

1.0 Reference and Address			
Report Number	180401334SHA-001	Original Issued: 15-Aug-2018	Revised: 19-Feb-2019
Standard(s)	Current Taps And Adapters [UL 498A:2008 Ed.2+R:10Jun2016] Surge Protective Devices [UL 1449:2014 Ed.4+R:21Jul2017] General Use Receptacles, Attachment Plugs, And Similar Wiring Devices (R2015) [CSA C22.2#42:2010 Ed.7+U1;U2;U3] Surge Protective Devices - Type 3 - Cord Connected, Direct Plug-In And Receptacle Type [CSA C22.2#269.3:2017 Ed.2]		
Applicant	<u>HANGZHOU KAITE ELECTRICAL APPLIANCE CO.,LTD.</u>	Manufacturer 1	HANGZHOU KAITE ELECTRICAL APPLIANCE CO.,LTD.
Address	SANDU INDUSTRIAL ZONE, JIANDE CITY, ZHEJIANG PROVINCE 311605	Address	SANDU INDUSTRIAL ZONE, JIANDE CITY, ZHEJIANG PROVINCE 311605
Country	China	Country	China
Contact	Mr BaoFengFang	Contact	Mr BaoFengFang
Phone	0571-58317207	Phone	0571-58317207
FAX	-	FAX	-
Email	gma@powerkaite.com	Email	gma@powerkaite.com
Manufacturer 2	Zhejiang Camet Electrical Appliance Co.,Ltd.	Manufacturer 3	Kingtec (vietnam) technologies Co.,ltd.
Address	Kaihua Industrial Zone, Kaihua, Quzhou, Zhejiang 324300	Address	HAISHAN INDUSTRIAL ZONE, PINGQIAN VILLAGE,HEXIA,DEHE COUNTY, Long An Province
Country	China	Country	Vietnam
Contact	Mr BaoFengFang	Contact	Mr BaoFengFang
Phone	0571-58317207	Phone	0571-58317207
FAX	-	FAX	-
Email	gma@powerkaite.com	Email	gma@powerkaite.com

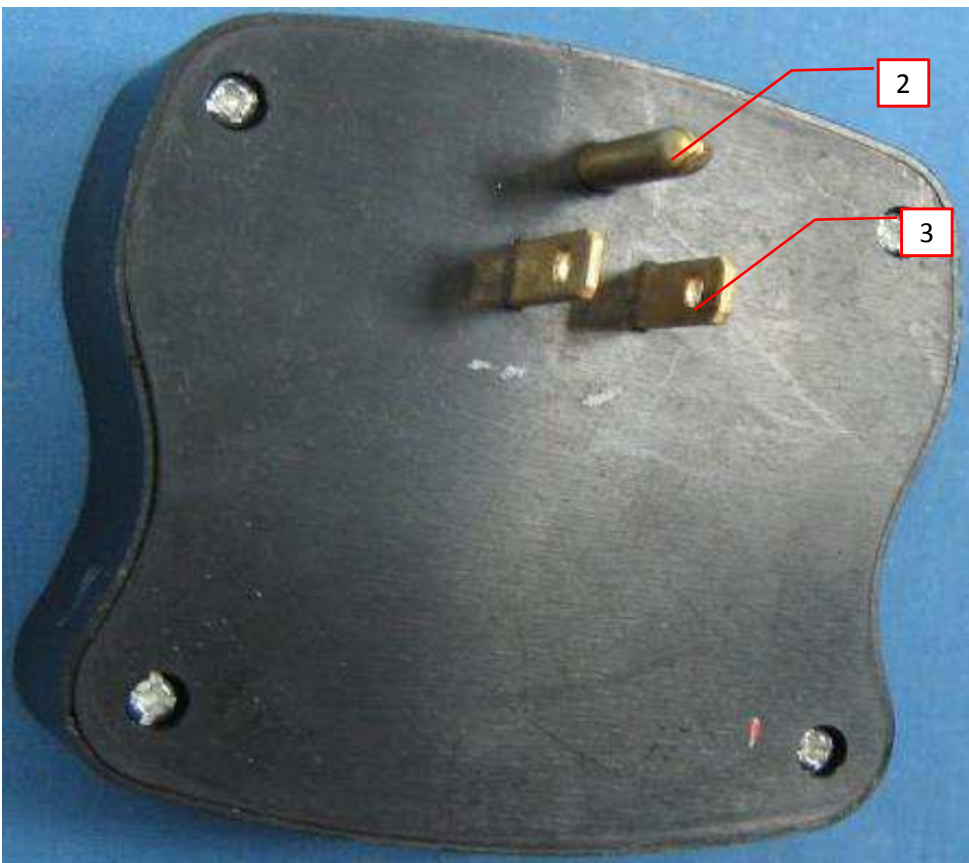
2.0 Product Description	
Product	Current taps with surge protector
Brand name	KAITE, KMC
Description	The products covered by this report are current taps with surge protector, with indicator light, with 5-15P/5-15R configuration, for indoor use only and direct plug in with main supply,
Models	CU23011,30332,30332A
Model Similarity	<p>For CU23011,30332, they with similiar construction which with same outer enclosure dimension, with one set of 5-15P plug as line fitting, with three way 5-15R receptacles, only different surge protector and class 2 power unit construction, see below for details</p> <p>CU23011: with surge protector for L-N mode only with indicator light, with class 2 power unit with type KT-CU2301-5V3.4A which with ouput parameter 5Vdc Max 3.4A</p> <p>For 30332 and 30332A, they with similar construction,with surge protector with indicator light, with class 2 power unit with type KT-CU2301-5V3.4A-2 which with output parameter 5Vdc Max 3.4A in total (for final product, there may be marked with output parameter which equal or less than 5Vdc 3.4A in total, for example marked as 5Vdc 3.1A in total or other parameter according to client's request), only difference is protection mode for SPD, see below for details: 30332: with protection mode for L-N,L-G,N-G (two MOV for L-N mode, one MOV for L-G,N-G respectively) 30332A: with protection mode for L-N only (two MOV for L-N mode)</p>
Ratings	15A 125Vac 1875W 60Hz
Other Ratings	<p>TYPE 3 SPD VPR: 900V (L-N) (for type CU23011,30332A) VPR: 900V (L-N,L-G,N-G) (for 30332)</p> <p>Class 2 Power Unit: KT-CU2301-5V3.4A: O/P:5Vdc, max. 2.4A each port,max. 3.4A in total. (only for CU23011) KT-CU2301-5V3.4A-2:Input: 125VAC, 60Hz, 0.4A;Output: 5Vdc, max. 2.4A each port, max. 3.4A in total. (for 30332,30332A)</p>

3.0 Product Photographs

Photo 1 - Overall view of CU23011



Photo 2 - Overall view of CU23011



3.0 Product Photographs

Photo 3 - Overall view of CU23011

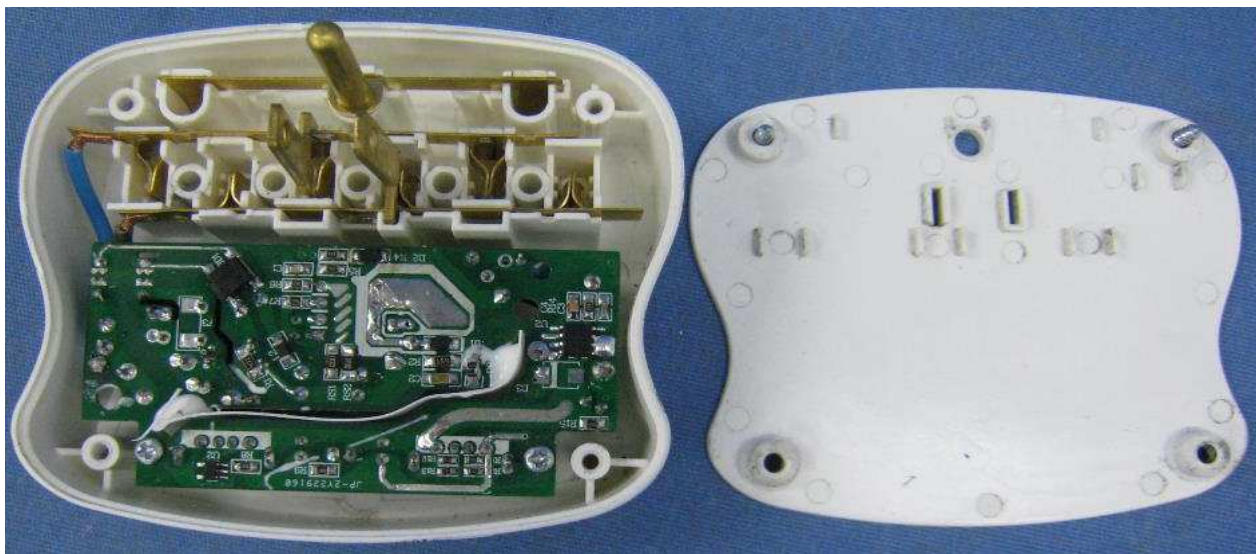
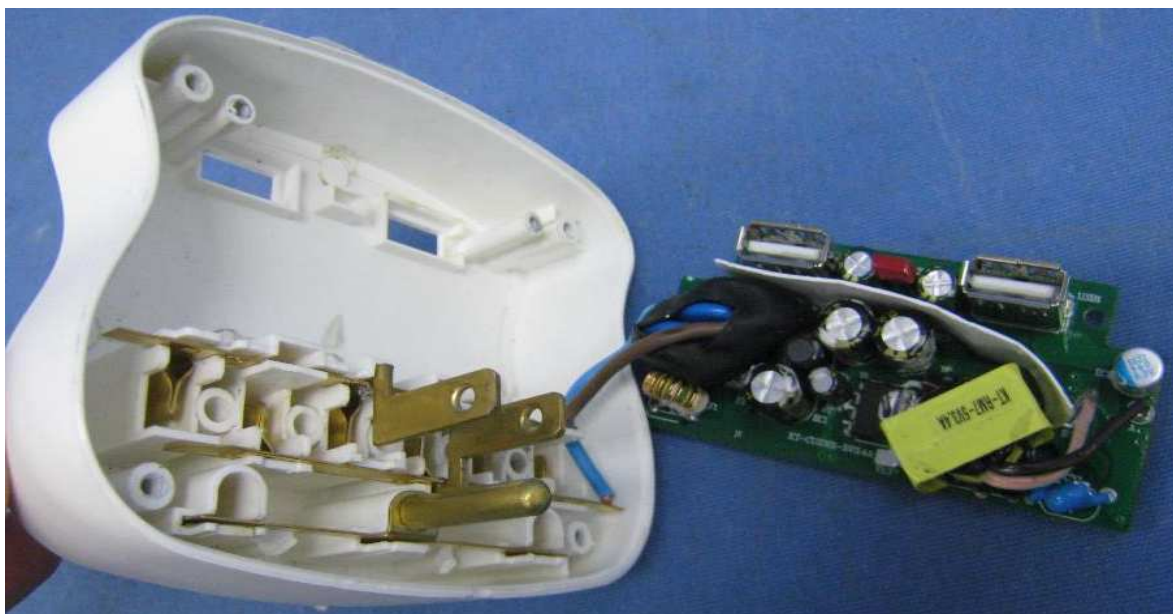


Photo 4 - Overall view of CU23011



3.0 Product Photographs

Photo 5 - Overall view of CU23011

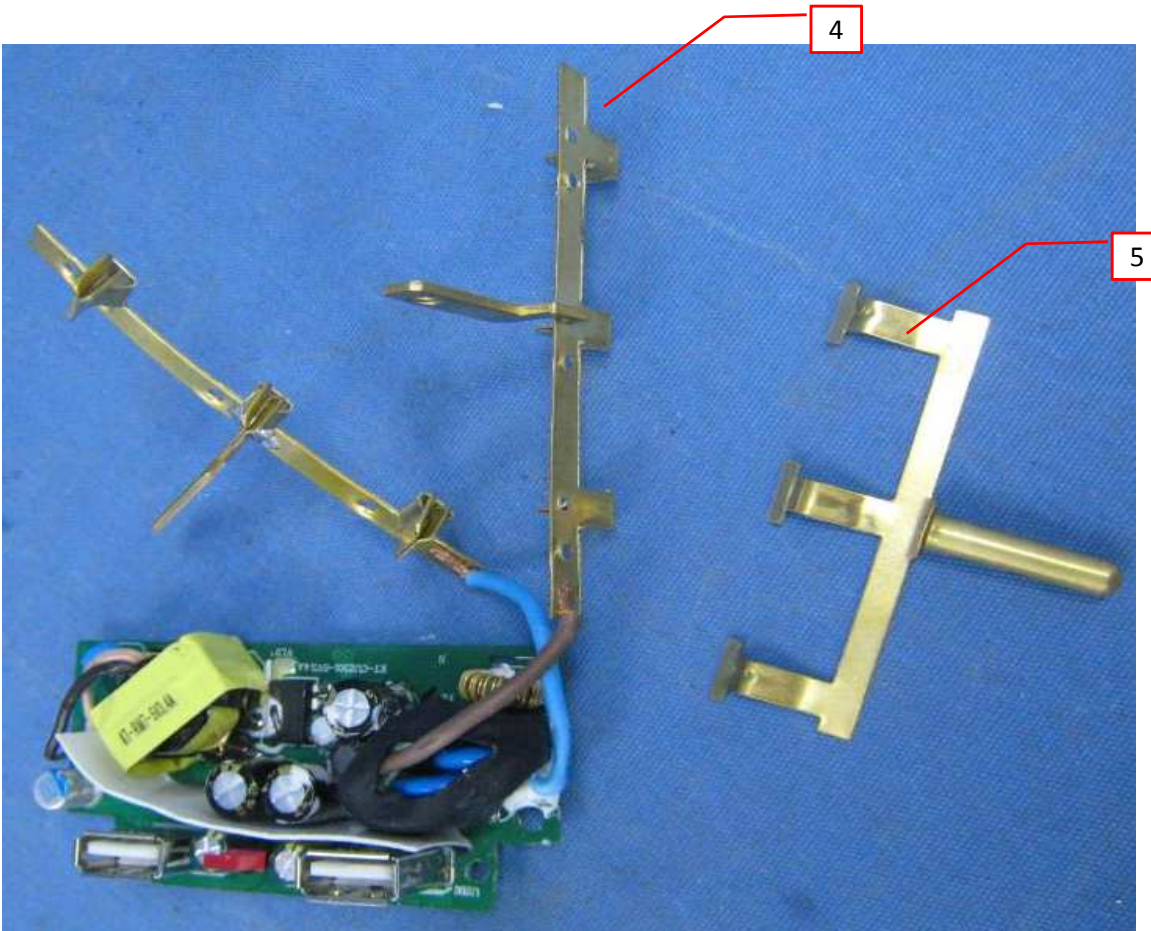
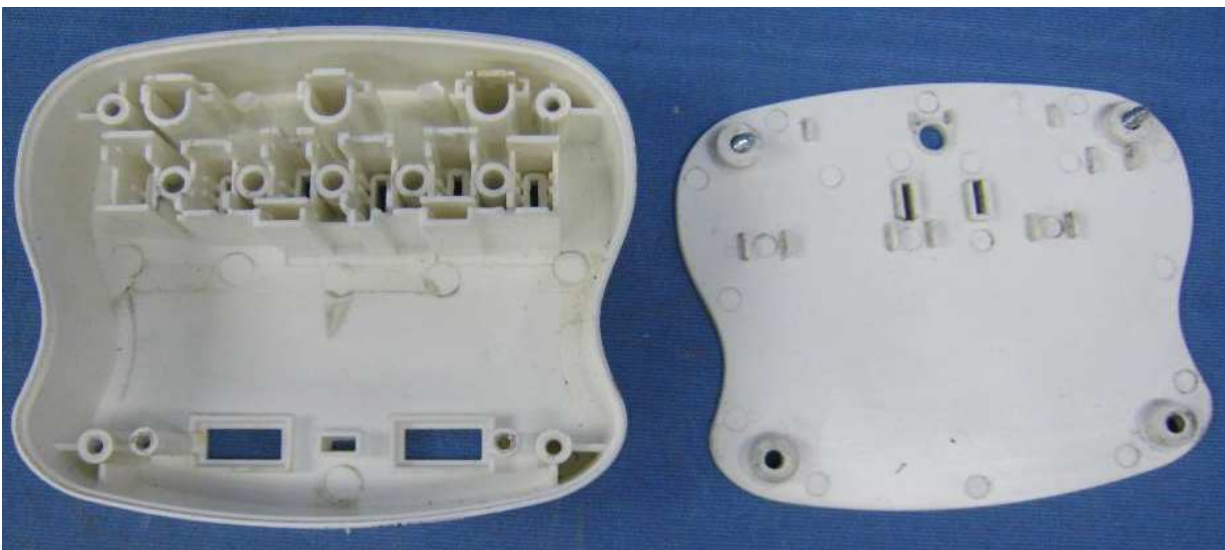


