

1.0 Reference and Address			
Report Number	220804085GZU-001	Original Issued: 30-Aug-2022	Revised: None
Standard(s)	Class 2 Power Units [UL 1310:2018 Ed.7+R:16Aug2019]		
	Power Supplies with Extra-Low-Voltage Class 2 Outputs (R2020) [CSA C22.2#223:2015 Ed.3]		
Applicant	Xiamen Innov Electronics Tech. Co., Ltd.	Manufacturer	Xiamen Innov Electronics Tech. Co., Ltd.
Address	1F/3F-5F, Bldg 5, No. 943, Tonglong 2nd Rd, Torch Hi-Tech Industrial Zone, Xiang'an, XIAMEN, Fujian	Address	1F/3F-5F, Bldg 5, No. 943, Tonglong 2nd Rd, Torch Hi-Tech Industrial Zone, Xiang'an, XIAMEN, Fujian
Country	CHINA	Country	CHINA
Contact	Weijie Tu	Contact	Weijie Tu
Phone	0592-7766227	Phone	0592-7766227
FAX	NA	FAX	NA
Email	iwtwfnso@126.com	Email	iwtwfnso@126.com

2.0 Product Description								
Product	Class 2 Power Supply							
Brand name	Invcy							
Description	The products covered by this report are direct plug-in Class 2 Power Supply, provided with non-polarized input blades and for Dry location use only.							
Models	IVP followed by 0300 to 3000; followed by -; followed by 0100 to 2000; may be followed by W.							
Model Similarity	IVPxxxx-yyyy represent model "IVP followed by 0300 to 3000; followed by -; followed by 0100 to 2000" in the report. IVPxxxx-yyyyW represent model "IVP followed by 0300 to 3000; followed by -; followed by 0100 to 2000; followed by W" in the report. xxxx can be 0300 to 3000, represent output voltage from 3.0Vdc to 30.0Vdc, interval 0.1Vdc; yyyy can be 0100 to 2000, represent output current from 0.10A to 2.00A, interval 0.01A; All models are similar except for the case type, PCB layout, transformer type, secondary circuit schematic and rating of some components (EC4, EC5, R3, R4, R5, R6) in circuit to adjust output current. For PCB layout models PCB-T984, PCB-T985, PCB-T484-K: Components inductance L2 is optional. For all mdoels: Component U1+C6 and D7A can be replaced by each other. For all mdoels: The output connector is optional.							
Ratings	Model	Input	Output			PCB layout	Case type	Transformer type
			Voltage	Current (A)	Wattage (Max. W)			
	IVPxxxx-yyyyW	100-240V~, 50/60Hz, 0.5A	3.0-11.9	0.10-2.00	12.6	PCB-T594-K	A	0201-0639
			12.0-30.0	0.10-1.05	12.6			0201-0640
			3.0-11.9	0.10-2.00	12.6	PCB-T984	B	0201-0639
			12.0-30.0	0.10-1.05	12.6			0201-0640
			3.0-11.9	0.10-2.00	12.6	PCB-T985	C	0201-0639
			12.0-30.0	0.10-1.05	12.6			0201-0640
	IVPxxxx-yyyy		3.0-11.9	0.10-2.00	12.6	PCB-T484-K	D	0201-0639
			12.0-30.0	0.10-1.05	12.6			0201-0640
Other Ratings	NA							

3.0 Product Photographs

Photo 1 - External view for case type A



Photo 2 - External view for case type A



3.0 Product Photographs

Photo 3 - Internal view for case type A



Photo 4 - PCB view for PCB layout PCB-T594-K (Line choke L1: 0510-102K)



3.0 Product Photographs

Photo 5 - PCB view with D7A (without U1+C6), for PCB layout PCB-T594-K

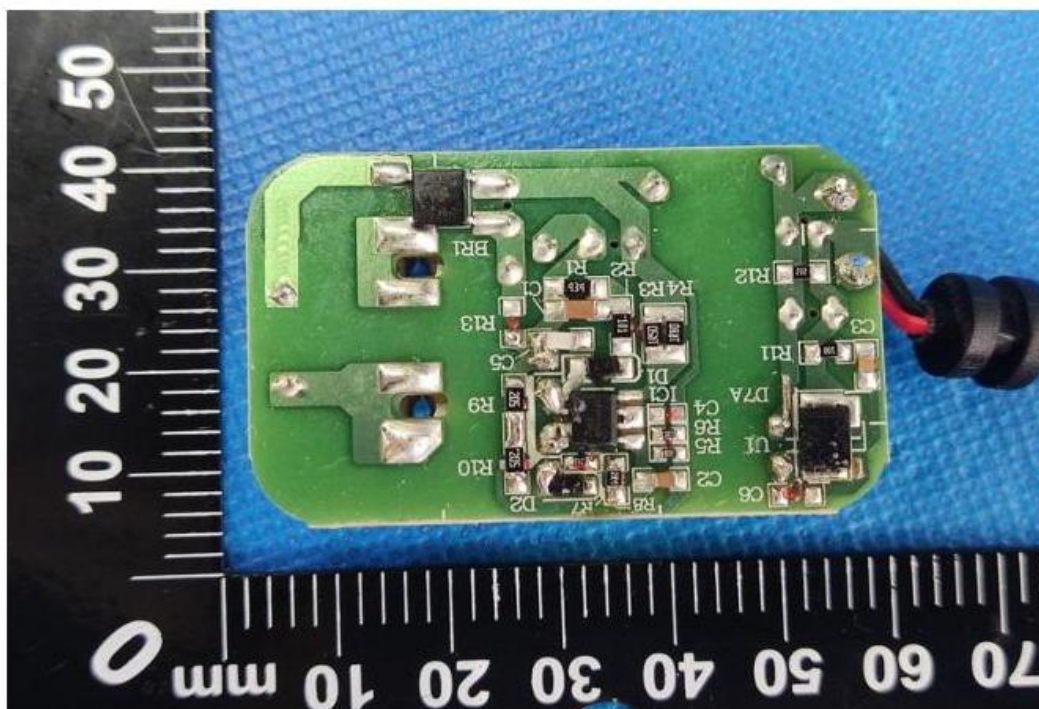
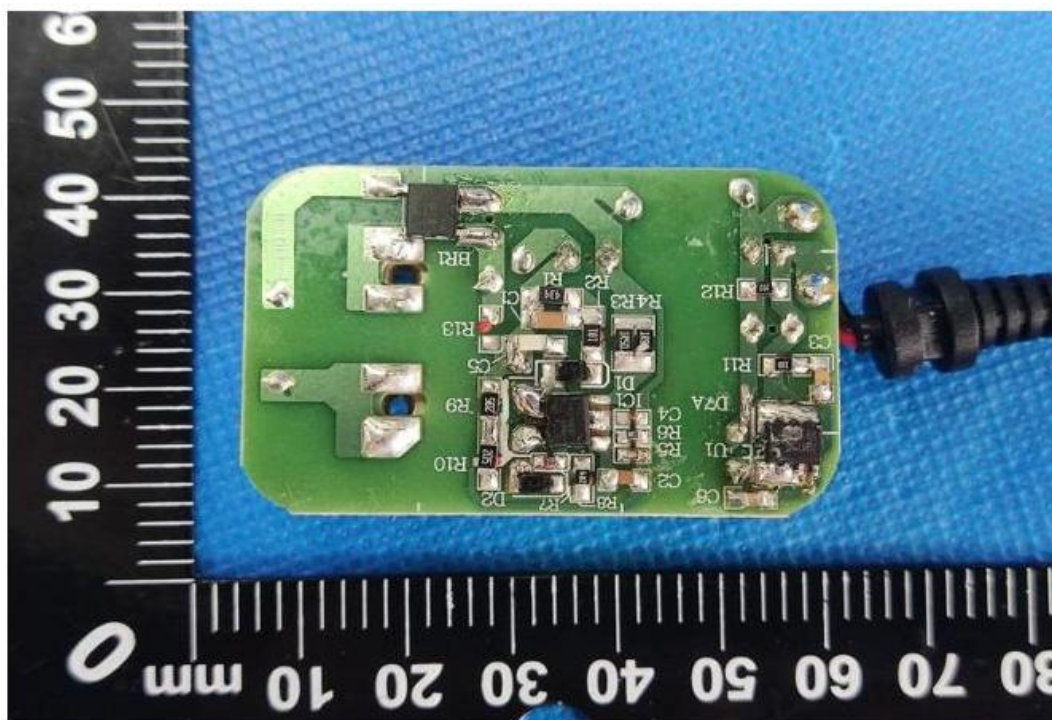


Photo 6 - PCB view with U1+C6 (without D7A), for PCB layout PCB-T594-K

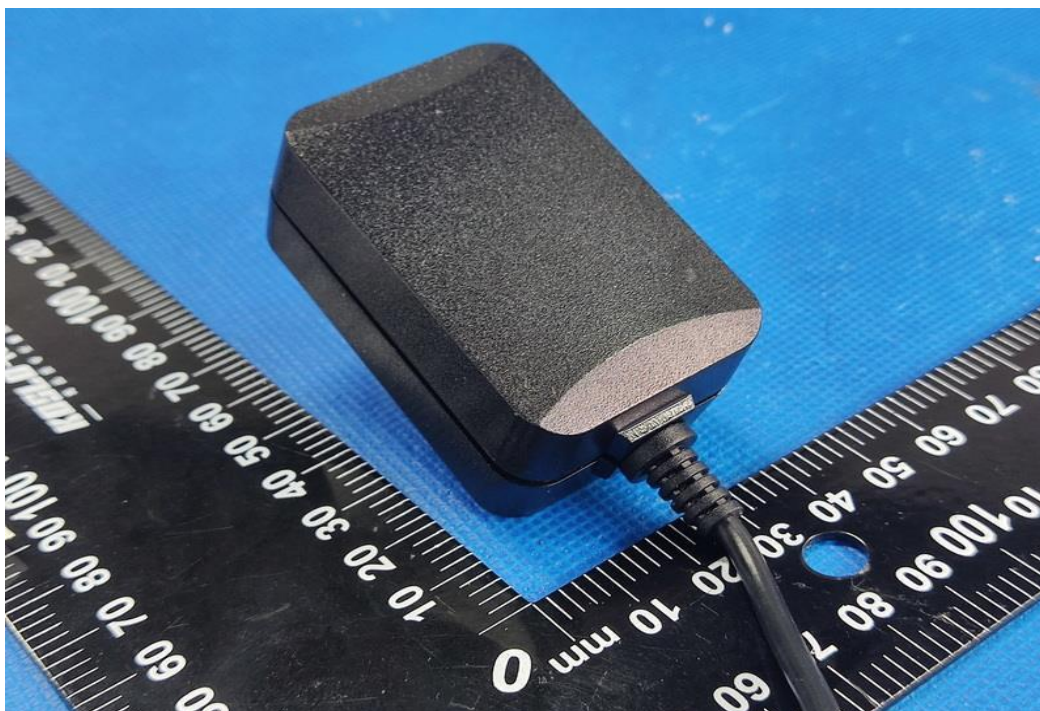


3.0 Product Photographs

Photo 7 - External view for case type B



Photo 8 - External view for case type B



3.0 Product Photographs

Photo 9 - Internal view for case type B



Photo 10 - PCB view without L2, for PCB layout PCB-T984 (Line choke L1: 0510-102K)



3.0 Product Photographs

Photo 11 - PCB view with L2, for PCB layout PCB-T984 (Line choke L1: 0510-102K)



Photo 12 - PCB view without L2, for PCB layout PCB-T984 (Line choke L1: 0501-0027)

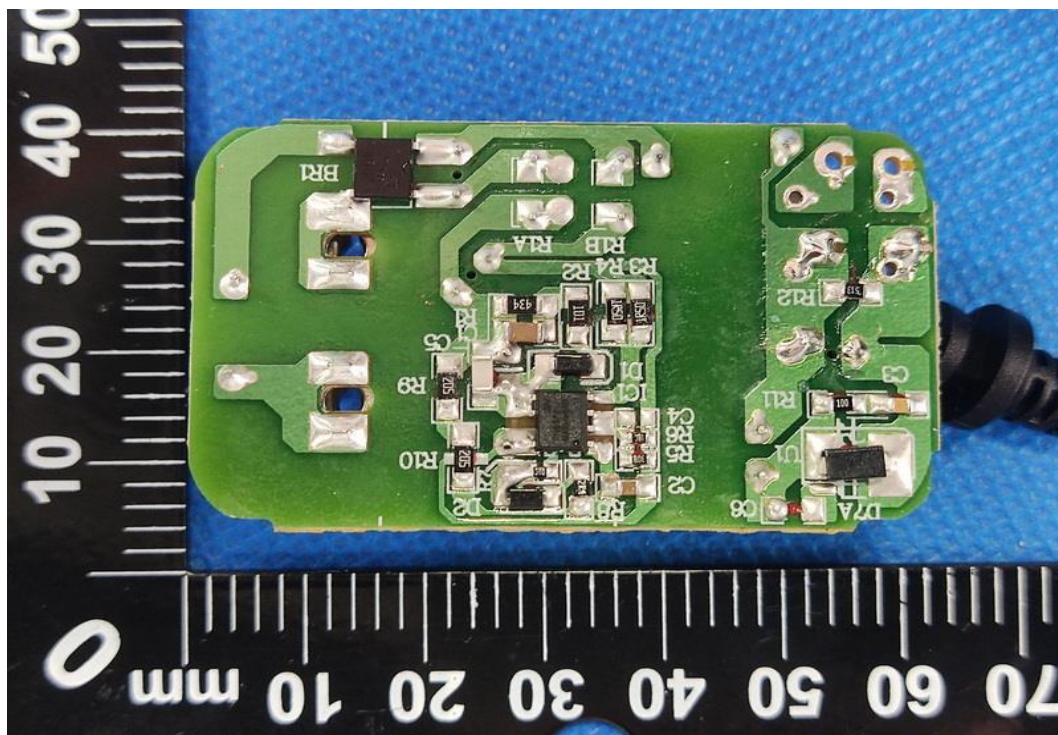


3.0 Product Photographs

Photo 13 - PCB view with L2, for PCB layout PCB-T984 (Line choke L1: 0501-0027)



