrument Type	Function/Range	Last Cal. Date	Next Cal. Date
US-015	Digital Caliper	0-150mm	2015-08-20	2016-08-19

[ ] UL measurement equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

[ ] Measurement instrument information is recorded on UL's Laboratory Project Management (LPM) database. (This statement may be selected only if CRD's are completed at UL facility)

[X] The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.
US-015	GUOGEN/0-150mm/ US-015/--

Project No. 4787529511 File E473515 Page 2

Compliance Review Conducted by: Jack Huang (Printed Name) Jack Huang (Signature) Date 2016-07-10

CONSTRUCTION COMPLIANCE REVIEW:

The sample was reviewed for compliance with the construction requirements in the following Standard and compliance with applicable construction requirements is noted below.

Standard	CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)	Edition/ Revision Date	2nd Edition/ 2014-10