Photo 6 - Overall view of CU23011



3.0 Product Photographs

Photo 7 - Overall view of CU23011

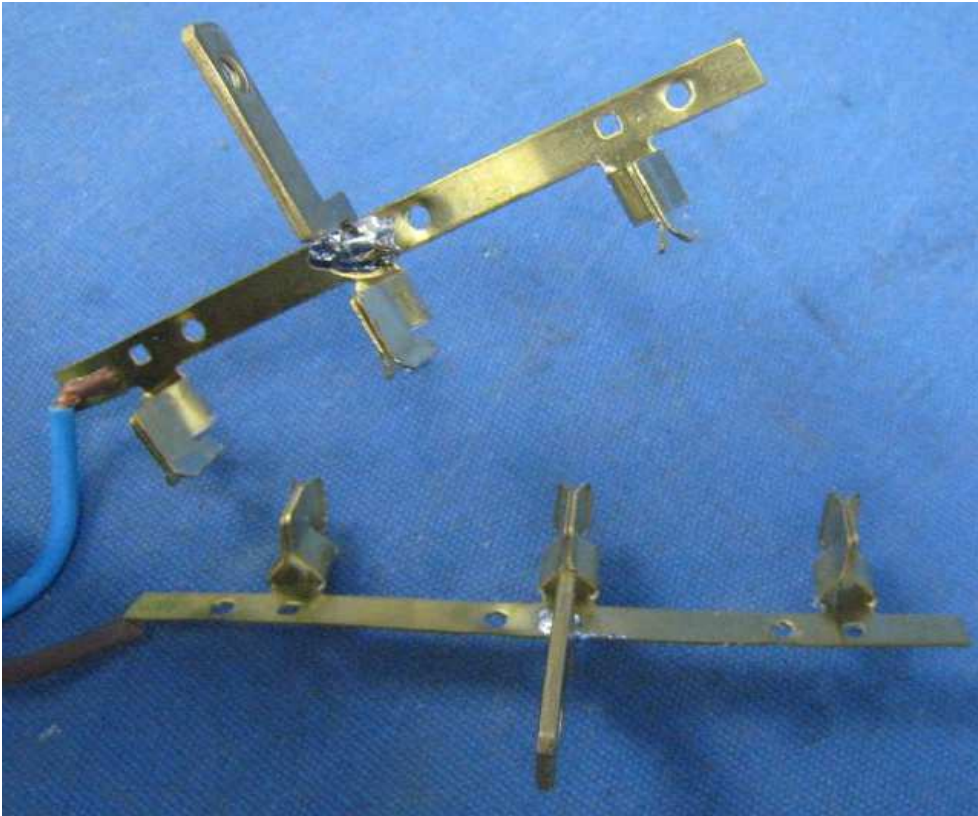
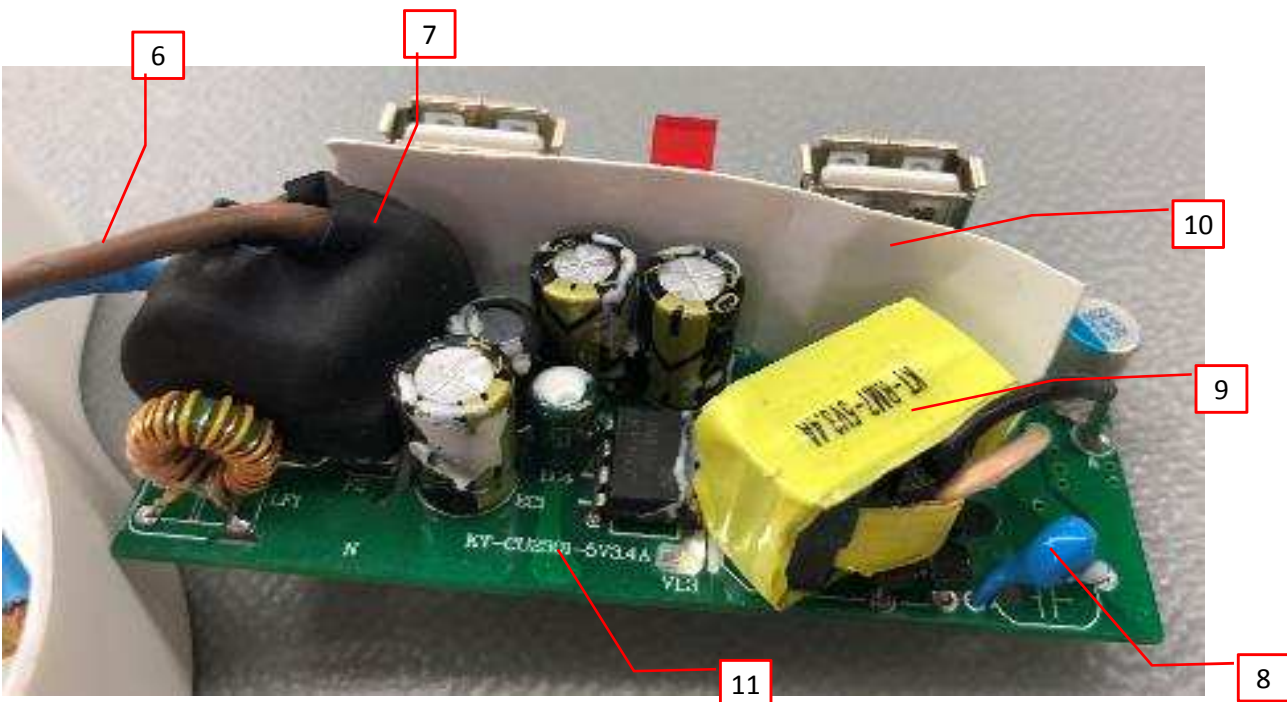