Photo 14 - PCB view with D7A (without U1+C6), for PCB layout PCB-T984



3.0 Product Photographs

Photo 15 - PCB view with U1+C6 (without D7A), for PCB layout PCB-T984

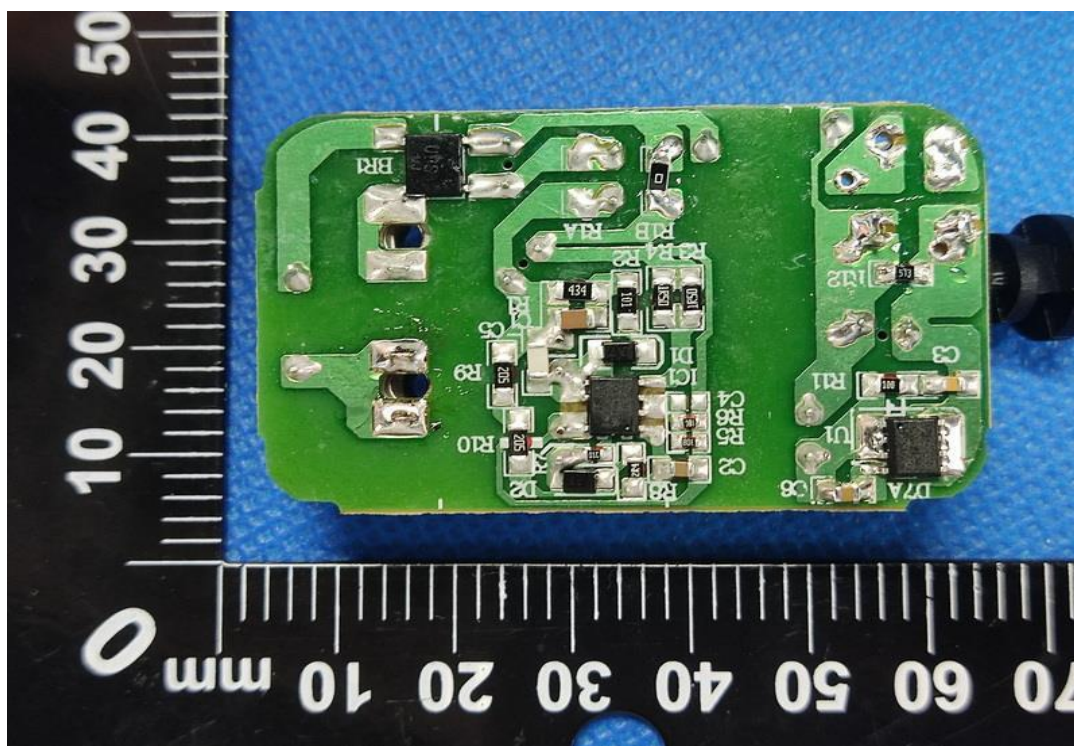


Photo 16 - External view for case type C



3.0 Product Photographs

Photo 17 - External view for case type C

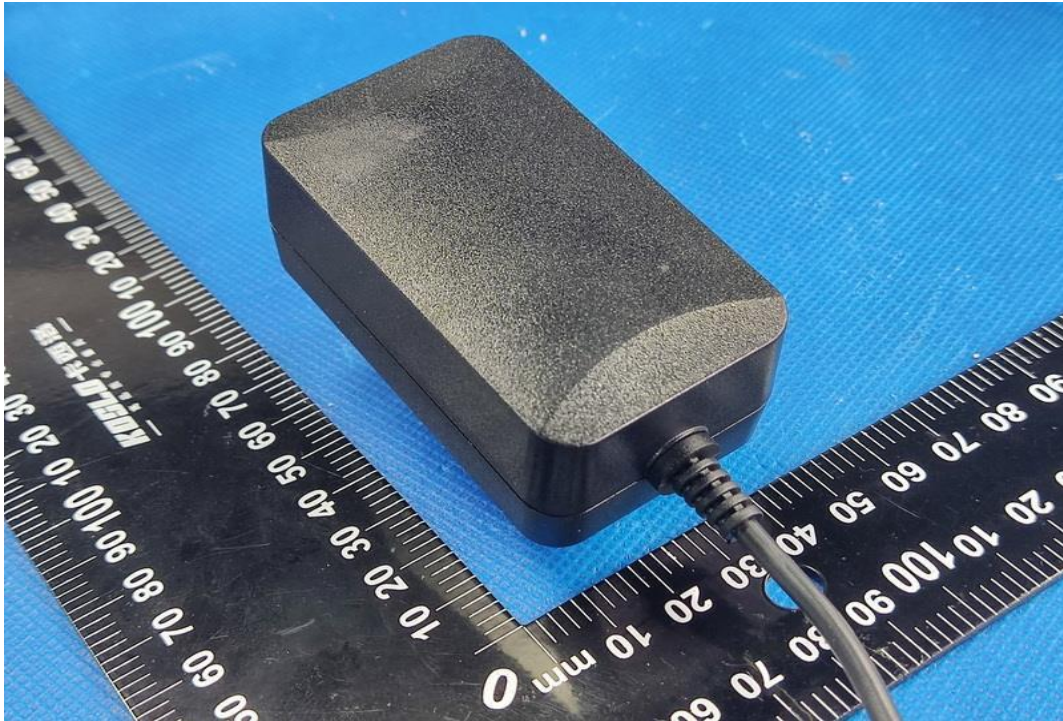


Photo 18 - Internal view for case type C



3.0 Product Photographs

Photo 19 - PCB view without L2, for PCB layout PCB-T985 (Line choke L1: 0510-102K)

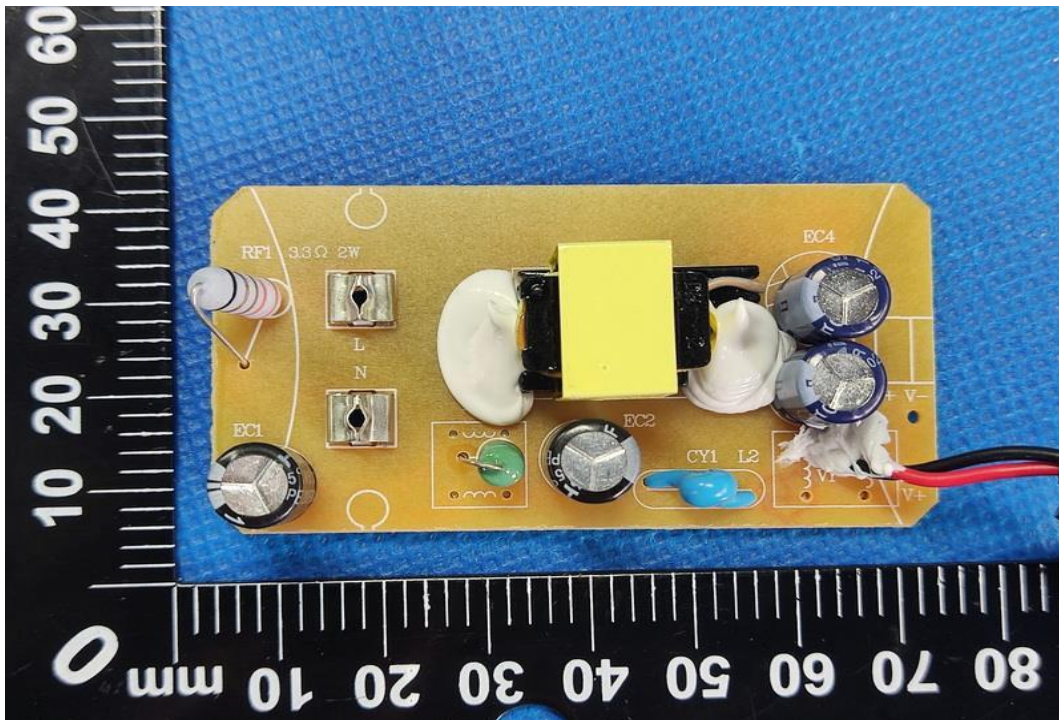
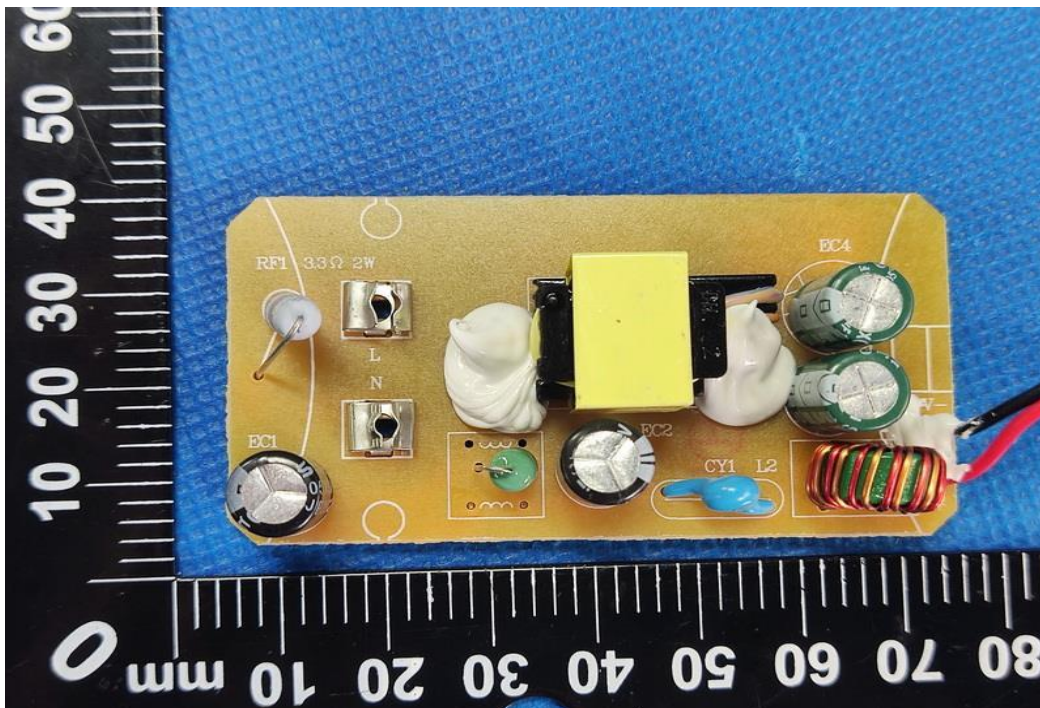


Photo 20 - PCB view with L2, for PCB layout PCB-T985 (Line choke L1: 0510-102K)



3.0 Product Photographs

Photo 21 - PCB view without L2, for PCB layout PCB-T985 (Line choke L1: 0501-0027)

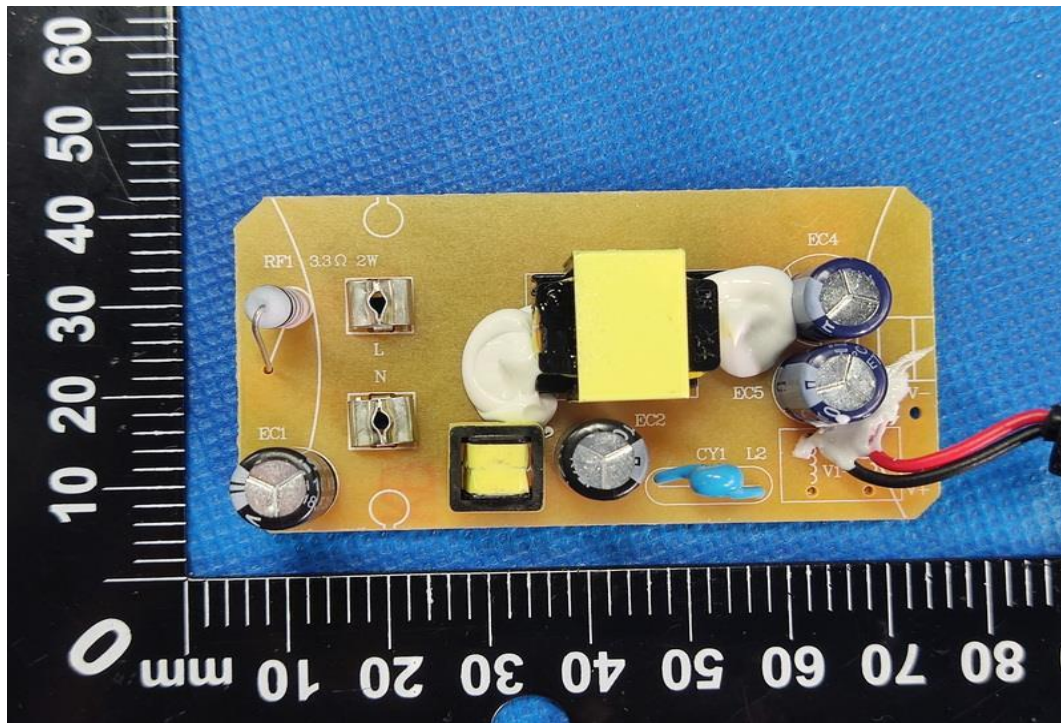
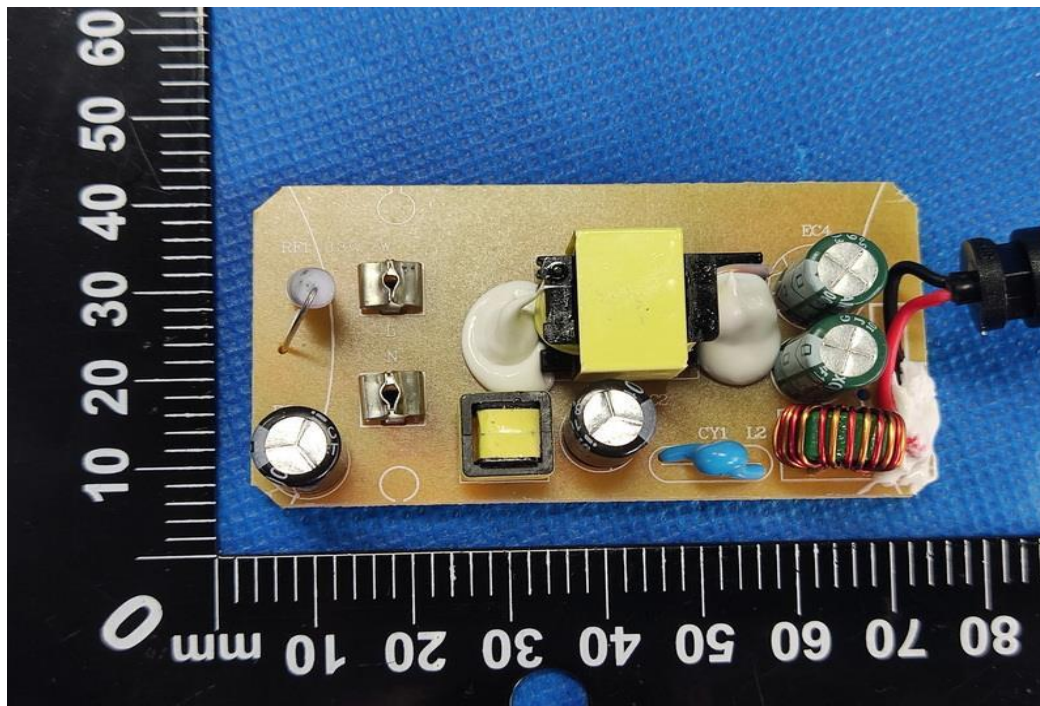


Photo 22 - PCB view with L2, for PCB layout PCB-T985 (Line choke L1: 0501-0027)



3.0 Product Photographs

Photo 23 - PCB view with D7A (without U1+C6), for PCB layout PCB-T985

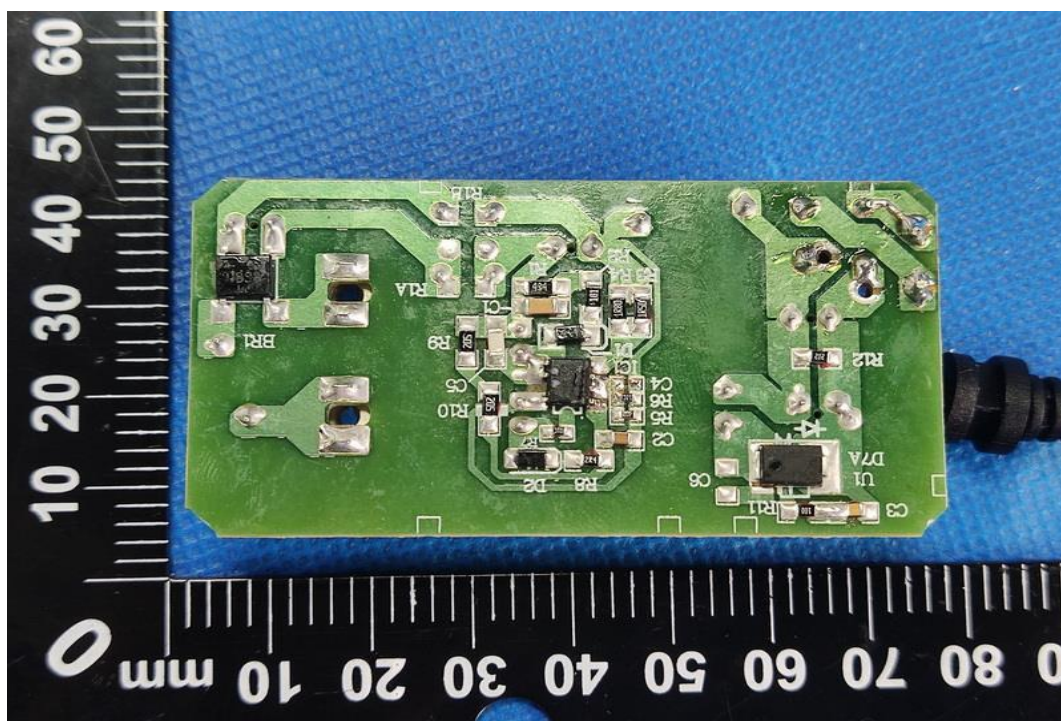
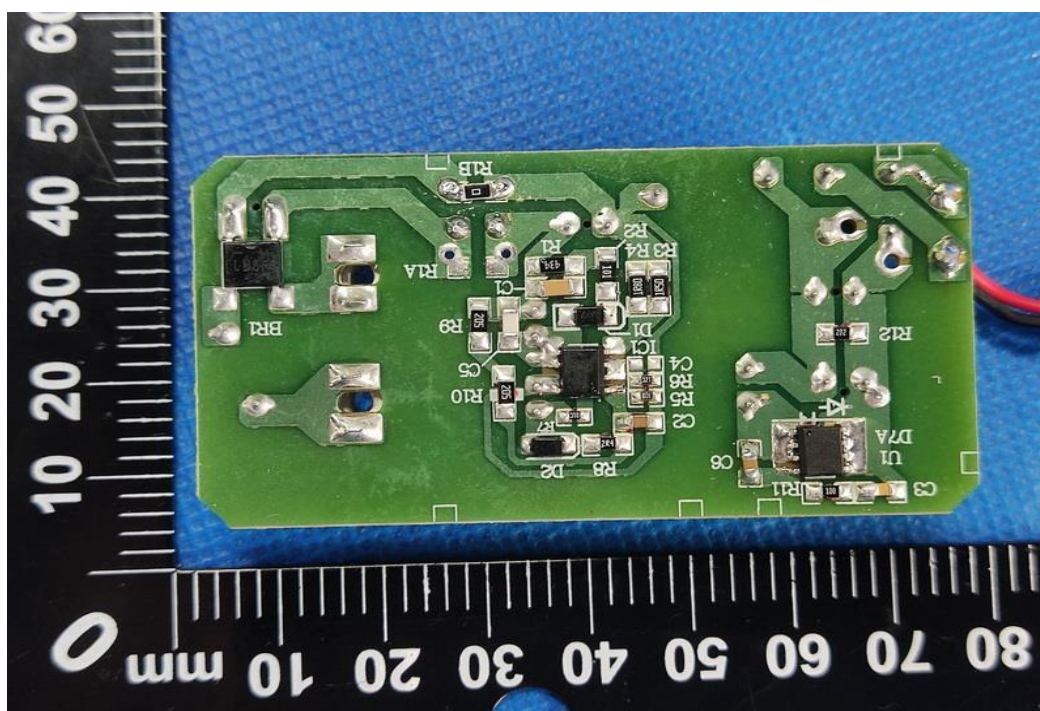


