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

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

Please find attached the related material on Project 4790418033

For your convenience, the below describes the related updates:

E161451-A6011-DescriptionUL
Figure-47-Total
E161451-A6011-TestRecordUL

Times change, Trust Remains™

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	QQJQ, QQJQ7 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	AC Adapter
Model:	KPL-xy (x = 040, 050, 060, 065; y = F, G, V, H, I, W, J, K, L, N, Q, R, M) KPL-xy (x = 048, 066; y = F) KPL-xy-VI or KPL-xy-II or KPL-xy-KV (x = 040, 048, 050, 060, 065, 066; y = F, G, V, H, I, W, J, K, L, N, Q, R, M, A, S, T, P, U) PAA060M-ZZZ (Z=0-9, A-Z or blank)
Rating:	Input: 100-240 Vac, 50/60 Hz, 1.7 A Output: See Enclosure Miscellaneous 7-01 Model List and Rating Table: 1a). KPL-xy •x represents the output wattage; x = 040, 050, 060, 065 •y represents the output voltage; y = F, G, V, H, I, W, J, K, L, N, Q, R, M 1b). KPL-xy •x represents the output wattage; x = 048, 066 •y represents the output voltage; y = F 1c). KPL-xy-VI or KPL-xy-II or KPL-xy-KV •x represents the output wattage; x = 030, 040, 048, 050, 060, 065, 066 •y represents the output voltage; y = F, G, V, H, I, W, J, K, L, N, Q, R, M, A, S, T, P, U 1d). PAA060M-ZZZ •Z represents the different customers; Z=0-9, A-Z, or blank

Applicant Name and Address:	CHANNEL WELL TECHNOLOGY CO LTD 222 SEC 2 NANKAN RD LUJHU TOWNSHIP TAOYUAN HSIEN 33855 TAIWAN

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

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

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

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

Prepared By:	Phoebe Du(T)/Yongzhi Zhang / Project Handler	Reviewed By:	Cynthia Xiao / Reviewer

Supporting Documentation

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

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

B. Generic Inspection Instructions -

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

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

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

Product Description

Class I unit, all electronic components mounted on V-1 PWB and housed within plastic enclosure.

Model Differences

All models are similar except for the type designation, heatsink shape, output rating, different transformer (T1):

PQ-2620-12 or PQ-2620-12-VI applied for KPL series with output voltage 12V to 16V.

PQ-2620-17 applied for KPL series with output voltage 17V to 24V.

PQ-2620-36 applied for KPL series with output voltage 36V.

PQ-2620-48 applied for KPL series with output voltage 48V to 56V.

09P260003-ON applied for PAA060M-ZZZ.

Test Item Particulars

Classification of use by	Ordinary person
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	pluggable equipment type A - appliance coupler
Considered current rating of protective device as part of building or equipment installation	20 A; building;
Equipment mobility	movable transportable
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	40-45 (See General Product Information 1 for details)
IP protection class	IPX0
Power Systems	TN
Altitude during operation (m)	5000 m or less for all models except PAA m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.27 kg

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : Model: KPL-xy (for x=040, 050, 060, 065; y= F, G, V, H, I, W, J, K, L, N, Q, R, M) i. PCB with fuse: FUSE1 ii. Working Ambient Temperature: 40°C; Model: KPL-xy (for x=48, 66; y=F) i. PCB with fuses: F1 and F2 ii. Working Ambient Temperature: 45°C for x= 048 and y= F iii. Working Ambient Temperature: 40°C for x= 066 and y= F; Model: KPL-xy-VI (for x=040, 050, 060, 065; y= F, G, V, H, I, W, J, K, L, N, Q, R, M,S) i. PCB with fuses: F1 and F2 ii. Working Ambient Temperature: 45°C for x= 40, 48, 5
- The equipment disconnect device is considered to be : Appliance inlet
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS) : Outputs of all models.
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The model, PAA060M-ZZZ, was submitted and tested for use at maximum ambient temperature (Tma): 40C.

Additional Information

This report is issued based on conversion from Report E161451-A68, UL60950-1, 2nd Ed, Amendment 2 and based on TUV CBTR Ref. Nos. 31581397.022, 31581397.025 and 31581397.028, IEC 62368-1, CB Test Certificate Ref. Nos. US-TUVR-011359, US-TUVR-011362, US-TUVR-011359-M1 and US-TUVR-011359-M2. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, has been determined that the product continues to comply with the standard.

For KPL series, Model (KPL-xy-VI) with 48V output (50W, 60W and 65W), and 12V output (48W and 66W) were added. PCB was to include two fuses (F1 and F2). When TVS1 is not present, F1 (6.3A/250V) will be replaced by a jumper wire.

For KPL series (PCB with fuses: F1 and F2), CY2 (optional) was added in series with CY1 cross over between primary GND and secondary GND. Refer to Photos and Circuit Diagram for details.

The following changes were made to the report:
• Addition of LF1, type/model:SQ15, for KPL series [PCB with F1, F2] as an alternate source.
• Addition of TVSA and TVSB for KPL series [PCB with F1, F2] as an optional items.
• Update to the list of critical component (Table 4.1.2).
• Addition of TVSA and TVSB made by Littelfuse, type SE200+, for KPL series [PCB with F1, F2] as an optional items.

The following changes were made to the report:
• Addition of model PAA060M-ZZZ.
• Update to the list of critical component (Table 4.1.2).
• Update to Enclosures for model PA060M-ZZZ.
• Update to Tables for model PA060M-ZZZ.

Revision of project 4790418033:
-Alternate the manufacturer and models of AC Inlet, more details please refer to the CCL ID 02m and 02n.
-Alternate the manufacturer and models of Varistor, more details please refer to the CCL ID 13d and 13k.
-Alternate the manufacturer and models of Optical coupler, more details please refer to the CCL ID 08j.
-Alternate the manufacturer and models of Gas tube, more details please refer to the CCL ID 33c.
-Alternate fuses, more details please refer to the CCL ID 04h, 04-1g and 05k.

Additional Standards

The product fulfills the requirements of: CSA CAN/CSA-C22.2 NO. 60950-1 2nd Ed, Revised October 14, 2014

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"
c-UL wet location instructions	Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, suchas vases, shall be placed on the apparatus.
UL wet location instructions	WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
Explanation of Safety-Related Symbols and Shock Hazard Graphical Symbol	Explanation shall precede any operating instructions. See Enclosure - Manuals for details 6-01 for details. Location: On the cover page, the reverse side of cover page, or the very next page of the instruction manual which may optionally provide safety instructions with each carton of shipment to O.E.M. manufacturer.
Important Safety Instructions	Refer to Enclosure - Manuals for details 6-01
Class I Protective Earthing Connection	Warning statement indicating that Class I apparatus shall be connected to a mains socket outlet with a protective earthing connection. (Instruction)
Service Instruction Manual	"CAUTION - These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so."
Fuses Component ID: FUSE1, F1, F2	FUSE1 T4.0AL/250V F1 T6.3AL/250V or T8AL/250V F2 T3.15A/250V F1 2.5A or 3.0A/250V located on or adjacent to fuse or fuseholder.
Shock Hazard Graphical Symbol	Refer to Enclosure/Manual 6-01 for details

Disconnect Device - Mains Plug or Appliance Coupler	Statement indicating that when the mains plug or appliance coupler shall remain readily operable. (Instruction).
Date of Manufacture	Provided with month and year of Manufacturer.

Special Instructions to UL Representative

Inspect the transformer(s) listed in production-line testing requirements per AA1.1- (C). When the tests are conducted at other location, inspect test record and specification sheet provided by the component manufacturer. Verify the specification sheet indicates 100% routine test specified in BD1.1 is conducted at the component manufacturer. The test record noted above shall be submitted to the manufacturer from transformer manufacturer. The test record can be in the form of a actual test record. A stamp or sticker on the transformer or other method verifying the routine test is being completed on 100% production is also acceptable.

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	**Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.**					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
All models	Transformer T1	-	Primary/Core to Secondary	2829	4000	1
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	-					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	-					
BD1.4	**Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.**					
	-					

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

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
01. Plastic enclosure	SABIC Japan L L C	SE1X	V-1 or better, 105°C, minimum 1.5 mm thick, min HWI=3, refers to enclosure 7-09 for details.	QMFZ2	UL	
01a. Plastic enclosure - Alternate	Teijin Chemicals Plastic Compounds Shanghai Ltd.	LN-1250G	V-0 or better, 115°C, minimum 1.5 mm thick, min HWI=3, refers to enclosure 7-09 for details.	QMFZ2	UL	
01b. Plastic enclosure - Alternate	SABIC Japan L L C	940	V-0 or better, 120°C, min 1.5 mm thick, min. HWI=3	QMFZ2	UL	
01c. Plastic enclosure - Alternate	SABIC Japan L L C	SE100P	V-0 or better, 80°C, min 1.5 mm thick, min.	QMFZ2	UL	
01d. Plastic enclosure - Alternate (for KPL PCB with F1,F2; 2ABF, 2ACL only)	Covestro Deutschland AG [PC Resins]	FR3010 HF +	V-0 or better, 85°C, min 1.5 mm thick, min.	QMFZ2	UL	
02. AC Inlet (CON1)	Tecx-Unions Technology Corporation.	TU-301-S, TU-301-SP	15 A, 250 Vac, 105°C	AXUT2	UL	
02a. AC Inlet (CON1) - Alternate	Tecx-Unions Technology Corporation.	TU-333	2.5 A, 250 Vac, 75°C	AXUT2	UL	
02b. AC Inlet (CON1) - Alternate	Rong Feng Industrial Co. Ltd.	RF-190	2.5 A, 250 Vac, 105°C	AXUT2	UL	
02c. AC Inlet (CON1) - Alternate	Rong Feng Industrial Co. Ltd.	SS-120, SS-120-PCB	15A, 250 Vac, 105°C	AXUT2	UL	

02d. AC Inlet (CON1) - Alternate	Rong Feng Industrial Co. Ltd.	SS-7B-1	10A, 250 Vac, 75°C	AXUT2	UL	
02e. AC Inlet (CON1) - Alternate	Rong Feng Industrial Co. Ltd.	SS-7B	10A, 250 Vac, 105°C	AXUT2	UL	
02f. AC Inlet (CON1) - Alternate	Rich Bay Co. Ltd.	R-30790	2.5A, 250 Vac, 105°C	AXUT2	UL	
02g. AC Inlet (CON1) - Alternate	Rich Bay Co. Ltd.	R-301SN	15A, 250 Vac, 105°C	AXUT2	UL	
02h. AC Inlet (CON1) - Alternate	Zhe Jiang Bei Er Jia Electronic Co. Ltd.	ST-A01-003J, ST-A01 Series	15A, 250 Vac, 95°C	AXUT2	UL	
02i. AC Inlet (CON1) - Alternate	Zhe Jiang Bei Er Jia Electronic Co. Ltd.	ST-A04-002	2.5A, 250 Vac, 90°C	AXUT2	UL	
02j. AC Inlet (CON1) - Alternate	Solteam Electronics Co. Ltd.	ST-A04-002	2.5A, 250 Vac, 75°C	AXUT2	UL	
02k. AC Inlet (CON1) - Alternate	Dong Guan Sheng Ming Electronics Co. Ltd.	S06-101-B01-2	7A, 250 Vac, 100°C	AXUT2	UL	
02l. AC Inlet (CON1) - Alternate	Dong Guan Sheng Ming Electronics Co. Ltd.	S14-101, S14-102, S14-201, S14-202, S14-203	15A, 250 Vac, 90°C	AXUT2	UL	
02m. AC Inlet (CON1) - Alternate	HCR Electronics Co Ltd	SK01, SK01-08	15A, 250 Vac, 70°C	AXUT2	UL	
02n. AC Inlet (CON1) - Alternate	HCR Electronics Co Ltd	SK03 Series, SK03 followed by 05, 18, 21, 23 or 27	7 A, 125 Vac, 70°C or 2.5 A 250 Vac, 70°C	AXUT2	UL	
03. Fuse (FUSE1)	Interchangeable	Interchangeable	T4.0A, 250Vac	JDYX	UL	
03a. Fuse (FUSE1) - Alternate	XC Electronics (Shenzhen) Corp. Ltd.	4T	T4.0A, 250Vac	JDYX	UL	
03b. Fuse (FUSE1) - Alternate	XC Electronics (Shenzhen) Corp. Ltd.	5TE	T4.0A, 250Vac	JDYX	UL	

03c. Fuse (FUSE1) - Alternate	Suzhou Walter Electronic Co. Ltd.	ICP	T4.0A, 250Vac	JDYX	UL	
03d. Fuse (FUSE1)	Ever Island Electric Co. Ltd. & Walter Electric	2010	T4.0A, 250Vac	JDYX2	UL	
03e. Fuse (FUSE1) - Alternate	Conquer Electronics Co. Ltd.	PTU	T4.0A, 250Vac	JDYX2	UL	
03f. Fuse (FUSE1) - Alternate	Conquer Electronics Co. Ltd.	MST	T4.0A, 250Vac	JDYX2	UL	
03g. Fuse (FUSE1) - Alternate	Littelfuse Wickmann Werke	392	T4.0A, 250Vac	JDYX2	UL	
04. Fuse (F1) (KPL PCB with F1, F2) (Optional)	XC Electronics (Shen Zhen) Corp. Ltd.	4T	T6.3AL or T8AL, 250Vac	JDYX	UL	
04a. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	XC Electronics (Shen Zhen) Corp. Ltd.	5TE	T6.3AL or T8AL, 250Vac	JDYX	UL	
04b. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Walter Electronic Co. Ltd.	ICP	T6.3AL or T8AL, 250Vac	JDYX	UL	
04c. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Ever Island Electric Co. Ltd. and Walter Electric	2010	T6.3AL or T8AL, 250Vac	JDYX2	UL	
04d. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Conquer Electronics Co. Ltd.	PTU	T6.3AL or T8AL, 250Vac	JDYX2	UL	
04e. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Conquer Electronics Co. Ltd.	MST	T6.3AL or T8AL, 250Vac	JDYX2	UL	
04f. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Littlefuse Wickmann-Werke	392	T6.3AL or T8AL, 250Vac	JDYX2	UL	

04g. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Dongguan Better Electronics Technology Co. Ltd.	932	T6.3AL or T8AL, 250Vac	JDYX2	UL	
04h. Fuse (F1) (KPL PCB with F1, F2) Alternate (Optional)	Interchangeable	Interchangeable	T6.3AL or T8AL, 250Vac	JDYX	UL	
04-1. Fuse (F1) (PAA060M)	Littelfuse Inc	19372, 382	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1a. Fuse (F1) (PAA060M) Alternate	Bel Fuse Inc	MRT	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1b. Fuse (F1) (PAA060M) Alternate	Cooper Bussmann LLC	SR-5	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1c. Fuse (F1) (PAA060M) Alternate	Conquer Electronics	MET	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1d. Fuse (F1) (PAA060M) Alternate	Dongguan Better Electronics Technology Co., Ltd	932	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1e. Fuse (F1) (PAA060M) Alternate	XC Electronics (Shenzhen) Corp Ltd.	5TR	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1f. Fuse (F1) (PAA060M) Alternate	Ever Island Electric Co Ltd. & Walter Eletric	2000	T2.5A or T3.15A, 250V	JDYX2	UL	
04-1g. Fuse (F1) (PAA060M) Alternate	Interchangeable	Interchangeable	T2.5A or T3.15A, 250V	JDYX	UL	
05. Fuse (F2) (KPL PCB with F1, F2)	XC Electronics (Shenzhen)HexBCorp. Ltd.	3T, 4T	T3.15A, 250Vac	JDYX	UL	

05a. Fuse (F2) (KPL PCB with F1, F2) Alternate	XC Electronics (Shenzhen) Corp. Ltd.	5TE	T3.15A, 250Vac	JDYX	UL	
05b. Fuse (F2) (KPL PCB with F1, F2) Alternate	Walter Electronic Co. Ltd.	ICP	T3.15A, 250Vac	JDYX	UL	
05c. Fuse (F2) (KPL PCB with F1, F2) Alternate	Ever Island Electric Co. Ltd. and Walter Electric	2010	T3.15A, 250Vac	JDYX2	UL	
05d. Fuse (F2) (KPL PCB with F1, F2) Alternate	Conquer Electronics Co. Ltd.	PTU	T3.15A, 250Vac	JDYX2	UL	
05e. Fuse (F2) (KPL PCB with F1, F2) Alternate	Conquer Electronics Co. Ltd.	MST	T3.15A, 250Vac	JDYX2	UL	
05f. Fuse (F2) (KPL PCB with F1, F2) Alternate	Littlefuse Wickmann-Werke	392	T3.15A, 250Vac	JDYX2	UL	
05g. Fuse (F2) (KPL PCB with F1, F2) Alternate	Dongguan Better Electronics Technology Co. Ltd.	932	T3.15A, 250Vac	JDYX2	UL	
05h. Fuse (F2) (KPL PCB with F1, F2) Alternate	Littelfuse Inc.	677	T3.15A, 250Vac	JDYX2	UL	
05i. Fuse (F2) (KPL PCB with F1, F2) Alternate	Cooper Bussmann LLC	SS-5	T3.15A, 250Vac	JDYX2	UL	
05j. Fuse (F2) (KPL PCB with F1, F2) Alternate	Hollyland Co. Ltd.	5ET	T3.15A, 250Vac	JDYX2	UL	
05k. Fuse (F2) (KPL PCB with F1, F2) Alternate	Interchangeable	Interchangeable	T3.15A, 250Vac	JDYX	UL	

06. X-Cap. (CX1)	Okaya Electric Industries Co. Ltd.	LE	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06a. X-Cap (CX1) - Alternate	Jenn Shen Electronics Corp. (Jenn Fu Electronics Corporation)	MPX	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06b. X-Cap (CX1) - Alternate	Europtronic (Taiwan) Ind. Corp.	MPX, MPX2	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 110°C, complied with IEC/EN 60384-14	FOWX2	UL	
06c. X-Cap (CX1) - Alternate	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C,	FOWX2	UL	

			complied with IEC/EN 60384-14			
06d. X-Cap (CX1) - Alternate	Hua Jung Components Co. Ltd.	MKP	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06e. X-Cap (CX1) - Alternate	Kemet Electronics Italia SRL (Arcotronics S.P.A)	R.46	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06f. X-Cap (CX1) - Alternate	Kemet Electronics Italia SRL (Arcotronics S.P.A)	R.49	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06g. X-Cap (CX1) - Alternate	Shenzhen Yimanfeng Science and Technology Co. Ltd.	MPX/MKP	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2),	FOWX2	UL	

			minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14			
06h. X-Cap (CX1) - Alternate	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co. Ltd.	MPX	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06i. X-Cap (CX1) - Alternate	Okaya Electric Industries Co. Ltd.	LE, RE, XE	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06j. X-Cap (CX1) - Alternate	Cowell Fashion Co. Ltd. (Pilkor Electronics)	PCX1 331, PCX2 337	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06k. X-Cap (CX1) - Alternate	Vishay Electronica Portugal LDA	F1772	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac.	FOWX2	UL	

			Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14			
06l. X-Cap (CX1) - Alternate	Joey Electronics (Dong Guan) Co. Ltd.	MPX	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06m. X-Cap (CX1) - Alternate	Cheng Tung Industrial Co. Ltd.	CTX	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06n. X-Cap (CX1) - Alternate	Vishay Electronic GmbH	VY1	Maximum 0.47 µF for KPL (PCB with FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14	FOWX2	UL	
06o. X-Cap (CX1) - Alternate	Chiefcon Electronics	CKX	Maximum 0.47 µF for KPL (PCB with	FOWX2	UL	

			FUSE1), PAA060M, minimum 250 Vac. Maximum 0.33 µF for KPL (PCB with F1, F2), minimum 250 Vac,X2 type, minimum 100°C, complied with IEC/EN 60384-14			
07. Bridge Capacitor (CY1)	TDK Corporation	CD	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07a. Bridge Capacitor (CY1) - Alternate	Walsin Technology Corp.	AH	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07b. Bridge Capacitor (CY1) - Alternate	Success Electronics Co. Ltd.	SB, SE	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07c. Bridge Capacitor (CY1) - Alternate	Xiangtai Electronics (Shenzhen) Co. Ltd.	YOB, YOF, YOE	Maximum 2200 pF for KPL (with F1 and F2), minimum 250	FOWX2	UL	

			Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14			
07d. Bridge Capacitor (CY1) - Alternate	Jya-Nay Co. Ltd.	JN	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07e. Bridge Capacitor (CY1) - Alternate	Murata Mfg. Co. Ltd.	KX	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07f. Bridge Capacitor (CY1) - Alternate	Welson Industrial Co. Ltd.	WD	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1), minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07g. Bridge Capacitor (CY1) - Alternate	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co. Ltd.	CD	Maximum 2200 pF for KPL (with F1 and F2), minimum 250 Vac.Maximum 3300 pF for KPL (with FUSE1),	FOWX2	UL	

			minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14			
07-1. Bridge Capacitor (CY3) (PAA060M)	TDK Corporation	CD	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07-1a. Bridge Capacitor (CY3) (PAA060M)	Walsin Technology Corp.	AH	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07-1b. Bridge Capacitor (CY3) (PAA060M)	Success Electronics Co. Ltd.	SE	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07-1c. Bridge Capacitor (CY3) (PAA060M)	Panasonic	NS-A	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07-1d. Bridge Capacitor (CY3) (PAA060M)	Jya-Nay Co. Ltd.	JN	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07-1e. Bridge Capacitor (CY3) (PAA060M)	Murata Mfg. Co. Ltd.	KX	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	

07-1f. Bridge Capacitor (CY3) (PAA060M)	Welson Industrial Co. Ltd.	WD	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
07-1g. Bridge Capacitor (CY3) (PAA060M)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co. Ltd.	CD	Maximum 4700 pF, minimum 250 Vac.Y1 type, minimum 125°C, complied with IEC/EN 60384-14	FOWX2	UL	
08.Optical coupler (IC1 for KPL) (U2 for PAA)	Lite-on Technology Corp.	LTV-817	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08a.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Lite-on Technology Corp.	LTV-10xx, xx=06, 07, 08, 09	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08b. Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Cosmo Electronics Corp.	K1010	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08c. Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Cosmo Electronics Corp.	KPC817	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08d. Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Toshiba Electronic Devices & Storage Corporation	TLP781, TLP781F	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08e.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Everlight Electronics Co. Ltd.	EL817	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08f.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Fairchild Semiconductor Corp.	FOD817	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08g.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Sharp Corp. Electronic Components And Devices Group	PC817	Insulation voltage 5000Vac, 110°C	FPQU2	UL	

08h.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Sharp Corp Electronic Components And Devices Group	PC123	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08i.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	Vishay Semiconductor GmbH	TCLT10xx (x is any number)	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
08j.Optical coupler (IC1 for KPL) (U2 for PAA) - Alternate	CT Microelectronics Far East Ltd	CT1018 , CT1017, CT817	Insulation voltage 5000Vac, 110°C	FPQU2	UL	
09. Bridge Diode (BD1)	--	--	Minimum 600V, minimum 2A	--	--	
10. Storage Capacitance (C2) (PCB with fuse: FUSE1)	--	--	Maximum 120µF, minimum 400V, 105°C	--	--	
10a. Storage Capacitance (C2) (PCB with fuse: F1, F2)	--	--	Maximum 150µF, minimum 400V, 105°C	--	--	
10b. Storage Capacitance (C2) (PAA060M)	--	--	68-150µF, minimum 400V, 105°C	--	--	
11. Transistor IC (Q1)	--	--	Minimum 600V, minimum 4.5A	--	--	
12. Bleeder Resistors (R2, R3, R4, R5) (for PCB with fuse: FUSE1)	--	--	Each rated 2.2 MΩ, 1/4W, connected in 2 series/2 parallel.	--	--	
12a. Bleeder Resistors (R2, R3, R4, R5) (for PCB with fuse: F1, F2)	Interchangeable	Interchangeable	SMD type, 1/4W, 3 MΩ or 3.9 MΩ	IEC 60950-1:2005 (2nd Edition) + A1: 2009;EN 60950-1: 2006 + A11: 2009 + A1: 2010	Tested with appliance	