Photo 8 - PCBA for class 2 power unit KT-CU2301-5V3.4A

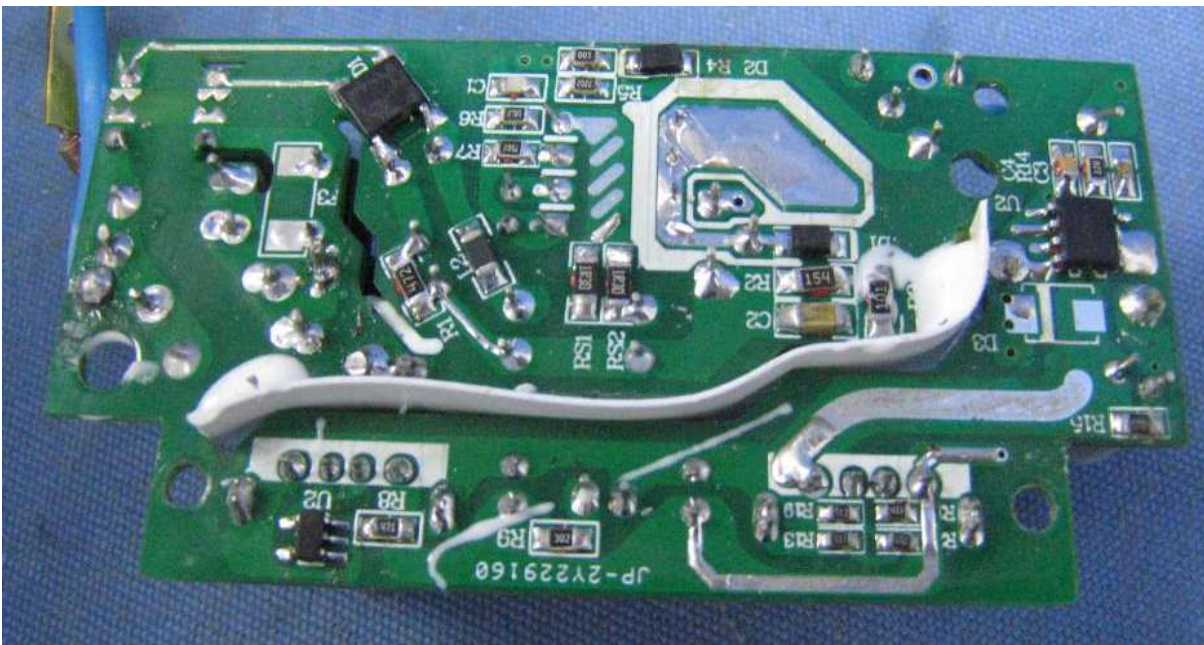


3.0 Product Photographs

Photo 9 - PCBA for class 2 power unit KT-CU2301-5V3.4A



Photo 10 - PCBA for class 2 power unit KT-CU2301-5V3.4A



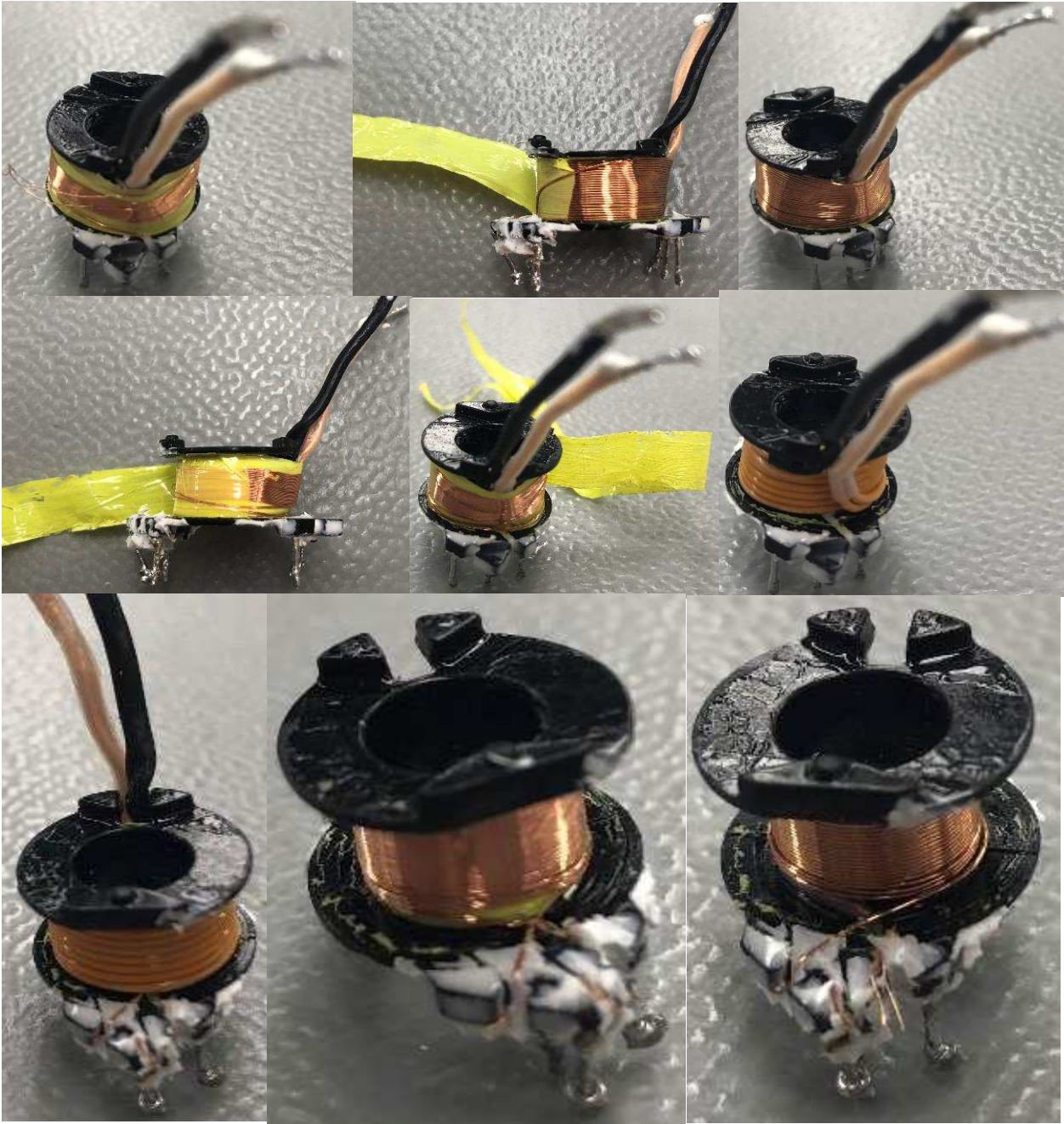
3.0 Product Photographs

Photo 11 - Transformer for class 2 power unit KT-CU2301-5V3.4A



3.0 Product Photographs

Photo 12 - Transformer for class 2 power unit KT-CU2301-5V3.4A



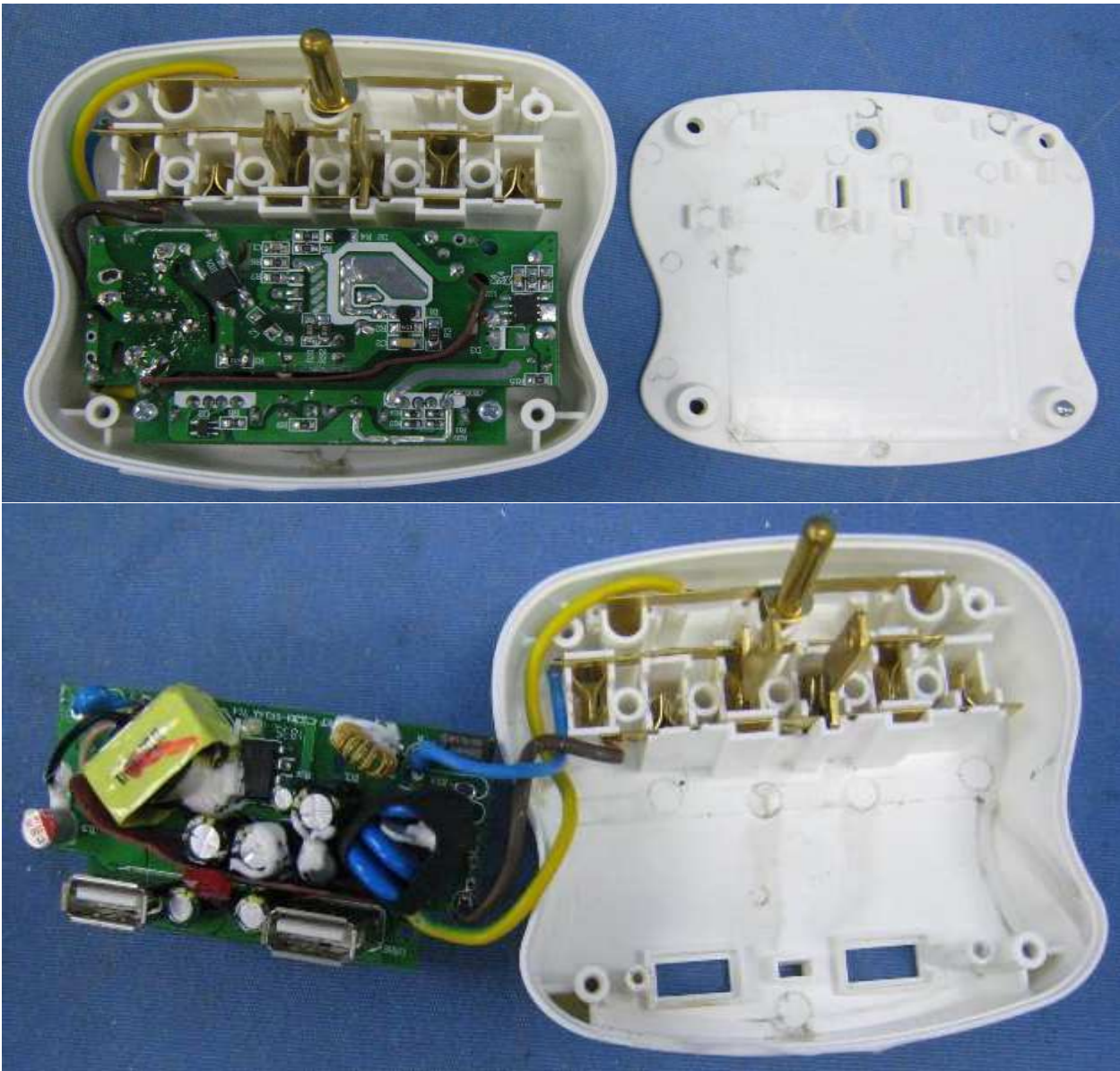
3.0 Product Photographs

Photo 13 - Overall view of 30332



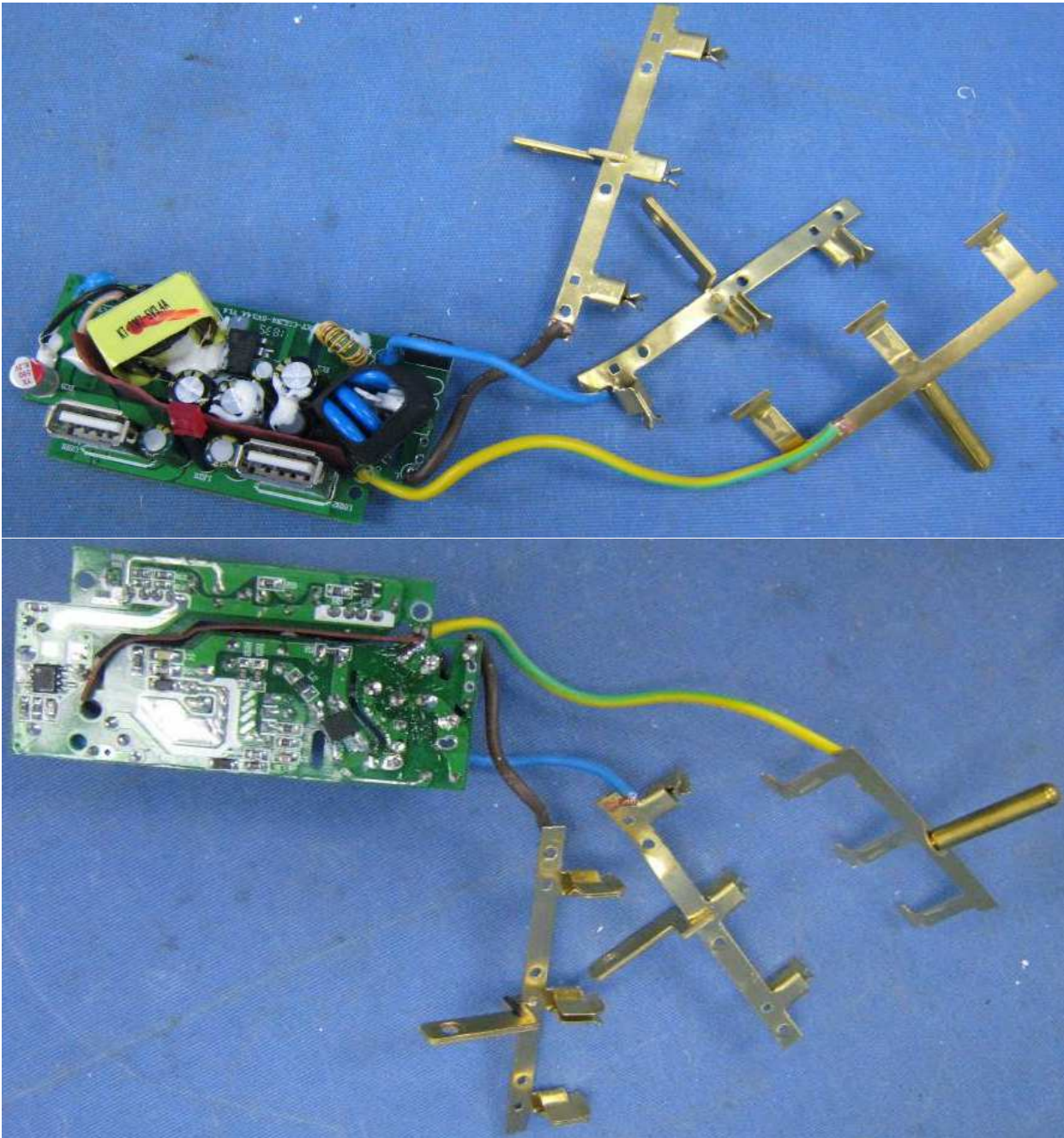
3.0 Product Photographs

Photo 14 - Overall view of 30332



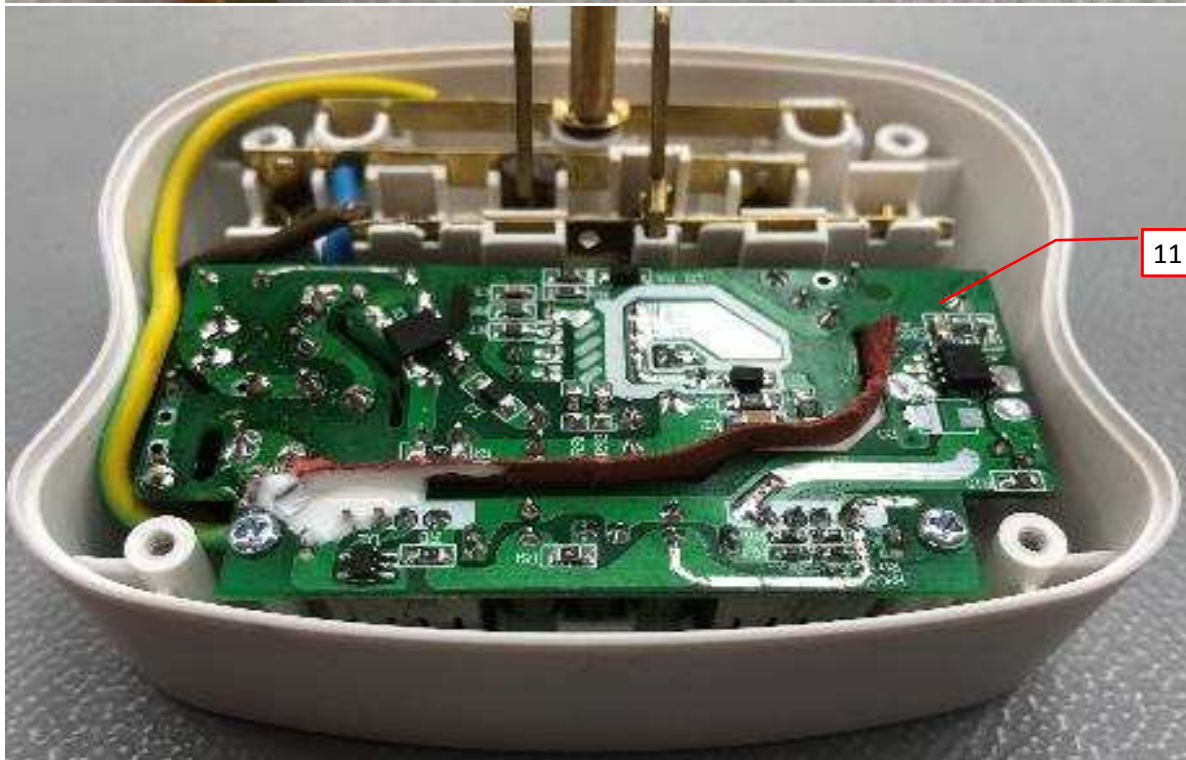
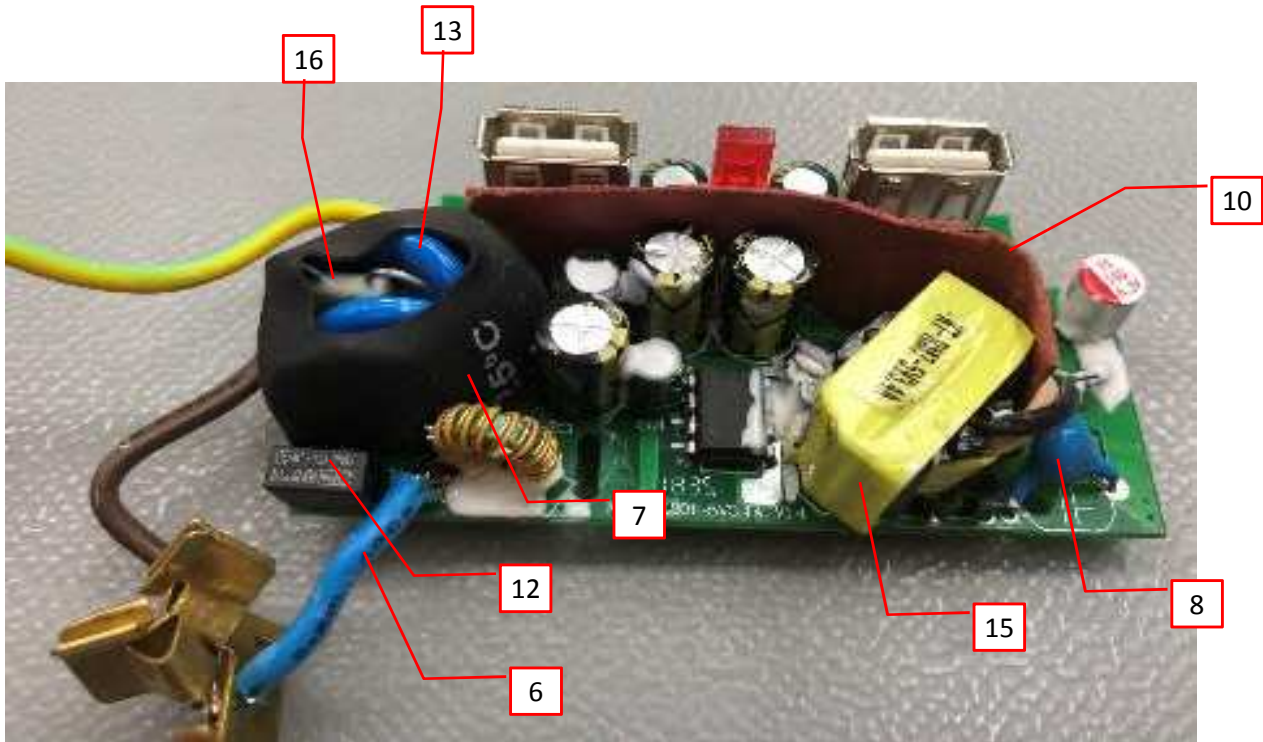
3.0 Product Photographs