Photo 24 - PCB view with U1+C6 (without D7A), for PCB layout PCB-T985

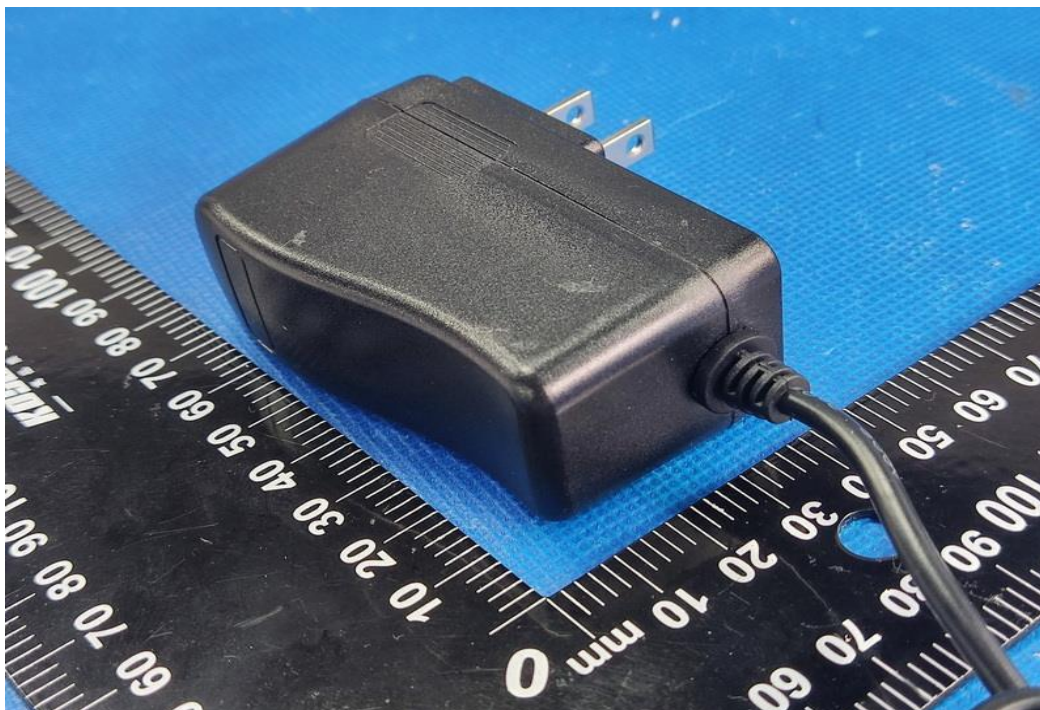


3.0 Product Photographs

Photo 25 - External view for case type D



Photo 26 - External view for case type D

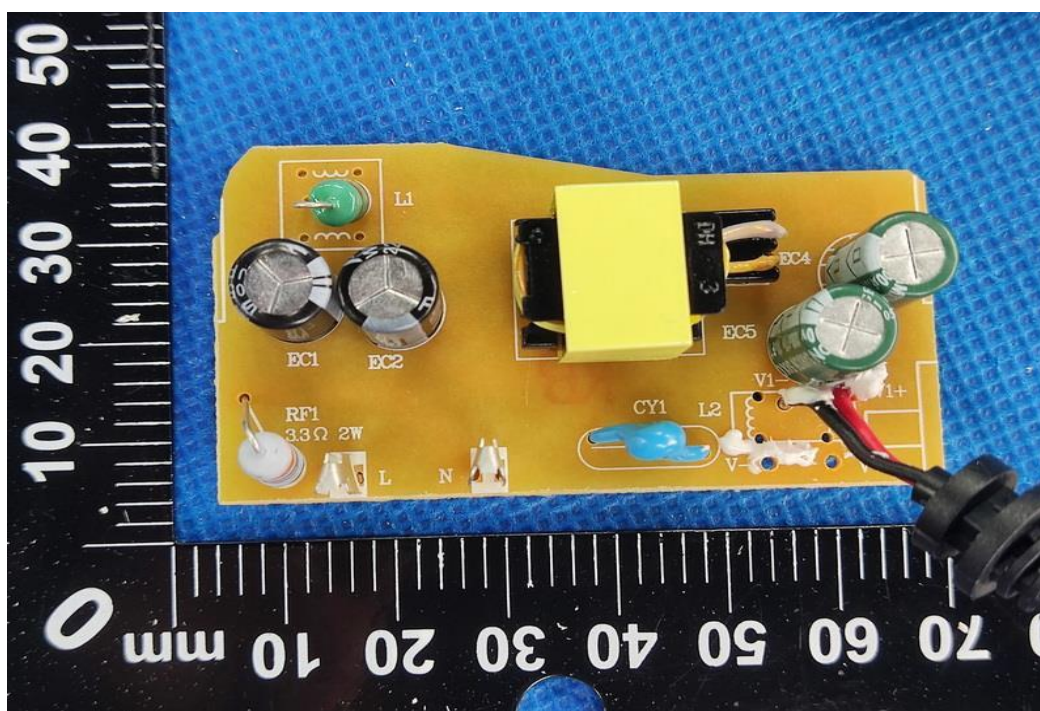


3.0 Product Photographs

Photo 27 - External view for case type D



Photo 28 - PCB view without L2, for PCB layout PCB-T484-K (Line choke L1: 0510-102K)



3.0 Product Photographs

Photo 29 - PCB view with L2, for PCB layout PCB-T484-K (Line choke L1: 0510-102K)

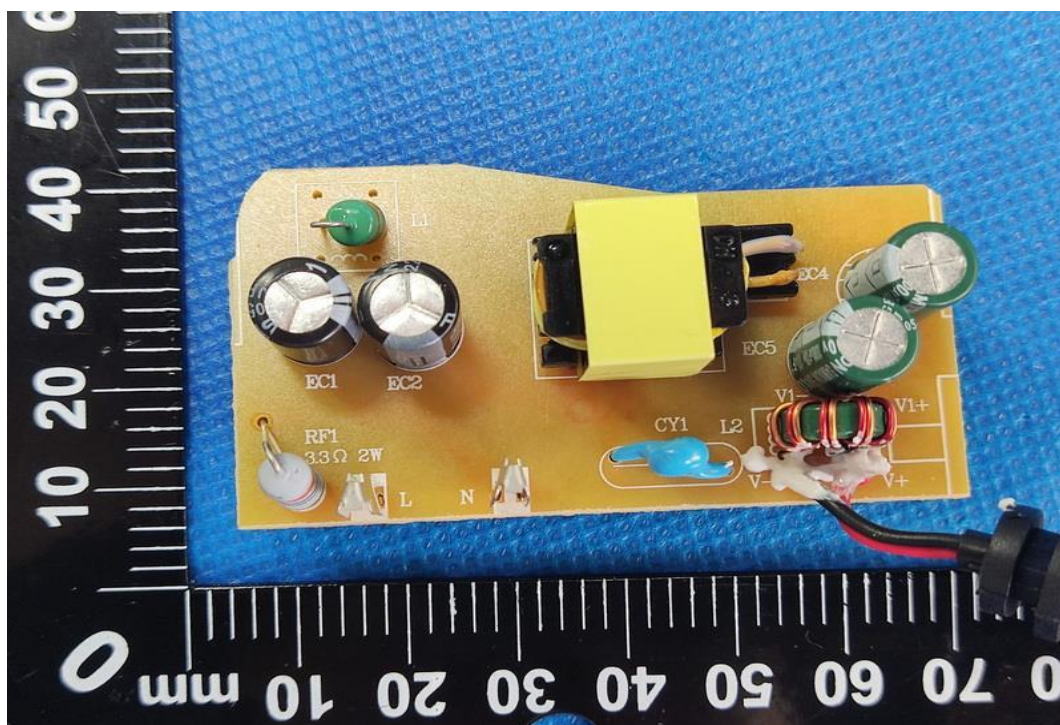
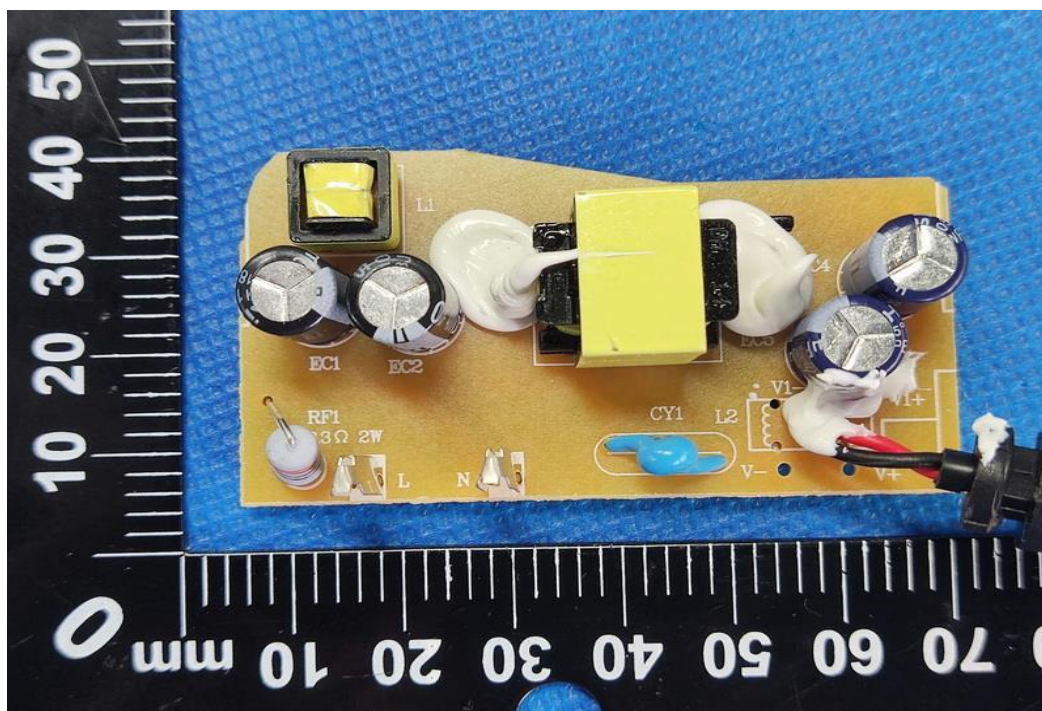


Photo 30 - PCB view without L2, for PCB layout PCB-T484-K (Line choke L1: 0501-0027)



3.0 Product Photographs

Photo 31 - PCB view with L2, for PCB layout PCB-T484-K (Line choke L1: 0501-0027)

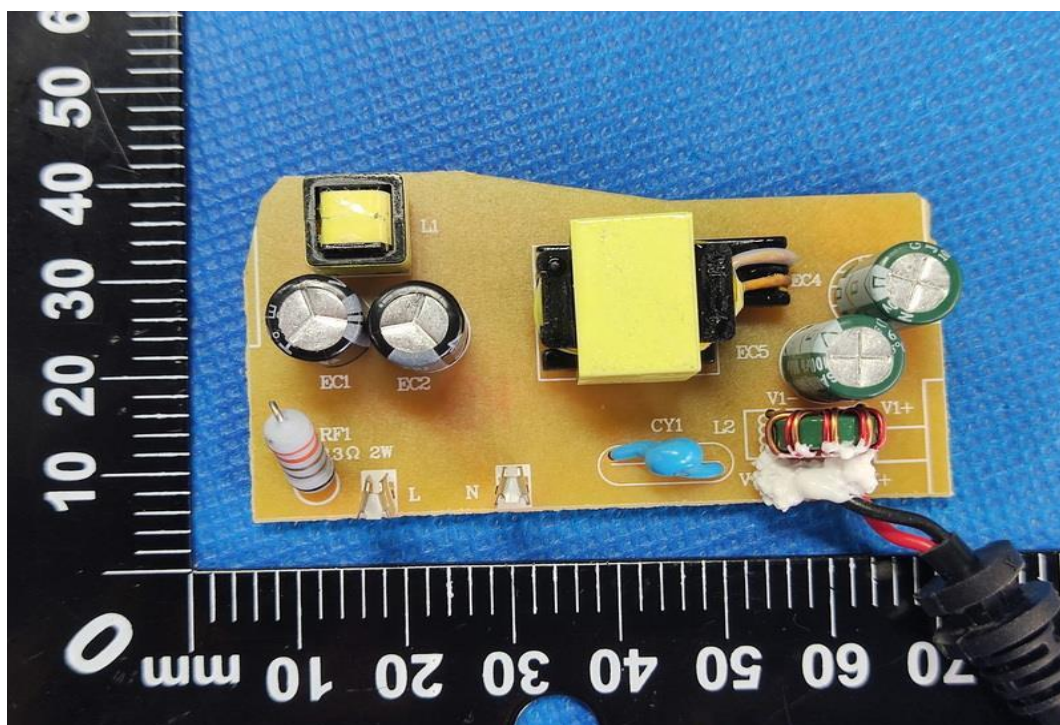
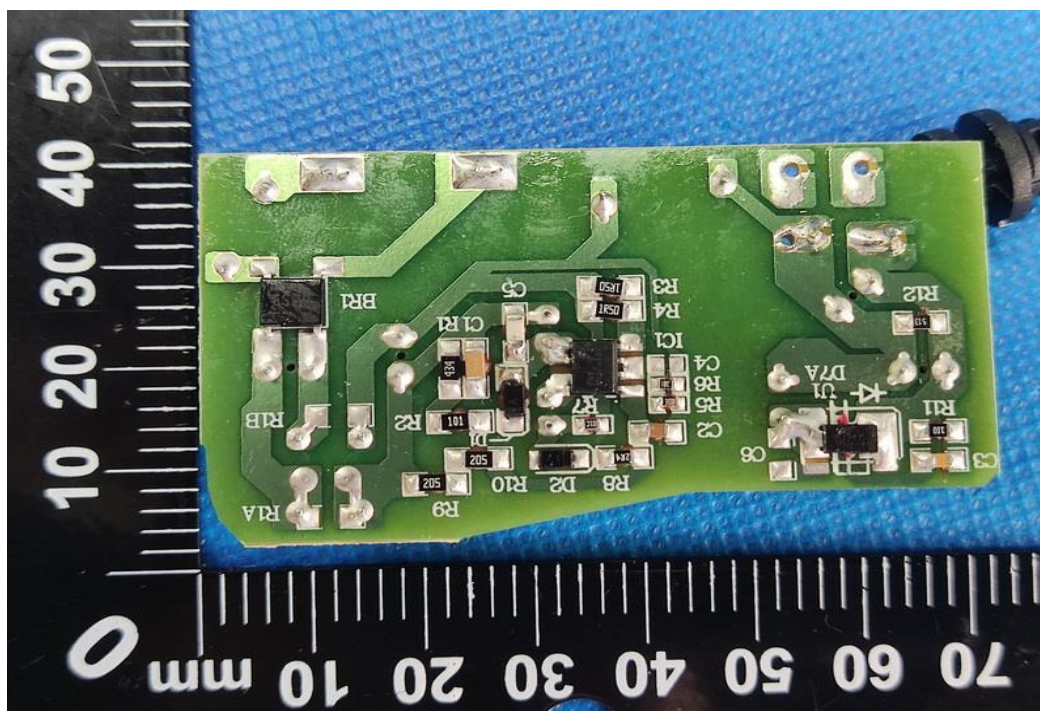