12b. Bleeder Resistors(R2, R7) (PAA060M)	Tzaiyuan Enterprise	SMD********* HSMD*********	SMD type, 1/4W, 1MΩ	--	--	
12b-1. Bleeder Resistors(R2, R7) - Alternate (PAA060M)	Yageo Coration	RV1206	SMD type, 1/4W, 1MΩ	--	--	
12b-2. Bleeder Resistors(R2, R7) - Alternate (PAA060M)	Uniroyal Electronics Global	HV06	SMD type, 1/4W, 1MΩ	--	--	
12b-3. Bleeder Resistors(R2, R7) - Alternate (PAA060M)	TA-I Technology	RH12	SMD type, 1/4W, 1MΩ	--	--	
13. Varistors (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) (optional)	Thinking Electronics Industrial Co. Ltd.	TVR14471	Rated 300Vac. Coating min. V-1.	VZCA2	UL	
13a. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Thinking Electronic Industrial Co. Ltd.	TVR14561	Rated 350 Vac, 560 Vac, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13b. Varistors (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Thinking Electronics Industrial Co. Ltd.	TVR14681	Rated 420Vac, SPD type 3. Coating min. V-1.	VZCA2	UL	
13c. Varistors (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Thinking Electronics Industrial Co. Ltd.	TVR10471-D, TVR14471-D	Rated 300Vac. Coating min. V-1.	VZCA2	UL	

13d. Varistors (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Thinking Electronics Industrial Co. Ltd.	TVR10681-D, TVR14681-D	Rated 420Vac. Coating min. V-0.	VZCA2	UL	
13e. Varistors (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Thinking Electronics Industrial Co. Ltd.	TVR10561-D, TVR14561-D	Rated 350Vac. Coating min. V-1.	VZCA2	UL	
13f. Varistors (TVS1, TUV2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Nanjing Jocol Electronics Technology Co. Ltd.	TUR14D471K, TUR10D561K	Rated 300Vac. Coating min. V-1.	VZCA2	UL	
13g. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Nanjing Jocol Electronics Technology Co. Ltd.	TUR14D681K	Rated 420Vac, SPD type 3. Coating min. V-1.	VZCA2	UL	
13h. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Nanjing Jocol Electronics Technology Co. Ltd.	TUR10D561K, TUR14D561K	Rated 350 Vac, 560 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13i. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Success Electronics Co. Ltd.	SVR14D561K, SVR10D561K	Rated 350 Vac, 560 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13j. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Success Electronics Co., Ltd.	SVR14D471K, SVR10D471K	Rated 300 Vac, 470 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	

13k. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Success Electronics Co. Ltd.	SVR14D681K, SVR10D681K	Rated 420 Vac, 680 Vdc, Max. 4500 A, min 85 °C. Coating min. V-1.	VZCA2	UL	
13l. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Joyin Co. Ltd.	10N471K, 10S471K, 14N471K	Rated 300 Vac, 470 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13m. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Joyin Co. Ltd.	10N561K, 10S561K, 14N561K	Rated 350 Vac, 560 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13n. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co. Ltd.	14D471K, 10D471K	Rated 300 Vac, 470 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13o. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co. Ltd.	14D561K, 10D561K	Rated 350 Vac, 560 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13p. Varistor (TVS1, TVS2, TVS3 for KPL) (ZNR1 for PAA060M) - Alternate (optional)	Shantou High-New Technology Developmnt Zone Songtian Enterprise Co. Ltd.	14D681K, 10D681K	Rated 420 Vac, 680 Vdc, Max. 4500 A, 85 °C. Coating min. V-1.	VZCA2	UL	
13-1. Varistor (TVS4) (optional)	Littelfuse Inc.	CG33.0L+	Rated 380 Vac, Max. 5000 A, 85 °C.	VZCA2	UL	
14. Inductor (LF1) (KPL)	Sunycore Electronics Co. Ltd	T18*10*7	Minimum 130°C, refer to Enclosure 4-01 for details.	--	--	

14a. Inductor (LF1) - Alternate	Channel Well Technology Co. Ltd.	T18*10*7	Minimum 130°C, refer to Enclosure 4-02 for details.	--	--	
14-1. Inductor (LF1) - Core	--	--	Toroid, OD 18 mm by ID 10 mm thick 7 mm	--	--	
14-2. Inductor (LF1) - Coil	Interchangeable	Interchangeable	Copper magnet wire wound concentrically on core. Two windings, each 0.55 mm diameter by 50 Ts, minimum 130°C	OBMW2	UL	
14-3. Inductor (LF1) - PWB	Interchangeable	Interchangeable	Minimum V-1, minimum 130°C	ZPMV2	UL	
14b. Inductor (LF1)	Channel Well Technology Co Ltd	SQ15	Minimum 130°C, refer to Enclosure 4-18 for details.	--	--	
14-1b. Inductor (LF1) (PAA060M)	Channel Well Technology Co Ltd	11R140804	130°C	--	--	
15. Inductor (LF2)	Sunycore Electronics Co. Ltd	T10*6*5+C, T12.7*7.9*5C	Minimum 130°C, refer to Enclosure 4-03 for details.	--	--	
15a. Inductor (LF2) - Alternate	Channel Well Technology Co. Ltd.	T10*6*5+C, T12.7*7.9*5C	Minimum 130°C, refer to Enclosure 4-04 for details.	--	--	
15-1. Inductor (LF2) - Core	--	--	Toroid, OD 10 mm by ID 6 mm thick 5 mm or OD 12.7 mm by ID 7.9 mm thick 9.5 mm	--	--	
15-2. Inductor (LF2) - Coil	Interchangeable	Interchangeable	Copper magnet wire wound concentrically on core. 0.6 mm diameter by 14.5Ts, minimum 130°C	OBMW2	UL	

15-3. Inductor (LF2 - Triple wire)	Interchangeable	Interchangeable	Triple wire wound concentrically on core. 0.6 mm diameter by 14.5Ts, minimum 130°C	OBJT2	UL	
15b. Inductor (LF2) (PAA060M)	Channel Well Technology Co., Ltd.	11R140803-0N	130°C	--	--	
16. Transformer (T1) For KPL output voltage 12-16V used; PCB with FUSE1)	Channel Well Technology Co., Ltd.	PQ-2620-12	Class B, refer to Enclosure 4-05 for details.	--	--	
16a. Transformer (T1) Alternate (For KPL output voltage 17-24V used)	Channel Well Technology Co. Ltd.	PQ-2620-17	Class B, refer to Enclosure 4-06 for details.	--	--	
16b. Transformer (T1) Alternate (For KPL output voltage 36V used)	Channel Well Technology Co. Ltd.	PQ-2620-36	Class B, refer to Enclosure 4-07 for details.	--	--	
16c. Transformer (T1) Alternate (For KPL output voltage 48-56V used)	Channel Well Technology Co. Ltd.	PQ-2620-48	Class B, refer to Enclosure 4-07 for details.	--	--	
16-1. Transformer (T1) - Insulation System	Channel Well Technology Co. Ltd.	GH-130	Class B	OBJY2	UL	
16-2. Transformer (T1) - Core	--	--	Ferrite, overall 26.7 by 18.8 by 20.4 mm. Provided with two layers of insulation tape wrapped around outside core body	--	--	
16-3. Transformer (T1) - Bobbin	Chang Chun Plastics Co. Ltd.	T375J	Two-flange, phenolic, rated V-0, 150°C,	QMFZ2	UL	

			minimum 0.7 mm thick. Leads exit directly through integral flanges in bobbin and are mechanically secured and soldered to pins which are molded into bobbin.			
16-3a. Transformer (T1) - Bobbin - Alternate	Sumitomo Bakelite Co. Ltd.	PM-9820	Two-flange, phenolic, rated V-0, 150°C, minimum 0.7 mm thick. Leads exit directly through integral flanges in bobbin and are mechanically secured and soldered to pins which are molded into bobbin.	QMFZ2	UL	
16-4. Transformer (T1) - Coil (Primary)	Interchangeable	Interchangeable	Copper magnet wire wound concentrically on bobbin, minimum 130°C	OBMW2	UL	
16-5. Transformer (T1) - Triple Wire (Secondary)	Great Leoflon Industrial Co. Ltd.	TRW(B)	Minimum 130°C	OBJT2	UL	
16-6. Transformer (T1) - Insulation Tape	3M Company Electrical Markets DIV	1350-1, 44	Minimum 130°C	OANZ2	UL	
16-6a. Transformer (T1) - Insulation Tape - Alternate	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd	PZ, CT*(b)(g)	Minimum 130°C	OANZ2	UL	
16-6b. Transformer (T1) Insulation Tap - Alternate	Symbio Inc	35660	Minimum 130°C	OANZ2	UL	

16-7. Transformer (T1) - Varnish	Elantas Electrical Insulation Elantas PDG Inc.	V1380FC	Minimum 130°C	OBOR2	UL	
16-8. Transformer (T1) - Sleeving	Great Holding Industrial Co. Ltd.	TFL	Minimum 130°C	YDPU2	UL	
16-d. Transformer (T1) (for output Voltage 12-16V used) (for PCB with fuse: F1, F2)	Channel Well Technology Co. Ltd.	PQ-2620-12-VI	Class B (GH-130)	--	--	
16-e. Transformer (T1) (for output Voltage 48V used)	Channel Well Technology Co. Ltd.	PQ-2620- 48	Class B (GH-130)	--	--	
16d. Transformer (T1) Alternate (For PAA060M)	Channel Well Technology Co., Ltd.	09P260003-0N	Class B (GH-130)	--	--	
17. Mylar sheet (under PWB)	ITW Electronics Components / Products (Shanghai) Co. Ltd.	FORMEX GK-17	VTM-0 or better, minimum 0.43mm thick, refers to Enclosure 7-10 for details.	QMFZ2	UL	
17a. Mylar sheet (under PWB) - Alternate	Yi-Hsin Plastech Co. Ltd.	YIMEX PP-17	V-0 or better, minimum 0.43mm thick, refers to Enclosure 7-10 for details.	QMFZ2	UL	
18. Glue	Interchangeable	Interchangeable	Minimum V-2, provided on LF1, LF2, C2, C18, C6, C7 for maintaining in position.	QMFZ2	UL	
19. Power supply cord (Optional)	Interchangeable	Interchangeable	Detachable, minimum 1.5m and maximum 4.5m long; Type SVT or SPT-2, minimum 18AWG/2C; flexible cord, one end terminates in NEMA 5-15P or 6-15P, other	ZJCZ and RTRT and AXUT, or ELBZ	UL	

			end in appliance coupler.			
20. Output cord	Interchangeable	Interchangeable	Non-detachable, maximum 3.05m long, FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1 or FT-1; Style 1185, 300V, 80°C, minimum 18AWG.	AVLV2	UL	
21. Strain Relief and Pushback Relief	Interchangeable	Interchangeable	Integral part of output cord, material rated V-1 or better.	QMFZ2	UL	
22. Primary heat sink (HSQ1) (for all models used except KPL-065F)	--	--	Aluminum, I type, refer to Enclosure 7-06 for details.	--	--	
23. Primary heat sink (HSQ1) (only for model KPL-065F used)	--	--	Aluminum, T type, refer to Enclosure 7-07 for details.	--	--	
24. Secondary heat sink (HSD3) (for all models used)	--	--	Aluminium, L type, refer to enclosure 7-08 for details.	--	--	
24-1. Insulation tape around HSD3	3M Company Electrical Markets DIV	1350-1, 44	Minimum 130°C	OANZ2	UL	
24-1a. Insulation tape around HSD3 - Alternate	Jingjiang Yahua Pressure Sensitive Glue Co. Ltd	PZ	Minimum 130°C	OANZ2	UL	
24-1b. Insulation tape around HSD3 - Alternate	Symbio Inc	35660	Minimum 130°C	OANZ2	UL	

25. Top shield (for output power 60-65W except for KPL-065F)	--	--	Aluminum, refer to Enclosure 7-04 for details.	--	--	
26. Top shield (for model KPL-065F used)	--	--	Aluminum, refer to Enclosure 7-05 for details.	--	--	
27. Bottom shield (for all models used) (served as bonding conductor)	--	--	Aluminum, refer to Enclosure 7-03 for details.	--	--	
28. Label	Interchangeable	Interchangeable	Minimum 86°C, suitable for plastic surface.	PGDQ2 or PGJI2	UL	
29. PWB	Interchangeable	Interchangeable	Minimum V-1, minimum 130°C	ZPMV2	UL	
30. Sensor Resistors (R9, R15, R16, R18, R23) (for KPL PCB with FUSE1)	--	--	Each rated minimum 1/4W, minimum 1.8 Ω, connected in parallel.	--	--	
30a. Sensor Resistors (R9, R15, R16, R18, R23) (for KPL PCB with F1, F2)	--	--	Each rated minimum 1/4W, minimum 1.5 Ω, connected in parallel.	--	--	
31b. Sensor Resistors (R22) (PAA060M)	--	--	Each rated minimum 1/4W, 0.3 - 0.75 Ω	--	--	
32. Bonding Wire	Interchangeable	Interchangeable	Green/yellow. Min. 18 AWG, min. 105°C, min. 300V	AVLV2	UL	
33. Gas tube (TVSA, TVSB) (KPL PCB with F1, F2) (optional)	SINNAGGATA	SPG-xxxM	Min200V	QVGQ2 (E205458)	UL	

33a. Gas tube (TVSA, TVSB) (KPL PCB with F1, F2) (optional)(Alternate)	BRIGHTKING	BK3200xxx2	Min200V	QVGQ2 (E244458)	UL	
33b. Gas tube (TVSA, TVSB) (KPL PCB with F1, F2) (optional)(Alternate)	Littlefuse Inc	SE200+	Min200V	QVGQ2 (E128662)	UL	
33c. Gas tube (TVSA, TVSB) (KPL PCB with F1, F2) (optional)(Alternate)	THINKING ELECTRONIC INDUSTRIAL CO LTD	GS22R200-C	Min85V	QVGQ2 (E314979)	UL	

Enclosures

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Photographs	03-20	Model PAA060M Internal View 4
Diagrams	04-01	Inductor LF1 - Sunycore Electronics Co. Ltd.
Diagrams	04-02	Inductor LF1 - Channel Well Technology Co. Ltd.
Diagrams	04-03	Inductor LF2 - Sunycore Electronics Co. Ltd.
Diagrams	04-04	Inductor LF2 - Channel Well Technology Co. Ltd.
Diagrams	04-05	Transformer T1 - PQ-2620-12
Diagrams	04-06	Transformer T1 - PQ-2620-12-VI
Diagrams	04-07	Transformer T1 - PQ-2620-17
Diagrams	04-08	Transformer T1 - PQ-2620-36
Diagrams	04-09	Transformer T1 - PQ-2620-48
Diagrams	04-10	Bottom Shield
Diagrams	04-11	Top shield for output rated 60W and 65W except for KPL-065F

Diagrams	04-12	Top shield for KPL-065F
Diagrams	04-13	Primary heat sink (HSQ1) for all models except KPL-065F
Diagrams	04-14	Primary heat sink (HSQ1) for KPL-065F
Diagrams	04-15	Secondary heat sink (HSD3) for all models
Diagrams	04-16	Enclosure Outline
Diagrams	04-17	Insulation Sheet
Diagrams	04-18	Inductor LF1 - Channel Well Technology Co Ltd
Diagrams	04-19	Transformer T1 - 09P260003-0N
Diagrams	04-20	Inductor LF1 - 11R140804-0N
Diagrams	04-21	Inductor LF2 - 11R140803-0N
Schematics + PWB	05-01	PWB Layout - KPL-xy-II or KPL-xy-KV with F1, F2, TVS2, TVS3, TVS4
Schematics + PWB	05-02	PCB with fuse: FUSE1
Schematics + PWB	05-03	Model PAA060M
Manuals	06-01	Safety Instruction
Miscellaneous	07-01	Model Differences
Miscellaneous	07-02	Test tables of SELV and Working Voltage Measurement

规 格 承 认 书

CUSTOMER	:	CWT
MATERIAL	:	CHOKE
CUSTOME NO	:	G12-T180062-P100
SUNYCORE NO	:	161-0576GS
ISSUE DATE	:	18-Jan-11

APPROVED BY

DRAWER	CHECKED	APPROVED
钟伟星	夏金海	刘军
18-Jan-11	18-Jan-11	18-Jan-11

双菱磁性材料有限公司

吴江工厂：

江苏省吴江市同里镇屯村区状元坊1号

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HTTP://WWW.SUNYCORE.COM

SPECIFICATION FOR APPROVAL
BILL OF MATERIAL

NO.	ITEM	MATERIAL	SUPPLIER OF MATERIAL	CERT NO.
1	CORE	FERRITE CORE T18*10*7 SL10K	SUNYCORE CO	
2	WIRE	TYPU-130 MW-75C 2UEW 130℃	HENG YA ELECTRIC CO.,LTD	E245514
3	EPOXY	3300A-1/3300B-1 3300A-2/3300B-2 130℃	EATTO ELECTRIC CO.,LTD	E253983
4	PCB	FR-4 KB-6164	KING BOARD ELECTRIC CO.,LTD	EI23995

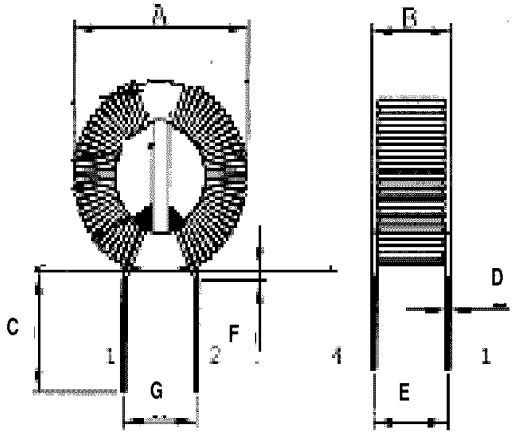
DOC NO:161-0576GS/G12-T180062-P100

SUNYCORE ELECTRONICS CO., LTD

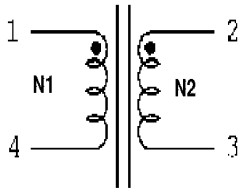
INSPECTOR:钟伟星　　CHECKED BY: 刘军　　APPROVED BY:吴世伟

SPECIFICATION FOR APPROVAL

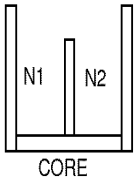
1.PHYSICAL DIMENSION (外观尺寸图)



2.SCHEMATIC:(线路图)



3.WINDING(剖面图)



4.WINDING TABLE AND NOTE(绕线结构)

Winding NO (组别)	Margin Tape (醋酸布)	PIN (脚位)	Wire&Wire Copper (绕线X股数)	TURNS (圈数)	Winding Type (绕线方式)	Tape Layer (胶带层次)	TUBE (套管)
N1	N/A	1--4	φ0.55*1P	50TS REF	半绕	N/A	N/A
N2	N/A	2--3	φ0.55*1P	50TS REF	半绕	N/A	N/A

NOTE: 1. 圈数以内圈计算。
2.产品出入线须点胶固定
3 .产品须加1.0MM的PCB板.

5.ELECTRONICAL CHARACTERISTIC(电器特性)TEMP:AT25℃
HUMIDTY:65±20% RH

MEAS. ITEM	DIMENSION UNIT:mm							
SPEC / NO.	A	B	C	D	E	F	G	
	22MAX	13.0MAX	5±0.5	0.6±0.05	11.0±0.5	1.5MAX	7.0±0.5	
TEST TOOL:								
DOC NO : 161-0576GS/G12-T180062-P100								

TEST ITEM(测试项目)	TEST CONDITION(测试条件)	RESULT (条件范围值)
INDUCTANCE(电感)	10KHZ 0.3V(1--4) (2--3)	15.0mH MIN
	CH1061	
HI-POT TEST(耐压)	50HZ OR 60HZ 1mA 3SEC AC	COIL-COIL1800V
DC R(电阻)	(1--4)(2--3)	100毫欧MAX

SUNYCORE ELECTRONICS CO., LTD TEL:0512-63322515 FAX:0512-63322512

DRAWER：钟伟星 CHECKED：夏金海 APPROVED：刘军

SPECIFICATION FOR APPROVAL

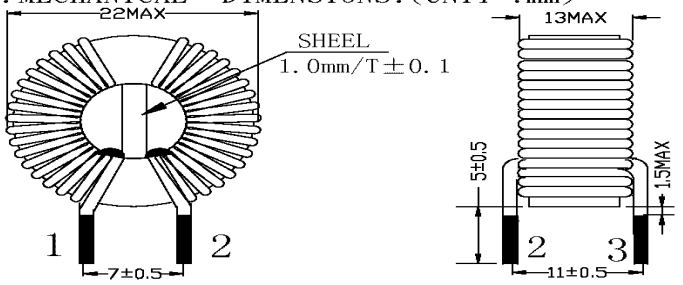
SHEET: 1 OF 1

CUSTOMER: 冠 碩 TYPE: T18*10*7

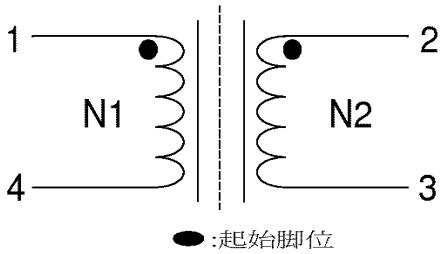
PART NO: G12-T180062-M100 OUR P/N:

REVISION: A ISSUE DATE: 2011-01-14

1. MECHANICAL DIMENSIONS: (UNIT :mm)



2. SCHEMATIC:



NOTE： 1. 圈數以內圈計算. 2. 產品出入線須點膠固定. 3. 產品須加1.0MM的PCB板.

3. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	NOTE
N1	2UEW Φ0.55mm	1	4	50TS REF	
N2	2UEW Φ0.55mm	2	3	50TS REF	

4. ELECTRICAL CHARACTERISTICS (AT25℃ 65±5%RH)

4-1. INDUCTANCE: AT 10KHz 0.3V

L(1-4):15mH MIN L(2-3):15mH MIN

4-2. DC RESISTANCE:

DCR(1-4):100mΩ MAX DCR(2-3):100mΩ MAX

4-3. HI-POT TEST AC 50Hz OR 60Hz 1mA 3SEC

COIL-CORE:1800V COIL-COIL:1800V

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	CORE	T18*10*7-R100	HAO BO	-
2	WIRE	MW-75C(DD) UEW-U 130℃	PACIFC-THAI ELECTRILWIRE&CADLE CO.,LTD.	E84081
3	SHEEL	FR-4	KING BOARD ELECTRIC CO.,LTD	E123995
4	EPOXY	3300A-1/3300B-1 3300A-2/3300B-2 130	EATTO ELECTRIC CO.,LTD	E218090
5	VARNISH	V1380FC /1630FS	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	E75225

APPROVED BY	CHECKED BY	DRAWING BY
		张娟溪

Channel Well Technology Co., Ltd.