Photo 15 - Overall view of 30332



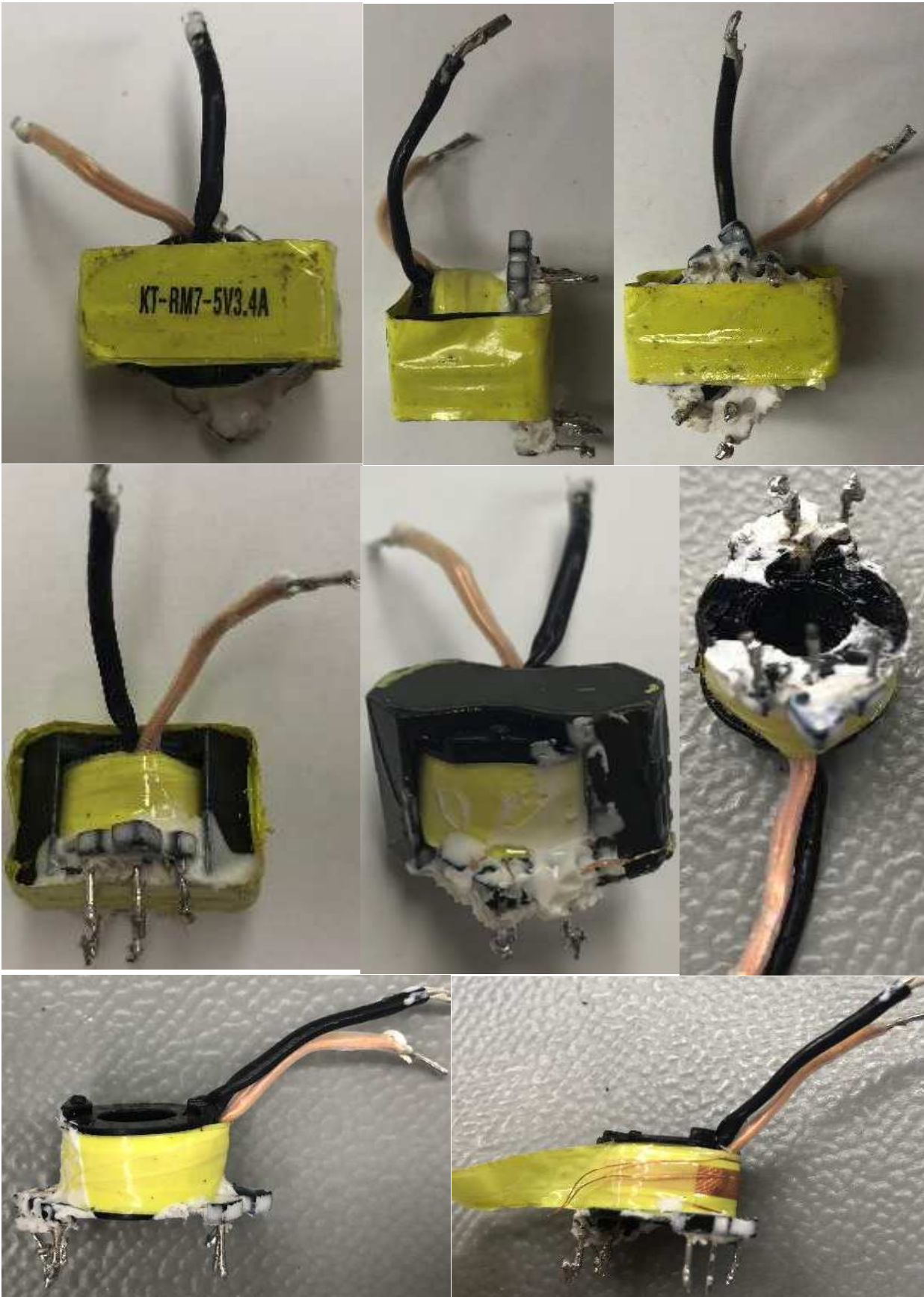
3.0 Product Photographs

Photo 16 - PCBA for class 2 power unit KT-CU2301-5V3.4A-2 which with surge protector function



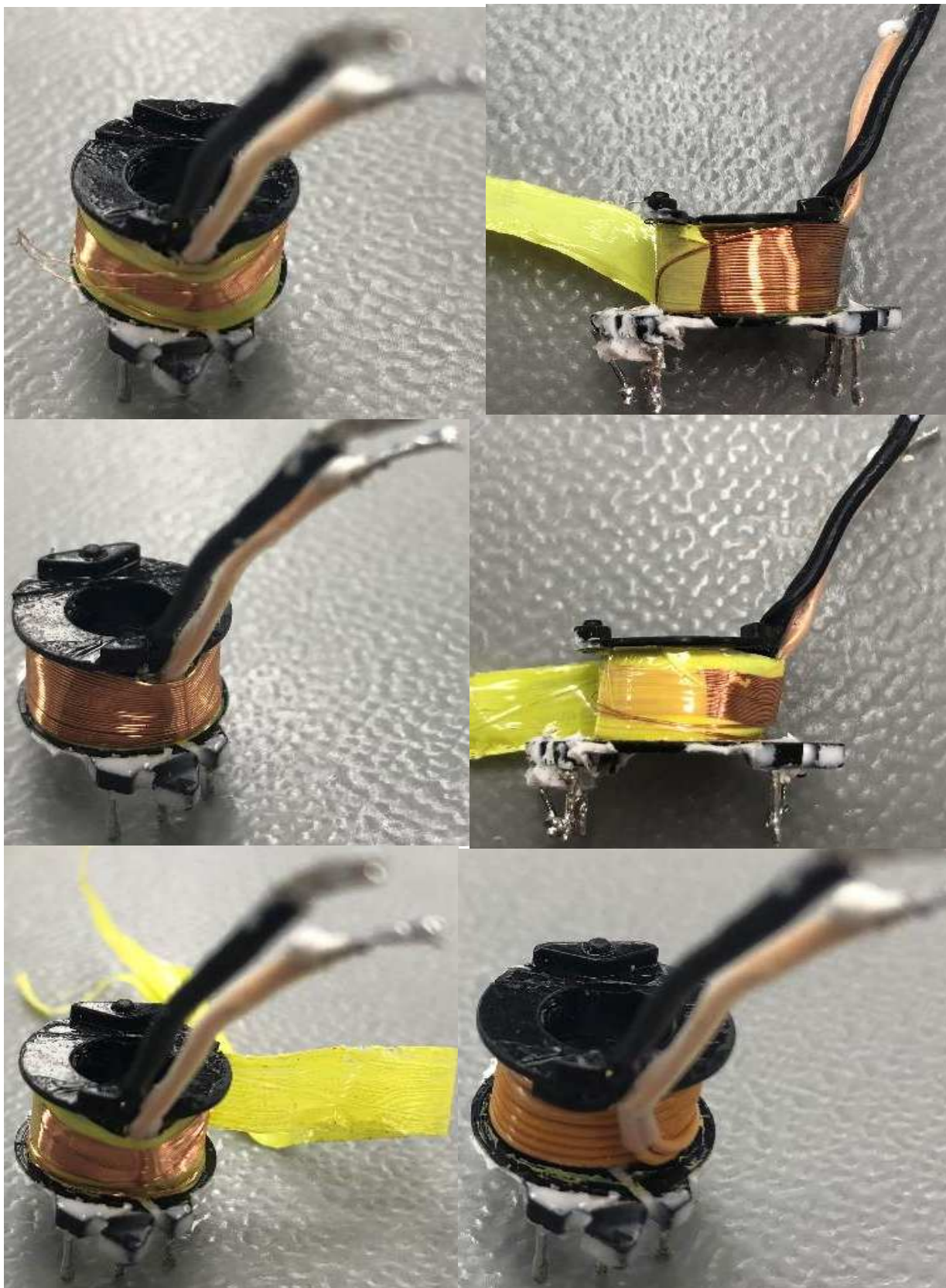
3.0 Product Photographs

Photo 17 - Transformer for class 2 power unit KT-CU2301-5V3.4A-2



3.0 Product Photographs

Photo 18 - Transformer for class 2 power unit KT-CU2301-5V3.4A-2



3.0 Product Photographs

Photo 19 - Transformer for class 2 power unit KT-CU2301-5V3.4A-2



Photo 20 - Overall view of 30332A



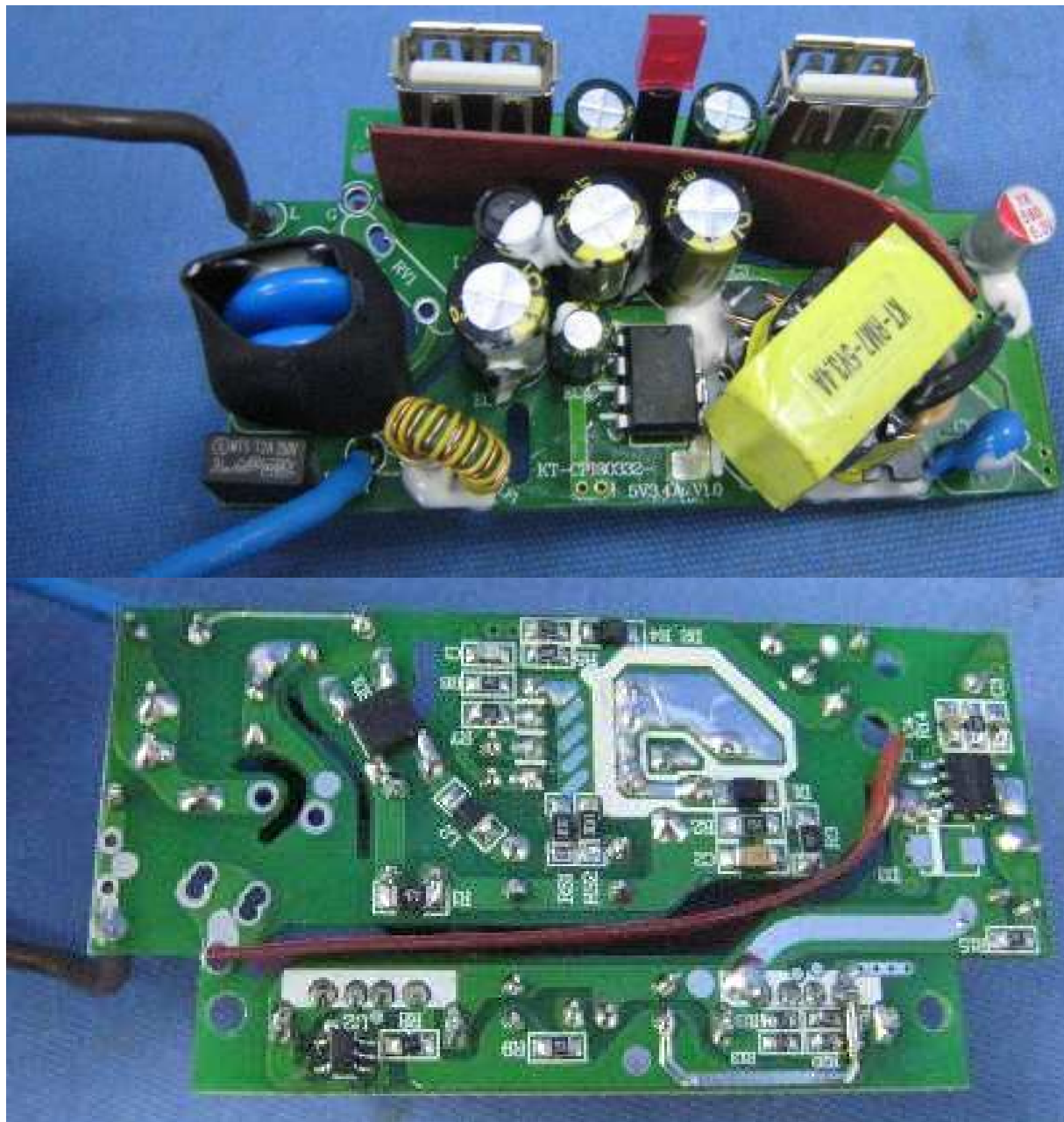
3.0 Product Photographs

Photo 21 - Overall view of 30332A



3.0 Product Photographs

Photo 22 - Overall view of 30332A



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	Enclosure	CHI MEI CORPORATION	PA-766	ABS, minimum thickness 1.5mm, flame class V-0, HWI I, HAI 0, RTI 60°C, CTI 2	cURus
2	2	Grounding pin	various	H62	Tubular construction, with minimum thickness 0.7mm	NR
2	3	Line and neutral blade	various	H62	Solid construction, with thickness of about 1.5mm	NR
5	4	Grounding contact	various	H62	Copper alloy, with minimum thickness 0.4mm	NR
5	5	Line and neutral contact	various	H62	Copper alloy, with minimum thickness 0.4mm	NR
8,1 6	6	Internal wire	DONGGUAN CHENG XING ELECTRONIC CO LTD	1672	VW-1, 300Vac, 105°C, min. 24AWG	cURus
			Various	1672	VW-1, 300Vac, 105°C, min. 24AWG; Fully comply with ANSI/UL 758.	cURus
			HANGZHOU KAITE ELECTRICAL APPLIANCE CO LTD	1015	VW-1, 600Vac, 105°C, min. 24AWG	cURus
				1007	VW-1, 300Vac, 80°C, min. 24AWG	cURus
			Various	1015	VW-1, 600Vac, 105°C, min. 24AWG; Fully comply with ANSI/UL 758.	cURus
			Various	1007	VW-1, 300Vac, 80°C, min. 24AWG; Fully comply with ANSI/UL 758.	cURus
			DONG GUAN SHENG PAI ELECTRIC WIRE & CABLE CO LTD	3239	3kVdc, 150°C, Min. 24AWG, VW-1	cURus
			Various	3239	3kVdc, 150°C, Min. 24AWG, VW-1; Fully comply with ANSI/UL 758.	cURus

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
8,1 6	7	Heat shrinkable tube	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR-H	600Vrms, 125°C, VW-1	cURus
			CHANGYUAN ELECTRONICS GROUP CO LTD	CB-1000	600Vrms, 125°C, VW-1	cURus
			DONGGUAN SALIPT CO LTD	SALIPT S-901-600	600Vrms, 125°C, VW-1	cURus
			SHENZHEN WOLIDA TRADING CO LTD	RSFR-H-2	600Vrms, 125°C, VW-1	cURus
			Various	Various	600Vrms, 125°C, VW-1; Fully comply with ANSI/UL 224.	cURus
8,1 6	8	Y capacitor (CY1)	SHANTOU HIGH-NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	250Vac, Max. 1000pF, 125°C, Y1 type	cURus
			HSUAN TAI ELECTRONICS CO LTD	CY Series	250Vac, Max. 1000pF, 125°C, Y1 type	cURus
8	9	Transformer (T1)	FANGZHOU ELECTRONICS CO.,LTD	KT-RM7-5V3.4A	Class 130 insulation system, designated TAIHU 130-TM; DONGGUAN ARK ELECTRONICS CO LTD; Dielectric Strength test 1250Vac 60sec on primary to secondary; 1250Vac 60sec on secondary to core.	cURus
8	9a	Tape	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A (b)	130°C	cURus
8	9b	Winding wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEW/U@	MW 75-C, 130°C	cURus
8	9c	Tube	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	PTFE, 150Vrms, 200°C	cURus
8	9d	Triple insulating wire	COSMOLINK CO LTD	TIW-M	Reinforced, 130°C, 1410V peak	cURus
8	9e	Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 150°C, min. thickness 0.75mm	cURus