Photo 32 - PCB view with D7A (without U1+C6), for PCB layout PCB-T484-K



3.0 Product Photographs

Photo 33 - PCB view with U1+C6 (without D7A), for PCB layout PCB-T484-K

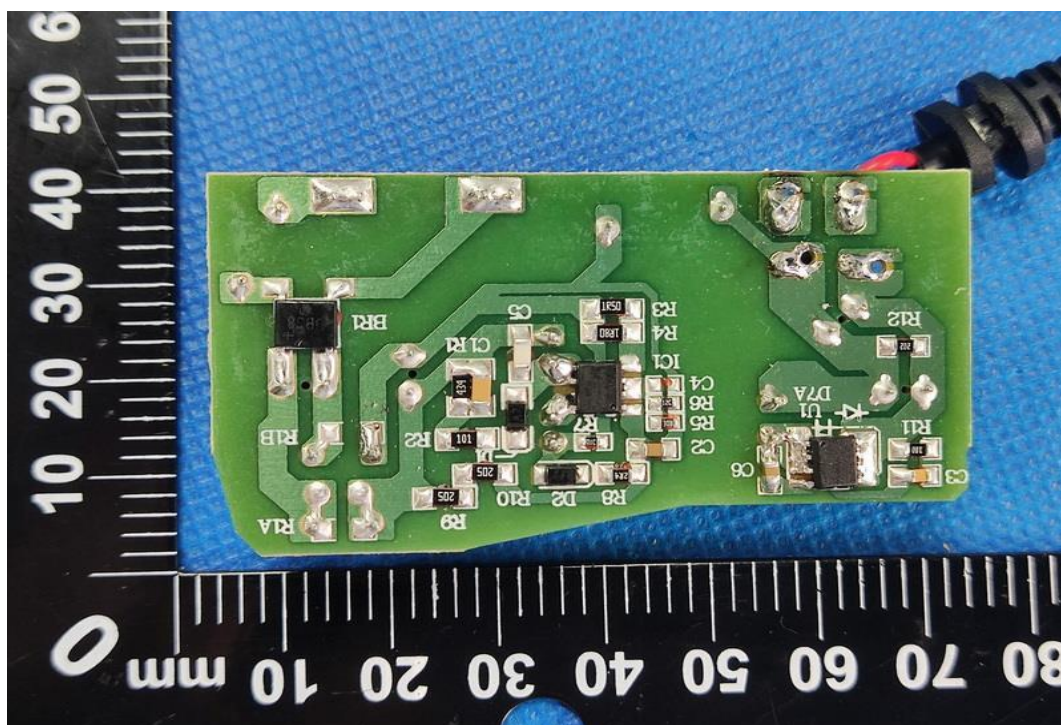
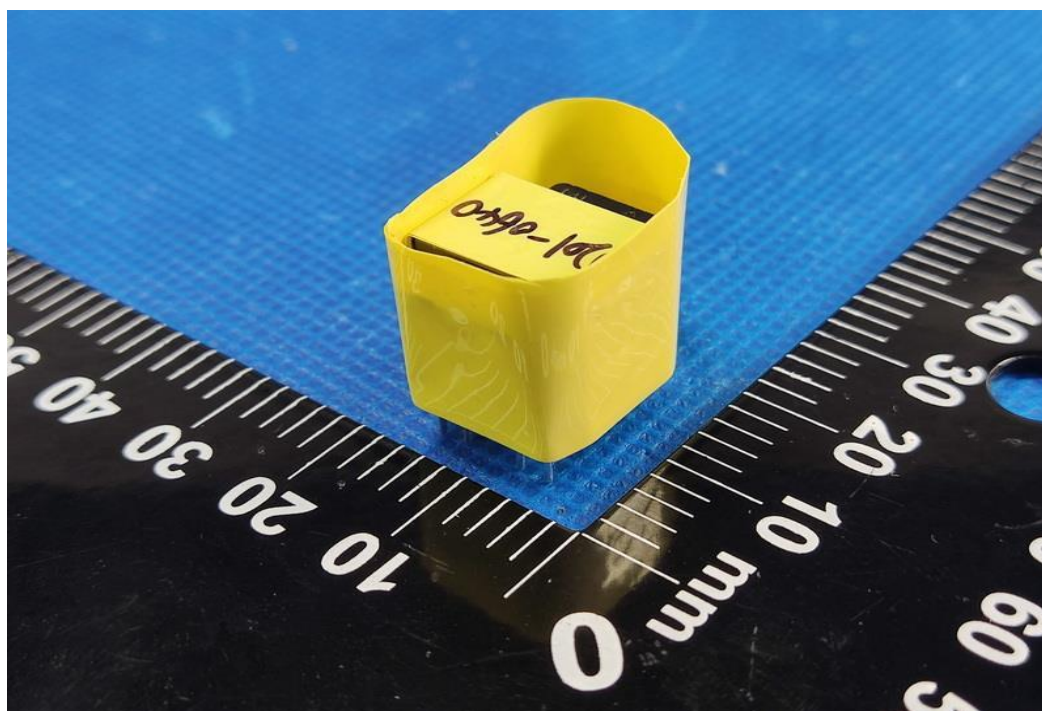


Photo 34 - Transformer view for PCB layout PCB-T594-K and PCB-T984



3.0 Product Photographs

Photo 35 - Transformer view for PCB layout PCB-T594-K and PCB-T984

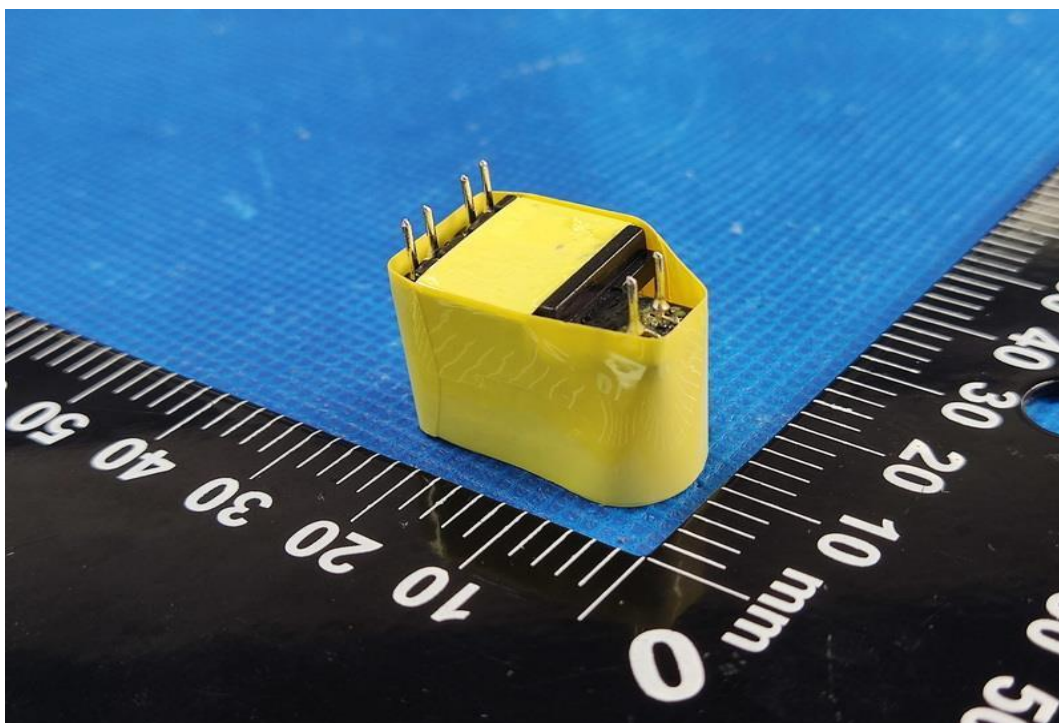
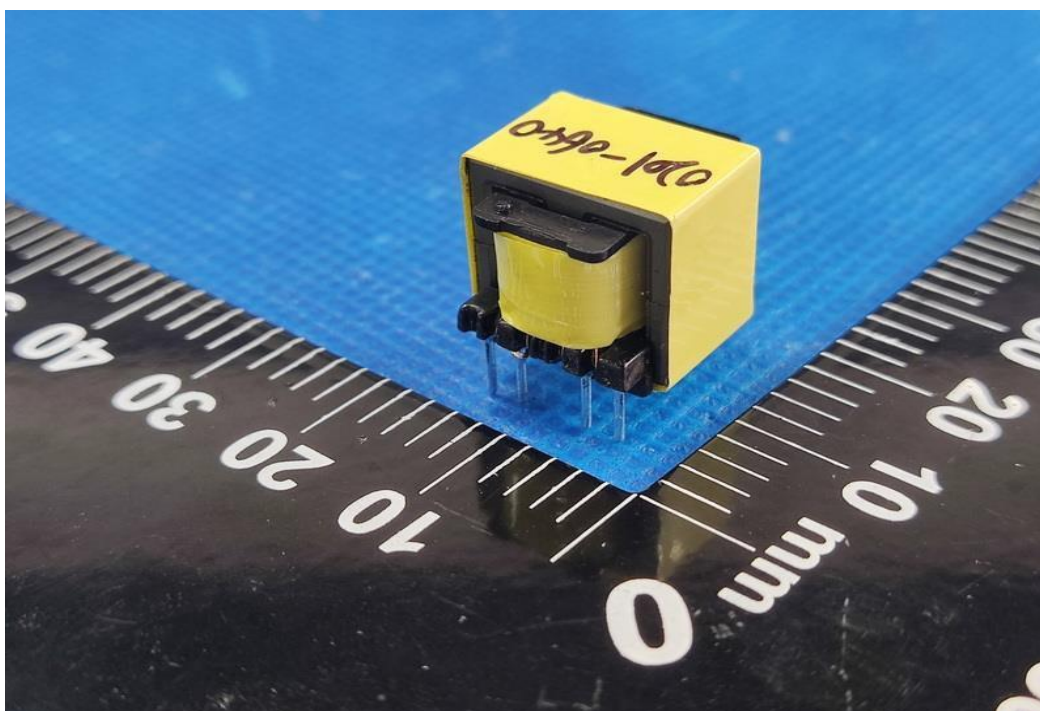


Photo 36 - Transformer view for PCB layout PCB-T985 and PCB-T484-K



3.0 Product Photographs

Photo 37 - Transformer view for PCB layout PCB-T985 and PCB-T484-K

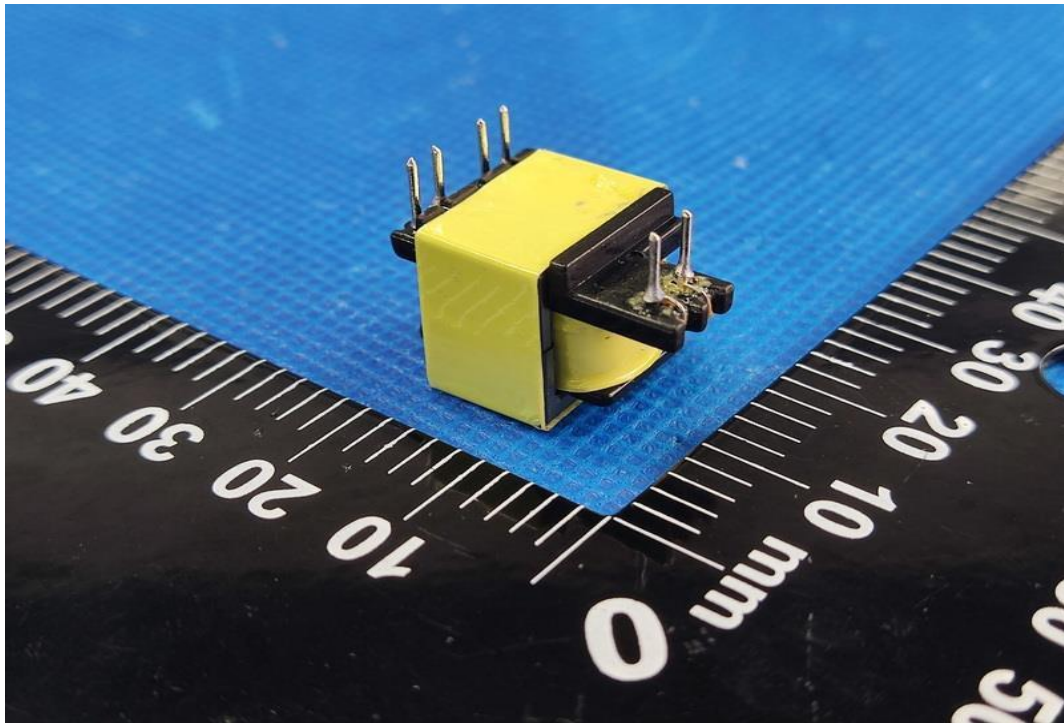
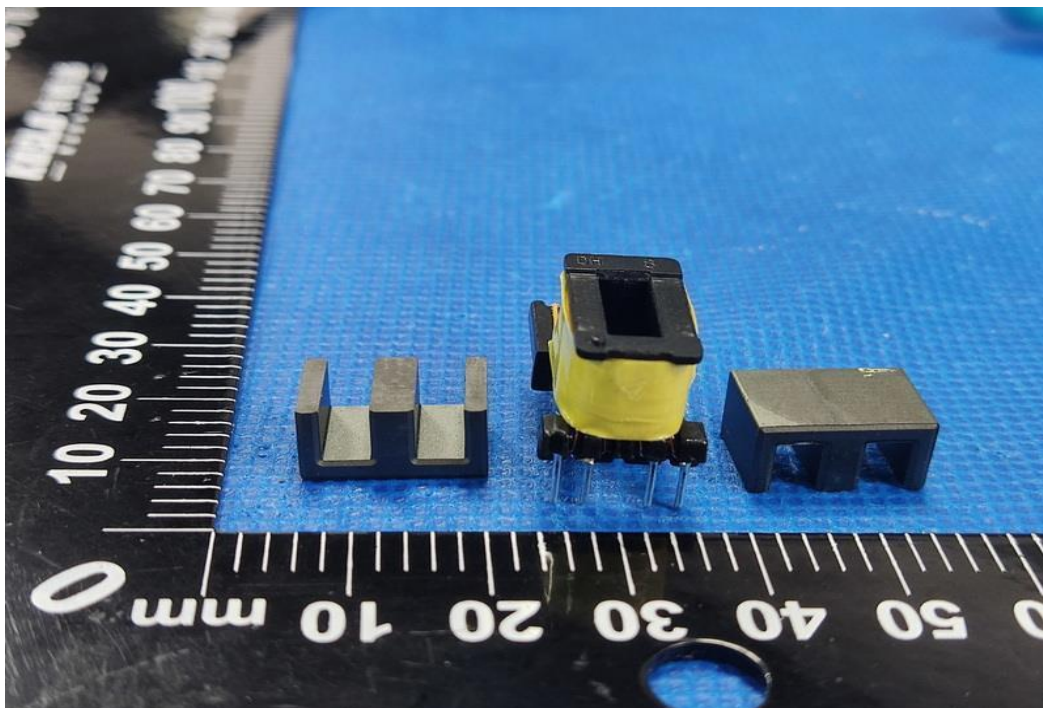