规 格 承 认 书

CUSTOMER	:	CWT
MATERIAL	:	CHOKE
CUSTOME NO	:	G12-T100029-P100
SUNYCORE NO	:	161-0575GS
ISSUE DATE	:	18-Jan-11

APPROVED BY

DRAWER	CHECKED	APPROVED
钟伟星	夏金海	刘军
18-Jan-11	18-Jan-11	18-Jan-11

双菱磁性材料有限公司

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江西工厂：

江西省抚州市金巢开发区纵四路

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HTTP://WWW.SUNYCORE.COM

SPECIFICATION FOR APPROVAL
BILL OF MATERIAL

NO.	ITEM	MATERIAL	SUPPLIER OF MATERIAL	CERT NO.
1	CORE	FERRITE CORE T10*6*5+C SL10K	SUNYCORE CO.,	
2	WIRE	TYPU-130 MW-75C 2UEW 130℃	HENG YA ELECTRIC CO.,LTD	E245514
3	WIRE	CAT N0 TIW-B 130℃	YUSHENG ELECTRIC CO.,LTD	E332529
4	TUBE	TFL 155℃	GREAT LEOFLON INDUSTRIAL.CO	E211989
5	EPOXY	3300A-1/3300B-1 3300A-2/3300B-2 130℃	EATTO ELECTRIC CO.,LTD	E253983

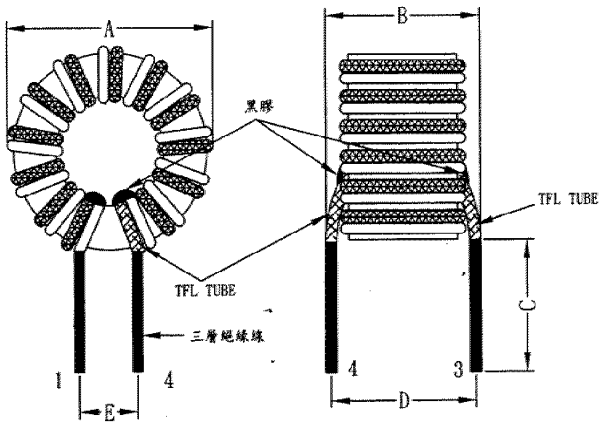
DOC NO: 161-0575GS/G12-T100029-P100

雙芃電子 SUNYCORE ELECTRONICS CO., LTD

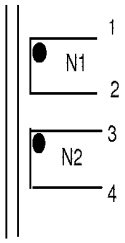
INSPECTOR:钟伟星 CHECKED BY:刘军 APPROVED BY:吴世伟

SPECIFICATION FOR APPROVAL

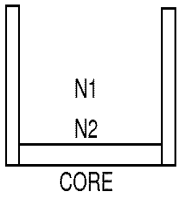
1.PHYSICAL DIMENSION (外观尺寸图)



2.SCHEMATIC:(线路图)



3.WINDING(剖面图)



4.WINDING TABLE AND NOTE(绕线结构)

Winding NO (组别)	Margin Tape (醋酸布)	PIN (脚位)	Wire&Wire Copper (绕线X股数)	TURNS (圈数)	Winding Type (绕线方式)	Tape Layer (胶带层次)	TUBE (套管)
N1	N/A	1--2	∮0.6*1P(2UEW)	14.5TS	双组并绕	N/A	N/A
N2	N/A	3--4	∮0.6*1P(TIW-B)	14.5TS		N/A	TFL TUBE

NOTE:

1.产品圈数以内圈计算

2.绕线须平整美观,漆包层不可破损或脱落.

3.拉线时不能破皮,产品须点胶固定,且胶不可超出本体.

4,N2绕组进出线需上铁弗龙套管,平铁芯面±0.5mm.

5.ELECTRONICAL CHARACTERISTIC(电器特性)TEMP:AT25℃ HUMIDITY AT:65±20% RH

MEAS. ITEM	DIMENSION UNIT:mm						
SPEC NO.	A	B	C	D	E		
	14MAX	10MAX	5.0±1	6.0±1	6±1		
TEST TOOL:	CALLIPERS						
DOC NO: 161-0575GS/G12-T100029-P100 REV:000							

TEST ITEM(测试项目)	TEST CONDITION(测试条件)	RESULT (条件范围值)
INDUCTANCE (电感)	1KHZ 0.25V(1--2) (3--4)	0.8mH MIN
	GKT1062A 50欧	
HI-POT TEST (耐压)	60HZ 5mA 1SEC AC	COIL-COIL 500V
DC R (电阻)	(1--2)(3--4)	70毫欧MAX

SUNYCORE ELECTRONICS CO., LTD TEL:0512-63322515 FAX:0512-63322512

DRAWER:钟 伟 星 CHECKED:夏金海 APPROVED:刘军

SPECIFICATION FOR APPROVAL

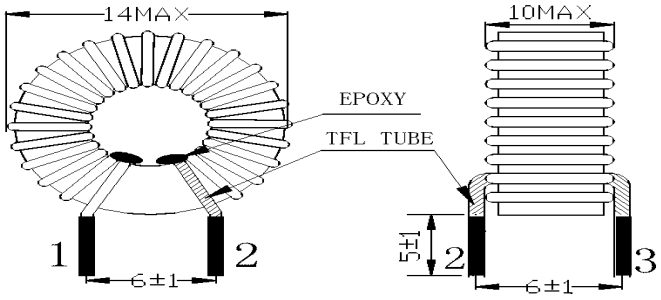
SHEET: 1 OF 1

CUSTOMER: 冠 碩 TYPE: T10*6*5+C

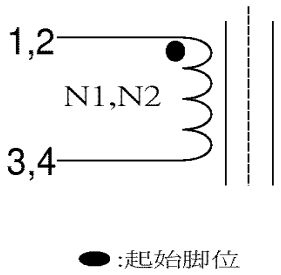
PART NO: G12-T100029-M100 OUR P/N:

REVISION: A ISSUE DATE: 2011-01-14

1. MECHANICAL DIMENSIONS: (UNIT :mm)



2. SCHEMATIC:



NOTE:

1. 產品以內圈計算. 2. 產品出入線需點膠固定. 3. PIN2, 3加TFL TUBE.

3. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	NOTE
N1	2UEW Φ0.6mm	1	4	14.5TS	
N2	TRW(B) Φ0.6mm	2	3	14.5TS	

4. ELECTRICAL CHARACTERISTICS (AT25℃ 65±5%RH)

4-1. INDUCTANCE: AT 1KHz 0.25V
L(1-4)=(2-3): 0.8mH MIN

4-2. DC RESISTANCE:
DCR(1-4)=(2-3): 70mΩ MAX

4-3. HI-POT TEST AC 50Hz OR 60Hz 5mA 1SEC
COIL-COIL: 500V

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	CORE	T10*6*5+C	HAO BO	-
2	WIRE	UEW	PACIFC-THAI ELECTRILWIRE&CADLE CO.,LTD.	E84081
		TRW(B)	GREAT LEOFON INDUSTRIAL CO LTD	E211989
3	VARNISH	V1380FC /1630FS	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	E75225

APPROVED BY	CHECKED BY	DRAWING BY
		张娟溪

Channel Well Technology Co., Ltd.

SPECIFICATION FOR APPROVAL

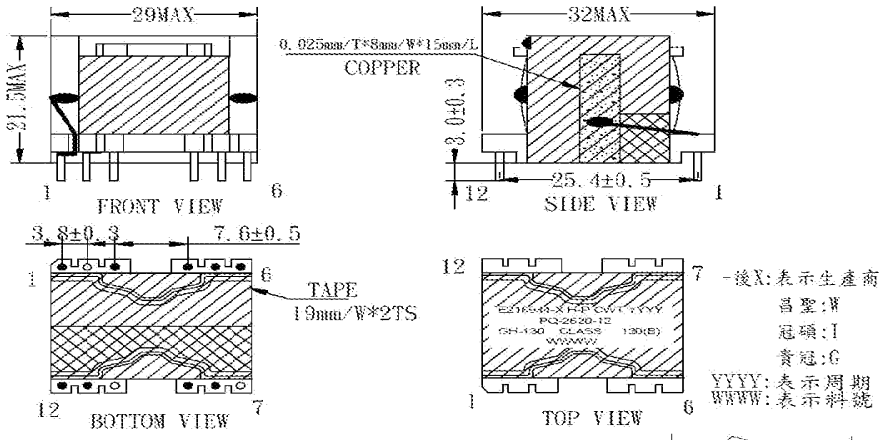
SHEET: 1 OF 4

CUSTOMER: 慧 碩　　MODEL: PQ-2620-12

PART NO: G09-PQ26203-M100　　OUR P/N:

REVISION: A　　ISSUE DATE: 2011-02-14

1. MECHANICAL DIMENSIONS: (UNIT : mm)



NOTE:

1. PIN2.7.10 NO.PIN5 CUT OFF1/2.
2. 底部磁芯加工PIN7-12(如圖所示).
3. 所有出入線需加TFL套管.
4. 側面貼自粘銅箔0.025mm/T*8mm/W*15mm/L,引線為中0.3,加TFL接為PIN1.
5. 研磨磁芯並於變壓器頂部、CORE TAPE:19mm/W*2TS/(切口在側面).
6. 磁芯與磁芯結合處及磁芯與BOBBIN結合處,共點膠五點固定(如圖所示).
7. 線圈貼於頂部,字體朝向PIN1-5側(如圖所示).

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

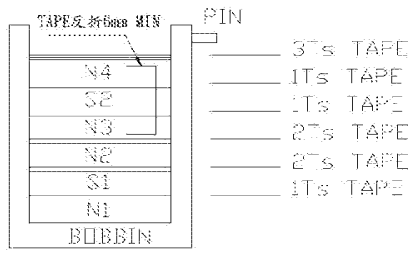
SHEET: 2 OF 4

CUSTOMER: 冠 碩　　MODEL: PQ-2620-12

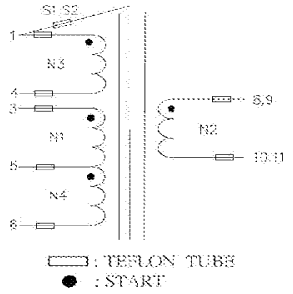
PART NO: G09-PQ26203-M100　　OUR P/N:

REVISION: A　　ISSUE DATE: 2011-02-14

2. CONSTRUCTIONS:



3. SCHEMATIC:



4. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	UL TAPE	TEFLON ST	TEFLON FI	NOTE
N1	2UEW Φ0.4mm*2P	3	5	1STS	1TS	V	V	
S1	0.025mm/T*8mm/W	1	-	1TS	2TS	V		
N2	TRW(S) Φ0.8mm*2P	8,9	11,12	4TS	2TS	V	V	
N3	2UEW Φ0.16mm*2P	1	4	5TS	1TS	V	V	絞線
S2	0.025mm/T*8mm/W	1	-	1TS	1TS	V		
N4	2UEW Φ0.4mm*2P	5	6	1STS	3TS	V	V	

NOTE:

1. S1, S2銅箔絕緣膠, 引線為Φ0.3mm.
2. 露底部繞N3是需貼一塊膠帶, 待N4繞完後反折6mm MIN.

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

CUSTOMER: 雅 徠 MODEL: PQ-2620-12

PART NO: G09-PQ26203-M100 OUR P/N:

REVISION: A ISSUE DATE: 2011-02-14

5. ELECTRICAL CHARACTERISTICS:(AT20℃ 65±5%RH)

(1). INDUCTANCE: AT 1KHz 0.25V
L(3-6): 670uH~730uH

(2). LEAKAGE INDUCTANCE: AT 60KHz 0.25V
LK(3-6): uH MAX (SEC SHORT)

(3). DC TESISTANCE:
DCR(3-6):195mΩ MAX
DCR(PIN1-CORE):50kΩ MAX

(4). HI-POT TEST :AC 50Hz OR 60Hz 5mA 3SEC
PRI --- SEC:3000V
SEC --- CORE:1500V
PRI --- CORE:1500V

(5). INSULATION RESISTANCE: DC500V
PRI---SEC: 100M OHMS MIN
SEC---CORE: 100M OHMS MIN
PRE---CORE: 100M OHMS MIN

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

SHEET: 4 OF 4

CUSTOMER: 冠 領 MODEL: PQ-2620-12

PART NO: G09-PQ26203-M100 OUR P/N:

REVISION: A ISSUE DATE: 2011-02-14

6. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLICS T375J 94V-0 150°C	CHANG CHUN PLASTICS CO.,LTD	E59481(S)
2	CORE	M2.3K	HAO BO ELECTRONICSSCIENCE&TECHNOLOGY CO.,LTD	-
		SSP-44	SHANGPENG	-
		PF-2L	CWCC	-
		3F3	FERROXCUBE	-
		TF2	SPINEL	-
3	MAGNET WIRE	DD-NYU Polyurethane MW75 130°C	PACIFC-THAI ELECTRIL WIRE&CADLE CO.,LTD	E84081
		TRW(B)	GREAT LEOFON INDUSTRIAL CO.LTD	E211989
4	TAPE	CAT NO 1350-1 130°C	3M COMPANY ELECTRICAL MARKETS DIV (EMI)	E17385
		#PZ-280 130°C	HUIZHOU YAHUA STICKING TAPE CO.,LTD	E165111
		CAT NO 35660	SYMBIO INC	E50293(S)
5	COPPER	0.025mm/1	DONGGUAN ZHONGCHI METAL PRODUCT CO.,LTD	-
6	SLEEVING	TFL 200°C	GREAT HOLDING INDUSTRIAL CO.,LTD	E156256
7	VARNISH	V1320FC /1360FS	P D GEORGE	E75225
8	EPOXY	3300A/B	SUZHOU EATUO ELECTRONIC MATERIAL CO.LTD	E218090

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

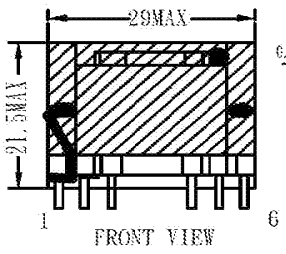
SHEET: 3 OF 6

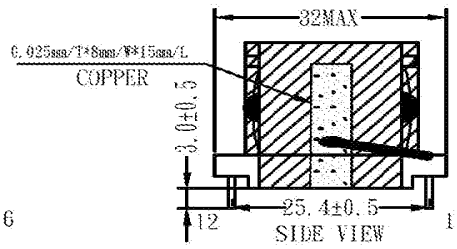
CUSTOMER: 貴冠 TYPE: PQ-2620

PART NO: G09-PQ2627S-M100 OUR P/N:

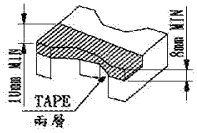
REVISION: A ISSUE DATE: 2015.5.12

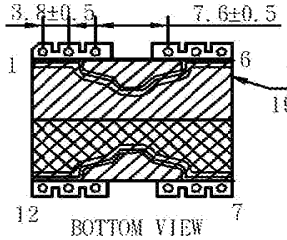
1. MECHANICAL DIMENSIONS: (UNIT : mm)





後X:表示生產商
昌聖:W
冠碩:I
貴冠:G





YYYY:表示周期

NOTE:

1. PIN2, 7, 10 NO, PIN5 CUT OFF1/2.
2. 底部磁芯加工PIN7-12(如圖所示).
3. 所有出入線需加TFL套管.
4. 側面貼自粘銅箔0.025mm/T*8mm/W*15mm/L, 引線為中0.3, 加TFL接於PIN1.
5. 研磨磁芯置於變壓器頂部, CORE TAPE:19mm/W*2TS(切口在側面), 成品用15mm膠帶沿線包方向包2TS.
6. 磁芯與磁芯結合處及磁芯與BOBBIN結合處, 共點膠五點固定(如圖所示).
7. 標籤貼於頂部, 字體朝向PIN1-6側(如圖所示).

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	彭小平

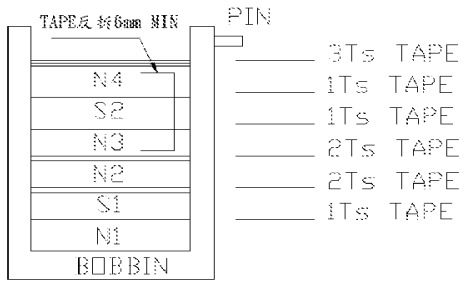
SPECIFICATION FOR APPROVAL

CUSTOMER: 晨冠 TYPE: PQ-2620

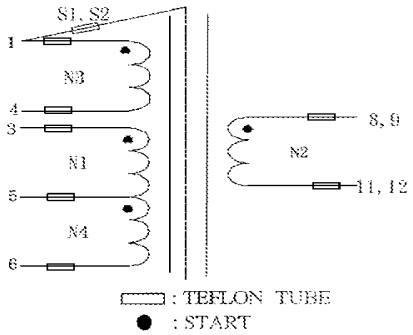
PART NO: G09-PQ26278-M100 OUR P/N:

REVISION: A ISSUE DATE: 2015.5.12

2. CONSTRUCTIONS:



3. SCHEMATIC:



4. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	UL TAPE	TEFLON		NOTE
						ST	FI	
N1	丝包线 Φ0.1mm*2SP	3	5	24TS	1TS	V	V	
S1	0.025mm/T*8mm/W	1	-	1TS	2TS	V		
N2	TRW(B) Φ0.8mm*2P	8,9	11,12	4TS	2TS	V	V	
N3	2UEW Φ0.16mm*2P	1	4	5TS	1TS	V	V	疏绕
S2	0.025mm/T*8mm/W	1	-	1TS	1TS	V		
N4	丝包线 Φ0.1mm*2SP	5	6	11TS	3TS	V	V	

NOTE :
1、 S1、S2铜箔须背胶，引线为Φ0.3mm。
2. 靠底部绕N3是需贴一块胶带，待N4绕完后反折6mm MIN.

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	彭小平

SPECIFICATION FOR APPROVAL

CUSTOMER: 貴冠 TYPE: PQ-2620

PART NO: G09-PQ26278-M100 OUR P/N:

REVISION: A ISSUE DATE: 2015.5.12

5. ELECTRICAL CHARACTERISTICS: (AT20℃ 65±5%RH)

(1). INDUCTANCE: AT 10KHz 1.0V
L(3-6): 650uH +/- 5%

(2). LEAKAGE INDUCTANCE: AT 50KHz 0.25V
LK(3-6): 12uH MAX (SEC SHORT)

(3). DC TESISTANCE:
DCR(3-6): 195mΩ MAX
DCR(PIN1-CORE): 50kΩ MAX

(4). HI-POT TEST : AC 50Hz OR 60Hz 5mA 3SEC
PRI --- SEC: 3000V
SEC --- CORE: 1500V
PRI --- CORE: 1500V

(5). INSULATION RESISTANCE: DC500V
PRI---SEC: 100M OHMS MIN
SEC---CORE: 100M OHMS MIN
PRE---CORE: 100M OHMS MIN

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	彭小平

SPECIFICATION FOR APPROVAL

SHEET: 6 OF 6

CUSTOMER: 貴冠 TYPE: PQ-2620

PART NO: G09-PQ26278-M100 OUR P/N:

REVISION: A ISSUE DATE: 2015.5.12

6. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLICS T375J 94V-0 150℃	CHANG CHUN PLASTICS CO.,LTD	E59481(S)
2	CORE	M2.3K	HAO BO ELECTRONICS&SCIENE&TECHNILOGY CO.,LTD	-
		SSP-44	SHANGPENG	-
		PF-2L	CWOC	-
		3F3	FERROCXCUBE	-
		JF2	SPINEL	-
3	MAGNET WIRE	DD-NYU Polyurethane MW75 130℃	PACIFIC-THAI ELECTRIL WIRE&CADLE CO.,LTD	E84081
		2UEW 130℃	SHENZHEN CHENGWEI INDUSTRY CO LTD	E227475
		TRW(B)	GREAT LEOFON INDUSTRIAL CO LTD	E2J 1989
4	TAPE	CAT NO 1350-1 130℃	3M COMPANY ELECTRICAL MARKETS DIV (EMI)	E17385
		#PZ-280 130℃	HUIZHOU YARUA STICKING TAPE CO.,LTD	E165111
		CAT NO 35660	SYMBIO INC	E50292(S)
5	COPPER	0.025mm/T	DONGGUAN ZHONGCHI METAL PRODUCT CO.,LTD	-
6	SLEEVING	TFL 200℃	GREAT HOLDING INDUSTRIAL CO.,LTD	E156256
7	VARNISH	V1380FC /1360FS	P D GEORGE	E75225
8	EPOXY	3300A/B	SUZHOU EATTO ELECTRONIC MATERIAL CO.LTD	E218090

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	彭小平

SPECIFICATION FOR APPROVAL

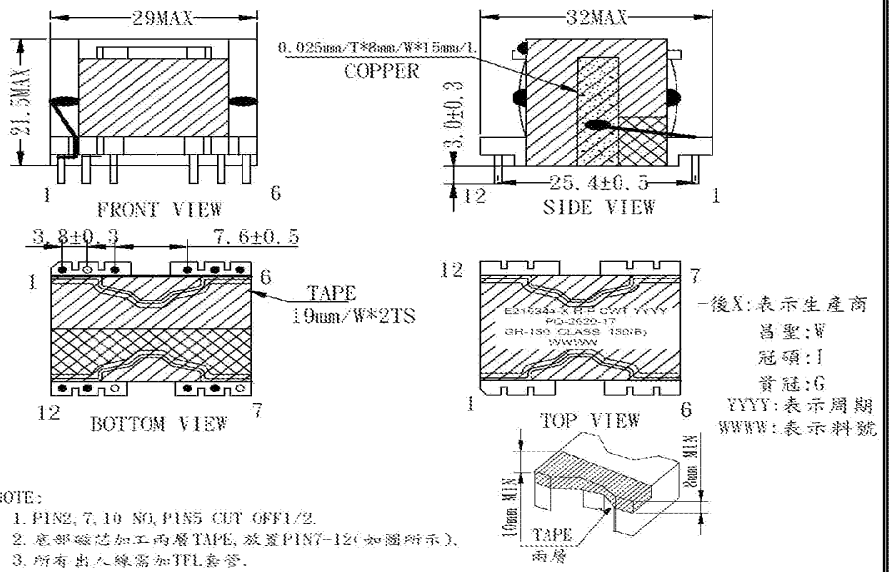
SHEET: 1 OF 4

CUSTOMER: 冠 頡 MODEL: PQ-2620-17

PART NO: G09-PQ26205-M100 OUR P/N:

REVISION: A ISSUE DATE: 2011-02-14

1. MECHANICAL DIMENSIONS: (UNIT : mm)



NOTE:

1. PIN2, 7, 10 NO, PIN5 CUT OFF1/2.
2. 底部磁芯加工兩層TAPE, 放置PIN7-12(如圖所示).
3. 所有出入線需加TFL套管.
4. 側面貼自粘銅箔0.025mm/T*8mm/W*15mm/L, 引線為Φ0.3, 加TFL接於PIN1.
5. 研磨磁芯置於變壓器頂部, CORE TAPE:19mm/W*2TS(切口在側面).
6. 磁芯與磁芯結合處及磁芯與BOBBIN結合處, 共點膠五點固定(如圖所示).
7. 標籤貼於頂部, 字腳朝向PIN1-6側(如圖所示).