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
8	9f	Varnish (not shown)	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	MW 28-C, 130°C	cURus
8,16	10	Insulation pad	DUPONT TEIJIN FILMS U S L P	Melinex 561	PET,VTM-2, 105°C, Min.0.3 mm thick	cURus
8,16	11	Printed wiring board	KUNSHAN HUATAO ELECTRONICS CO LTD	HT-D	V-0, 130°C; Minimum thickness: 1.30mm;	cURus
			Various	Various	V-0, 130°C; Minimum thickness: 1.30mm;	cURus
9,16	12	Fuse (F1)	CHANGZHOU CHINA-LAY ELECTRONICS CO LTD	32F	4 x 11.1mm, 250VAC, 2A	cULus
			DONG GUAN ANDU ELECTRONICS CO LTD	3GFU	3.6mm x 10mm, 125Vac, 2A	cULus
			DONGGUAN REOMAX ELECTRONICS TECHNOLOGY CO LTD	3GFV	3.6mm x 10mm, 125Vac, 2A	cULus
			DONGGUAN REOMAX ELECTRONICS TECHNOLOGY CO LTD	MTS	8.4 x 4.0 x 8.2 mm, 250Vac, 2A	cULus
9,16	13	Varistor	CERGLASS MFG INC	14D331K	330V, -40~+85°C, fulfilled 3kA pulse test.	cURus
9	14	Thermal-Link (F1)	XIAMEN SET ELECTRONICS CO LTD	C2	250VAC, 5A	cURus
16	15	Transformer (T1)	FANGZHOU ELECTRONICS CO.,LTD	KT-RM7-5V3.4A	Class 130 insulation system, designated TAIHU 130-TM of DONGGUAN ARK ELECTRONICS CO LTD	NR
16	15a	Tape	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A (b)	130°C	cURus
16	15b	Winding wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEW/U@	MW 75-C, 130°C	cURus
16	15c	Tube	CHANGYUAN ELECTRONICS GROUP CO LTD	CB-TT-L	PTFE, 150Vrms, 200°C	cURus
16	15d	Triple insulating wire	COSMOLINK CO LTD	TIW-M	Reinforced, 130°C, 1410V peak	cURus
16	15e	Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	V-0, 150°C, min. thickness 0.75mm	cURus

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
16	15f	Varnish (not shown)	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	T-4260(a)	MW 28-C, 130°C	cURus
16	16	Thermal-Link (F1)	XIAMEN SET ELECTRONICS CO LTD	Y2	250VAC, 5A	cURus

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	
<u>Recognized Component</u>	- 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.
<u>Listed Component</u>	- 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.
<u>Unlisted Component</u>	- 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.
<u>Critical Features/Components</u>	- 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.
<u>Construction Details</u>	- 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. <u>Spacing</u>	- In primary circuits, 1.6mm minimum spacing are maintained through air and over surfaces of insulating material between current-carrying parts of opposite polarity and 6.4mm minimum between such current-carrying parts and dead-metal parts or low voltage isolated circuits.
2. <u>Mechanical Assembly</u>	- Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.
3. <u>Corrosion Protection</u>	- All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.
4. <u>Accessibility of Live Parts</u>	- All uninsulated live parts in primary circuitry are housed within a <metal or non-metallic> enclosure constructed with no openings other than those specifically described in Sections 4 and 5.
5. <u>Grounding</u>	- All exposed dead-metal parts and all dead-metal parts within the enclosure that are exposed are connected to the grounding lead of the power supply cord or the equipment grounding terminal
6. <u>Polarized Connection</u>	- This product is provided with a polarized power supply connection. All single pole switches and fuses are connected only to the ungrounded supply circuit conductor.
7. <u>Internal Wiring</u>	- 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 for main circuit is minimum 14AWG, with a minimum rating of 600V, 105°C.
8. <u>Schematics</u>	- See illustration 6 to 13 for details
9. <u>Markings</u>	- See illustration 1 for details
10. <u>Cautionary Markings</u>	- See illustration 2 for details
11. <u>Installation, Operating and Safety Instructions</u>	- N/A

7.0 Illustrations

Illustration 1 - Marking

<p>Model: 30332</p> <p>15A 125VAC 1875W 60Hz</p> <p>TYPE 3 SPD VPR: 900V (L-N,L-G,N-G)</p> <p>Class 2 Output: 5Vdc 3.4A</p> <p>KAITE</p> <p>Made In China Date Code: 20YY/MM/DD</p>	 <p>3121738</p> <p>CONFORMS TO UL STD. 498A and 1449 CERTIFIED TO CSA STD.C22.2#42 and 269.3</p>
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Note:

- 1 There can be with alternative trade mark KMC,
- 2 There can be with alternative control no 5003846 for manufacturer 2 "Zhejiang Camet Electrical Appliance Co.,Ltd.", it with same marking as above except different control no;
- 3 There can be with alternative control no 5013210 for manufacturer 3 "Kingtec (vietnam) technologies Co.,Ltd", it with same marking information as above, except with coutry original information change to be "Made In Vietnma" and different control no;
- 4 For type CU23011,30332A, all marking information is the same as above, only different class 2 ouput parameter and SPD VPR parameter, see section 2 for details.
- 5 For multiple listee 1 "Central Purchasing LLC. DBA Harbor Freight Tools" with multiple listee type 56220 which corresponding to basic listee type 30332. All marking is the same as above, only different multiple listee type designation and different multiple listee trade mark as "Armstrong", see section 9 for details

7.0 Illustrations

Illustration 2 - Caution

CAUTION:

Do not install this device if there is not least 10 meters (30 feet) or more of wire between the electrical outlet and the electrical service panel

This device features an internal protection that will disconnect the surge protective component but will maintain power to the load - now unprotected. if this situation is undesirable for the application, follow the manufacturer's instructions for replacing the device

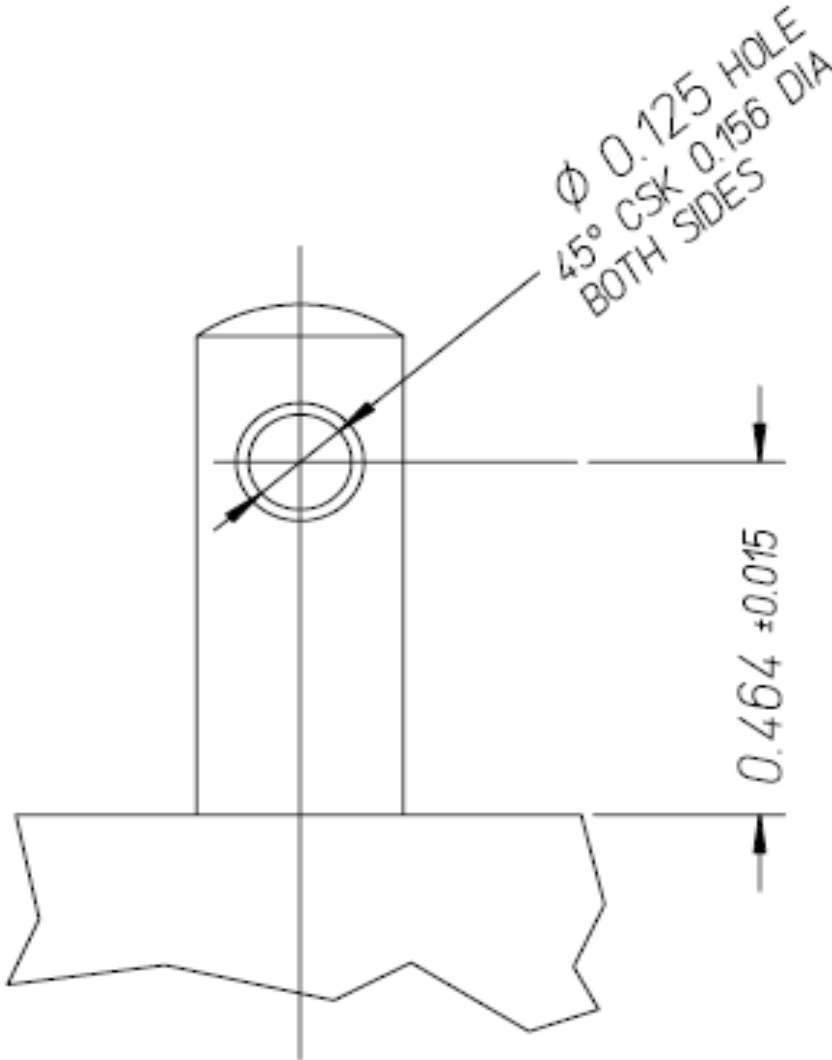
ATTENTION:

N'installez pas cet appareil si le fil entre la prise électrique et le panneau électrique est d'une longueur inférieure à 10 m (30 pi).

Ce dispositif est doté d'un système de protection interne qui désactivera le composant de suppression des surtensions. La barre d'alimentation continuera ensuite à laisser passer le courant, mais sans la protection contre les surtensions. Si les appareils branchés nécessitent une protection contre les surtensions, suivez les directives du fabricant pour le remplacement du dispositif.

7.0 Illustrations

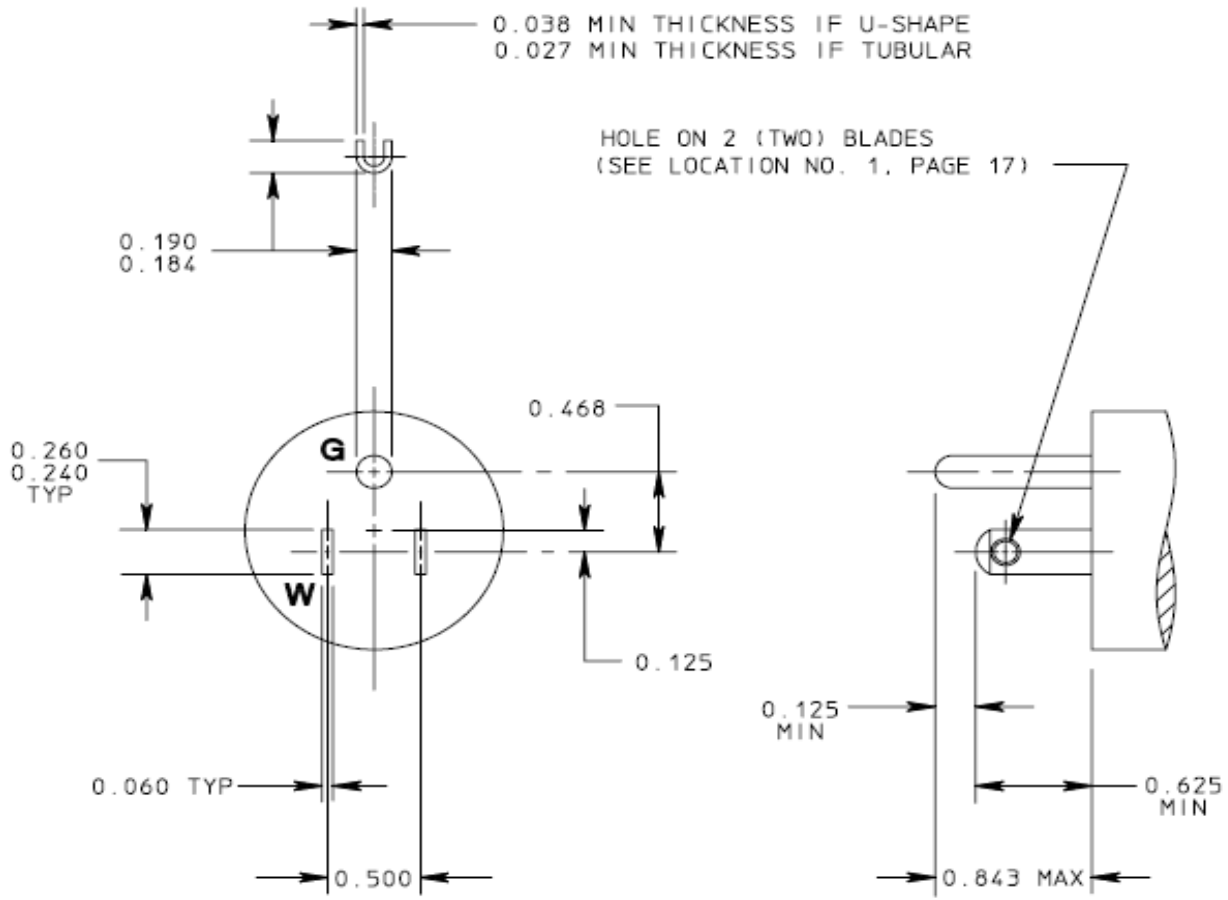
Illustration 3 - Plug blade location hole dimension (unit:inch)



LOCATION # 1

7.0 Illustrations

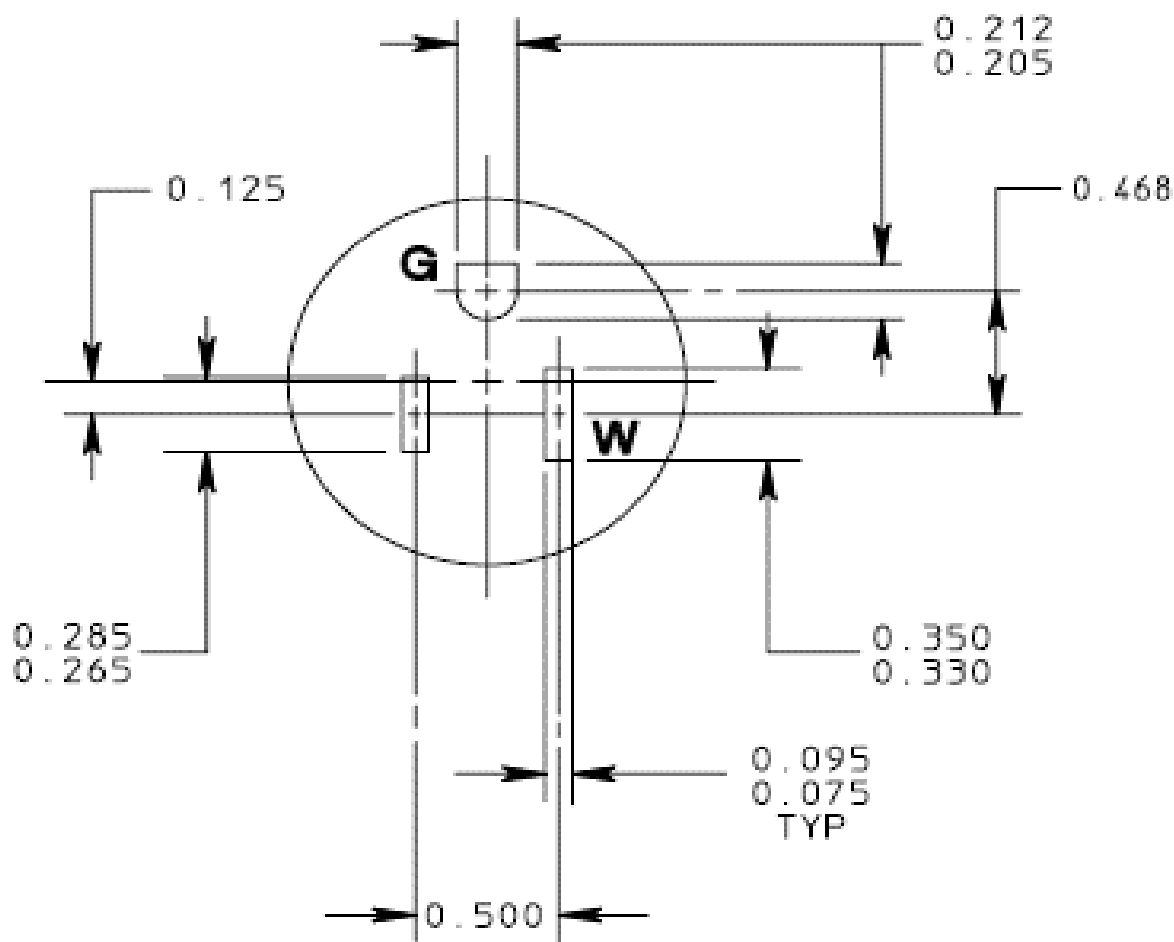
Illustration 4 - 5-15P Plug standard sheet (unit:inch)