Photo 38 - Transformer view



3.0 Product Photographs

Photo 39 - Transformer view for transformer type 0201-0640

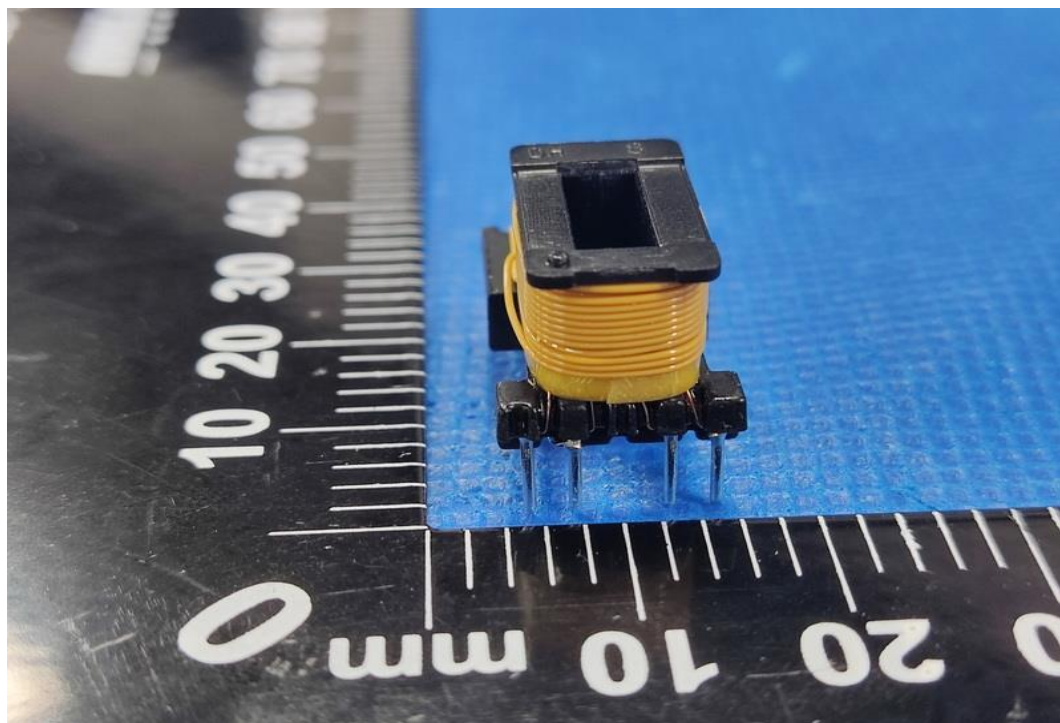
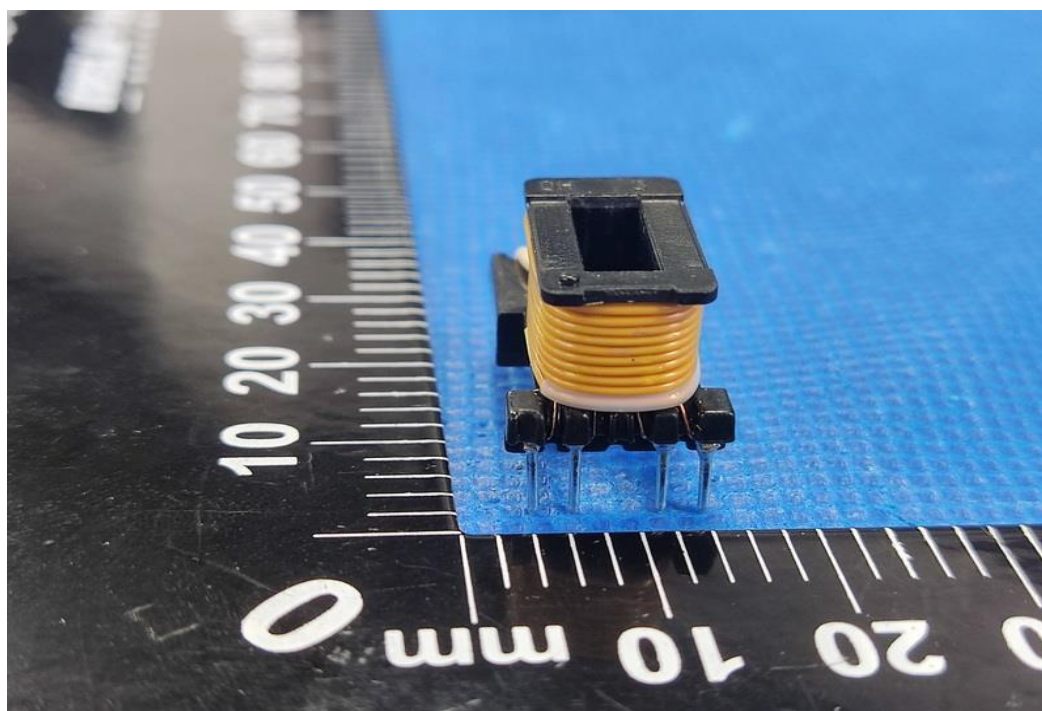


Photo 40 - Transformer view for transformer type 0201-0639



3.0 Product Photographs

Photo 41 - Transformer view

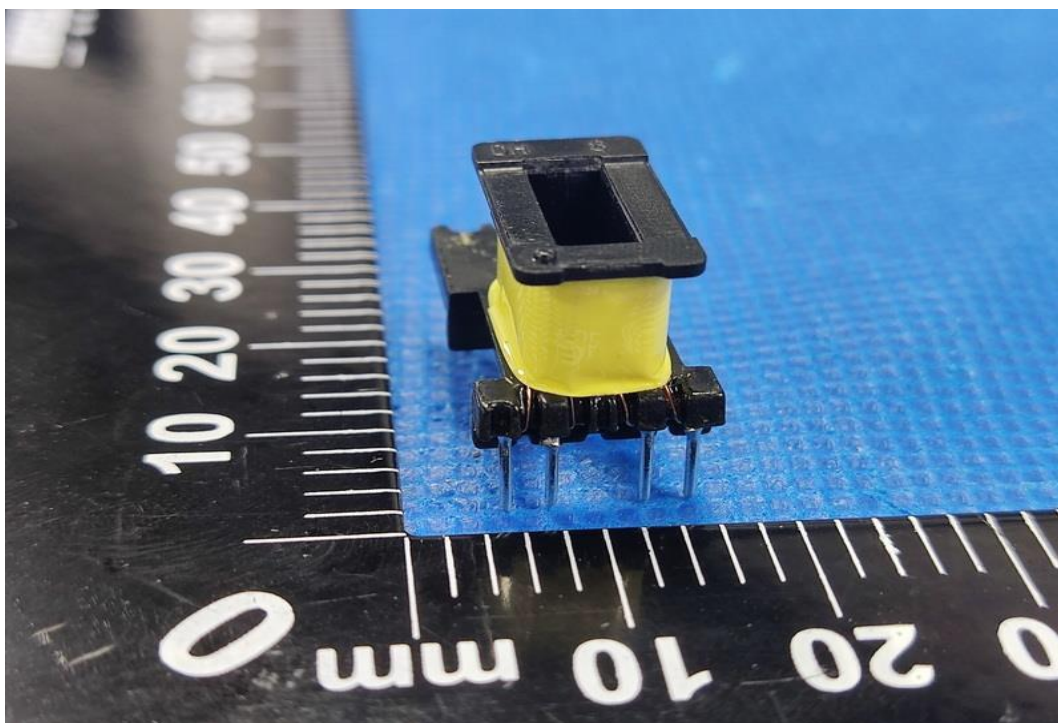
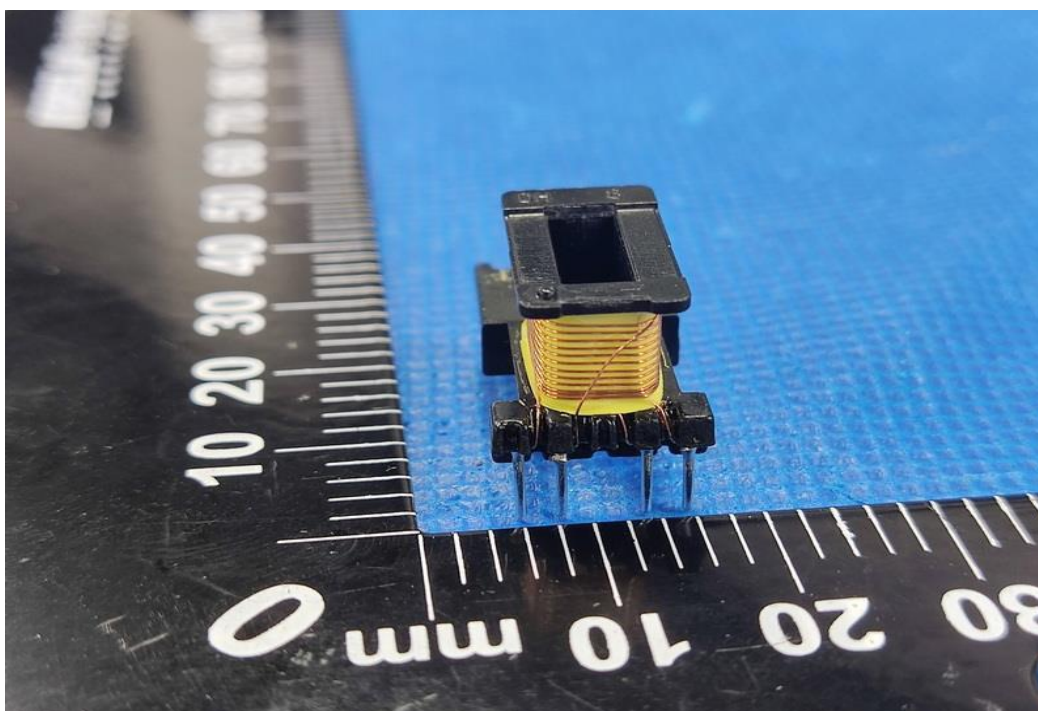
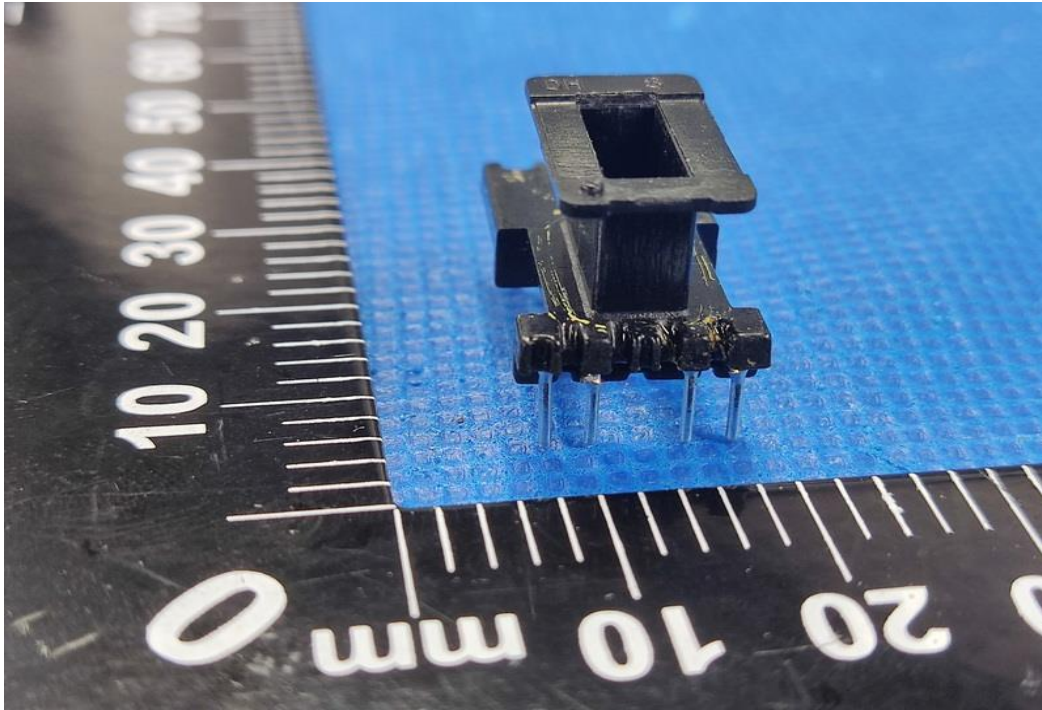


Photo 42 - Transformer view



3.0 Product Photographs

Photo 43 - Transformer view



4.0 Critical Components						
Photo #	Item no. ¹	Name	Manufacturer / trademark ²	Type / model ²	Technical data and securement means	Mark(s) of conformity ³
1	1	Plastic enclosure	MITSUBISHI ENGINEERING-PLASTICS CORP	EMT3100+ (f1)	PC, V-0, 115°C, min. 1.5 mm thickness. Secured by ultrasonic welding method. (f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.	cURus
1	2	Blade	Various	Various	Non-polarized type. Copper or alloy copper, stainless steel material, size refer to Illustration 1, 1a, 1b, 1c.	NR
3	2a	Contact	Various	Various	Copper or alloy copper, Stainless steel material, min. 0.30mm thick.	NR
1	3	Output wire	Various	2464	Min. 80°C, min. 300V, VW-1, min. 24AWG, min. 1800 mm length. Conductor Insulation not less than 0.33 mm thick.	cURus or cETLus Recognized
				2468		
				Various		
4	4	Fusible resistor	SHENZHEN GREAT ELECTRONIC S CO LTD	RXF-2W Series	3.3ohm, 2WS.	cURus
			JIEYANG MADEFORCE ELECTRONIC CO LTD	RX21-2W	3.3ohm, 2WS.	cURus
4	5	Y capacitor (Optional)	Various	Various	Min. 250 V, max. 1000pF, 125 °C, Y1 type	cURus
4	6	PCB	Various	Various	Single layer print wiring board, V-0, 130°C, with min. 1.0 mm thick. Comply with UL 796.	cURus
4	7	Transformer-1	Xiamen Haohehan Magnetolectric Technology Co Ltd	0201-0639	Input:100-240Vac Output: 3.0-11.9Vdc. Included item 7a class B insulation system. It consist of bobbin, Enameled Wire(as primary winding), Triple Insulated Wire (as secondary), tapes, tubing. See Illustration No. 4 for details.	NR
4	7a	Insulation system (not shown)	Xiamen Haohehan Magnetolectric Technology	HAIM-18.1	Class 130.	cURus
4	8	Transformer-2 (not shown)	Xiamen Haohehan Magnetolectric Technology Co Ltd	0201-0640	Input:100-240Vac Output: 12.0-30.0Vdc. Included item 7a class B insulation system. It consist of bobbin, Enameled Wire(as primary winding), Triple Insulated Wire (as secondary), tapes, tubing. See Illustration No. 4 for details.	NR

4.0 Critical Components

Photo #	Item no. ¹	Name	Manufacturer / trademark ²	Type / model ²	Technical data and securement means	Mark(s) of conformity ³
4	9	Insulation tape	Various	Various	Polyester PET insulating tapes with acrylic adhesive, 130°C, min. 0.1mm. Covered the Transformer, only for Case type A and B models.	UR
1	10	Label (not shown)	Various	Various	Suitable for affixed on plastic surface, min. 80°C. comply with UL 969.	UR

NOTES:

- 1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.
- 2) "Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.
- 3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

5.0 Critical Unlisted CEC Components

No Unlisted CEC components are used in this report.

6.0 Critical Features

Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.

Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.

Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.

Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.

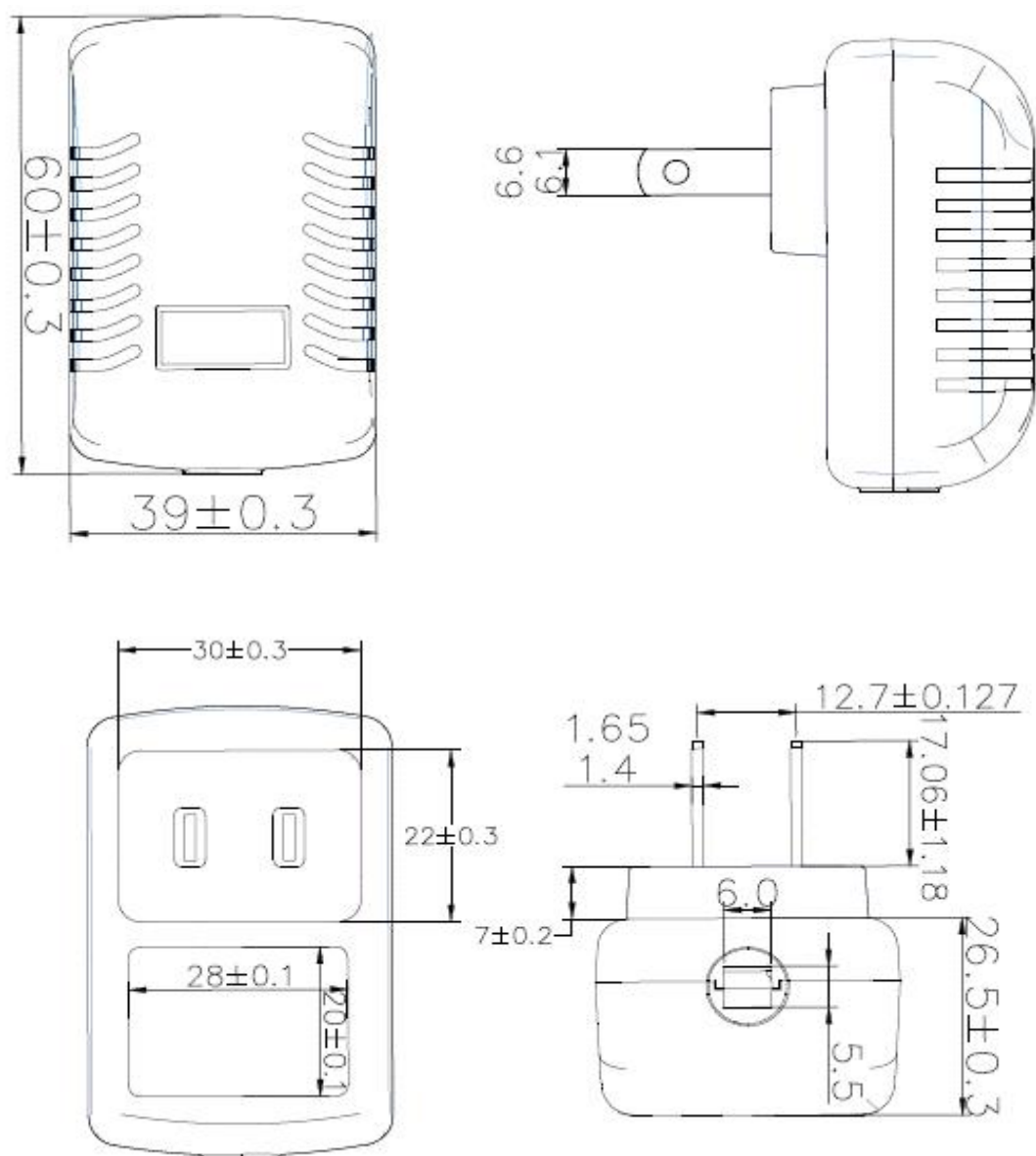
Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.