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

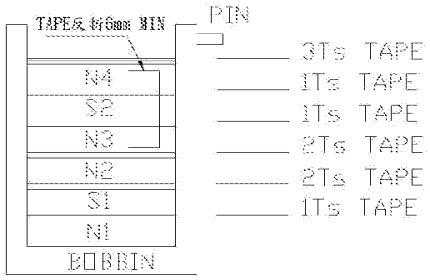
SHEET: 2 OF 4

CUSTOMER: 冠 碩　　MODEL: PQ-2620-17

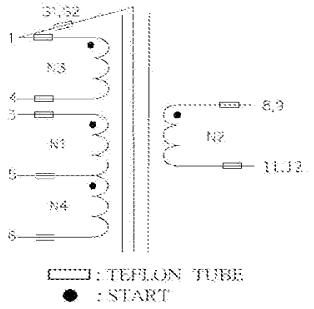
PART NO: G09-PQ26205-M100　　OUR P/N:

REVISION: A　　ISSUE DATE: 2011-02-14

2. CONSTRUCTIONS:



3. SCHEMATIC:



4. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	CL TAPE	TEFLON ST	TEFLON PI	NOTE
N1	2UEW Φ0.4mm*2P	3	5	20TS	1TS	V	V	
S1	0.025mm/T*8mm/W	1	-	1TS	2TS	V		
N2	TRW(B) Φ1.0mm	8,9	11,12	7TS	2TS	V	V	
N3	2UEW Φ0.16mm*2P	1	4	5TS	1TS	V	V	兩線併繞
S2	0.025mm/T*8mm/W	1	-	1TS	1TS	V		
N4	2UEW Φ0.4mm*2P	5	6	20TS	3TS	V	V	

NOTE :

1. S1、S2銅箔須穿膠、引線為Φ0.3mm.
2. 靠底部繞N3是需貼一塊膠帶，待N4繞完後反折6mm MIN.

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

CUSTOMER: 冠 暉 MODEL: PQ-2620-17

PART NO: G09-PQ26205-M100 OUR P/N:

REVISION: A ISSUE DATE: 2011-02-14

5. ELECTRICAL CHARACTERISTICS: (AT20℃ 65±5%RH)

(1). INDUCTANCE: AT 1KHz 0.25V
L(3-6): 0.85mH±4%

(2). LEAKAGE INDUCTANCE: AT 60KHz 0.25V
LK(3-6): uH MAX (SEC SHORT)

(3). DC TESISTANCE:
DCR(3-6): 200mΩ MAX
DCR(PIN1-CORE): 50kΩ MAX

(4). HI-POT TEST :AC 50Hz OR 60Hz 5mA 3SEC
PRI --- SEC: 3000V
SEC --- CORE: 1500V
PRI --- CORE: 1500V

(5). INSULATION RESISTANCE: DC500V
PRI---SEC: 100M OHMS MIN
SEC---CORE: 100M OHMS MIN
PRI---CORE: 100M OHMS MIN

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

SHEET: 4 OF 4

CUSTOMER: 冠 徽　　MODEL: PQ-2620-17

PART NO: G09-PQ26205-M100　　OUR P/N:

REVISION: A　　ISSUE DATE: 2011-02-14

6. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLICS T375J 94V-0 150℃	CHANG CHUN PLASTICS CO.,LTD	E59481(S)
2	CORE	M2.3E	BAO BO	-
		SSP-44	SHANGPENG	-
		PE-2L	CWGC	-
		3F3	FERROXCOBE	
		JP2	SPINEL	-
3	MAGNET WIRE	DD-NYU Polyurethane MW75 130℃	PACIFC-THAI ELECTRILWIRE&CADLE CO.,LTD	E84081
		TRW(E)	GREAT LEOFON INDUSTRIAL CO LTD	E211989
4	TAPE	CAT NO 1350-1 130℃	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	E17385
		#PZ-280 130℃	HUIZHOU YAHUA STICKING TAPE CO.,LTD	E165111
		CAT NO 55660	SYMBIO INC	E50292(S)
5	COPPER	0.025mm/T	DONGHUAN ZHONGCHI METAL PRODUCT CO.,LTD	-
6	SLEEVING	TFL 200℃	GREAT HOLDING INDUSTRIAL CO.,LTD	E156256
7	VARNISH	V1380FC /1360FS	P D GEORGE	E75225
8	EPOXY	3300A/B	SUZHOU EATTO ELECTRONIC MATERIAL CO.,LTD	E218090

APPROVED BY	CHECKED BY	DRAWING BY
林宗財	丁俊德	張娟溪

SPECIFICATION FOR APPROVAL

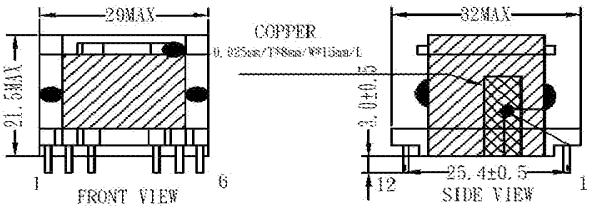
SHEET: 1 OF 4

CUSTOMER: _____ TYPE: PQ-2620

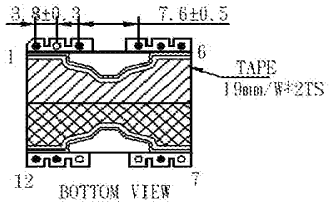
PART NO: G09-PQ26301-M1A0 OUR P/N: _____

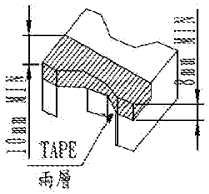
REVISION: A ISSUE DATE: 2017.06.03

1. MECHANICAL DIMENSIONS: (UNIT : mm) 成品單重:41.8g

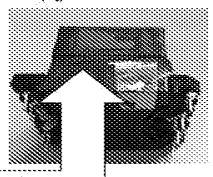


-後X:表示生產商
昌聖:W
央霖:I
貴冠:G
YYYY:標示週期





NOTE:
1. PIN2、7、10 NO PIN5 CUT OFF1/2.
2. 底部磁芯加工兩層TAPE, 放置PIN7~12(如圖所示).
3. 磁芯與磁芯結合處及磁芯與BOBBIN結合處點膠共5點.
4. 所有出入線需加TFL套管.
5. 沿PIN1側貼自粘銅箔0.025mm/T*8mm/W*15mm/L, 焊引線中0.252鍍錫線, 加TFL接於PIN1. 自粘銅箔距離次級磁芯7mmMIN. (如圖所示)
6. 研磨磁芯置於變壓器頂部. CORE TAPE:19mm/W*2TS(切口在側面).
7. 標籤材質為25#透明紙, 標籤貼於頂部, 字體朝向PIN1~6側(如圖所示)



距離次級磁芯7mmMIN

APPROVED BY	CHECKED BY	DRAWING BY
楊景龍	張麗蓁	龍建華

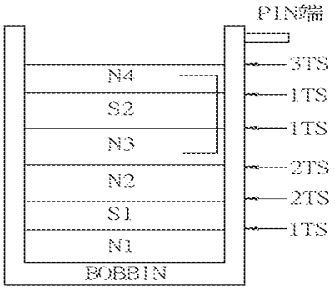
SPECIFICATION FOR APPROVAL

CUSTOMER: _____ TYPE: PQ-2620

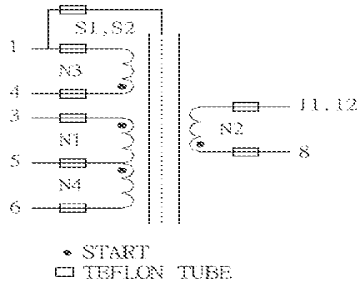
PART NO: G09-PQ26301-M1A0 OUR P/N: _____

REVISION: A ISSUE DATE: 2017.06.03

2. CONSTRUCTIONS:



3. SCHEMATIC:



4. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	UL TAPE	TEFLON		NOTE
						ST	FI	
N1	2UEW Φ0.4mm*2P	3	5	20TS	1TS	V	V	密繞
S1	0.025mm/T*8mm/W	1	--	1TS	2TS	V		
N2	TRW(B) Φ0.5mm*2P	8	11,12	11TS	2TS	V	V	密繞
N3	2UEW Φ0.16mm*2P	1	4	5TS	1TS	V	V	疏繞
S2	0.025mm/T*8mm/W	1	--	1TS	1TS	V		
N4	2UEW Φ0.4mm*2P	5	6	20TS	3TS	V	V	密繞

NOTE :

1. S1, S2銅箔四端包膠, 引線為Φ0.3mm.
2. 靠底部繞N3時需貼反折膠帶, 待N4繞完后反折6mm MIN.

APPROVED BY	CHECKED BY	DRAWING BY
楊景龍	張麗蓁	龍建華

SPECIFICATION FOR APPROVAL

CUSTOMER: _____ TYPE: PQ-2620

PART NO: G09-PQ26301-M1A0 OUR P/N: _____

REVISION: A ISSUE DATE: 2017.06.03

5. ELECTRICAL CHARACTERISTICS: (AT20℃ 65±5%RH)

(1). INDUCTANCE: AT 10KHz 0.25V
L(3-6): 0.85mH±5%

(2). LEAKEGE INDUCTANCE: AT 60KHz 0.25V
LK(3-6): 10uH MAX (SEC SHORT)

(3). DC RESISTANCE:
DCR(3-6): 200mΩ MAX
DCR(PIN1-CORE): 50KΩ MAX

(4). HI-POT TEST : AC 50Hz OR 60Hz 5mA 3SEC
PRI-SEC: 3000V
SEC-CORE: 1500V
PRI-CORE: 1500V
ARC(電弧測試): 5級(12mA)

(5). INSULATION RESISTANCE: DC500V
PRI-SEC: 100M OHMS MIN
SEC-CORE: 100M OHMS MIN
PRI-CORE: 100M OHMS MIN

APPROVED BY	CHECKED BY	DRAWING BY
楊景龍	張麗蓉	龍建華

SPECIFICATION FOR APPROVAL

SHEET: 4 OF 4

CUSTOMER: _____ TYPE: PQ-2620

PART NO: G09-PQ26301-M1A0 OUR P/N: _____

REVISION: A ISSUE DATE: 2017.06.03

6. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLICS T375J 94V-0	CHANG CHUN	E59481
2	CORE	SSP-4	SHANGPENG	-
		JP4	JIULONGWANG	-
3	MYLAR TAPE	CT* 130℃	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E165111
4	MAGNET WIRE	UEW-U	SIAM PACIFIC ELECTRIC WIRE & CABLE CO LTD	E142108
5	Triple insulated wire	TRW(B)	GREAT LEOFLON INDUSTRIAL CO LTD	E211989
6	SLEEVING	TFL	GREAT HOLDING INDUSTRIAL CO LTD	E156256
7	COPPER	0.025mm/T	DONGGUAN ZHONGCHI METAL PRODUCT CO.LTD	-
8	VARNISH	V1380FC	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	E75225
9	EPOXY	3300A-1/3300B-1	DONGGUaN EATTO	E218090

APPROVED BY	CHECKED BY	DRAWING BY
楊景龍	張麗蓥	龍建華

SPECIFICATION FOR APPROVAL

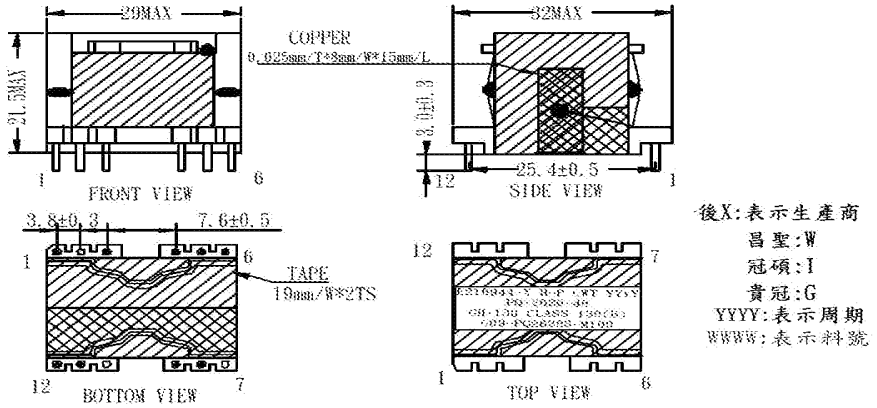
SHEET: 3 OF 6

CUSTOMER: 貴冠 TYPE: PQ-2620

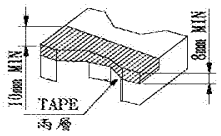
PART NO: G09-PQ26283-M100 OUR P/N:

REVISION: A ISSUE DATE: 2015.05.12

1. MECHANICAL DIMENSIONS: (UNIT : mm)



後X:表示生產商
昌聖:W
冠碩:I
貴冠:G
YYYY:表示周期
WWWW:表示料號



NOTE:
1. PIN2, 7, 10 NO. PIN5 CUT OFF1/2.
2. 底部磁芯加工兩層TAPE, 放置PIN7-12(如圖所示).
3. 所有出入線需加TFL套管.
4. 側面貼自粘銅箔0.025mm/T*8mm/W*15mm/L, 引線為Φ0.3, 加TFL接於PIN1.
5. 研磨磁芯置於變壓器頂部, CORE TAPE:19mm/W*2TS(切口在側面).
6. 磁芯與磁芯結合處及磁芯與BOBBIN結合處, 共點膠五點固定(如圖所示).
7. 標籤貼於頂部, 字朝向PIN1-6側(如圖所示).

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	楊景龍	張麗云

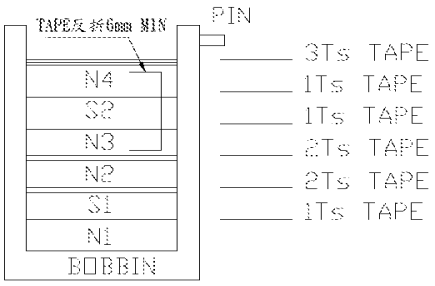
SPECIFICATION FOR APPROVAL

CUSTOMER: 貴冠 TYPE: PQ-2620

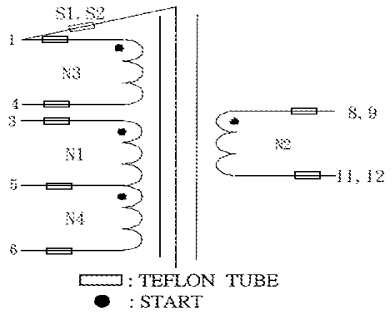
PART NO: G09-PQ26283-M100 OUR P/N:

REVISION: A ISSUE DATE: 2015.5.12

2. CONSTRUCTIONS:



3. SCHEMATIC:



4. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	UL TAPE	TEFLON ST	TEFLON FI	NOTE
N1	2UEW Φ0.4mm*2P	3	5	20TS	1TS	V	V	
S1	0.025mm/T*8mm/W	1	-	1TS	2TS	V		
N2	TRW(B) Φ0.4mm*2P	8,9	11,12	14TS	2TS	V	V	
N3	2UEW Φ0.16mm*2P	1	4	5TS	1TS	V	V	高絲
S2	0.025mm/T*8mm/W	1	-	1TS	1TS	V		
N4	2UEW Φ0.4mm*2P	5	6	20TS	3TS	V	V	

NOTE :

1. S1,S2銅箔須背膠,引線為Φ0.3mm.
2. 靠底部繞N3是需貼一塊膠帶,待N4繞完後反折6mm MIN.

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	楊景龍	張麗云

SPECIFICATION FOR APPROVAL

CUSTOMER: 貴寶 TYPE: PQ-2620

PART NO: G09-PQ26283-M100 OUR P/N:

REVISION: A ISSUE DATE: 2015.5.12

5. ELECTRICAL CHARACTERISTICS: (AT20℃ 65±5%RH)

(1). INDUCTANCE: AT 10KHz 0.25V
L(3-6): 0.85mH±5%

(2). LEAKAGE INDUCTANCE: AT 60KHz 0.25V
LK(3-6): 10 uH MAX (SEC SHORT)

(3). DC TESISTANCE:
DCR(3-6): 200mΩ MAX
DCR(PIN1-CORE): 50kΩ MAX

(4). HI-POT TEST : AC 50Hz OR 60Hz 5mA 3SEC
PRI —— SEC: 3000V
SEC —— CORE: 1500V
PRI —— CORE: 1500V

(5). INSULATION RESISTANCE: DC500V
PRI——SEC: 100M OHMS MIN
SEC——CORE: 100M OHMS MIN
PRI——CORE: 100M OHMS MIN

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	楊景龍	張麗云

SPECIFICATION FOR APPROVAL

SHEET: 6 OF 6

CUSTOMER: 貴司　　TYPE: PQ-2620

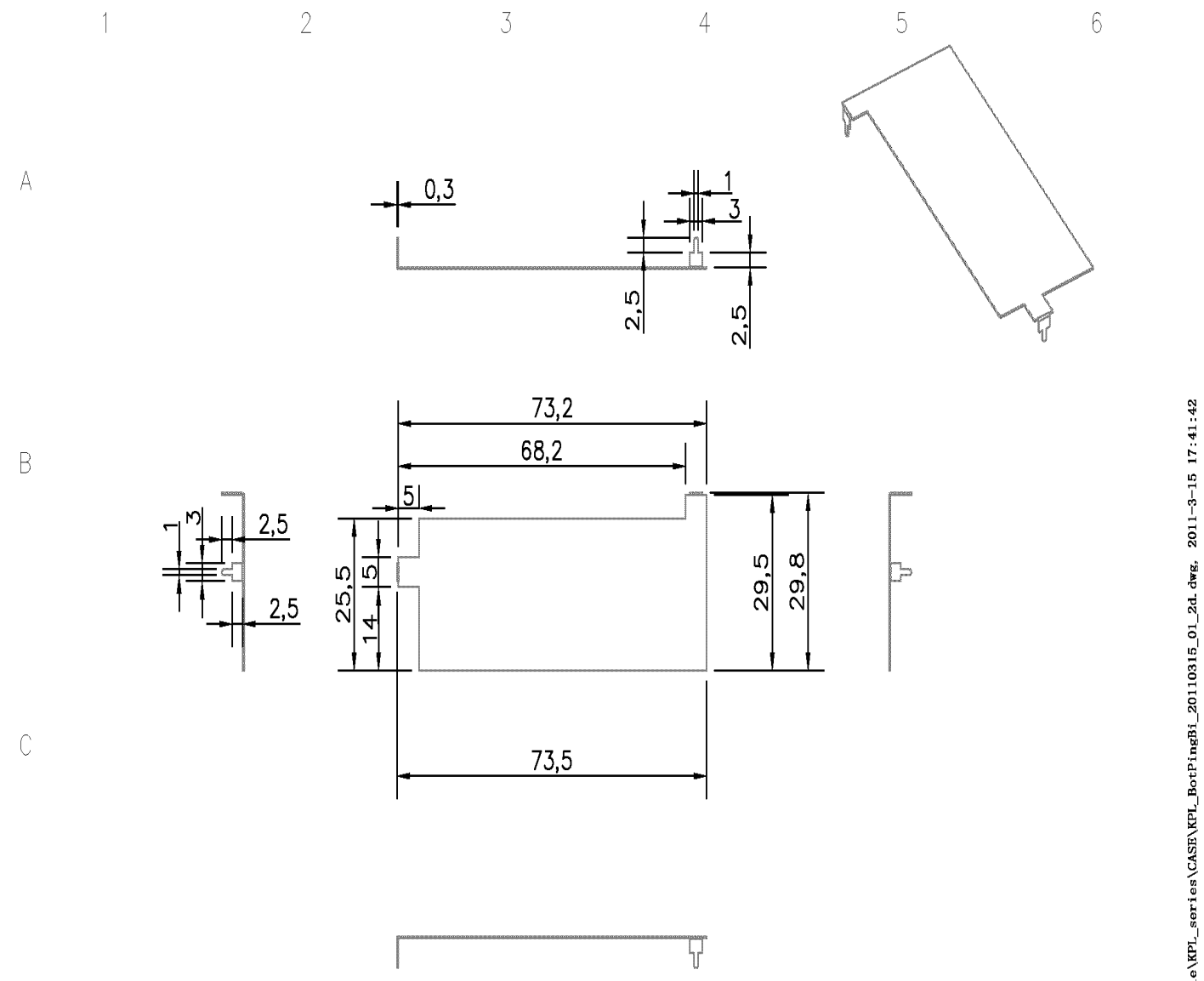
PART NO: C09-PQ26283-M100　　OUR P/N:

REVISION: A　　ISSUE DATE: 2015.5.12

6. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLICS T375J 94V-0 150℃	CHANG CHUN PLASTICS CO.,LTD	E59481(S)
2	CORE	M2.3K	HaO BO	-
		SSP-44	SHANGPENG	-
		P5-2L	CWGC	-
		3F3	FEROCIXCUBE	
		JF2	SPINEL	-
3	MAGNET WIRE	DD-NYU Polyurethane MW75 130℃	PACIFC-THAI ELECTRIL WIRE&CAOLE CO.,LTD	E84081
		2UEW 130℃	SHENZHEN CHENGWEI INDUSTRY CO LTD	E227475
		TRW(B)	GREAT LEOFON INDUSTRIAL CO LTD	E211089
4	TAPE	CAT NO 1350-1 130℃	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	EJ7385
		#PZ-280 130℃	HUIZHOU YAHUA STICKING TAPE CO.,LTD	E165111
		CAT NO 35660	SYMBIO INC	E50292(S)
5	COPPER	0.025mm/T	DONGGUAN ZHONGCHI METAL PRODUCT CO.,LTD	-
6	SLEEVING	TFL 200℃	GREAT HOLDING INDUSTRIAL CO.,LTD	E156256
7	VARNISH	V1380PC /1360FS	P D GEORGE	E75225
8	EPOXY	3300A/B	SUZHOU EATTO ELECTRONIC MATERIAL CO.LTD	E218093

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	楊景龍	張麗云



環保材料標准：

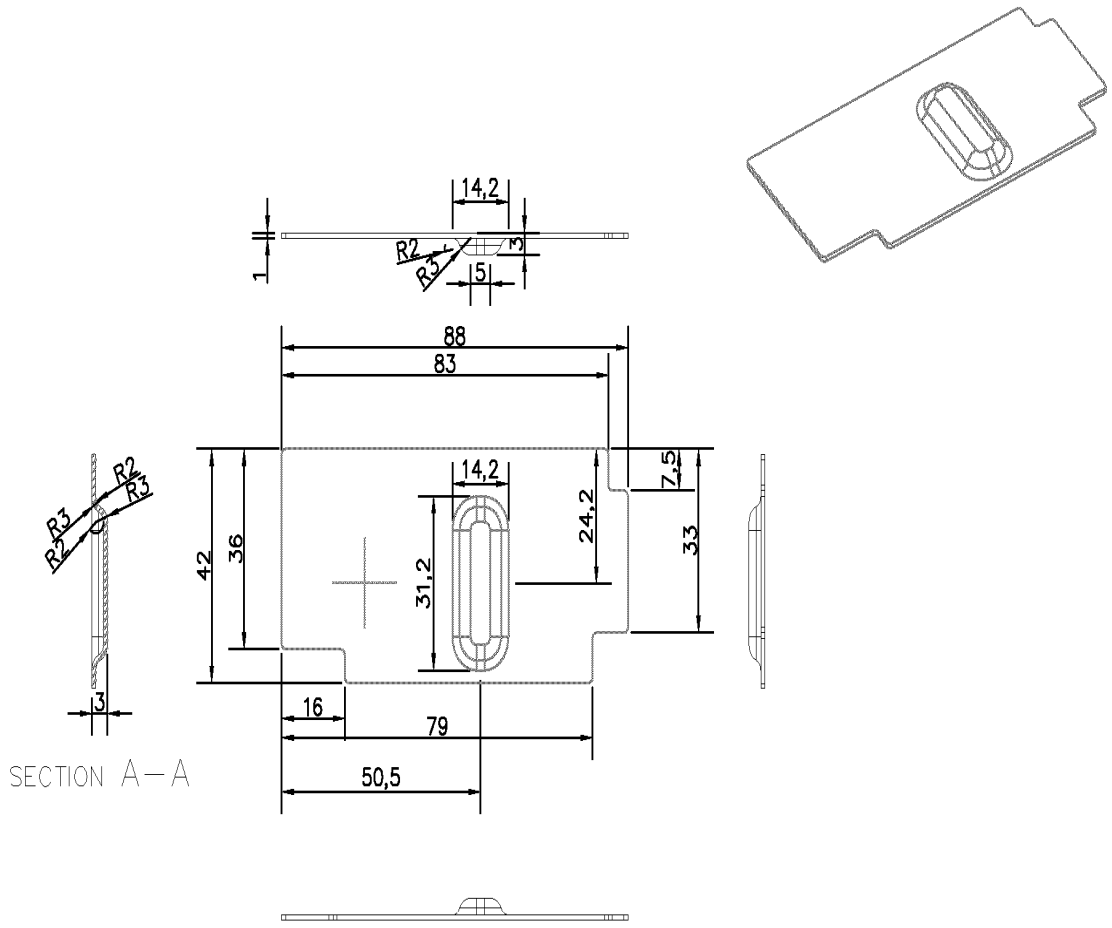
No	有害物質名稱	含量標准
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六價鉻 (Cr⁶)	<800ppm
5	多溴聯苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	鎘,汞,六價鉻,(包裝材料)	總含量<100ppm