PLUG

7.0 Illustrations

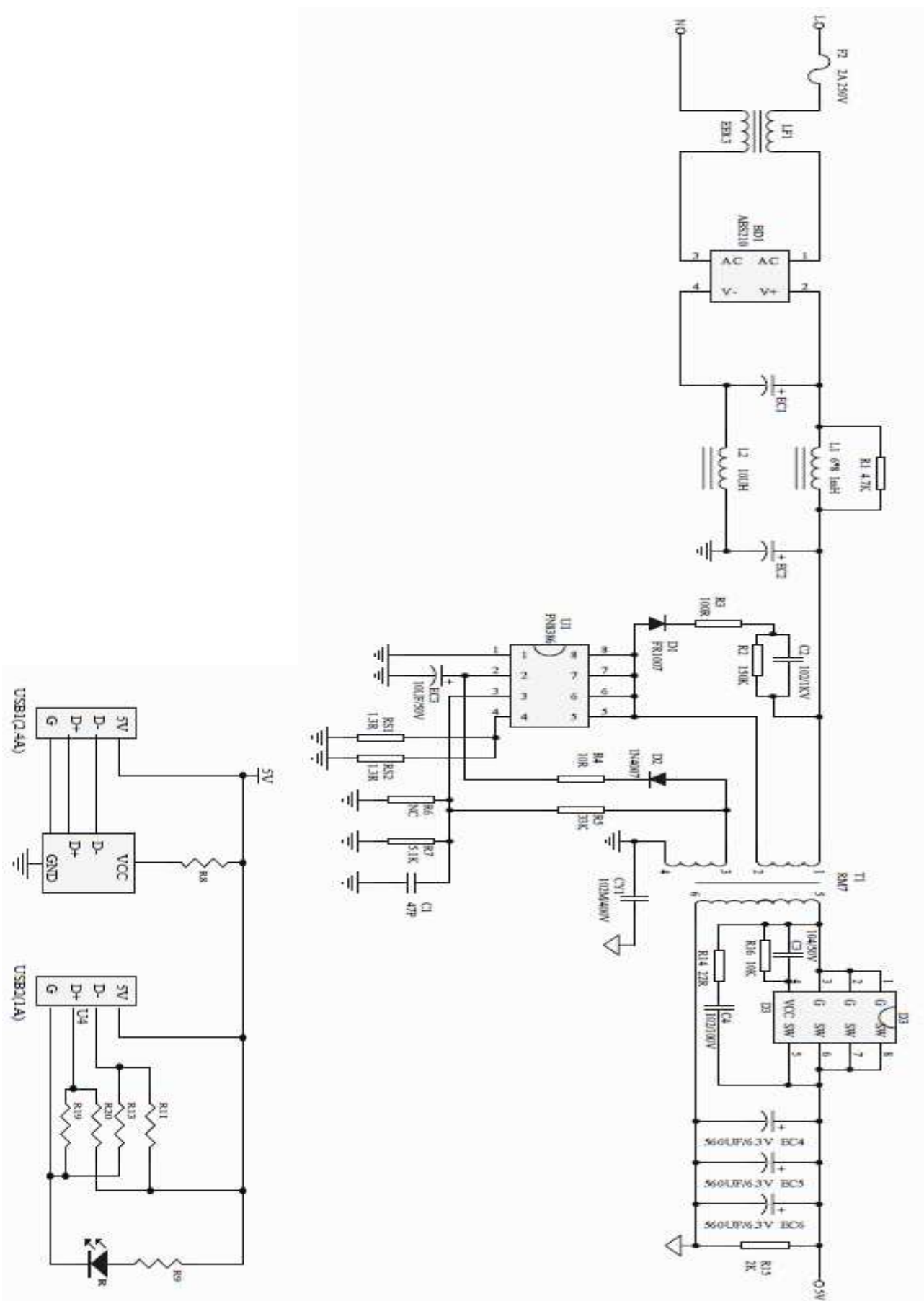
Illustration 5 - 5-15R receptacle standard sheet (unit:inch)



RECEPTACLE

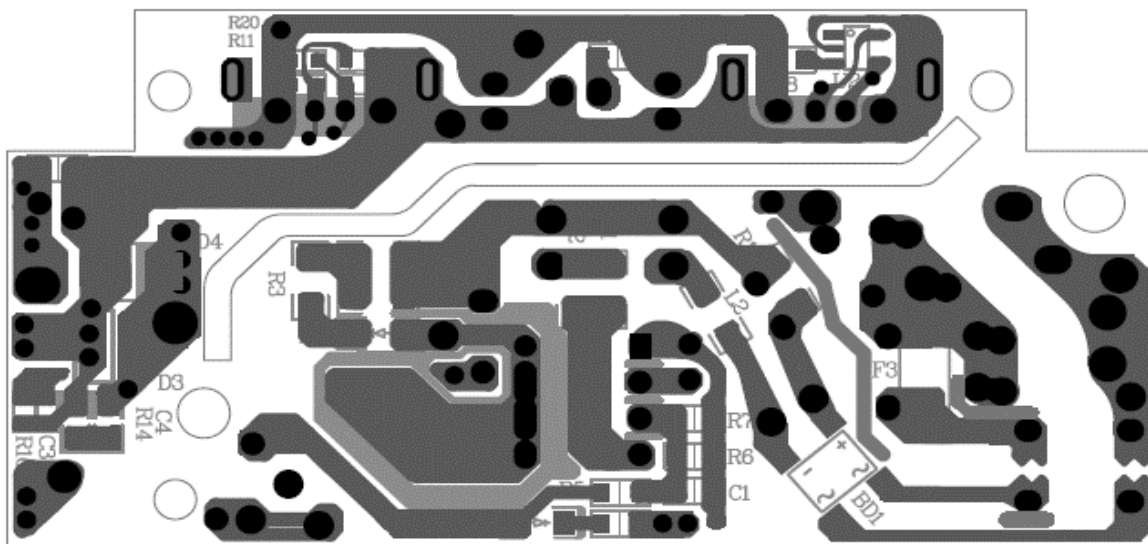
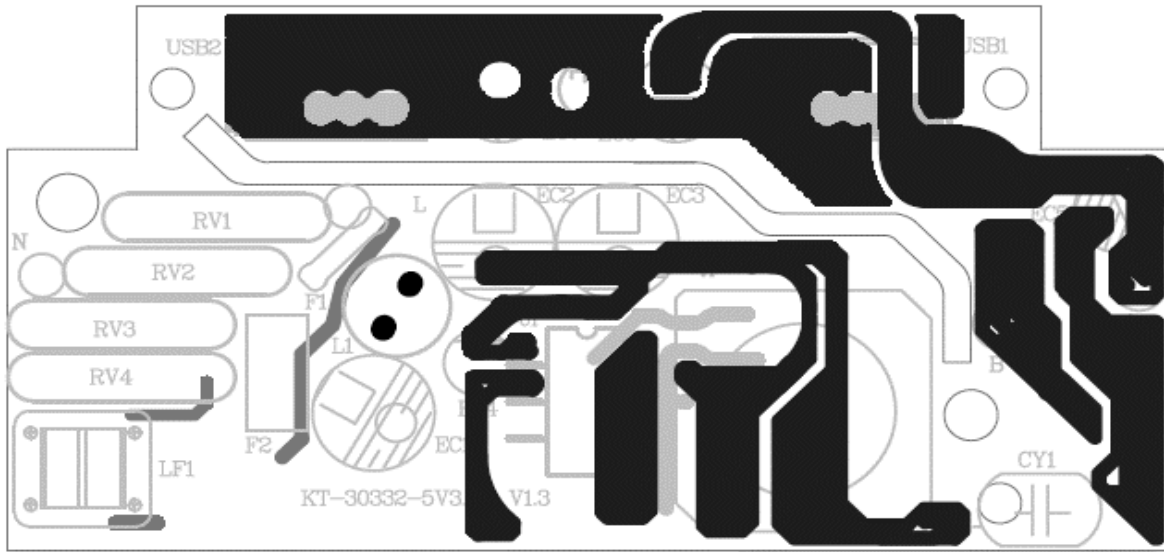
7.0 Illustrations

Illustration 6 - Electrical principle diagram for class 2 power unit KT-CU2301-5V3.4A



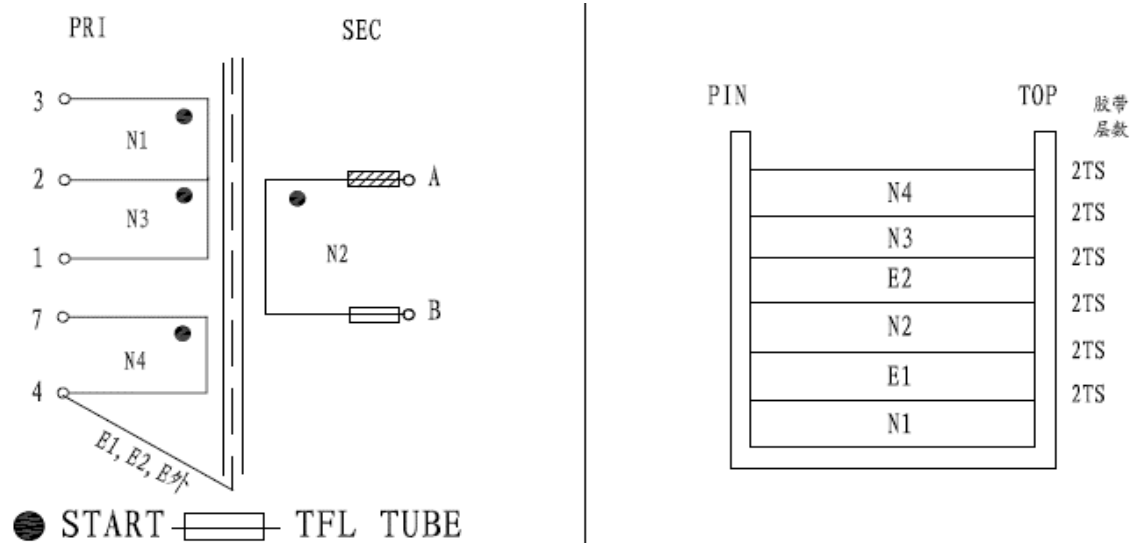
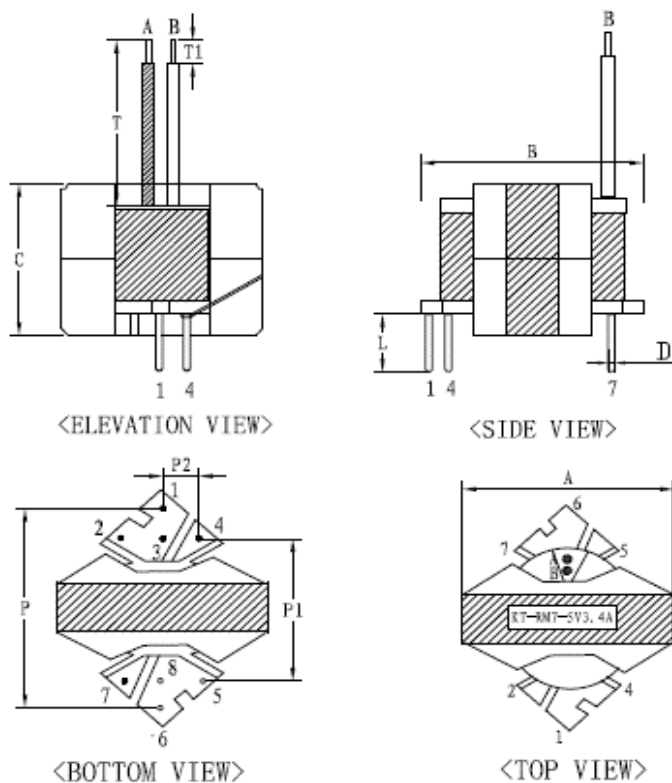
7.0 Illustrations

Illustration 7 - Component layout drawing and PCB trace for class 2 power unit KT-CU2301-5V3.4A



7.0 Illustrations

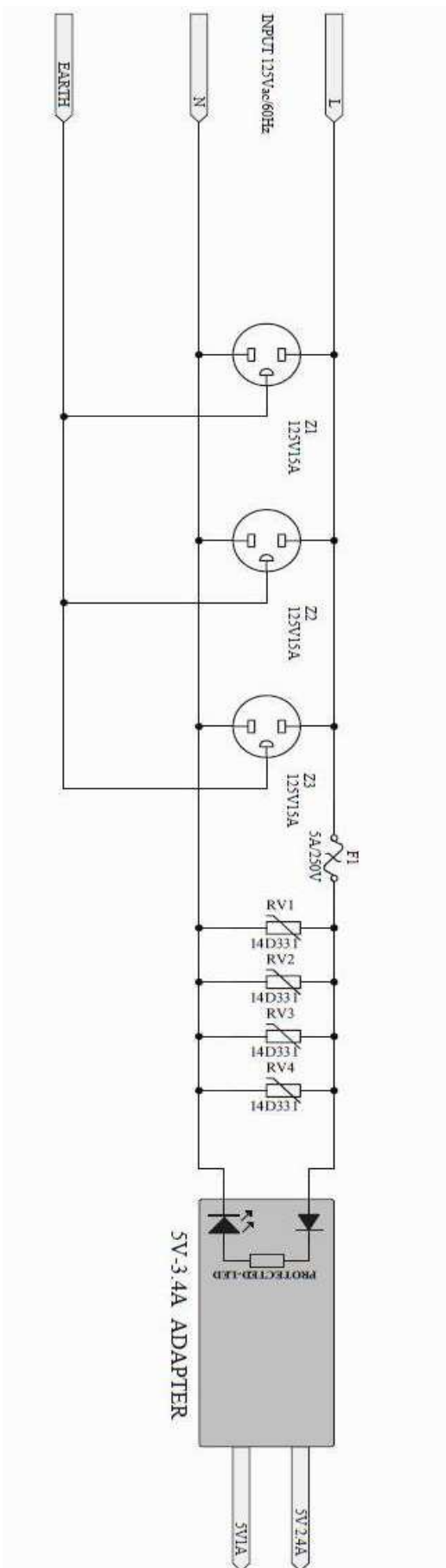
Illustration 8 - Transformer for class 2 power unit KT-CU2301-5V3.4A