1. Spacing - In primary circuits, 4.8mm minimum (UL840) spacing are maintained through air and over surfaces of insulating material between current-carrying parts of opposite polarity and 4.8 mm minimum (UL840) between such current-carrying parts and low voltage isolated circuits.
2. Accessibility of Live Parts - All uninsulated live parts in primary circuitry are housed within a non-metallic enclosure constructed with no openings other than those specifically described in Sections 4 and 5.
3. Grounding - This product is not provided with a means of grounding as it is not required to be grounded since all live part are housed within a non-metallic enclosure.
4. Internal Wiring - Internal wiring is routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized Component separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets. All wiring refer to Sec. 4.0.
5. Schematics - Refer to Illustration No. 2, 2a, 2b, 3, 3a, 3b, 3c schematics and PCB layout requiring verification during Field Representative Inspection Audits schematics. Verify schematics and PCB layout are identical with product.
6. Markings - The product is marked on a labeling system as described in item No.10 of Section 4.0 or by laser etching on polymeric enclosure as follows:
 - Applicant's name or brand name
 - model name
 - date of manufacture
 - electrical ratings (volts, amperes & frequency)
 - Class 2 Power Supply
 - See instruction manual for use in countries other than the U.S.A.
7. Cautionary Markings - The following are required:
CAUTION DRY LOCATION USE ONLY. RISK OF ELECTRIC SHOCK. INDOOR USE ONLY.
ATTENTION ENDROIT SEC UTILISER UNIQUEMENT RISQUE DE CHOC ÉLECTRIQUE USAGE INTÉRIEUR SEULEMENT
Note: "CAUTION", "ATTENTION" with min. 3,2 mm high and others with min.1.6 mm high.
8. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. See Illustration No. 5 for details.
9. Transformer - Supplier records must be provided that indicate the received shipment of transformers (section 4.0, item 7 and 8) was constructed as indicated in Illustration No. 4. These records must be available at the factory for inspection on every received shipment.

7.0 Illustrations

Illustration 1 - Drawing (unit: mm)

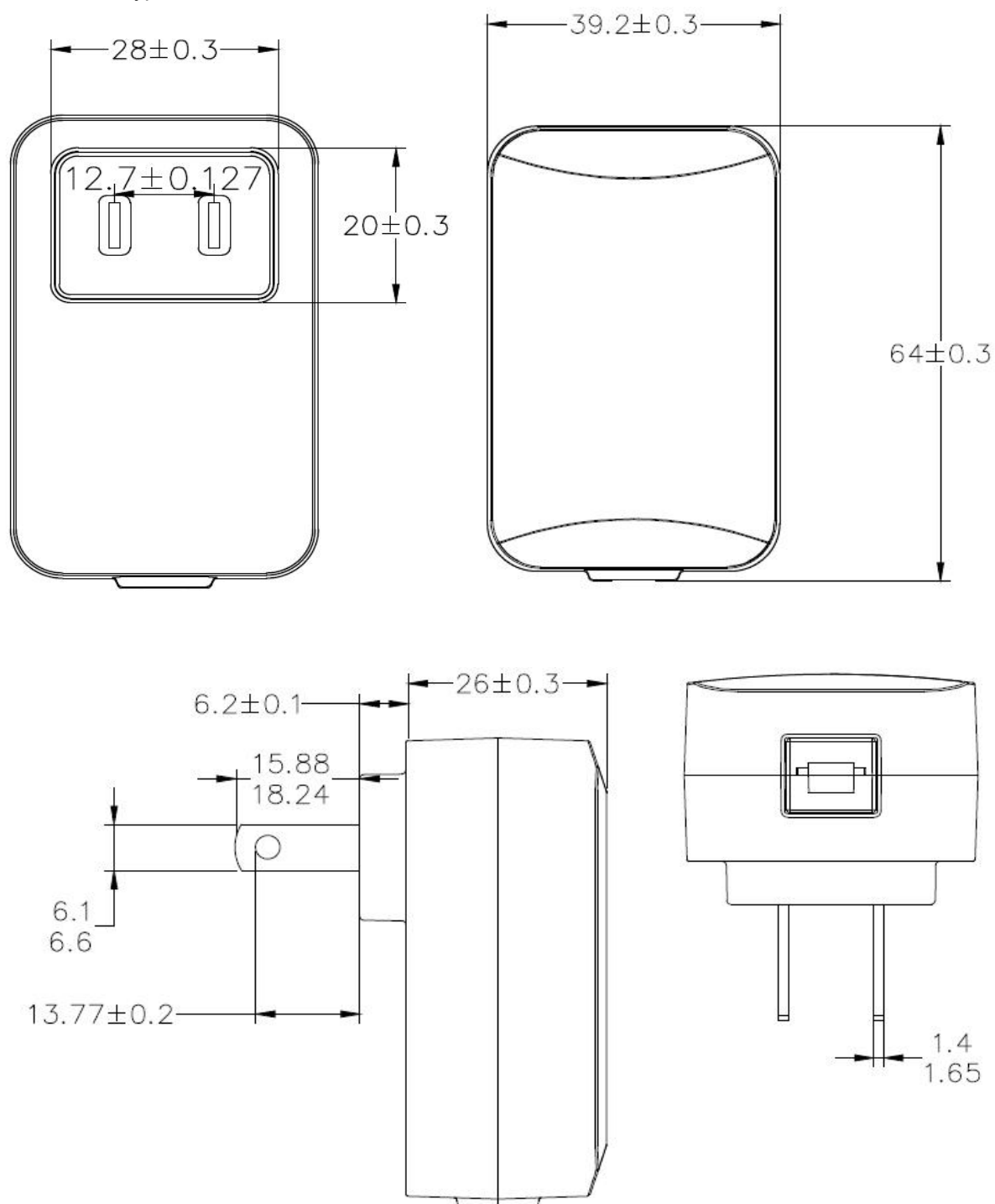
For case type A



7.0 Illustrations

Illustration 1a - Drawing (unit: mm)

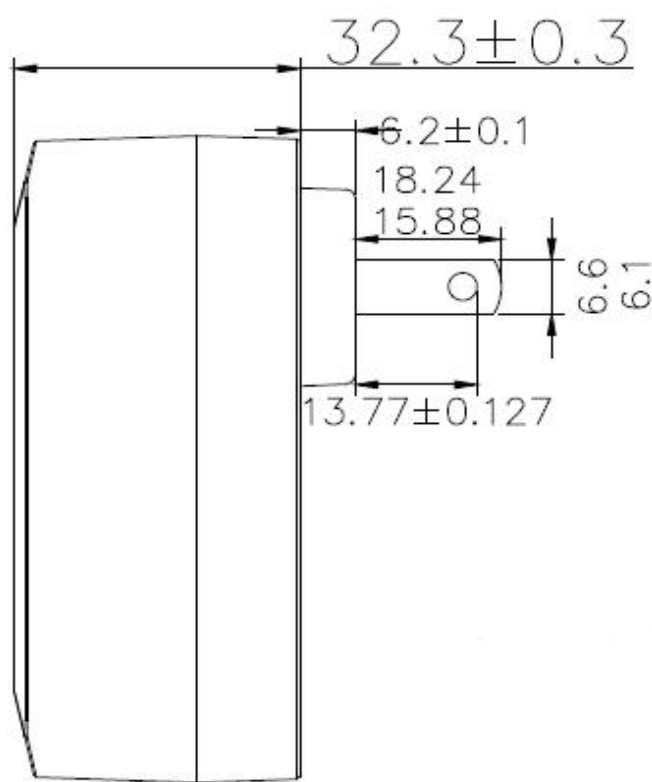
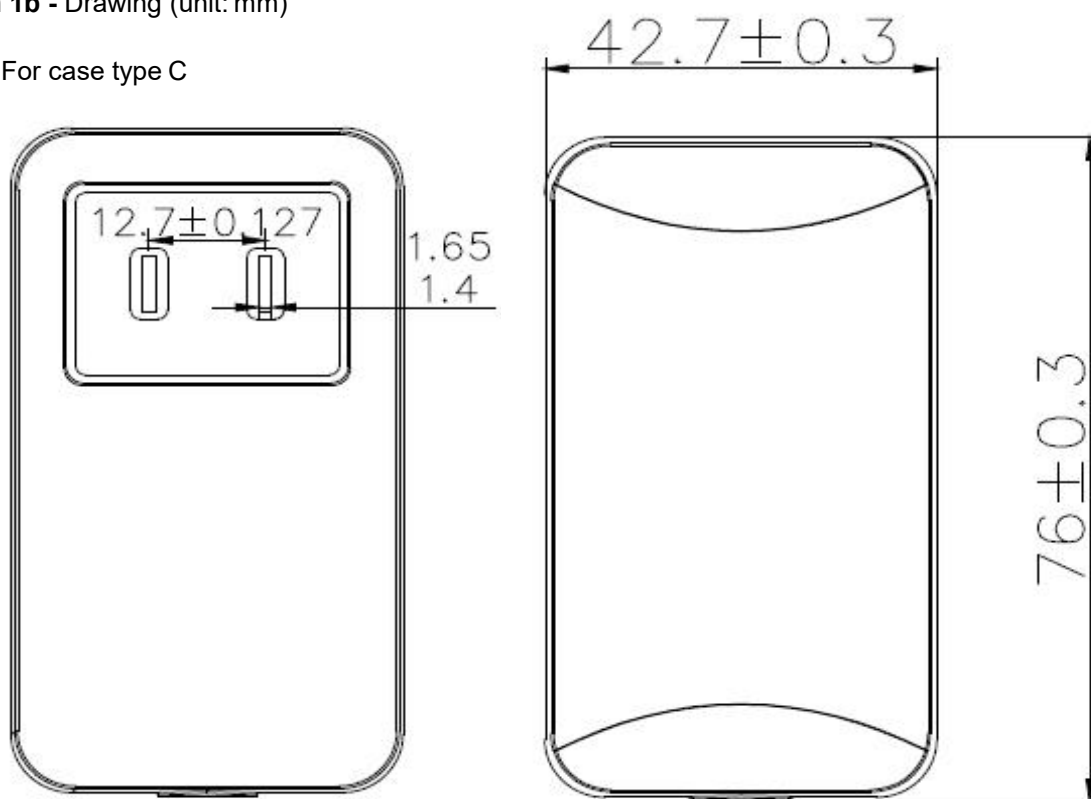
For case type B



7.0 Illustrations

Illustration 1b - Drawing (unit: mm)

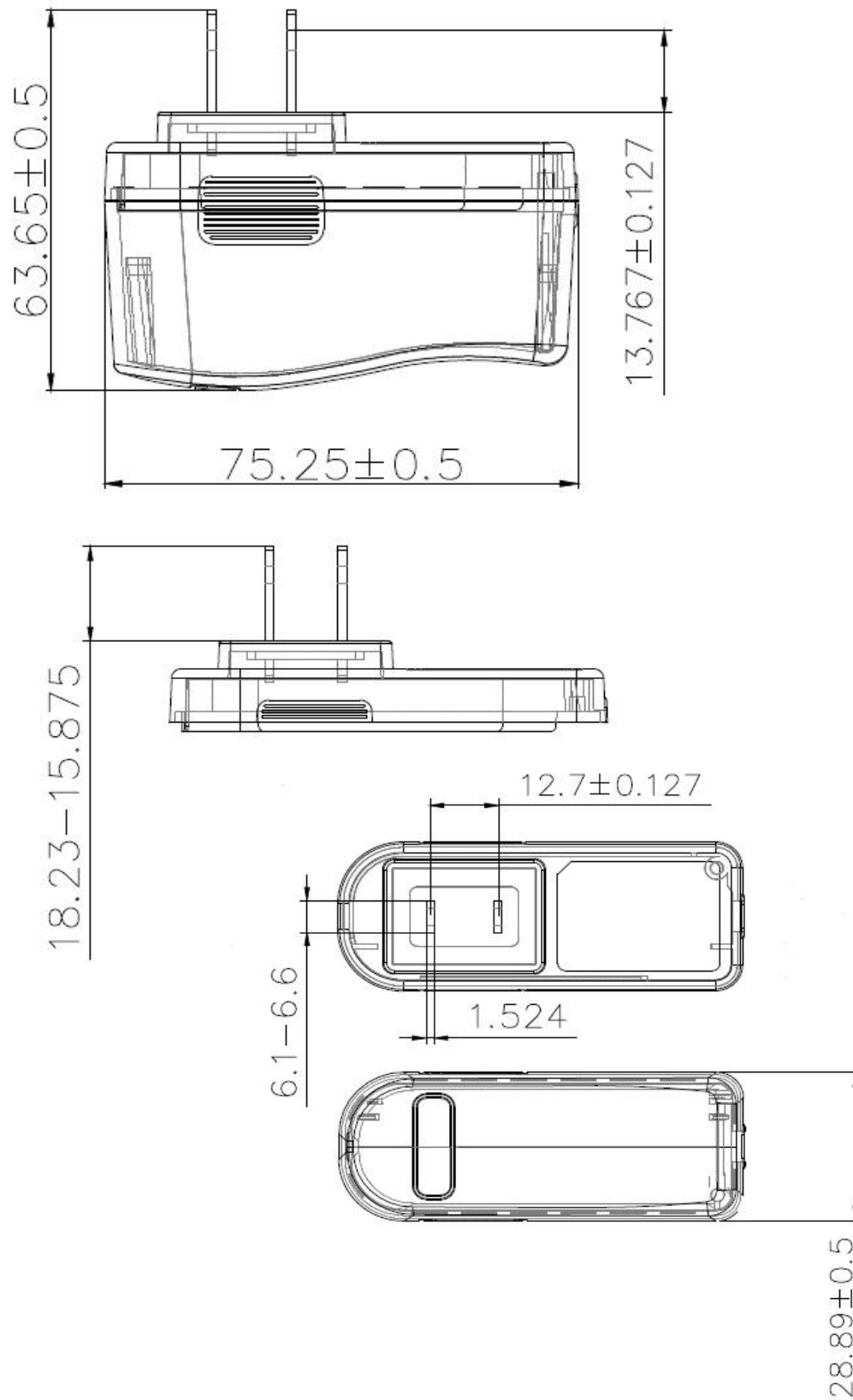
For case type C



7.0 Illustrations

Illustration 1c - Drawing (unit: mm)