SHEET METAL TOLERANCE
(UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	±1.5°

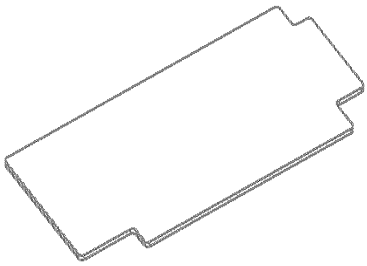
0.1
REV.
DESCRIPTION
APPROVED
CHECKED
DESIGNED
GuanDianFeng
DATE:
DATE:
DATE: 20110315
UNIT: mm
MODEL NO.: KPL****
MATERIAL
PART NO.: G15-F*
******
DRAWING NO.:
SCALE:
SHEET M
THIRD ANGLE PROJECTION
1 OF 1
A4

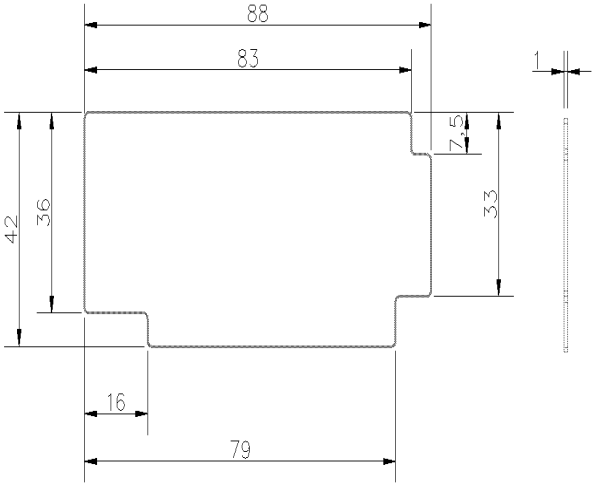
E:\PRODUCT FILE\UG NX File\KPL_series\CASE\KPL_BotPingBi_20110315_01_2d.dwg, 2011-3-15 17:41:42



環保材料標准:										
No	有害物質名稱	含量標准	SHEET METAL TOLERANCE				0.1			
1	鎘 (Cd)	<75ppm	(UNLESS OTHERWISE SPECIFIED)				REV.			DESCRIPTION
2	鉛 (Pb)	<800ppm	DIMENSION	PIERCING	BENDING	ANGULAR			UNIT: mm	MODEL NO.: KPL****
3	汞 (Hg)	<800ppm	X < 8	±0.1	±0.15	±0.3°			MATERIAL	PART NO.: G15-A080410-M100
4	六價鉻 (Cr⁶)	<800ppm	8 ≤ X < 25	±0.1	±0.2	±0.5°			******	DRAWING NO.:
5	多溴聯苯 (PBB)	<800ppm	25 ≤ X < 100	±0.15	±0.25	±0.5°	APPROVED	CHECKED	DESIGNED	
6	多溴二苯醚 (PBDE)	<800ppm	100 ≤ X < 300	±0.2	±0.3	±1°			GuanDianFeng	SCALE: SHEET M
7	鎘,鉛,汞,六價鉻(包裝材料)	總含量<100ppm	300 ≤ X < 800	±0.3	±0.5	±1.5°	DATE:	DATE:	DATE: 20100910	THIRD ANGLE PROJECTION 1 OF 1 A4L

E:\PRODUCT FILE\UG NX File\KPL_series\CASE\G15-A080410-M100-KPL_TopPingBl_20100910_01.dwg





环保材料标准：

No	有害物质名称	含量标准
1	镉 (Cd)	<75ppm
2	铅 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六价铬 (Cr⁶)	<800ppm
5	多溴联苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	镍,铬,六价铬,(包装材料)	总含量<100ppm

SHEET METAL TOLERANCE (UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	±1.5°

0.1

REV. DESCRIPTION

APPROVED CHECKED DESIGNED

DATE: DATE: GuanDianFeng

UNIT: mm MODEL NO.: KPL****

MATERIAL PART NO.: G15-A080411-M100

****** DRAWING NO.:

DATE: 20100910 SCALE: SHEET M

THIRD ANGLE PROJECTION 1 OF 1 A4L

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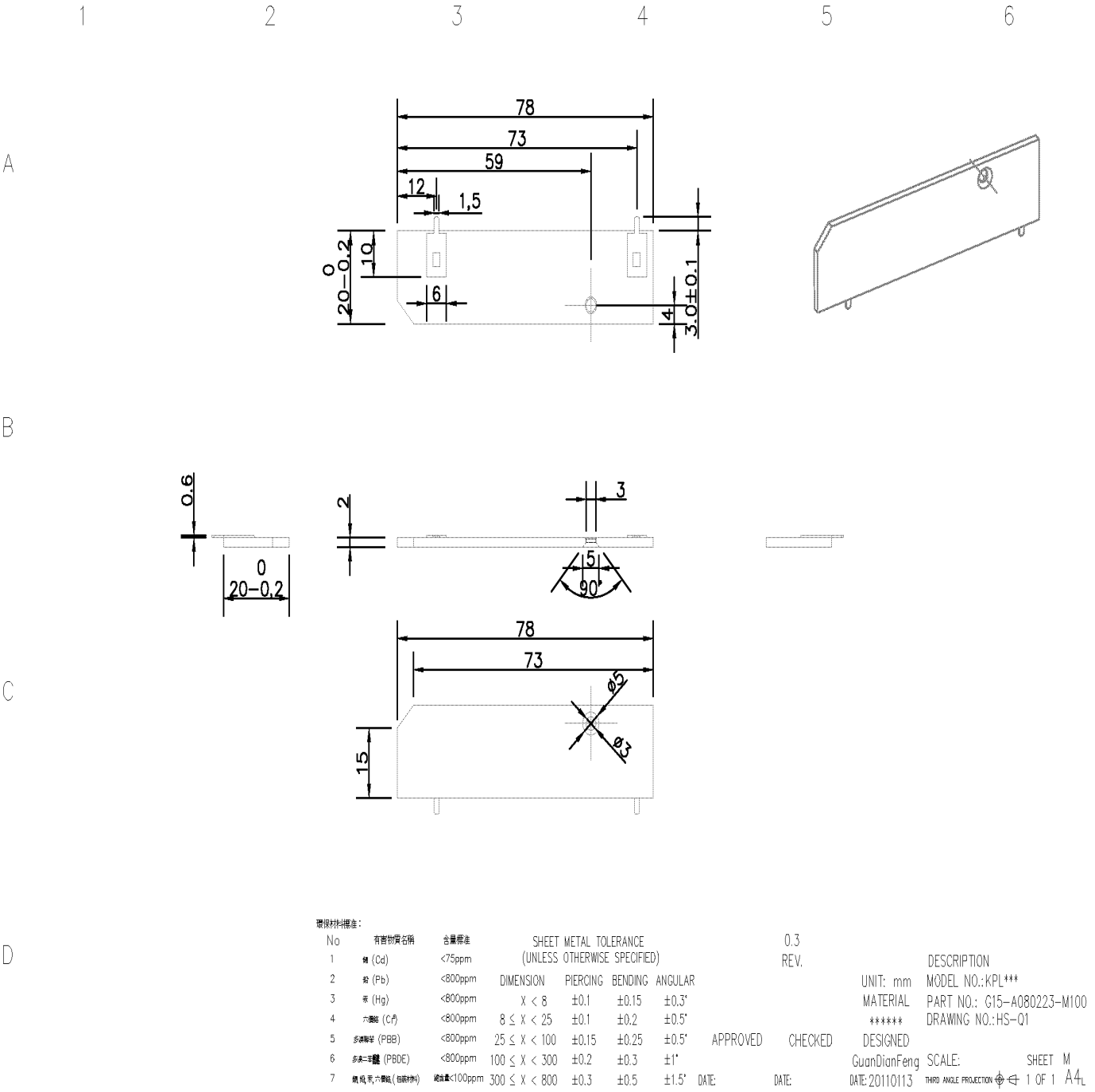
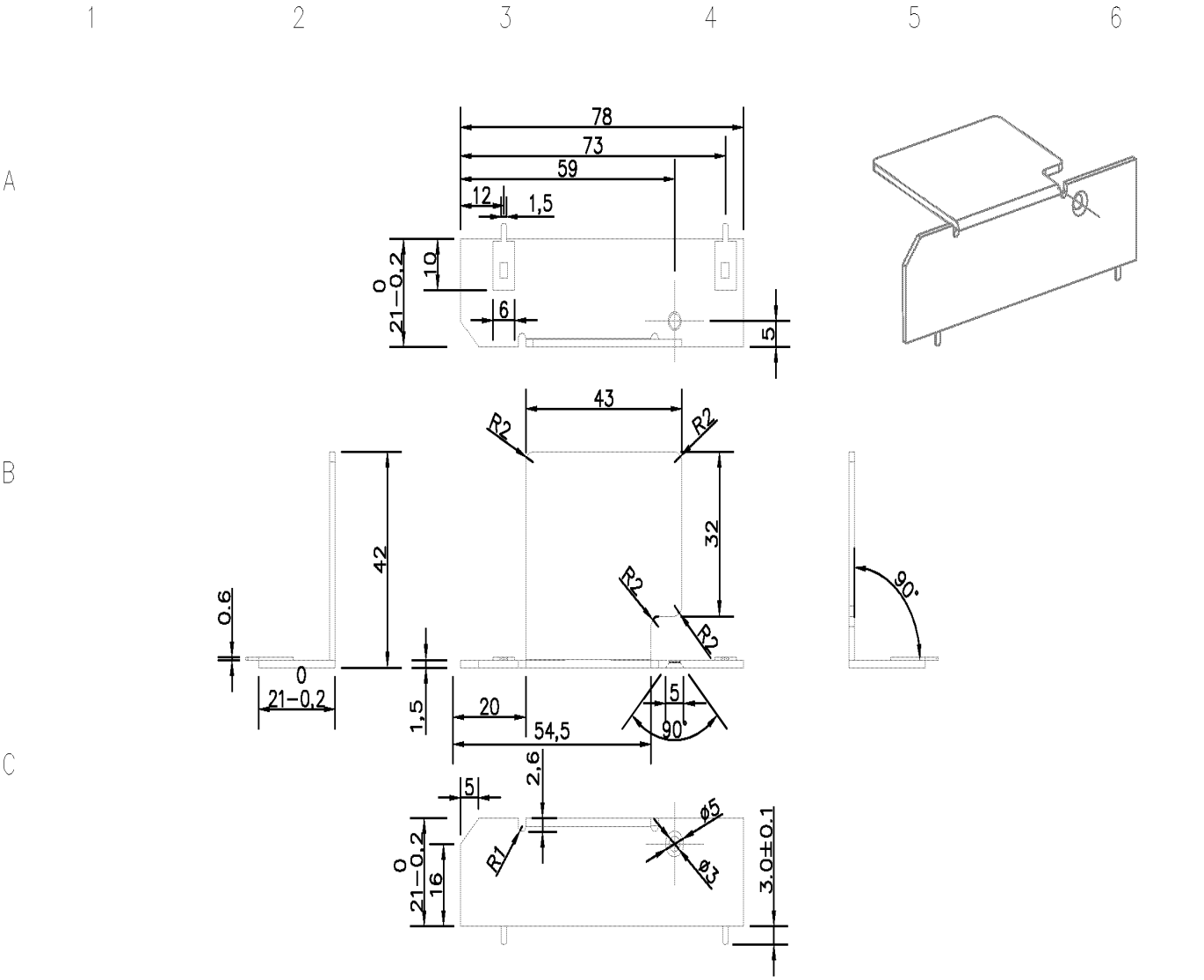
Diagrams-13 Page-1



環保材料標準：

No	有害物質名稱	含量標準
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六價鉻 (Cr⁶)	<800ppm
5	多溴聯苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	鎘,鉛,汞,六價鉻(包裝材料)	總含量<100ppm

Diagrams-14 Page-1



環保材料標准：

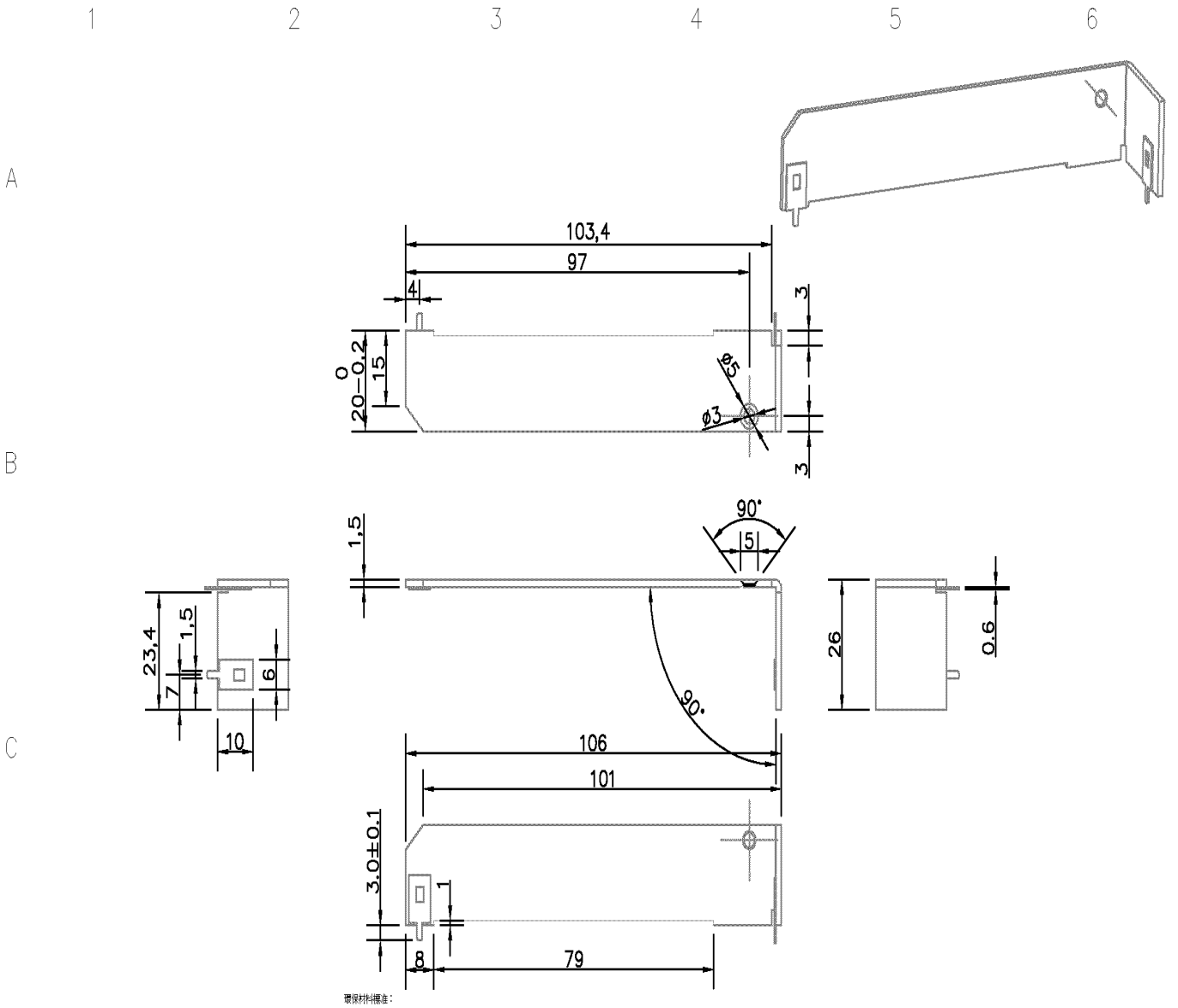
No	有害物質名稱	含量標准
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六價鉻 (Cr⁶)	<800ppm
5	多溴聯苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	鎘,鉛,汞,六價鉻(包裝材料)	總含量<100ppm

SHEET METAL TOLERANCE
(UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	±1.5°

0.3
REV.
DESCRIPTION
UNIT: mm
MODEL NO.: KPL***
MATERIAL
PART NO.: G15-A0804L0-M100
******
DRAWING NO.: HS-01
APPROVED
CHECKED
DESIGNED
GuanDianFeng
DATE:
DATE:
DATE: 20110113
SCALE:
SHEET M
THIRD ANGLE PROJECTION
1 OF 1
A4L

Diagrams-15 Page-1



環保材料標准：

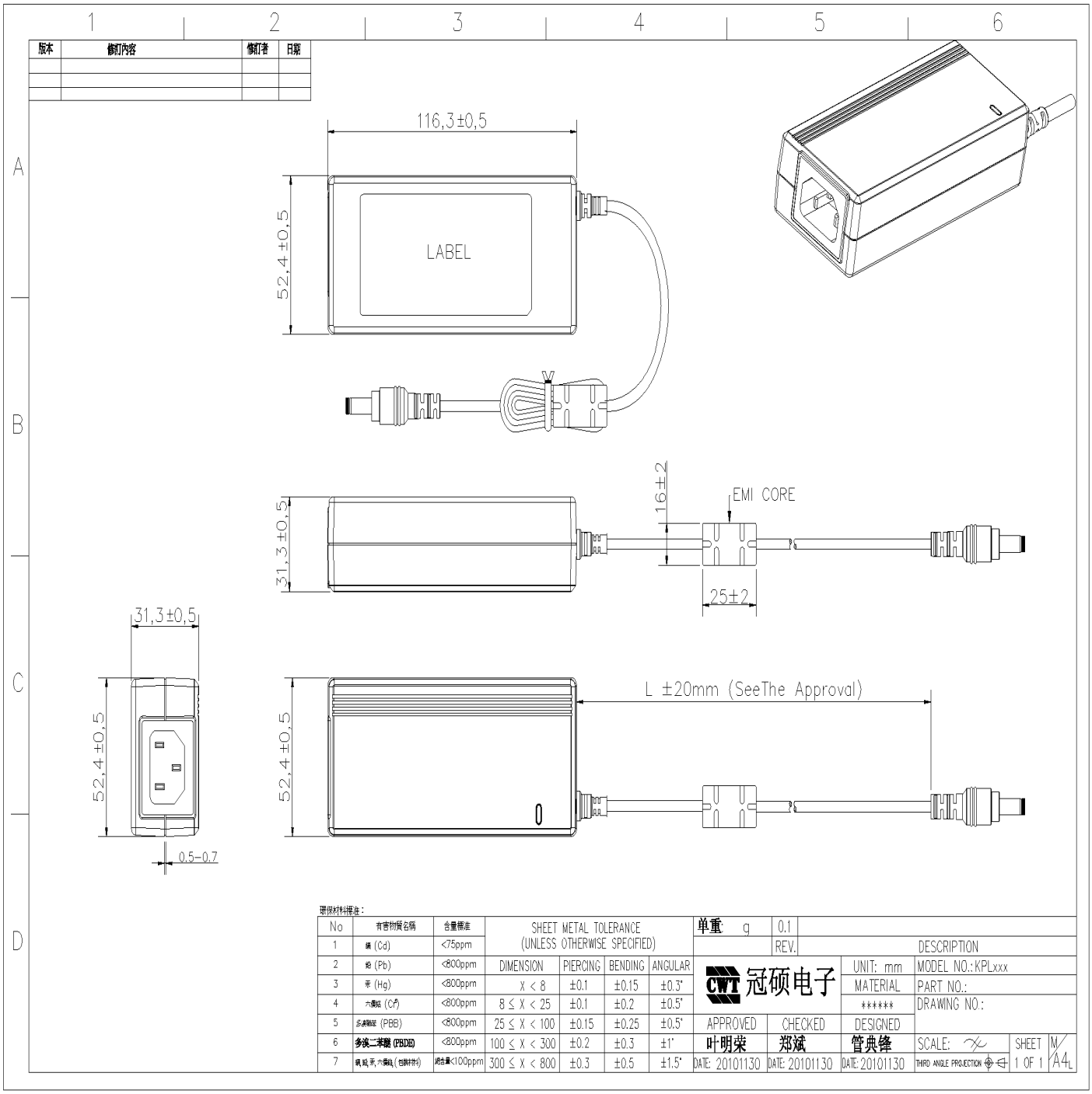
No	有害物質名稱	含量標准
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六價鉻 (Cr⁶)	<800ppm
5	多溴聯苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	鎘,鉛,汞,六價鉻(包裝材料)	總含量<100ppm

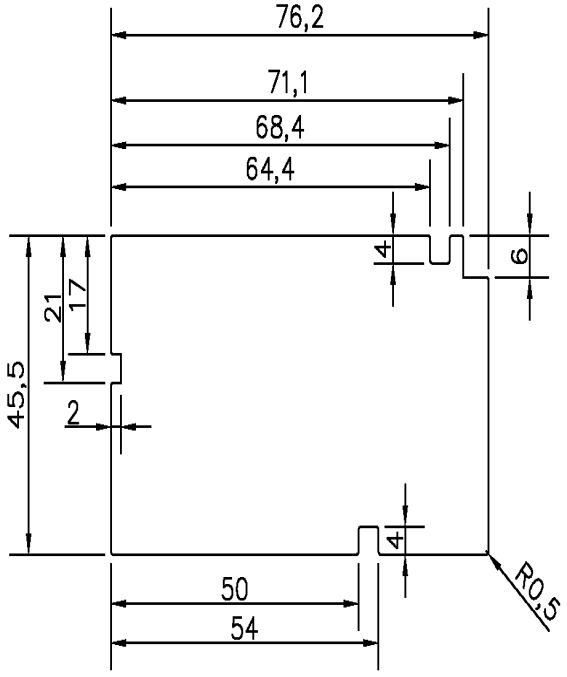
SHEET METAL TOLERANCE
(UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	±1.5°

0.4
REV.
DESCRIPTION
UNIT: mm
MODEL NO.: KPL***
MATERIAL
PART NO.: G15-A1002L0-M100
******
DRAWING NO.: HS-03
APPROVED
CHECKED
DESIGNED
GuanDianFeng
SCALE:
SHEET M
DATE:
DATE:
DATE: 20110113
THIRD ANGLE PROJECTION
1 OF 1
A4L

Diagrams-16 Page-1





環保材料標准：

No	有害物質名稱	含量標准
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<800ppm
3	汞 (Hg)	<800ppm
4	六價鉻 (Cr⁶)	<800ppm
5	多溴聯苯 (PBB)	<800ppm
6	多溴二苯醚 (PBDE)	<800ppm
7	鎘,鉛,汞,六價鉻(包裝材料)	總含量<100ppm

SHEET METAL TOLERANCE (UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	±1.5°

0.4

REV. DESCRIPTION

APPROVED CHECKED DESIGNED

DATE: DATE: GuanDianFeng

UNIT: mm MODEL NO.: KPL****

MATERIAL PART NO.: G16-MPP0005-P100

****** DRAWING NO.:

DATE: 20110226 SCALE: SHEET M

THIRD ANGLE PROJECTION 1 OF 1 A4L

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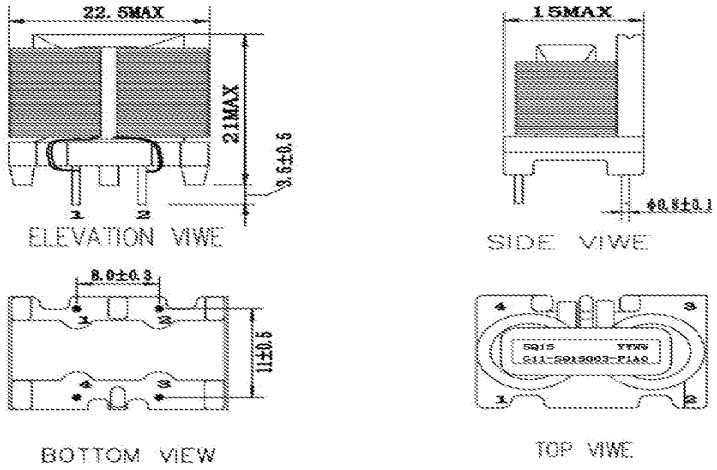
SPECIFICATION FOR APPROVAL

CUSTOMER：贵冠/嘉葵/昌圣/央霖　　TYPE：SQ15/15

PART NO：G11-SQ15003-P1A0　　OUR P/N：

REVISION：B　　ISSUE DATE：2019-09-23

1. MECHANICAL DIMENSIONS：（UNIT：mm）



NOTE：

1. 产品线圈、磁芯与底座含浸固定；
2. 产品线圈与磁芯不能有松动.