WINDING	START	FINISH	WIRE<mm>	TURN<TS>	TAPE<TS>	REMARK
N1	3	2	0.23φ*1P 2UEW	50	2	密绕
E1	4	NC	0.10φ*2P 2UEW	25	2	密绕
N2	A	B	0.60φ*2P TIWW-B	4	2	密绕
E2	4	NC	0.10φ*2P 2UEW	18	2	密绕
N3	2	1	0.23φ*1P 2UEW	25	2	密绕
N4	7	4	0.11φ*2P 2UEW	12	2	密绕

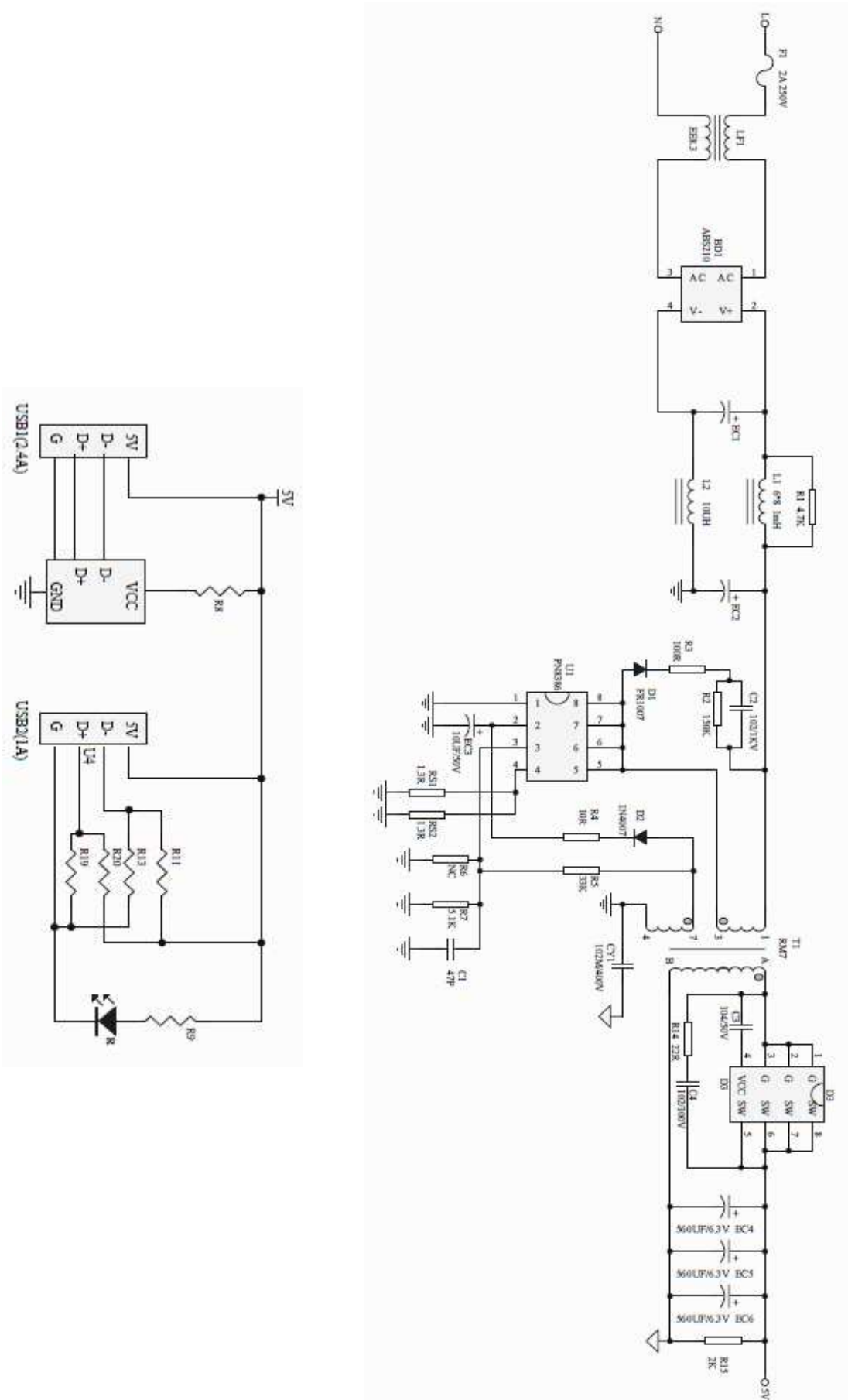
7.0 Illustrations

Illustration 9 - Electrical principle diagram for SPD for CU23011



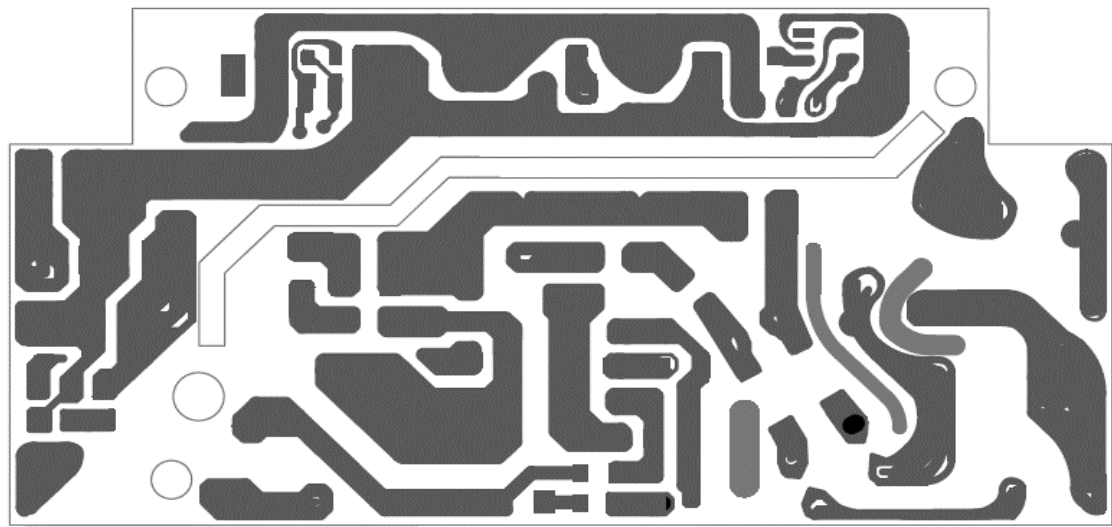
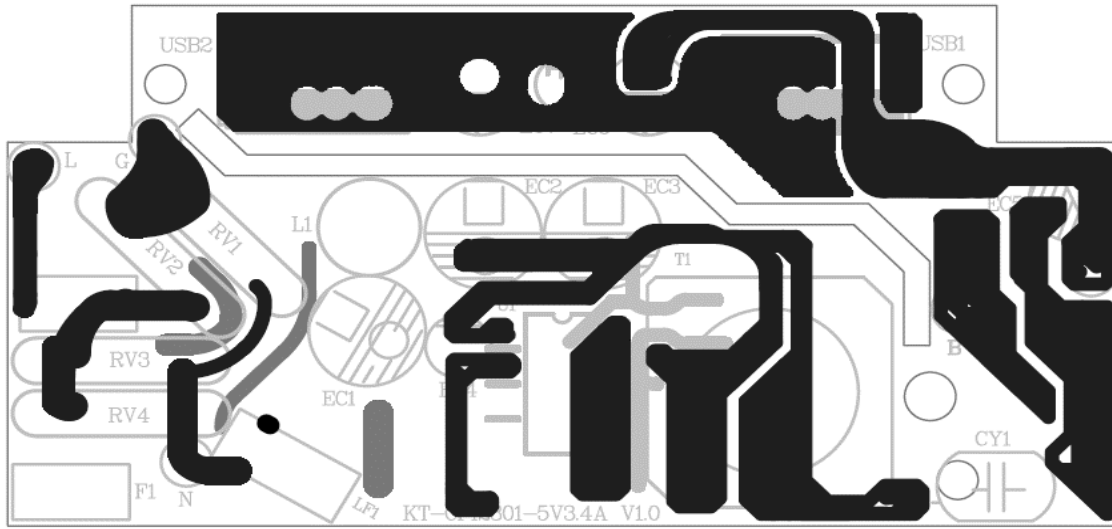
7.0 Illustrations

Illustration 10 - Electrical principle diagram for class 2 power unit KT-CU2301-5V3.4A-2



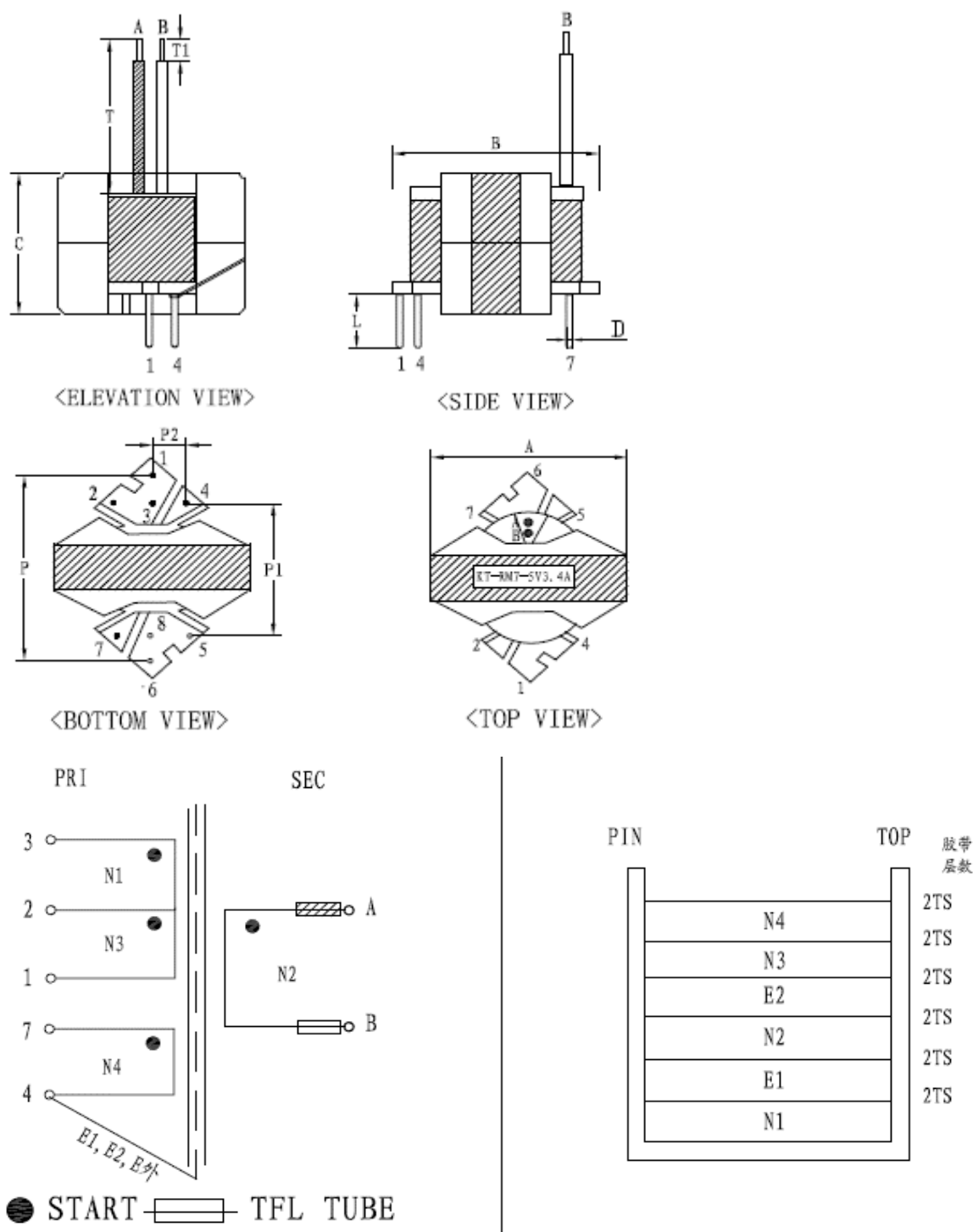
7.0 Illustrations

Illustration 11 - Component layout drawing and PCB trace for class 2 power unit KT-CU2301-5V3.4A-2



7.0 Illustrations

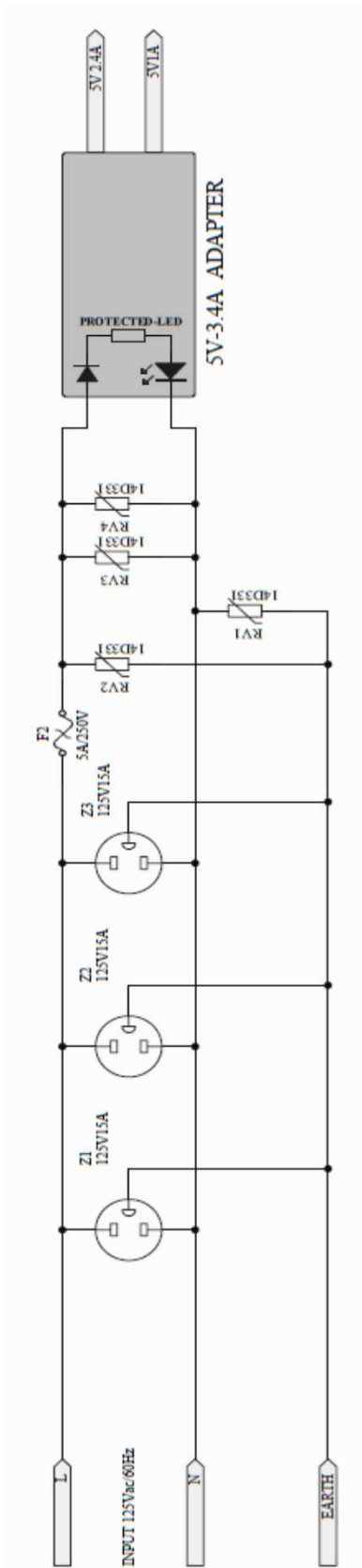
Illustration 12 - Structure of transformer for class 2 power unit KT-CU2301-5V3.4A-2