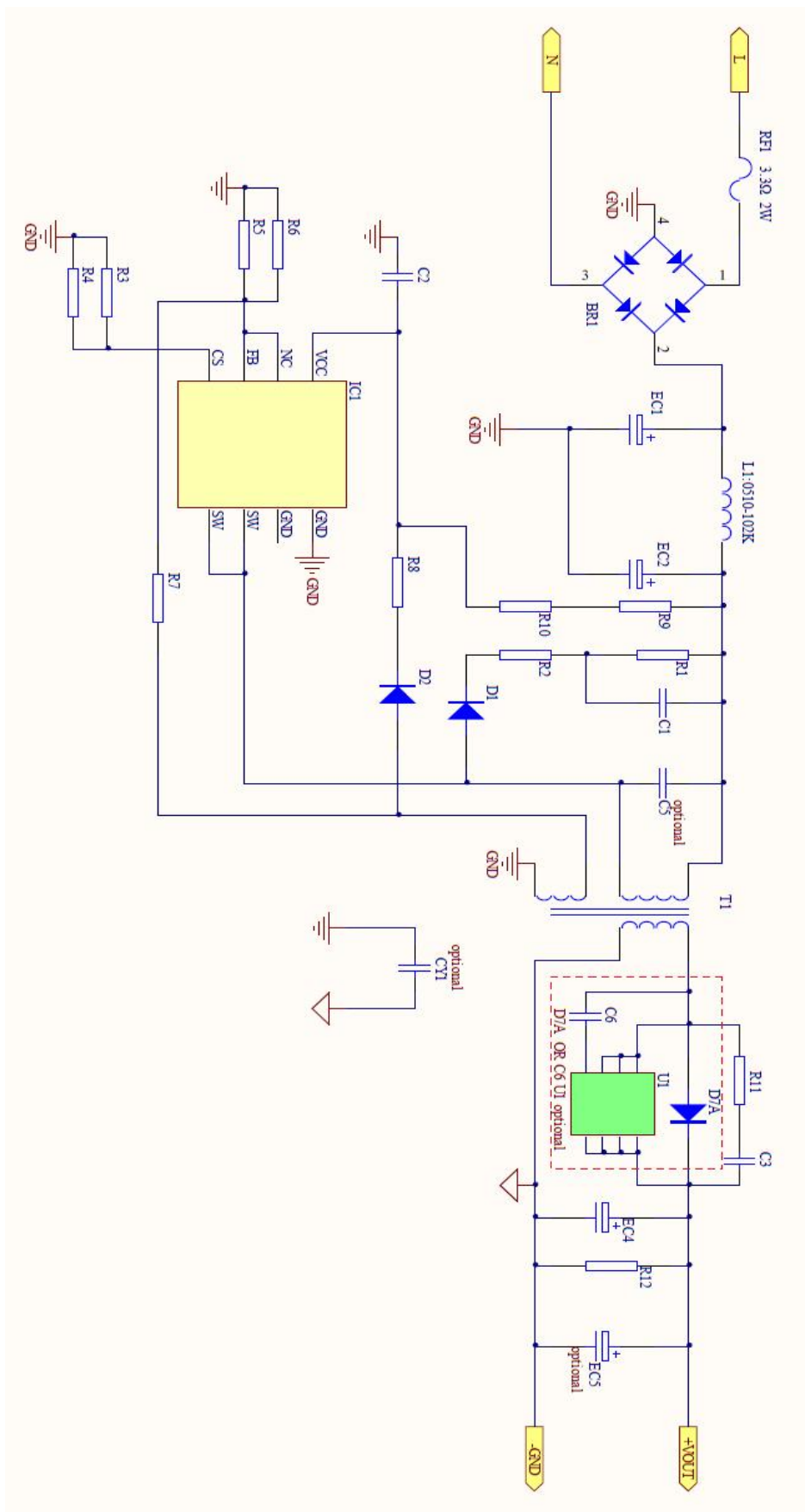
For case type D



7.0 Illustrations

Illustration 2 - Circuit diagram

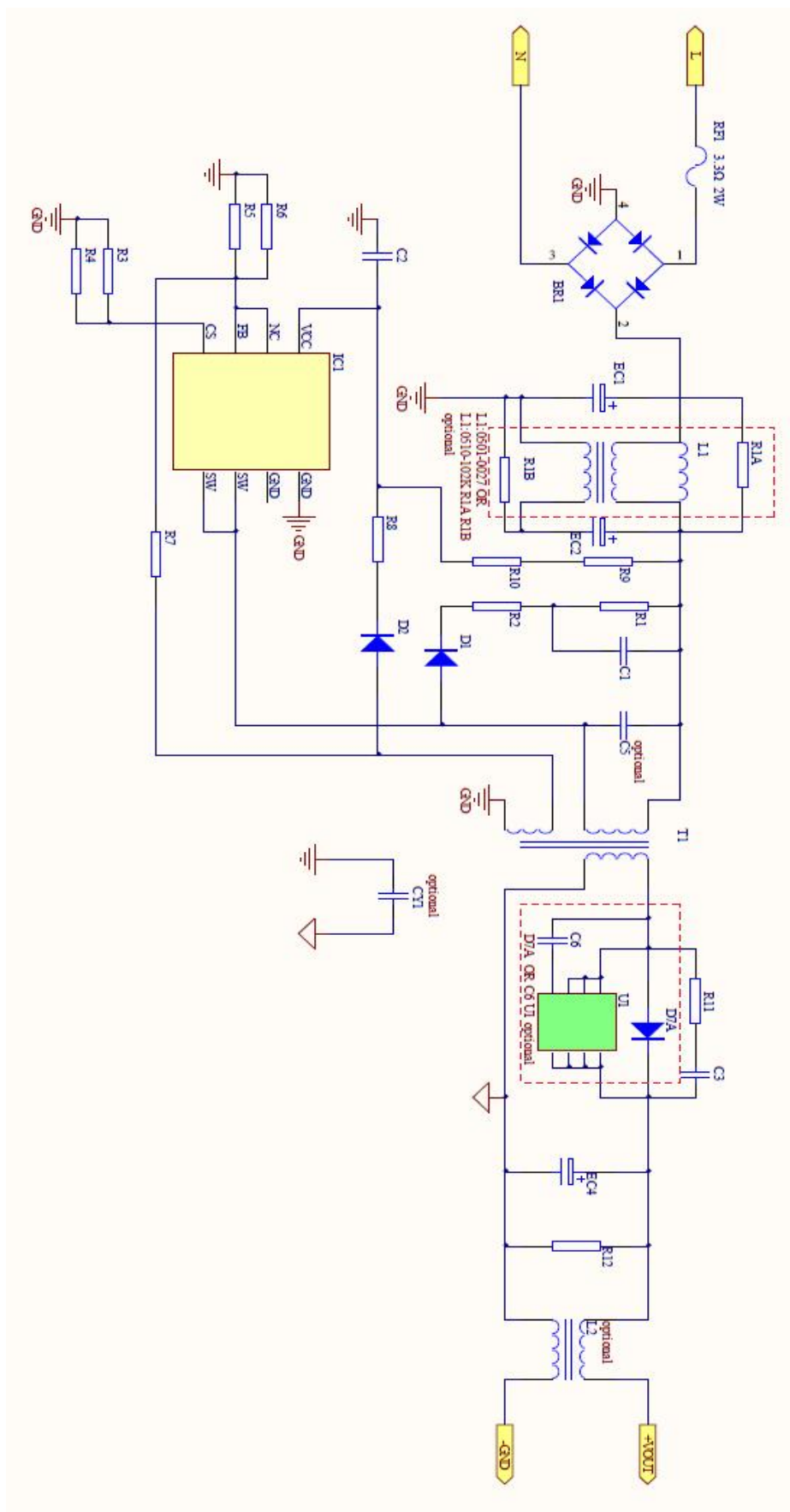
For PCB layout PCB-T594-K



7.0 Illustrations

Illustration 2a - Circuit diagram

For PCB layout PCB-T984



7.0 Illustrations

Illustration 2b - Circuit diagram

For PCB layout PCB-T985 and PCB-T484-K

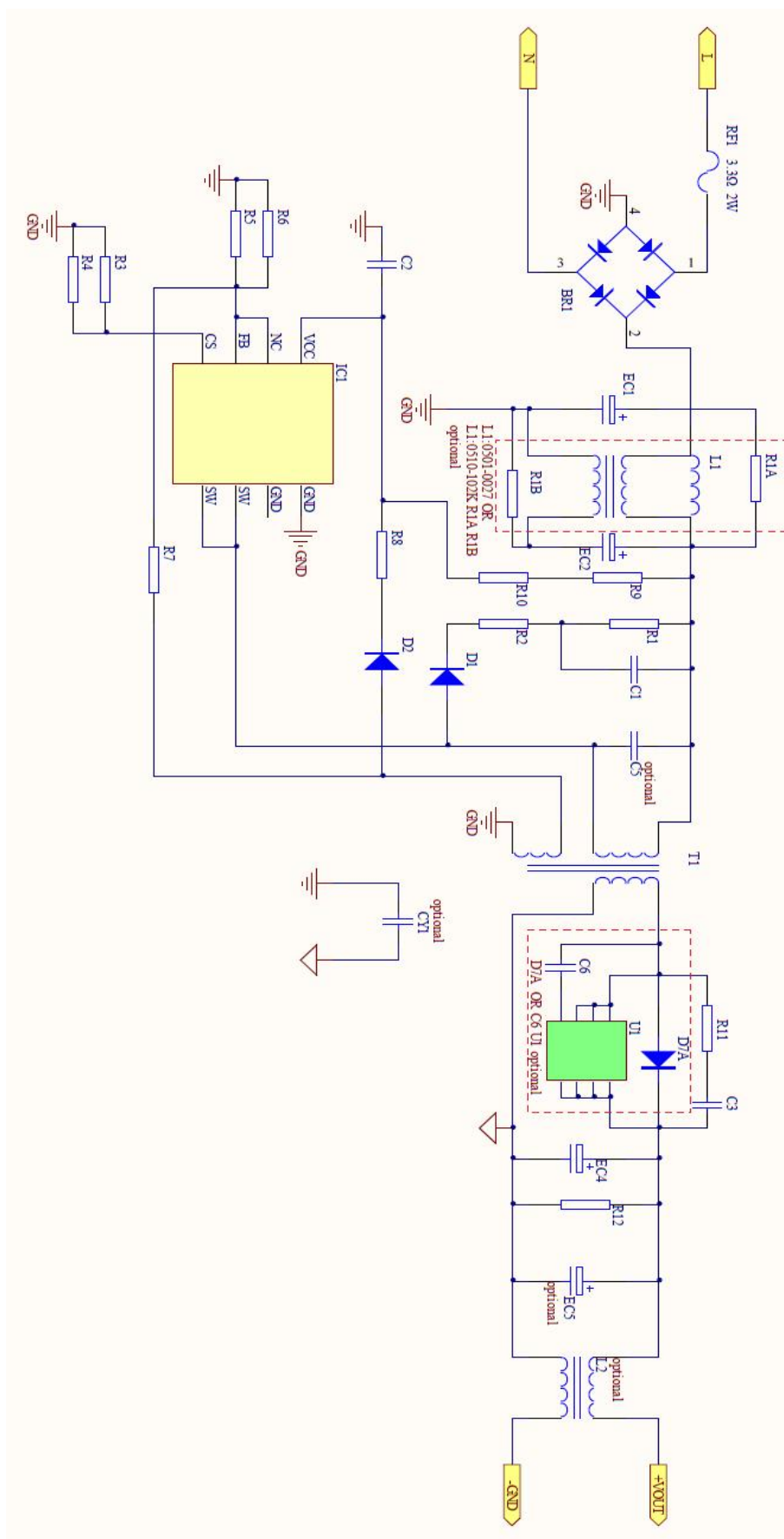
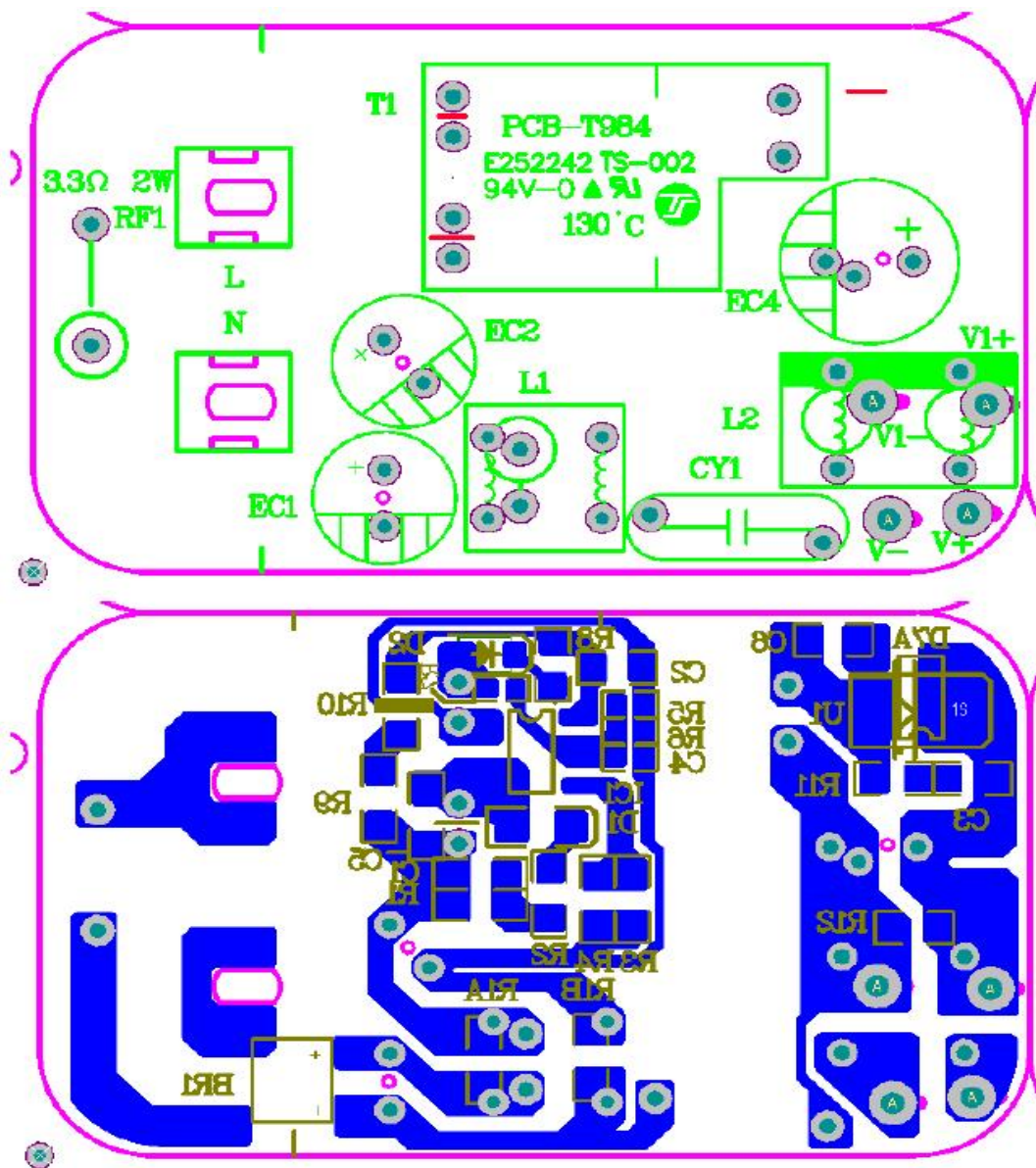