APPROVED	CHECKED BY	DRAWING BY
张洪	阳婉琴	黄春

SPECIFICATION FOR APPROVAL

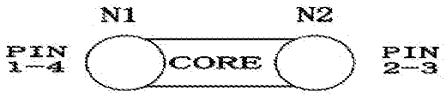
CUSTOMER： 贵冠/嘉葵/昌圣/央霖 TYPE： SQ15/15

PART NO： G11-SQ15003-P1A0 OUR P/N：

REVISION： B ISSUE DATE： 2019-09-23

2. SCHEMATIC:

3:CONSTRUCTIONS:



4:WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	UL TAPE	TEFLON ST	TEFLON FI	REMARK
N1	0.15mm/T*1.5mm 扁平线	1	4	50TS				±2 Ts
N2	0.15mm/T*1.5mm 扁平线	2	3	50TS				±2 Ts

NOTE:

1. 两边绕组圈数需一致.

APPROVED	CHECKED BY	DRAWING BY
张洪	阳婉琴	黄春

SPECIFICATION FOR APPROVAL

CUSTOMER：贵冠/嘉葵/昌圣/央霖　　TYPE：SQ15/15

PART NO：G11-SQ15003-P1A0　　OUR P/N：

REVISION：B　　ISSUE DATE：2019-09-23

5:ELECTRCAL SPECIFICATION：

1)INDUCTANCE: (1kHz 0.25V) (AT 25℃)

L1-4＝21mH MIN

L2-3＝21mH MIN

2)DC RESISTANCE: (AT 25℃)

R1-4=R2-3≤140mΩ

3) HI——POT TEST: (AC 50Hz)

COIL TO COIL ----------1.0kV/5mA/60S

APPROVED	CHECKED BY	DRAWING BY
张洪	阳婉琴	黄春

SPECIFICATION FOR APPROVAL

CUSTOMER： 贵冠/嘉葵/昌圣/央霖 TYPE： SQ15/15

PART NO： G11-SQ15003-P1A0 OUR P/N：

REVISION： B ISSUE DATE： 2019-09-23

6:MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLIC T375HF	CHANG CHUN PLASTICS CO.,LTD	E59481
2	CORE	FERRITE SQ15/15 HR12K	SHANDONG HENGRUI MAGNET TECHNOLOGY CO.,LTD	NA
		FERRITE SQ15/15 R12KZ	HENGDIAN GROUP DMEGC MAGNETICS CO.,LTD	NA
		FERRITE SQ15/15 SSH12	SHANGPENG	NA
3	COPPER WIRE	@*xUEW180	SUNTEK HOLDINGS LIMITED	E234867
		UEW/180℃	YANTAI TOMO PRECISION WIRE CO.,LTD	E477046
		x-EIW, x-EIW/NY 180℃	HUIZHOU GOLDEN OCEAN MAGNET WIRE FACTORY	E225143
4	VARNISH	T-4260(a) 130℃	SUZHOU TAIHU ELECTRIC ADVANCED MATERIAL CO LTD	E228349
		SD-1181 130℃	SHEN ZHEN XING SHI DA SCIEN. TECH. CO.,LTD	E327170
		JX-1150* 130℃	YUEYANG GREEN TECHNOLOGY CO LTD	E303754

APPROVED	CHECKED BY	DRAWING BY
张洪	阳婉琴	黄春

SPECIFICATION FOR APPROVAL

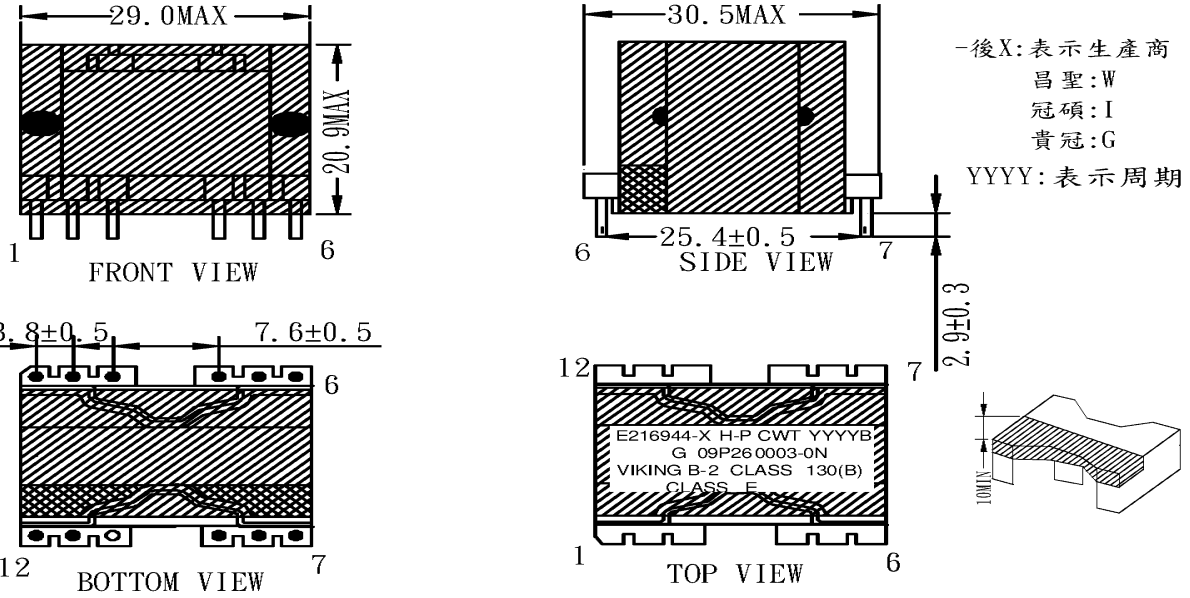
SHEET: 1 OF 4

CUSTOMER: 贵 冠 TYPE: PQ-2620

PART NO: G09-PQ26048-M100 OUR P/N:

REVISION: C ISSUE DATE: 2013-7-31

1. MECHANICAL DIMENSIONS:(UNIT :mm) 产品单重：42.88G



NOTE:

1. PIN2.7.12. NO, 产品沿磁芯方向包1TS.22mm/W胶带.成品本体方向包2TS.19.5mm/W胶带
2. 磁芯須加工PIN7-12側(如圖所示).
3. 所有出入線需加TFL套管.
4. 鐵芯與磁芯接合處,點膠共四點固定（如圖所示）.
5. 標籤貼於頂部,字腳朝向PIN1-6側(如圖所示).

6

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	郭基永

SPECIFICATION FOR APPROVAL

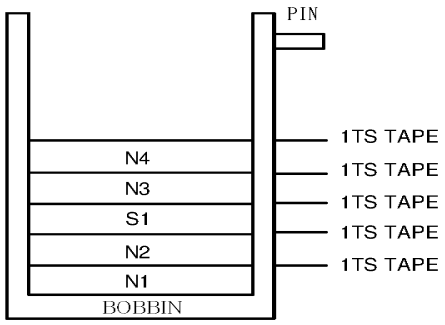
SHEET: 2 OF 4

CUSTOMER: 貴 冠 TYPE: PQ-2620

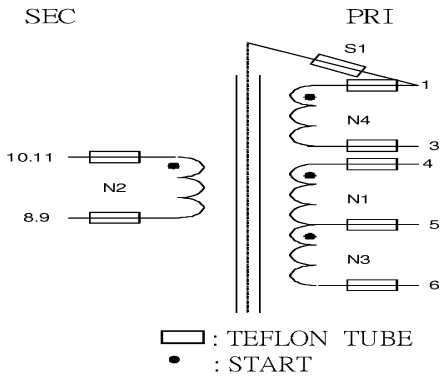
PART NO: G09-PQ26048-M100 OUR P/N:

REVISION: C ISSUE DATE: 2013-7-31

2. CONSTRUCTIONS:



3. SCHEMATIC:



4. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	UL TAPE	TEFLON		NOTE
						ST	FI	
N1	2UEW Φ0.4mm*2P	4	5	20TS	1TS	V	V	密繞
N2	TRW(B) Φ0.5mm*2P	10.11	8.9	12TS	1TS	V	V	密繞
S1	0.025mm/T*8mm/W	1	–	1TS	1TS	V	-	居中
N3	2UEW Φ0.4mm*2P	5	6	20TS	1TS	V	V	密繞
N4	2UEW Φ0.2mm*2P	1	3	9TS	2TS	V	V	密繞

NOTE：
1. S1銅箔須四端包膠, 引線為Φ0.2mm.
2.N2.PIN8.9理线可只理PIN8.

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	郭基永

SPECIFICATION FOR APPROVAL

SHEET: 4 OF 4

CUSTOMER: 贵冠 TYPE: PQ-2620

PART NO: G09-PQ26048-M100 OUR P/N:

REVISION: C ISSUE DATE: 2013.7.31

6. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	BOBBIN	PHENOLICS T375J 94V-0 150℃	CHANG CHUN PLASTICS CO.,LTD	E59481(S)
2	CORE	M2.3K	HAOBO	-
		SSP-44	SHANGPENG	-
		FP2A	FINEMAG	-
		JF2	SPINEL	-
3	MAGNET WIRE	UEW-U	SIAM PACIFIC ELECTRIC WIRE & CABLE CO LTD	E142108
4	TAPE	PZ 130℃	HUIZHOU YAHUA STICKING TAPE CO.,LTD	E165111
5	COPPER	0.025mm/T	DONGGUAN ZHONGCHI METAL PRODUCT CO.,LTD	-
6	SLEEVING	TFL 200℃	GREAT HOLDING INDUSTRIAL CO.,LTD	E156256
7	VARNISH	V1380FC	ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC	E75225
8	EPOXY	3300A/B	SUZHOU EATTO ELECTRONIC MATERIAL CO.LTD	E218090
9	Triple insulated wire	TRW(B)	GREAT LEOFON INDUSTRIAL CO.,LTD	E211989

APPROVED BY	CHECKED BY	DRAWING BY
李俊良	彭小平	郭基永

POWER PLUS TECHNOLOGY CORP

SPECIFICATION FOR APPROVAL

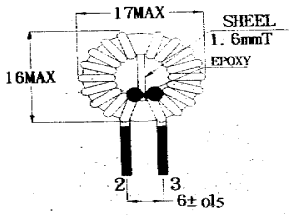
SHEET: 1 OF 1

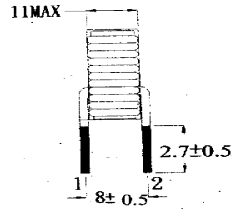
CUSTOMER: 達 威 TYPE: T14*8*7

PART NO: G11R140804-0N OUR P/N:

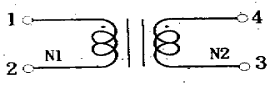
REVISION: C ISSUE DATE: 2008/12/15

-1. MECHANICAL DIMENSIONS:(UNIT:mm)





2. SCHEMATIC:



NOTE:鍍錫尺寸與底部齊平，出入線需點膠固定。

3. WINDING DATA:

WINDING	WIRE SIZE	START	FINISH	TURNS	NOTE
N1	Φ0.4mm 2UEW	1	2	42.5TS(REF)	/
N2	Φ0.4mm 2UEW	4	3	42.5TS(REF)	/

4. ELECTRICAL CHARACTERISTICS(AT25℃ 65±5%RH).

4-1. INDUCTANCE:AT 10KHz 0.3V.
L(1-2):9.6mH MIN L(4-3):9.6mH MIN

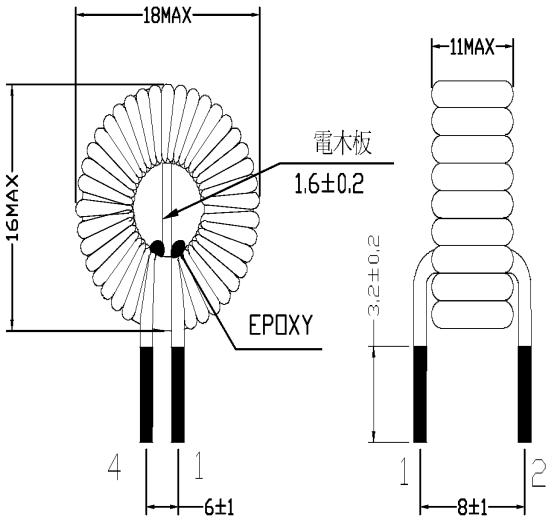
4-2. DC RESISTANCE:
DCR(1-2):170mΩ MAX DCR(4-3):170mΩ MAX

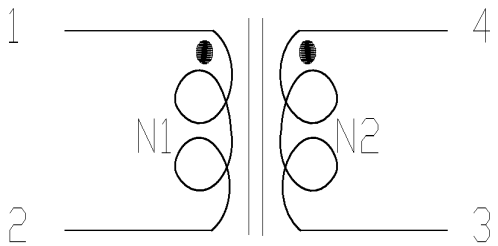
4-3. HI-POT TEST AC 50HZ OR 60HZ 1mA 3SEC.
COIL-COIL:1500V COIL-CORE:1500V

NO	ITEM	MATERIAL	SUPPLIER	UL FILE NO
1	CORE	T14*8*7(R10K)	浩博	/
2	MAGNET WIRE	UEW-U	PACIFIC	E142108
3	SHEEL	1.6mmT	翔國	E123995
4	EPOXY	E5091	力多	E218090
5	VARNISH	V1380FC	VIKING	E60614

APPROVED BY	CHECKED BY	DRAWING BY
	12/16	

DATA WELL ELECTRONICS CO. LTD.





WINDNG	WIRE SIZE	START	FINISH	TURNS	NOTE
N1	ø0.6mm *2UEW	1	2	18.5TS(REF)	
N2	ø0.6mm *2UEW	4	3	18.5TS(REF)	

Notes:
1.出線點膠固定,鍍錫与底部齊平.
2.CORE:T14*8*7(R10K)
3.感量在1.7mH以上

環保材料標准：

No	有害物質名稱	含量標准
1	鎘(Cd)	<75ppm
2	鉛(Pb)	<800ppm
3	汞(Hg)	<800ppm
4	六價鉻(Cr⁶⁺)	<800ppm
5	多溴聯苯(PBB)	<800ppm
6	多溴二苯醚(PBDE)	<800ppm
7	鎘,鉛,汞,六價鉻,(包裝總含量)	<100ppm

SHEET METAL TOLERANCE (UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	±1.5°

REV	DESCRIPTION
A	在G12-T140002-M100的基礎上將腳長由6±1mm改爲3.2±0.2mm

CWT 僑威科技

APPROVED	CHECKED	DESIGNED
XIE YM	XQ WU	JH HUANG
DATE: 2011-4-20	DATE: 2011-4-20	DATE: 2011-4-20

UNIT: mm | MODEL NO.:PAA
MATERIAL | PART NO.:
****** | DRAWING NO.:
SCALE: | SHEET 1 OF 1 | M/A4L
THIRD ANGLE PROJECTION

僑威科技股份有限公司
CHANNEL WELL TECHNOLOGY CO., LTD.

Important Safety Instructions

Model Name: KPL-040F, KPL-040G, KPL-040V, KPL-040H, KPL-040I, KPL-040W, KPL-040J, KPL-040K, KPL-040L, KPL-040N, KPL-040Q, KPL-040R, KPL-040M;

KPL-050F, KPL-050G, KPL-050V, KPL-050H, KPL-050I, KPL-050W, KPL-050J, KPL-050K, KPL-050L, KPL-050N, KPL-050Q, KPL-050R, KPL-050M;

KPL-060F, KPL-060G, KPL-060V, KPL-060H, KPL-060I, KPL-060W, KPL-060K, KPL-060M;

KPL-065F, KPL-065J, KPL-065K; KPL-065L, KPL-065N, KPL-065Q, KPL-065R, KPL-065M.

This symbol found on the apparatus indicates hazards arising from dangerous voltages.

This symbol found on the apparatus indicates the user should read all safety statements found in the user manual.

1. Read these instructions.
2. Keep these instructions.
3. Head all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.

12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damages in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. Maintain a minimum distance of 2''(50mm) around the front, rear, and sides of the apparatus for sufficient ventilation. The ventilation should not be impeded by covering the ventilation openings or placing on or around the apparatus items such as newspapers, table-cloths, curtains, etc.
15. No open flame sources, such as lighted candles, should be placed on the apparatus.
16. The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.
17. Either the power inlet connector on the rear of the apparatus or the power plug at the wall must remains accessible, to be able to disconnect power from the apparatus.
18. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
19. The mains plug of the power supply cord shall remains readily operable.
20. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a car is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

Model List and Rating Table 1a). KPL-xy

- x represents the output wattage; x = 040, 050, 060, 065
- y represents the output voltage; y = F, G, V, H, I, W, J, K, L, N, Q, R, M

1b). KPL-xy

- x represents the output wattage; x = 048, 066
- y represents the output voltage; y = F

1c). KPL-xy-VI or KPL-xy-II or KPL-xy-KV

- x represents the output wattage; x = 030, 040, 048, 050, 060, 065, 066
- y represents the output voltage; y = F, G, V, H, I, W, J, K, L, N, Q, R, M, A, S, T, P, U

Note:

1a). KPL-xy (for x=040, 050, 060, 065; y= F, G, V, H, I, W, J, K, L, N, Q, R, M)

i. PCB with fuse: FUSE1 (Efficiency Level V)

ii. Working Ambient Temperature: 40°C iii. Efficiency Level V

1b). KPL-xy (for x=48, 66; y=F)

i. PCB with fuses: F1 and F2

ii. Working Ambient Temperature: 45°C for x= 048 and y= F iii. Working Ambient Temperature: 40°C for x= 066 and y= F

iv. (Efficiency Level VI)

1c). KPL-xy-VI or KPL-xy-II or KPL-xy-KV (for x=030, 040, 048, 050, 060, 065, 066; y = F, G, V, H, I, W, J, K, L, N, Q, R, M, A, S, T, P, U)

i. PCB with fuses: F1 and F2

ii. Working Ambient Temperature: 45°C for x= 030, 040, 048, 050, 060 and y= all iii. Working Ambient Temperature: 40°C for x= 065, 066 and y= all

iv. (Efficiency Level VI)

x = O/P Wattage (W)	y = O/P Voltage	DC Output Voltage (V)	AC Input Voltage (VAC)	AC Input Current (A)	AC Input Frequency (Hz)
040, 048, 050, 060, 065, 066	F	12	100-240	1.7	50/60
040, 050, 060	G	13	100-240	1.7	50/60
040, 050, 060	V	14	100-240	1.7	50/60
040, 050, 060	H	15	100-240	1.7	50/60
040, 050, 060	I	16	100-240	1.7	50/60
040, 050, 060	W	17	100-240	1.7	50/60
040, 050, 065	J	18	100-240	1.7	50/60
040, 050, 060, 065	K	19	100-240	1.7	50/60
040, 050, 065	L	20	100-240	1.7	50/60
040, 050, 065	N	21	100-240	1.7	50/60
040, 050, 065	Q	22	100-240	1.7	50/60
040, 050, 065	R	23	100-240	1.7	50/60
040, 050, 060, 065	M	24	100-240	1.7	50/60
040, 050, 060, 065	A	36	100-240	1.7	50/60
030, 050, 060, 065	S	48	100-240	1.7	50/60
030, 050, 060, 065	T	52	100-240	1.7	50/60
030, 050, 060, 065	P	54	100-240	1.7	50/60
030, 050, 060, 065	U	56	100-240	1.7	50/60

O/P Voltage (y =)	O/P Voltage (V)	DC Output Current @ O/P Wattage 30W	DC Output Current @ O/P Wattage 40W	DC Output Current @ O/P Wattage 48W	DC Output Current @ O/P Wattage 50W	DC Output Current @ O/P Wattage 60W	DC Output Current @ O/P Wattage 65W	DC Output Current @ O/P Wattage 66W
F	12	---	3.33	4.00	4.17	5.00	5.42	5.50
G	13	---	3.08	---	3.85	4.62	---	---
V	14	---	2.86	---	3.57	4.29	---	---
H	15	---	2.67	---	3.33	4.00	---	---
I	16	---	2.50	---	3.13	3.75	---	---
W	17	---	2.35	---	2.94	3.53	---	---
J	18	---	2.22	---	2.78	---	3.61	---
K	19	---	2.11	---	2.63	3.16	3.42	---
L	20	---	2.00	---	2.50	---	3.25	---
N	21	---	1.90	---	2.38	---	3.10	---
Q	22	---	1.82	---	2.27	---	2.95	---
R	23	---	1.74	---	2.17	---	2.83	---
M	24	---	1.67	---	2.08	2.50	2.71	---
A	36	---	1.11	---	1.39	1.67	1.81	---
S	48	0.63	---	---	1.04	1.25	1.35	---
T	52	0.58	---	---	0.96	1.15	1.25	---
P	54	0.56	---	---	0.93	1.11	1.20	---
U	56	0.54	---	---	0.89	1.07	1.16	---

2.2.2, 2.2.3, 2.2.4, PART 22.6.1 - SELV RELIABILITY TEST

19°C, 58%RH

METHOD

This test was conducted after the Working Voltage Measurement Test - Hazardous Voltage. The unit was connected to 240 ~~[ ]~~ V ac, 60 ~~Hz [ ] V dc [ ]~~ and operated normally. After the introduction of a fault, as noted below, voltages between the following points were measured. If the fault condition resulted in a repetitive pulse i.e., "Hiccup," the pulse was assessing SELV limits (t_1) and the pulse width within SELV limits (t_2) were recorded.