WINDING	START	FINISH	WIRE<mm>	TURN<TS>	TAPE<TS>	REMARK
N1	3	2	0.23φ*1P 2UEW	50	2	密绕
E1	4	NC	0.10φ*2P 2UEW	25	2	密绕
N2	A	B	0.60φ*2P TIWW-B	4	2	密绕
E2	4	NC	0.10φ*2P 2UEW	18	2	密绕
N3	2	1	0.23φ*1P 2UEW	25	2	密绕
N4	7	4	0.11φ*2P 2UEW	12	2	密绕

7.0 Illustrations

Illustration 13 - Electrical principle diagram for SPD part which in together with class 2 power unit KT-CU2301-5V3.4A-2

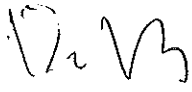



8.0 Test Summary			
Evaluation Period	2018-04-23~2018-08-15		Project No. 180401334SHA
Sample Rec. Date	23-Apr-2018	Condition Prototype	Sample ID. 0180423
Test Location	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China		
Test Procedure	Testing Lab		
Determination of the result includes 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.			
Below test conducted.			
Test Description	UL 498A:2008 Ed.2 +R:10Jun2016 Clause	CSA C22.2#42:2010 Ed.7+U1;U2;U3 Clause	
Dielectric Voltage Withstand	24	8.21	
Mold Stress Relief	22	-	
Moisture Absorption Resistance Test	23	-	
Dielectric Voltage Withstand (Repeated)	24	8.21	
Insulation Resistance	26	8.5	
Security of Blades	27	8.2	
Contact Security Test	28	-	
Retention of Plugs	29	8.7	
Overload Test	30	8.8	
Temperature Rise	31	8.9	
Retention of plugs Test (Repeated)	32	8.10	
Resistance to arcing test	33	8.17	
Improper Insertion Test	35	-	
Single-Pole Insertion Test	35A	-	
Grounding Contact	36	8.16	
Obstruction Test	38	-	
Seperation Test	39	-	
Circuit Condition Indication Test	40	-	
Leakage Current Test	41	-	
Test Description	UL 1449:2014 Ed.4+R:21Jul201 7 Clause	CSA C22.2#269.3:2 017 Ed.2 Clause	
Temperature Test	39	6.5	
Dielectric Voltage-Withstand Test	38	6.6	
Leakage Current Test	37	6.18	
Impact Test	-	6.7.1	
Conductor secureness	-	6.7.5	
Grounding Continuity Test	48	-	
Impact Test	61	6.17	
Mold Stress-Relief Distortion Test	62	-	
Surge test for VPR	40.6	6.2	
Operating duty cycle	40.8	6.4	
Repeat surge test	40.9	6.2	
Abnormal overvoltage-Intermediate current behaviour	44.3	6.10.3	
Abnormal overvoltage-Limited current behaviour test	44.4	6.10.4	
Operational voltage	43	-	
Accessibility tests	66	6.11	
Bonding impedance test	-	6.14	
Insulating Material test	-	6.15	
For Class 2 Power Unit part, below test conducted, all test results refer to report 180701483SHA-001.			
Test Description	UL 1310:2011 Ed.6+R:01Feb20 17	CSA C22.2#223:201 5 Ed.3	
Leakage Current Test	26	6.6	

8.0 Test Summary			
Leakage Current Test and Dielectric Voltage Withstand	27	--	
Maximum Output Voltage Test	28	6.3.1	
Maximum Input Test	29	6.3.2	
Output Current and Power Test	30	6.3.4	
Full-Load Output Current Test	32	6.3.3	
Normal Temperature Test	33	6.4	
Dielectric Voltage-Withstand Test	34	6.5	
Abnormal Test	39	--	
Tests on insulating materials	40	--	
Secondary Circuit Protection	--	6.7	
Abormal	--	6.8	
Insulating Material	--	6.14	
Evaluation Period	2018-08-13~2018-09-14		Project No. 180801233SHA
Sample Rec. Date	13-Aug-2018	Condition	Prototype
			Sample ID. 0180813
Test Location	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China		
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.			
Below test conducted for new added CU23011			
Test Description	UL 498A:2008 Ed.2 +R:10Jun2016 Clause	CSA C22.2#42:2010 Ed.7+U1;U2;U3 Clause	
Dielectric Voltage Withstand	24	8.21	
Mold Stress Relief	22	-	
Moisture Absorption Resistance Test	23	-	
Dielectric Voltage Withstand (Repeated)	24	8.21	
Insulation Resistance	26	8.5	
Security of Blades	27	8.2	
Contact Security Test	28	-	
Retention of Plugs	29	8.7	
Overload Test	30	8.8	
Temperature Rise	31	8.9	
Retention of plugs Test (Repeated)	32	8.10	
Resistance to arcing test	33	8.17	
Improper Insertion Test	35	-	
Single-Pole Insertion Test	35A	-	
Grounding Contact	36	8.16	
Obstruction Test	38	-	
Seperation Test	39	-	
Circuit Condition Indication Test	40	-	
Leakage Current Test	41	-	
Test Description	UL 1449:2014 Ed.4+R:21Jul201 7 Clause	CSA C22.2#269.3:2 017 Ed.2 Clause	
Temperature Test	39	6.5	
Dielectric Voltage-Withstand Test	38	6.6	
Leakage Current Test	37	6.18	
Impact Test	-	6.7.1	
Conductor secureness	-	6.7.5	
Grounding Continuity Test	48	-	
Impact Test	61	6.17	
Mold Stress-Relief Distortion Test	62	-	
Surge test for VPR	40.6	6.2	
Operating duty cycle	40.8	6.4	
Repeat surge test	40.9	6.2	
Abnormal overvoltage-Intermediate current behaviour	44.3	6.10.3	

8.0 Test Summary			
Abnormal overvoltage-Limited current behaviour test	44.4	6.10.4	
Operational voltage	43	-	
Accessibility tests	66	6.11	
Bonding impedance test	-	6.14	
Insulating Material test	-	6.15	
For Class 2 Power Unit KT-CU2301-5V3.4A, below test conducted, all test results refer to report 180801234SHA-001.			
Test Description	UL 1310:2011 Ed.6+R:01Feb20 17 Clause	CSA C22.2#223:201 5 Ed.3 Clause	
Leakage Current Test	26	6.6	
Leakage Current Test and Dielectric Voltage Withstand	27	--	
Maximum Output Voltage Test	28	6.3.1	
Maximum Input Test	29	6.3.2	
Output Current and Power Test	30	6.3.4	
Full-Load Output Current Test	32	6.3.3	
Normal Temperature Test	33	6.4	
Dielectric Voltage-Withstand Test	34	6.5	
Abnormal Test	39	--	
Tests on insulating materials	40	--	
Secondary Circuit Protection	--	6.7	
Abnormal	--	6.8	
Securement of componet	--	6.12	
Insulating Material	--	6.14	
Evaluation Period	2018-09-26~2018-11-05		Project No. 180901931SHA
Sample Rec. Date	26-Sep-2018	Condition	Prototype
			Sample ID. 0180926
Test Location	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China		
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.			
All is the same as before, only add new type 30332,56220 which with similar construction as former type CU23011, only different surge protector and class 2 power unit construction, after review, below test conducted for new added type 30332,56220			
Test Description	UL 498A:2008 Ed.2 +R:10Jun2016 Clause	CSA C22.2#42:2010 Ed.7+U1;U2;U3 Clause	
Dielectric Voltage Withstand	24	8.21	
Seperation Test	39	-	
Circuit Condition Indication Test	40	-	
Leakage Current Test	41	-	
Test Description	UL 1449:2014 Ed.4+R:21Jul201 7 Clause	CSA C22.2#269.3:2 017 Ed.2 Clause	
Temperature Test	39	6.5	
Dielectric Voltage-Withstand Test	38	6.6	
Leakage Current Test	37	6.18	
Impact Test	-	6.7.1	
Conductor secureness	-	6.7.5	
Grounding Continuity Test	48	-	
Impact Test	61	6.17	
Mold Stress-Relief Distortion Test	62	-	
Surge test for VPR	40.6	6.2	
Operating duty cycle	40.8	6.4	
Repeat surge test	40.9	6.2	

8.0 Test Summary			
Abnormal overvoltage-Intermediate current behaviour	44.3	6.10.3	
Abnormal overvoltage-Limited current behaviour test	44.4	6.10.4	
Operational voltage	43	-	
Accessibility tests	66	6.11	
Bonding impedance test	-	6.14	
Insulating Material test	-	6.15	
For Class 2 Power Unit KT-CU2301-5V3.4A-2, below test conducted, all test results refer to report 180901932SHA-001.			
	UL 1310:2018 Ed.7 Clause	CSA C22.2#223:201 5 Ed.3 Clause	
Test Description			
Leakage Current Test	26	6.6	
Leakage Current Test and Dielectric Voltage Withstand	27	--	
Maximum Output Voltage Test	28	6.3.1	
Maximum Input Test	29	6.3.2	
Output Current and Power Test	30	6.3.4	
Full-Load Output Current Test	32	6.3.3	
Normal Temperature Test	33	6.4	
Dielectric Voltage-Withstand Test	34	6.5	
Abnormal Test	39	--	
Tests on insulating materials	40	--	
Secondary Circuit Protection	--	6.7	
Abnormal	--	6.8	
Securement of componet	--	6.12	
Insulating Material	--	6.14	
Evaluation Period	2018-11-27~2018-11-28		Project No. 181102233SHA
Sample Rec. Date	NA	Condition Prototype	Sample ID. NA
Test Location	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China		
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.			
All is the same as before, only delete basic listee model 56220 and add multiple listee 1 "Central Purchasing LLC. DBA Harbor Freight Tools", after reievw, no additional test required.			
Evaluation Period	2019-01-10~2019-02-19		Project No. 190101072SHA
Sample Rec. Date	10-Jan-2019	Condition Prototype	Sample ID. 0190110
Test Location	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China		
Test Procedure	Testing Lab		
All is the same as before, only delete original type 30621,30620, add new type 30332A which with similar construction as original type 30332A, only difference is remove RV1,RV2 for L-G,N-G mode for SPD function, add new manufacturer 3 "Kingtec (vietnam) technologies Co.,Ltd." and some other administrative updates, after review, no additional test required.			

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:	Da Deng	Reviewed by:	Rachel Wang
Title:	Engineer	Title:	Reviewer
Signature:		Signature:	

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	HANGZHOU KAITE ELECTRICAL APPLIANCE CO.,LTD.
Address	SANDU INDUSTRIAL ZONE, JIANDE CITY, ZHEJIANG PROVINCE 311605
Country	China
Product	Current taps with surge protector

MULTIPLE LISTEE 1	Central Purchasing LLC. DBA Harbor Freight Tools
Address	26541 Agoura Rd., Calabasas,CA91302
Country	USA
Brand Name	Armstrong

ASSOCIATED MANUFACTURER	HANGZHOU KAITE ELECTRICAL APPLIANCE CO.,LTD.
Address	SANDU INDUSTRIAL ZONE, JIANDE CITY, ZHEJIANG PROVINCE 311605
Country	China

MULTIPLE LISTEE 1 MODELS	BASIC LISTEE MODELS
56220	30332

MULTIPLE LISTEE 2	None
Address	
Country	
Brand Name	

ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 2 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 3	None
Address	
Country	
Brand Name	

ASSOCIATED MANUFACTURER	
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 issue 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.

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.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:
Intertek Testing Services Shanghai
ETL Component Evaluation Center
Building No. 86, 1198 Qinzhou Road (North)
Shanghai 200233, China
Attn: Ms. Angela Han

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, Grounding Continuity 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>
No products covered by this Report. (judgement by engineer)	1250V or 1500V	60 s 1 s

11.2 Grounding Continuity Test

Method

Each product listed below shall be subjected to a test to determine that there is continuity between accessible dead-metal parts of the product and the grounding pin or blade of the attachment plug.

If all accessible dead metal is connected, only a single test need be performed. A visual or audible device (ohmmeter, buzzer, etc.) may be used to indicate grounding continuity.

Products Requiring Grounding Continuity Test:

All products covered by this Report.

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
14-Sep-2018	Da Deng/	2	-	Add new type CU23011 and relative product description
180801233S HA	Rachel Wang	3	18-27	Add photo for new added type CU23011
		4	19-32	Add component information for new added type CU23011
		6	8	Change information from "See illustration 6 to 10 for details" to be "See illustration 6 to 14 for details"
		7	1	Add marking information for new added type CU23011
		7	11~14	Add schematics for new added type CU23011
		8	-	Add test summary information
		12	-	Add revision summary information
5-Nov-2018	Da Deng/	2	-	Add new type 30332,56220 and relative product description
180901931S HA	Rachel Wang	3	30~36	Add photo for new added type 30332,56220
		4	24~26 28~31 33~34	Add component information for new added type 30332,56220
		6	8	Change information from "See illustration 6 to 10 for details" to be "See illustration 6 to 18 for details"
		7	1	Add marking information for new added type 30332,56220
		7	15~18	Add schematics for new added type 30332,56220
		8	-	Add test summary information
		12	-	Add revision summary information
28-Nov-2018	Da Deng/	2	-	Delete basic listee model 56220 and relative product description
181102233S HA	Rachel Wang	3	30~32	Delete information for basic listee model 56220
		7	1	1 For note 3, delete marking information for basic listee model 56220 2 Add note 4 for multiple listee type 56220 which corresponding to basic listee type 30332 for multiple listee 1 "Central Purchasing LLC. DBA Harbor Freight Tools"
		8	-	Add test summary information
		9	1	Add multiple listee 1 "Central Purchasing LLC. DBA Harbor Freight Tools"
		12	-	Add revision summary information
		19-Feb-2019	Da Deng/	1
190101072S HA	Rachel Wang	2	-	1 Delete type 30621,30620 and relative product description; 2 Add new type 30332A and relative product description
		3	origin al 1~17	Delete photo for original type 30621,30620
		3	1~19	Renumbering photo number for rest type CU23011,30332
		3	20-22	Add photo for new added type 30332A
		4	origin al 1~18	Delete component information for original type 30621,30620

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
		4	1~16	Renumbering item number for component for rest type CU23011,30332
		6	8	Change information from "See illustration 6 to 18 for details" to be "See illustration 6 to 13 for details"
		6	11	Change information from "See illustration 4 to 5 for details." to be "NA"
		7	1	1 Delete marking information for original type 30621,30620; 2 Add marking information for new added type 30332A; 3 Add note 3 for control no information for new added manufacturer 3 "Kingtec (vietnam) technologies Co.,ltd." 4 Renumbering item number for note
		7	2	Delete caution for original type 30621,30620
		7	Original 3	Delete blade spacing dimension requirement for original type 30621,30620
		7	Original 4~5	Delete use manual information for original type 30621
		7	Original 6~10	Delete schematics for original type 30621,30620
		7	3~5	Add standard sheet dimension requirement for NEMA 5-15P plug and NEMA 5-15R receptacle
		7	1~13	Renumbering illustration no for rest type CU23011,30332
		8	-	Add test summary information