Illustration 3 - PCB layout

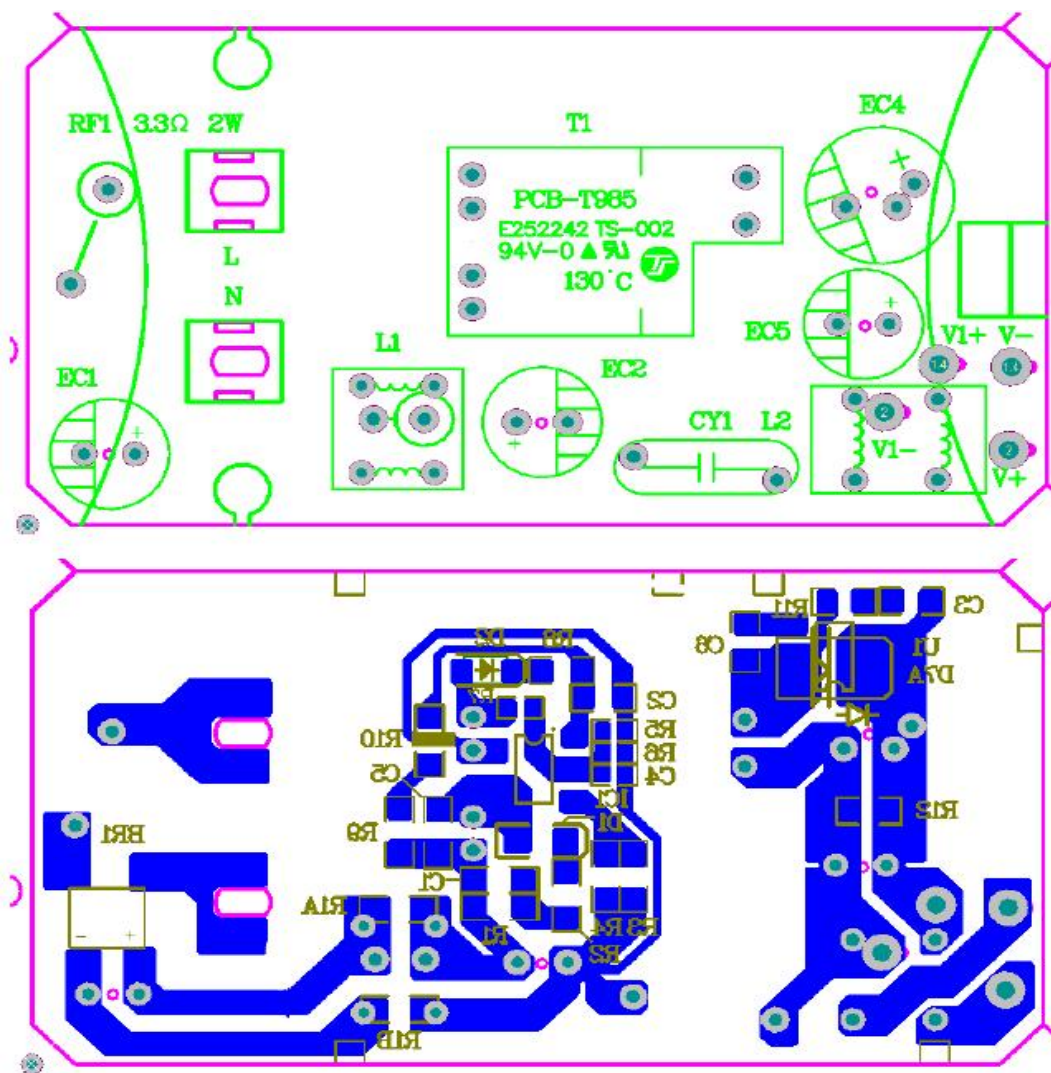
For PCB layout PCB-T984



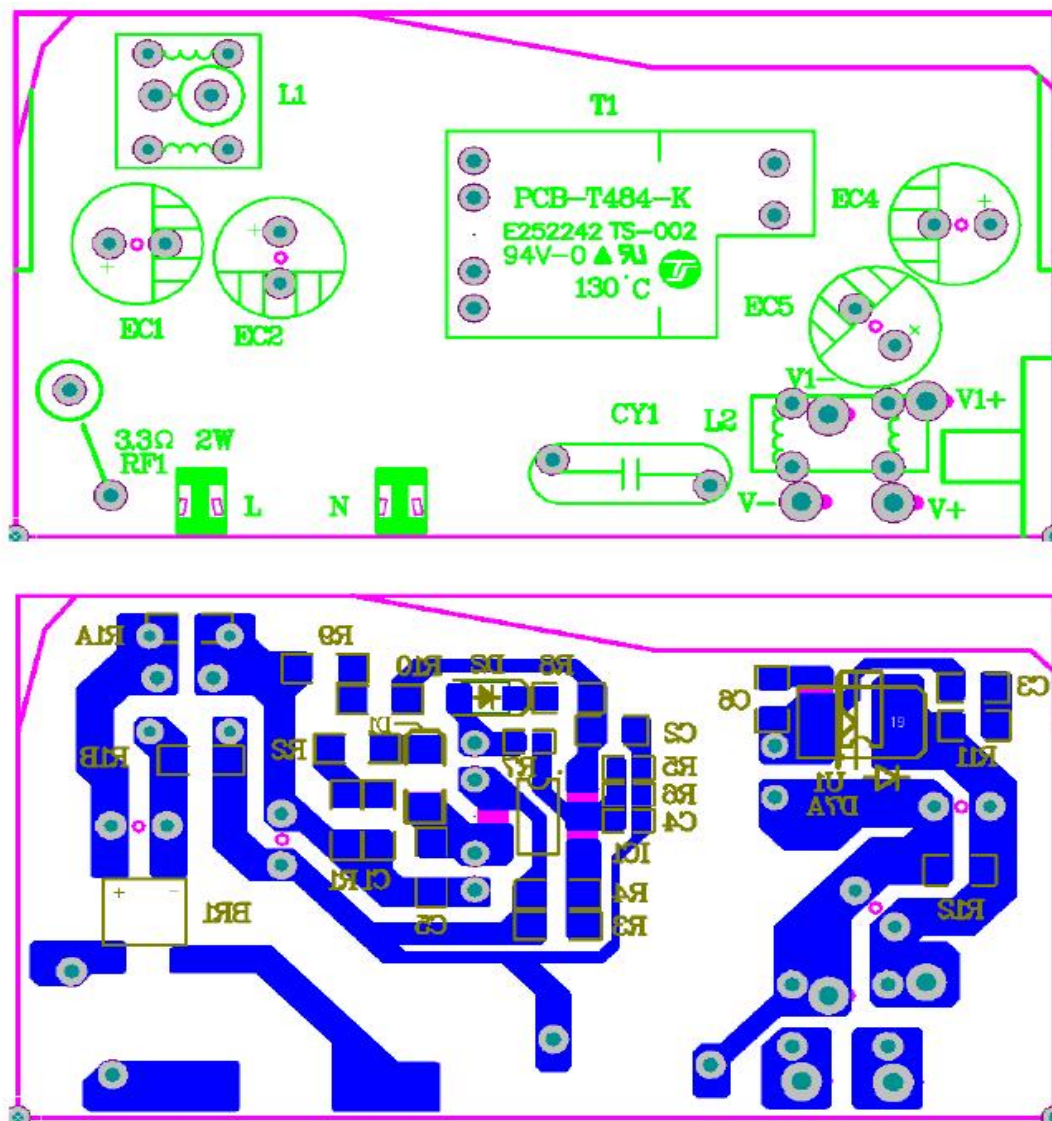
7.0 Illustrations

Illustration 3b - PCB layout

For PCB layout PCB-T985



For PCB layout PCB-T484-K



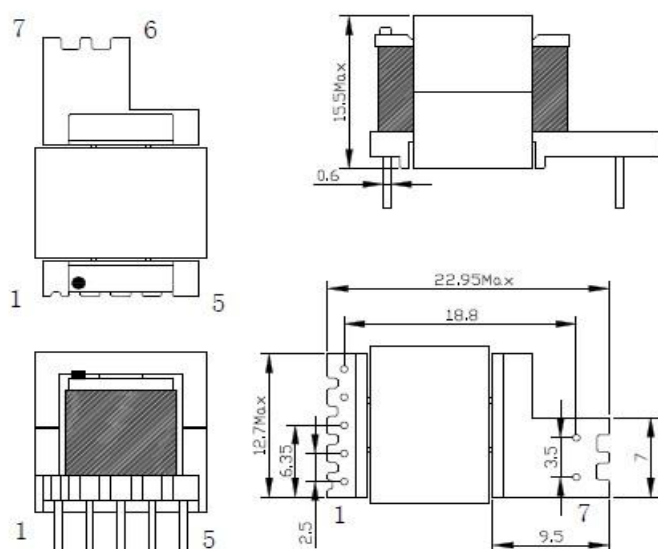
7.0 Illustrations

Illustration 4 - Transformer winding construction

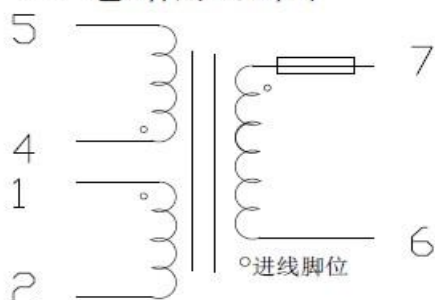
Construction and dimension: (mm)

For transformer type 0201-0639 and 0201-0640

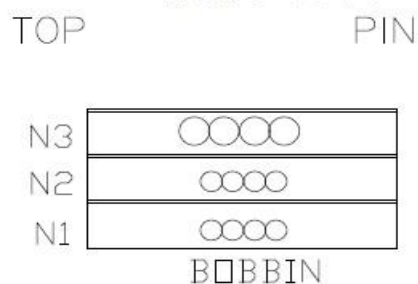
1. 骨架，磁芯规格尺寸：（单位：mm）



2. 电路原理图



3. 结构示意图



注: EE13 5+2pin加宽骨架, 拔除Pin3

4. 绕线参数: 绕线方式: 以PIN脚侧朝作业者, 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---5	2-UEW 0.23	82T	3	2	
N2	1---2	2-UEW 0.15	13T	1	3	均匀疏绕
N3	7---6	TIWW-B 0.5	10T	1	2	7PIN进线加套管, 套管加长到一次侧隔离初次级
	4---5	1. 0mH, 2脚磁芯接地				

7.0 Illustrations

Illustration 5 - User manual

IMPORTANT SAFETY INSTRUCTIONS-SAVE THESE INSTRUCTIONS and
DANGER-TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY
FOLLOW THESE INSTRUCTIONS.

INSTRUCTIONS DE SÉCURITÉ IMPORTANTES - CONSERVEZ CES
INSTRUCTIONS et DANGER - POUR RÉDUIRE LE RISQUE D'INCENDIE OU
D'ÉLECTROCUTION, SUIVEZ ATTENTIVEMENT CES INSTRUCTIONS.

1. For connection to supply not in the U.S.A. use an attachment plug adapter of the proper configuration for the Power outlet, if needed. Or, If the shape of the plug does not fit the power outlet, use an attachment plug adaptor of the proper configuration for the power outlet.

Pour que la connexion ne soit pas fournie aux États-Unis, utilisez un adaptateur de fiche d'adaptateur de la configuration appropriée pour la prise de courant, si nécessaire. Ou, si la forme de la fiche ne correspond pas à la prise de courant, utilisez un adaptateur de fiche de connexion avec la configuration appropriée pour la prise de courant.

2. Please read the instructions Before using the power supply.

Veillez lire les instructions avant d'utiliser l'alimentation.

3. This unit 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 they do not play with the unit.

Cet appareil n'est pas destiné à être utilisé par des personnes (y compris des enfants) ayant des capacités physiques, sensorielles ou mentales réduites, ou manquant d'expérience et de connaissances, à moins qu'une personne responsable de leur sécurité ne les ait supervisées ou instruites concernant leur utilisation. Les enfants doivent être surveillés pour s'assurer qu'ils ne jouent pas avec l'appareil.

4. For indoor use only.

Pour une utilisation en intérieur uniquement.

5. Please Don't use the power adapter in the damp environment and High temperature.

Pour une utilisation en intérieur uniquement.

6. Don't operate unit with damaged plug.

Ne faites pas fonctionner l'appareil avec une fiche endommagée.

7. Don't disassemble power adapter. Disassembly may result in a risk of electric shock or fire.

Ne démontez pas l'adaptateur secteur. Le démontage peut entraîner un risque de choc électrique ou d'incendie.

8. To reduce the risk of electric shock, unplug the power adapter from the outlet when not in use.

Pour réduire les risques d'électrocution, débranchez l'adaptateur secteur de la prise secteur lorsqu'il n'est pas utilisé.

Xiamen Innov Electronics Tech. Co.,Ltd.

1F/3F-5F, Bldg 5, No. 943,Tonglong 2nd Rd, Torch Hi-TechIndustrial Zone, Xiang'an, XIAMEN, Fujian

8.0 Test Summary					
Evaluation Period	4-Aug-2022 to 20-Aug-2022			Project No.	220804085GZU
Sample Rec. Date	4-Aug-2022	Condition	Prototype	Sample ID.	LP22060145C01 - S001 to S040
Test Location	Dongguan Iepon Room 102, Build t Testing Service Co.,Ltd. ing 11, No.7 Houjie Science And Technology Avenue, Houjie Town,				
Test Procedure	Testing Lab				
Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.					
The following tests were performed:					
Test Description	[UL 1310:2018 Ed.7+R:16Aug20 19] Clause	[CSA C22.2#223:201 5 Ed.3] Clause	[UL 746C:2018 Ed.7+R:20Apr20 2 0] Clause		
Leakage Current Test	26	6.6	--		
Leakage Current Test and Dielectric Voltage Withstand Test after Humidity Exposure	27	--	--		
Maximum Output Voltage Test / Open-Circuit Secondary Voltage	28	6.3.1	--		
Maximum Input Test / Rated Input	29	6.3.2	--		
Output Current and Power Test / Maximum Output Current and Power	30	6.3.4	--		
Full-Load Output Current Test / Rated Output	32	6.3.3	--		
Normal Temperature Test / Temperature (Normal)	33	6.4	--		
Dielectric Voltage Withstand Test / Dielectric Strength	34	6.5	--		
Secondary Circuit Protection	--	6.7	--		
Abnormal Operation Test – Output Loading Test	39.2	--	--		
Abnormal Operation Test – Transformer Burnout Test	39.4	--	--		
Abnormal Operation Test – Component Breakdown / Abnormal Test	39.7	6.8	--		
Tests on Insulating Materials	40	6.14	--		
Strain Relief Test	41	6.10.1	--		
Push-Back Relief Test	42	--	--		
Direct Plug-In Blade Secureness Test	43	6.10.5	--		
Direct Plug-In Security of Input Contacts Test	44	6.10.6	--		
Impact on Direct Plug-In Units	46.2	6.9.3	--		
Rod Pressure on Direct Plug-In Units	46.4	--	--		
Resistance to Crushing on Direct Plug-In Units	46.5	--	--		
Securement of Components	--	6.12	--		
Normal input test	50.2	--	--		
Mold stress-relief distortion test	--	--	29		
Strain Relief Test After Mold Stress-Relief Distortion	--	--	31		
8.1 Signatures					
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.					
Completed by:	Jerry Xie		Reviewed by:	Gerry Wu	
Title:	Project Engineer		Title:	Manager	
Signature:	<i>Jerry Xie</i>		Signature:	<i>Gerry Wu</i>	

9.0 Correlation Page For Multiple Listings

The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program.

BASIC LISTEE	Xiamen Innov Electronics Tech. Co., Ltd.
Address	1F/3F-5F, Bldg 5, No. 943, Tonglong 2nd Rd, Torch Hi-Tech Industrial Zone, Xiang'an, XIAMEN, Fujian
Country	CHINA
Product	Class 2 Power Supply

MULTIPLE LISTEE 1	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURE	
Address	
Country	
MULTIPLE LISTEE 1 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 2	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURE	
Address	
Country	
MULTIPLE LISTEE 2 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 3	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURE	
Address	
Country	
MULTIPLE LISTEE 3 MODELS	BASIC LISTEE MODELS

10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

- 1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"
- 2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)
- 3) a control number issued by Intertek
- 4) a product descriptor that identifies the standards used for certification. Example:

For US standards, the words, "Conforms to" shall appear with the standard number along with the word, "Standard" or "Std." Example: "Conforms to ANSI/UL Std. XX."

For Canadian standards, the words "Certified to CAN/CSA Standard CXX No. XX." shall be used, or abbreviated, "Cert. to CAN/CSA Std. CXX No. XX."

Can be used together when both standards are used.

If all standards on the ATM have the same standard title, the shared title or its abbreviation may be used in place of the examples above. Example: "Medical Electrical Equipment" or "MEE"; "Information Technology Equipment" or "ITE"; "Audio/Video Information And Communication Technology Equipment" or "A/V ICTE".

Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use.

The facsimile need not have a control number. A control number will be issued **after signed Certification Agreements** have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

The Applicant will be notified, in writing, via the applicable contact methods, as defined in Section 1.0, when these components must be selected and sent to Component Evaluation Center (CEC) for re-evaluation.

Due to particular testing requirements, some components may be requested to be shipped to specific labs. Thus, specific shipment destination(s) for each sample will be provided in the written notification.

Managing CEC Location:

Intertek Testing Services Shenzhen Limited Guangzhou Branch

ETL Component Evaluation Center

Room 02, &101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2,

Caipin Road, Science City

GETDD Guangzhou, Guangdong, China

Attn: Ms. Joey Kuang

Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

Required Tests

Dielectric Voltage Withstand Test

11.1 Dielectric Voltage Withstand Test

Method

One hundred percent of production of the products covered by this Report shall be subjected to a routine production line dielectric withstand test.

The test shall be conducted on products, which are fully assembled. Prior to applying the test potential, all switches, contactors, relays, etc., should be closed so that all primary circuits are energized by the test potential. If all primary circuits cannot be tested at one time, then separate applications of the test potential shall be made.

The test voltage specified below shall be applied between primary circuits and accessible dead-metal parts. The test voltage may be gradually increased to the specified value but must be maintained at the specified value for one second or one minute as required.

Test Equipment

The test equipment shall incorporate a transformer with an essentially sinusoidal output, a means to indicate the applied test potential, and an audible and/or visual indicator of dielectric breakdown.

The test equipment shall incorporate a voltmeter in the output circuit to indicate directly the applied test potential if the rated output of the test equipment is less than 500VA.

If the rated output of the test equipment is 500VA or more, the applied test potential may be indicated by either:

- 1 - a voltmeter in the primary circuit;
- 2 - a selector switch marked to indicate the test potential; or
- 3 - a marking in a readily visible location to indicate the test potential for test equipment having a single test potential output.

In cases 2 and 3, the test equipment shall include a lamp or other visual means to indicate that the test potential is present at the test equipment output. All test equipment shall be maintained in current calibration.

Products Requiring Dielectric Voltage Withstand Test:

<u>Product</u>	<u>Test Voltage</u>	<u>Test Time</u>
All products covered by this Report.	1000 Vac	60s
	or	
	1200 Vdc	1s
Product		
One sample from each shipment of Section 4.0 item 7 and 8.		
Between primary winding and secondary winding	3000 Vac	60s
Between secondary winding and core	3000 Vac	60s

The following changes are in compliance with the declaration of Section 8.1:

ED 16.3.15 (1-Jul-2022) Mandatory