RESULTS

No. Accessible Part From - To	Component No. (Voltage Limiting)	Fault	Test Voltage (V)	Test time t_1 and t_2 (Duration) (sec)	Fuse No.	Fuse Current (A)	Result Specify Maximum Vpk or V dc for V1 and V2
KPL-06GI Output	D3	Shorted	240Vac	--	FUSE1	0	0
KPL-06GI Output	C19	Shorted	240Vac	--	FUSE1	0.625	15.97
KPL-06SF Output	D3	Shorted	240Vac	--	FUSE1	0	0
KPL-06SF Output	C19	Shorted	240Vac	--	FUSE1	0.563	11.87
KPL-06SJ Output	D3	Shorted	240Vac	--	FUSE1	0	0
KPL-06SJ Output	R41 & R42	Shorted	240Vac	--	FUSE1	0.565	16.03
KPL-06SM Output	D3	Shorted	240Vac	--	FUSE1	0	0
KPL-06SM Output	R41 & R42	Shorted	240Vac	--	FUSE1	0.551	23.86

2.10.2 - DETERMINATION OF WORKING VOLTAGE - WORKING VOLTAGE MEASUREMENT TEST

19°C, 58%RH

METHOD

The unit was connected to ~~[ ]~~ 240 V ac, 50 ~~Hz [ ] V dc [ ]~~ and operated normally. Working voltages between the following points were recorded.

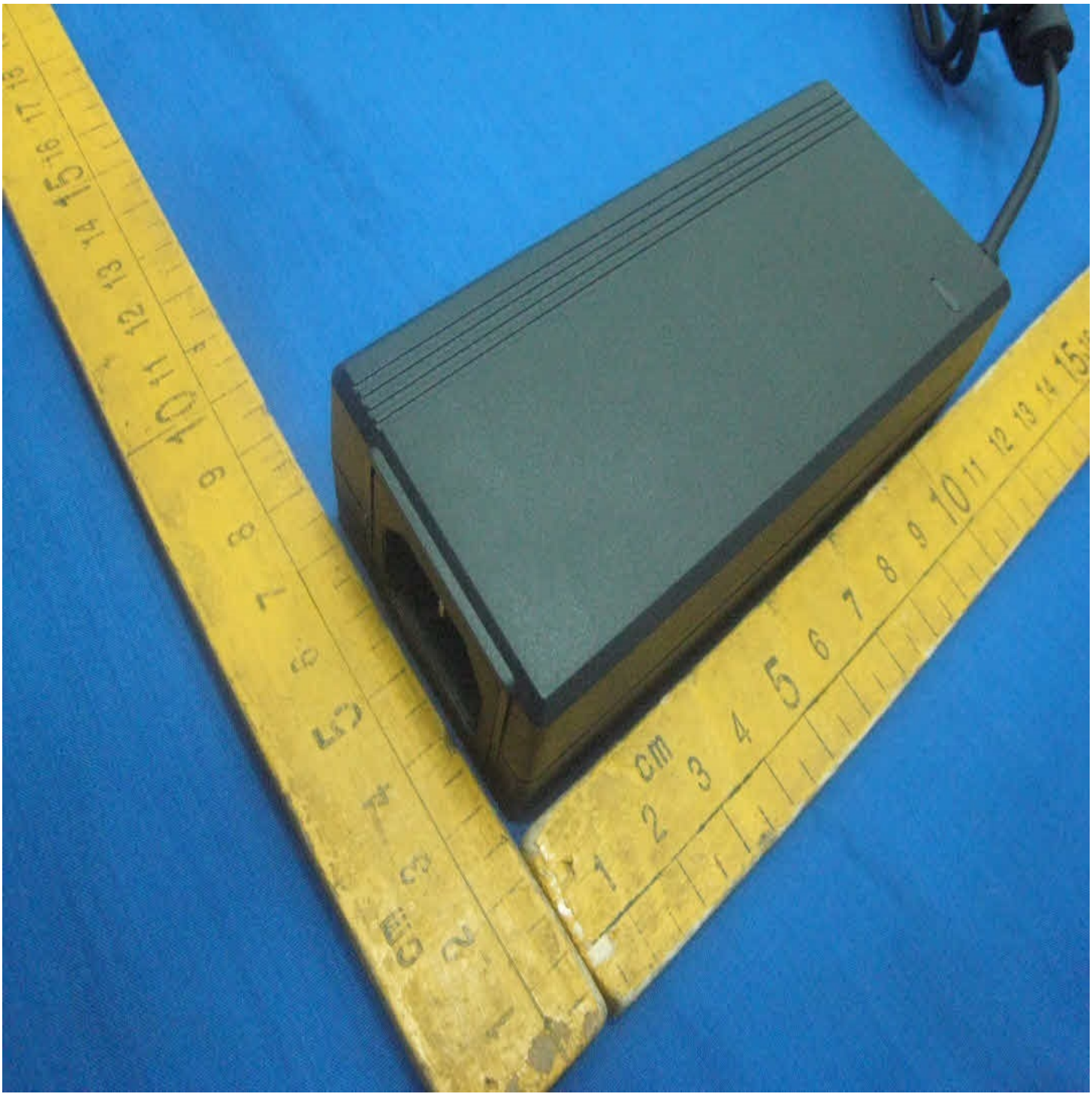
RESULTS:

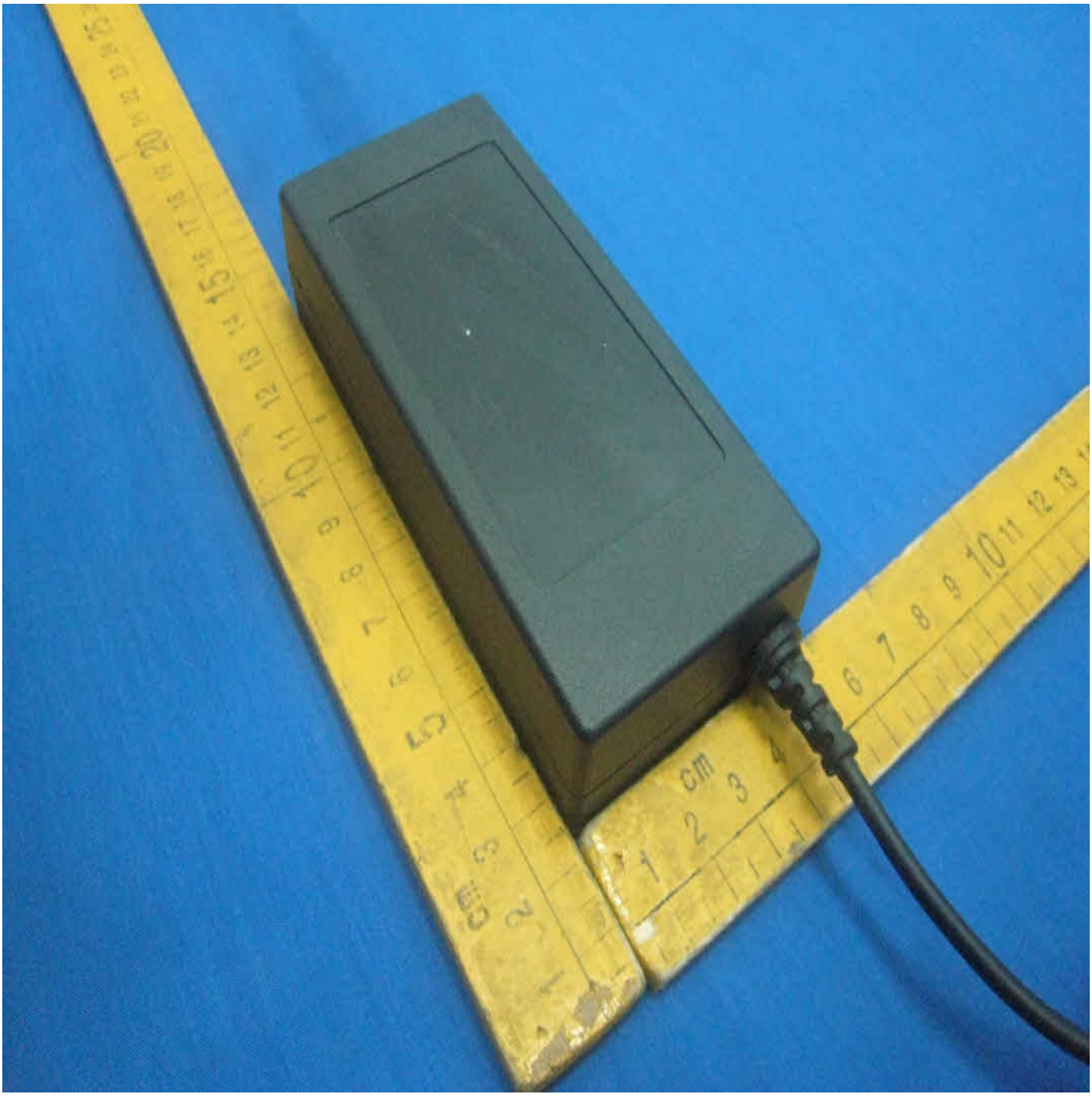
Test Voltage: 240 ~~[ ]~~ Vac, 50 Hz ~~[ ]~~ Vdc ~~[ ]~~

TABLE: clearance and creepage distance measurements						
Clearance (cl) and creepage distance (cr) at/of/between:	Upeak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
FROM/TO						
KPL-06GI						
T1 pin1 to pin8,9	344	172	--	--	--	--
T1 pin1 to pin11,12	360	173	--	--	--	--
T1 pin3 to pin8,9	348	245	--	--	--	--
T1 pin3 to pin11,12	364	246	--	--	--	--
T1 pin4 to pin8,9	392	173	--	--	--	--
T1 pin4 to pin11,12	352	171	--	--	--	--
T1 pin6 to pin8,9	556	317	--	--	--	--
T1 pin6 to pin11,12	532	304	--	--	--	--
CY1 pin1 to pin2	344	171	--	--	--	--
IC1 pin1 to pin3	360	180	--	--	--	--
IC1 pin1 to pin4	364	184	--	--	--	--
IC1 pin2 to pin3	360	182	--	--	--	--
IC1 pin2 to pin4	368	180	--	--	--	--
T1 pin1 to R33 trace	364	203	--	--	--	--
Primary trace to Heatsink HSD3	368	244	--	--	--	--
KPL-06SF						
T1 pin1 to pin8,9	340	170	--	--	--	--
T1 pin1 to pin11,12	352	171	--	--	--	--
T1 pin3 to pin8,9	348	346	--	--	--	--
T1 pin3 to pin11,12	356	248	--	--	--	--
T1 pin4 to pin8,9	360	172	--	--	--	--
T1 pin4 to pin11,12	368	170	--	--	--	--
T1 pin6 to pin8,9	532	316	--	--	--	--
T1 pin6 to pin11,12	512	304	--	--	--	--

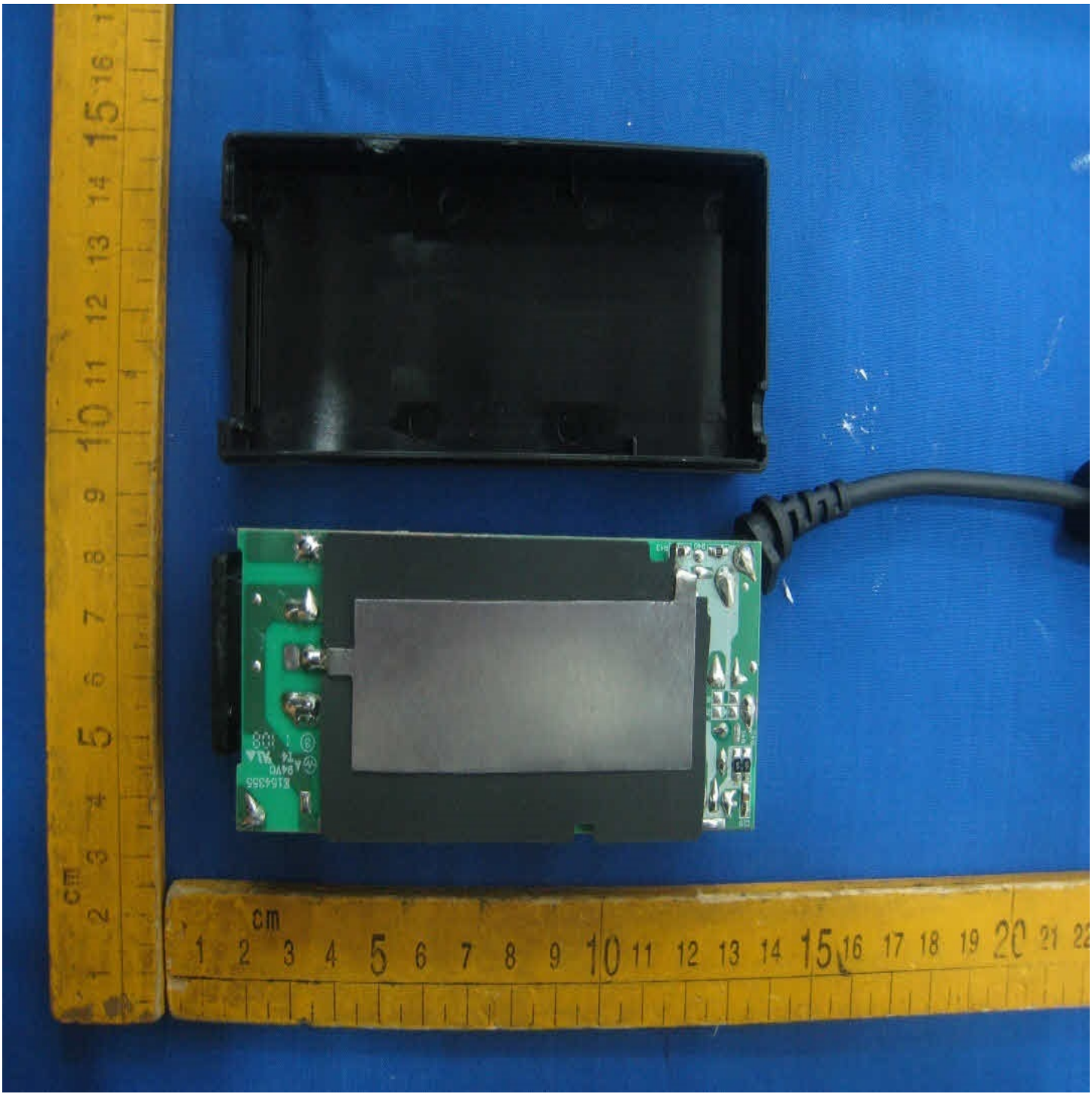
CY1 pin1 to pin2	344	172	--	--	--	--
IC1 pin1 to pin3	356	180	--	--	--	--
IC1 pin1 to pin4	356	180	--	--	--	--
IC1 pin2 to pin3	358	172	--	--	--	--
IC1 pin2 to pin4	358	176	--	--	--	--
T1 pin1 to R33 trace	380	232	--	--	--	--
Primary trace to Heatsink HSD3	354	334	--	--	--	--
KP1_0SSJ						
T1 pin1 to pin8,9	340	170	--	--	--	--
T1 pin1 to pin11,12	350	174	--	--	--	--
T1 pin3 to pin8,9	346	246	--	--	--	--
T1 pin3 to pin11,12	406	248	--	--	--	--
T1 pin4 to pin8,9	350	172	--	--	--	--
T1 pin4 to pin11,12	354	171	--	--	--	--
T1 pin6 to pin8,9	512	316	--	--	--	--
T1 pin6 to pin11,12	482	304	--	--	--	--
CY1 pin1 to pin2	344	171	--	--	--	--
IC1 pin1 to pin3	360	185	--	--	--	--
IC1 pin1 to pin4	358	181	--	--	--	--
IC1 pin2 to pin3	362	181	--	--	--	--
IC1 pin2 to pin4	366	186	--	--	--	--
T1 pin1 to R33 trace	364	230	--	--	--	--
Primary trace to Heatsink HSD3	388	242	--	--	--	--
KP1_0SSM						
T1 pin1 to pin8,9	344	172	--	--	--	--
T1 pin1 to pin11,12	372	176	--	--	--	--
T1 pin3 to pin8,9	348	244	--	--	--	--
T1 pin3 to pin11,12	412	248	--	--	--	--
T1 pin4 to pin8,9	368	174	--	--	--	--
T1 pin4 to pin11,12	356	172	--	--	--	--
T1 pin6 to pin8,9	540	324	--	--	--	--
T1 pin6 to pin11,12	520	302	--	--	--	--
CY1 pin1 to pin2	348	172	--	--	--	--
IC1 pin1 to pin3	368	188	--	--	--	--
IC1 pin1 to pin4	364	185	--	--	--	--
IC1 pin2 to pin3	364	186	--	--	--	--
IC1 pin2 to pin4	360	184	--	--	--	--
T1 pin1 to R33 trace	378	231	--	--	--	--
Primary trace to Heatsink HSD3	386	240	--	--	--	--

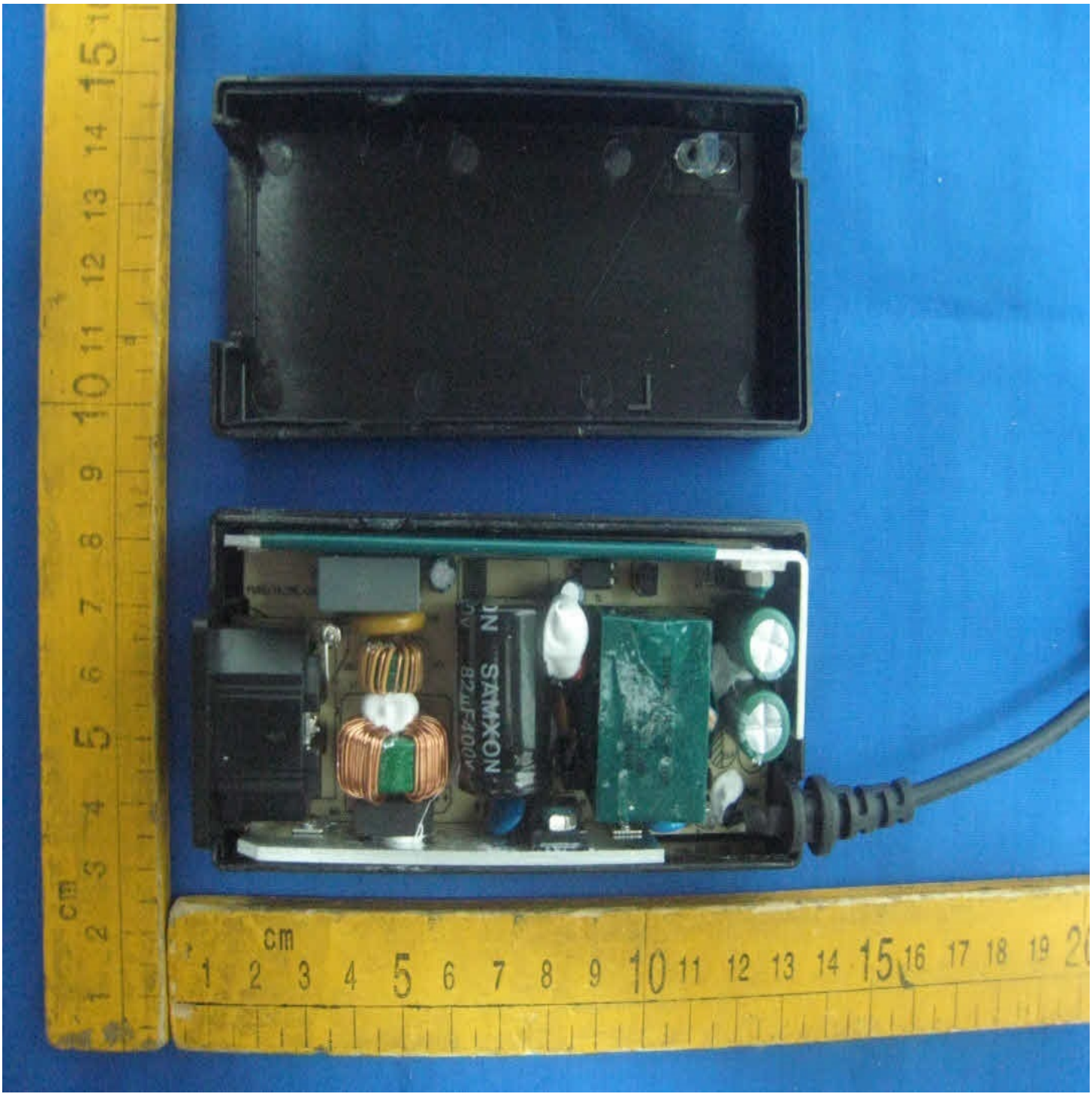
Photographs-01 Page-1




cm

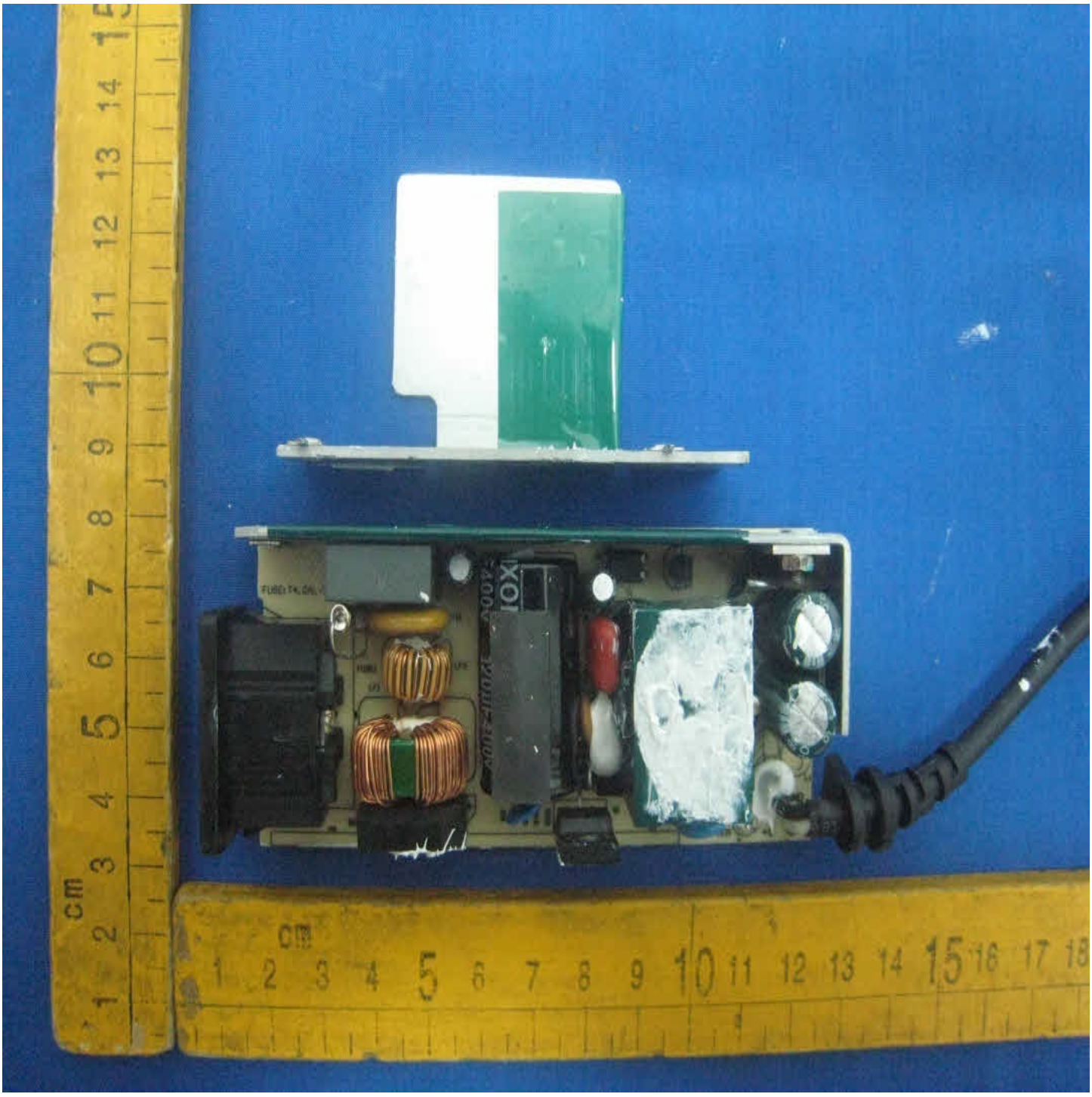
Photographs-03 Page-1



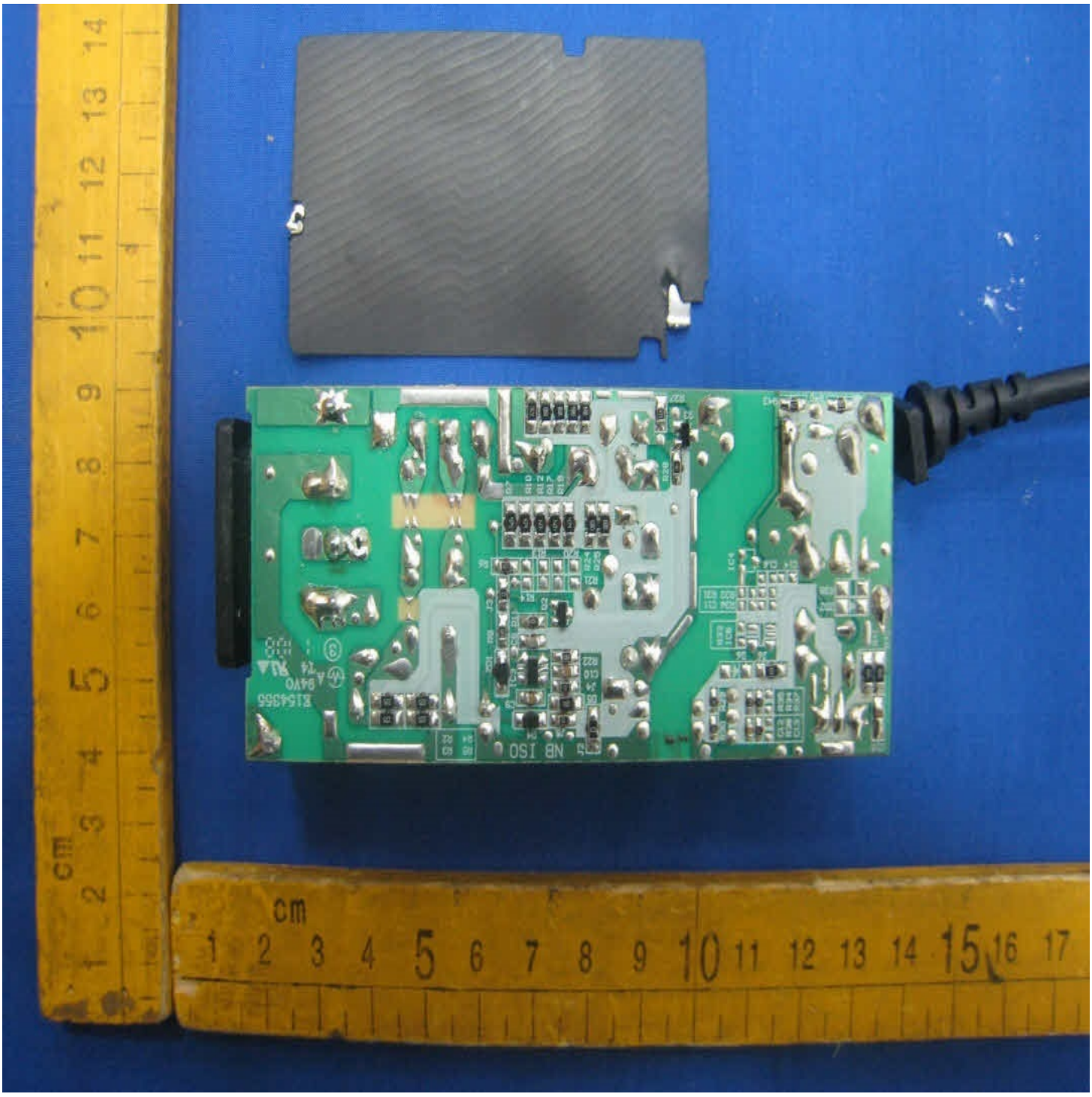

SAMXON
82uF 400V
cm
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

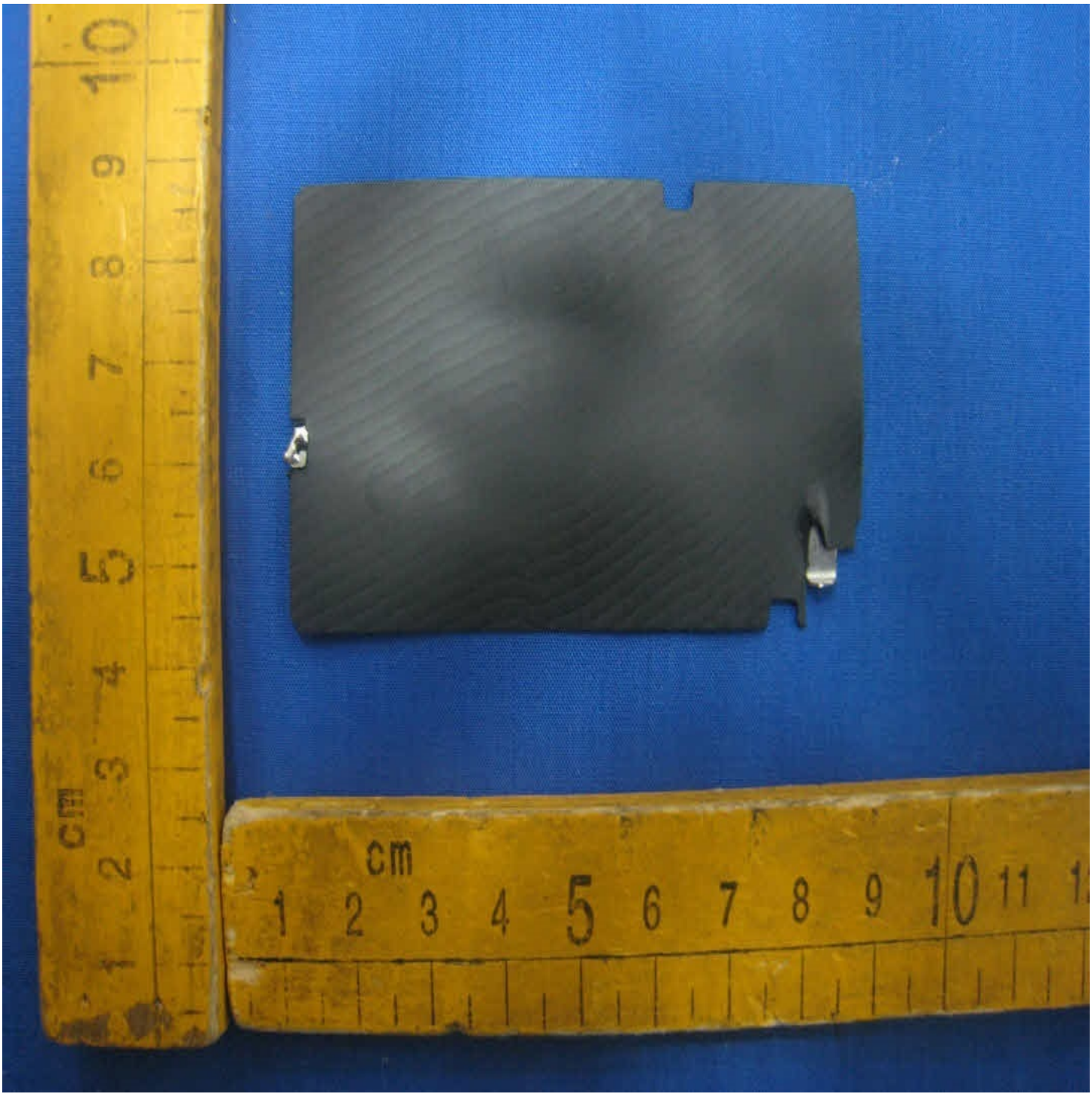
Photographs-05 Page-1

Photographs-06 Page-1



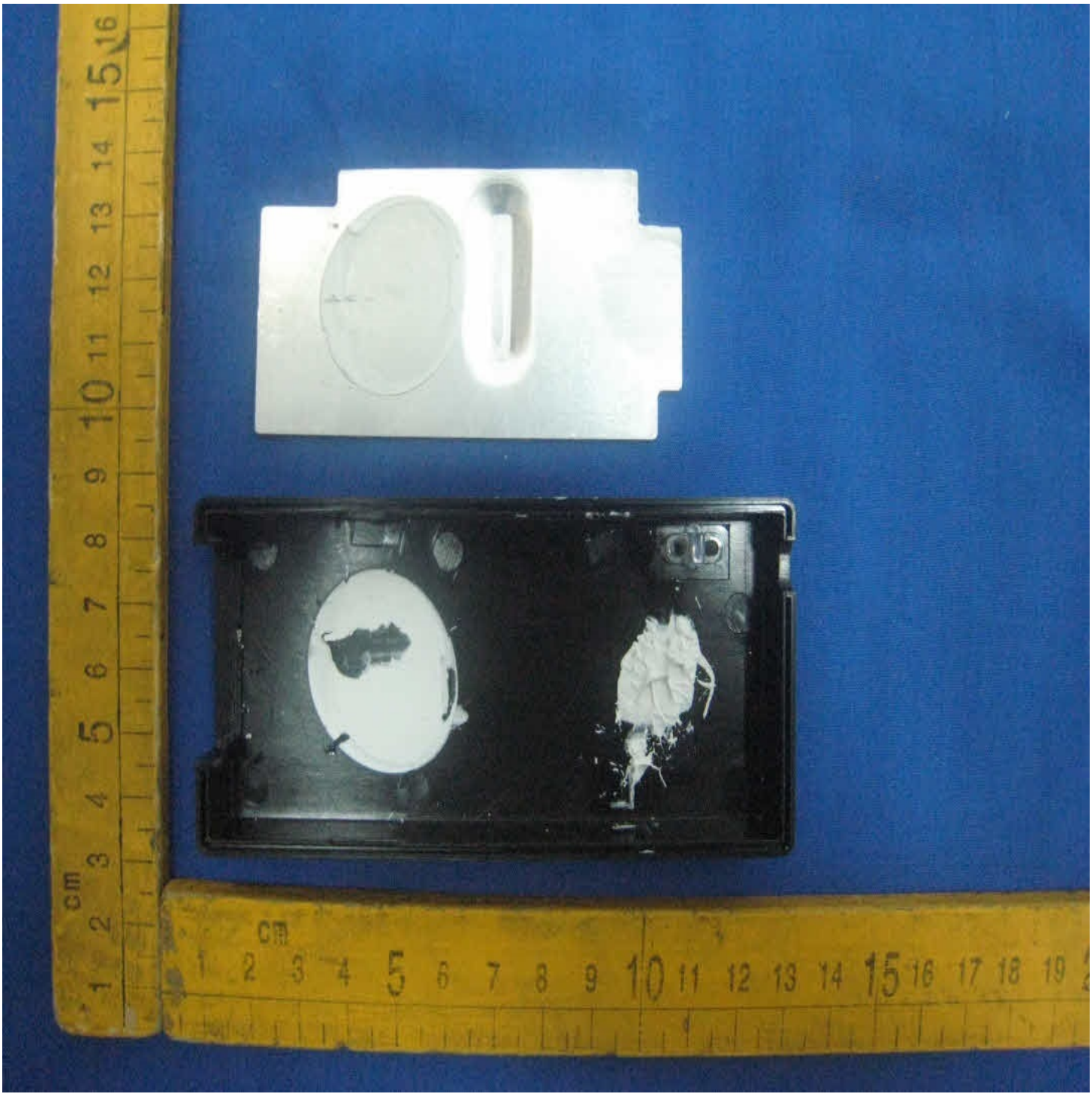
Photographs-07 Page-1



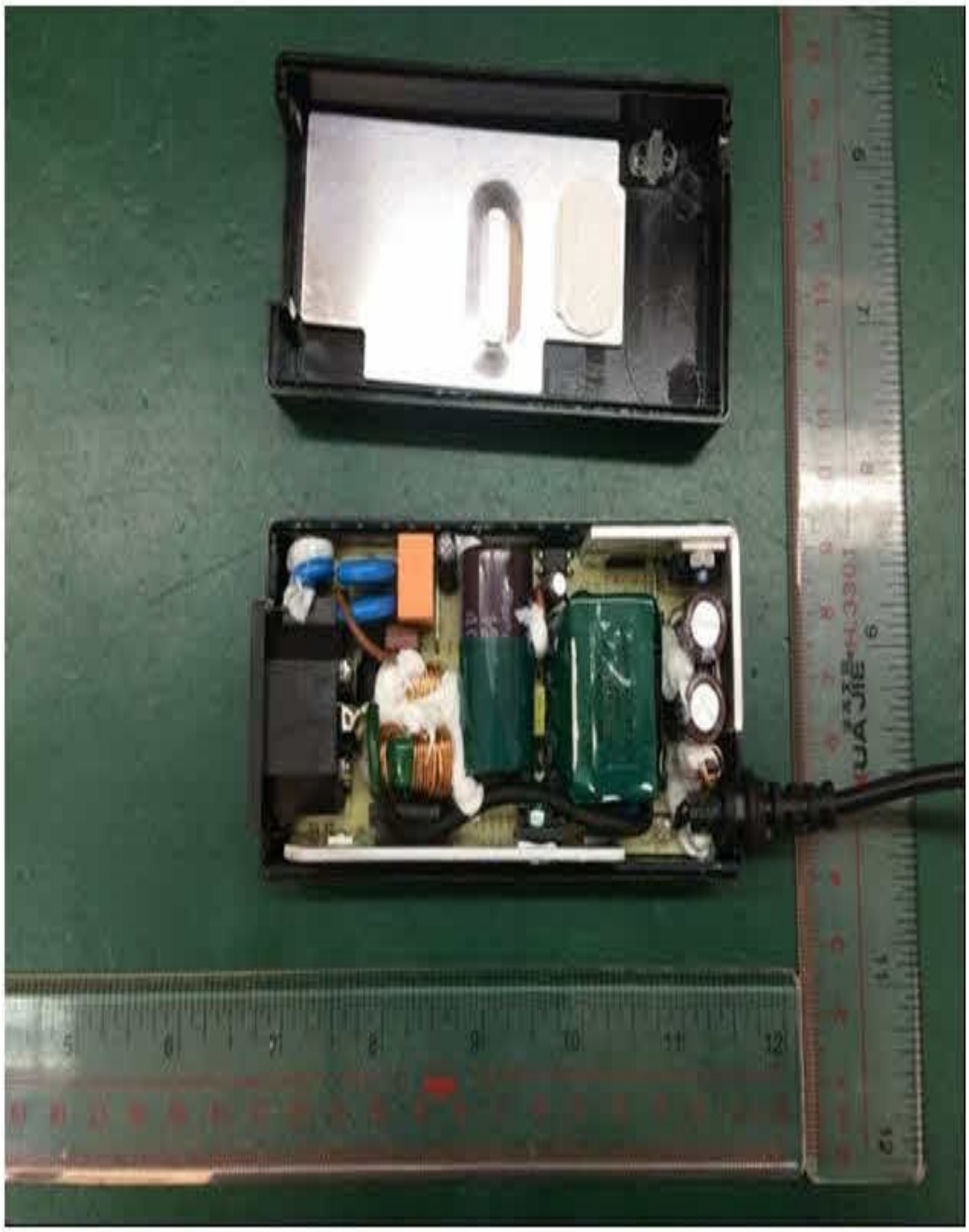

cm
1 2 3 4 5 6 7 8 9 10 11


cm
1 2 3 4 5 6 7 8 9

Photographs-10 Page-1

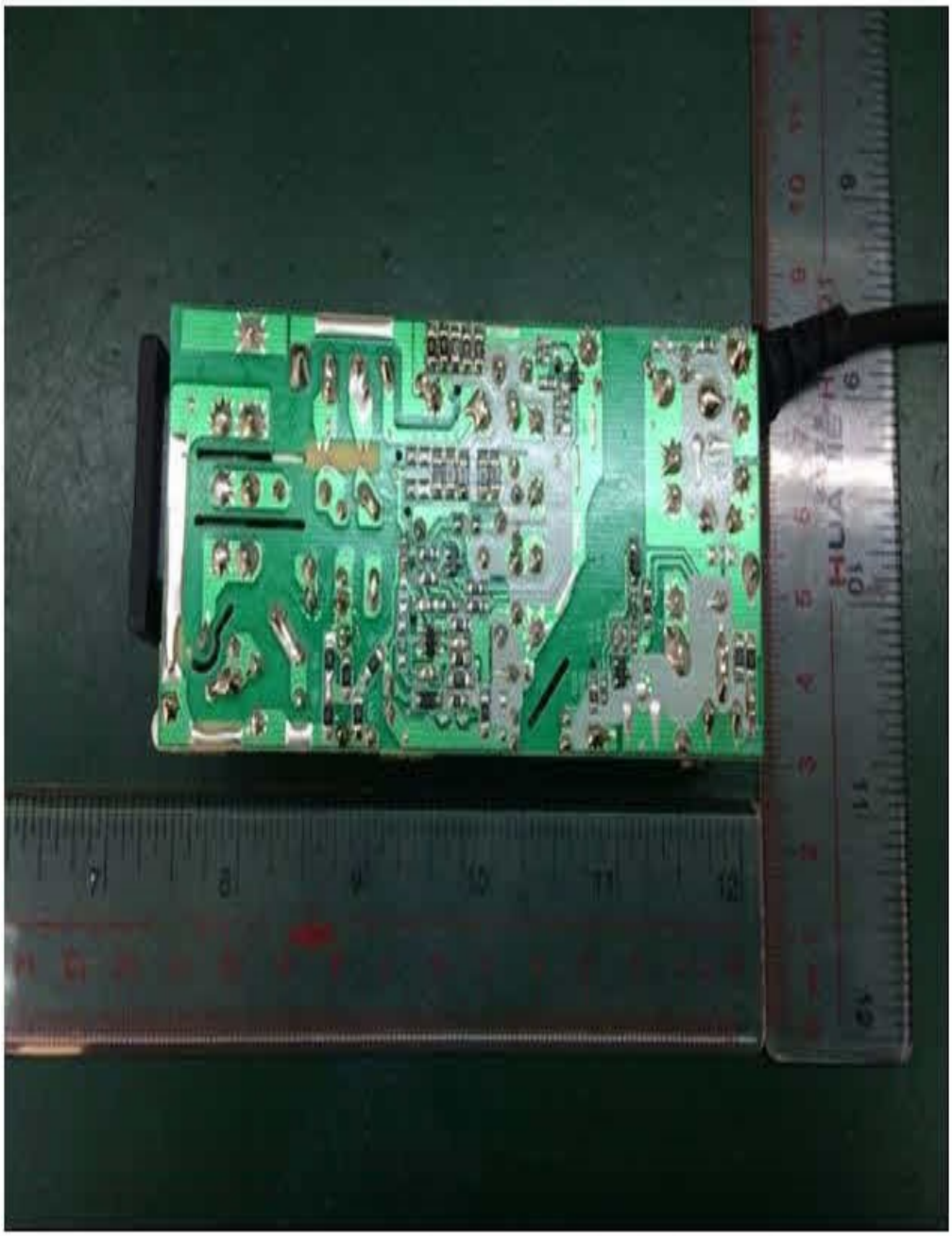


Photographs-11 Page-1



KPL: For PCB with fuses: F1 and F2 (with TVS2, TVS3, TVS4)

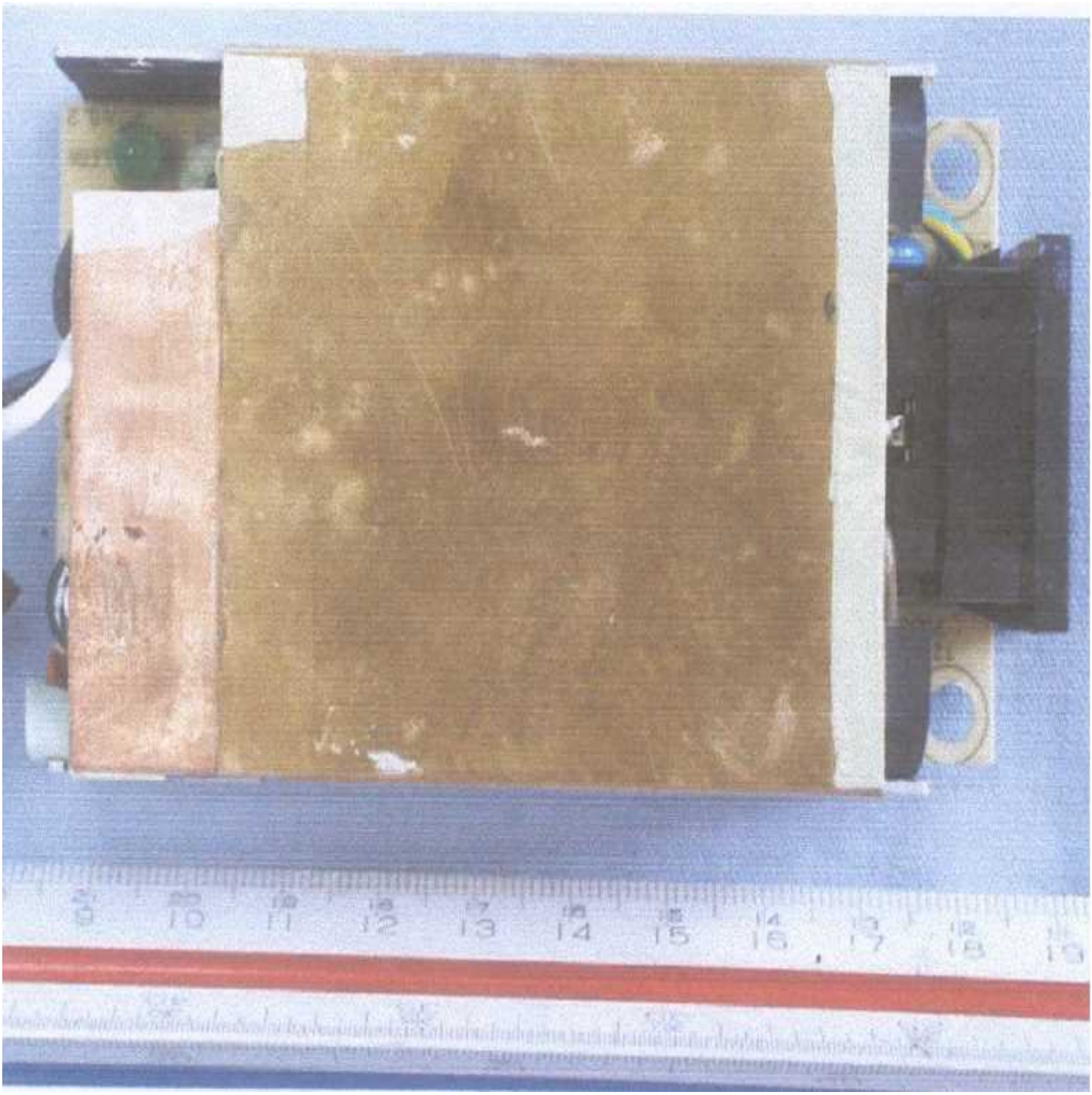
KPL: For PCB with fuses: F1 and F2 (with TVS2, TVS3, TVS4)



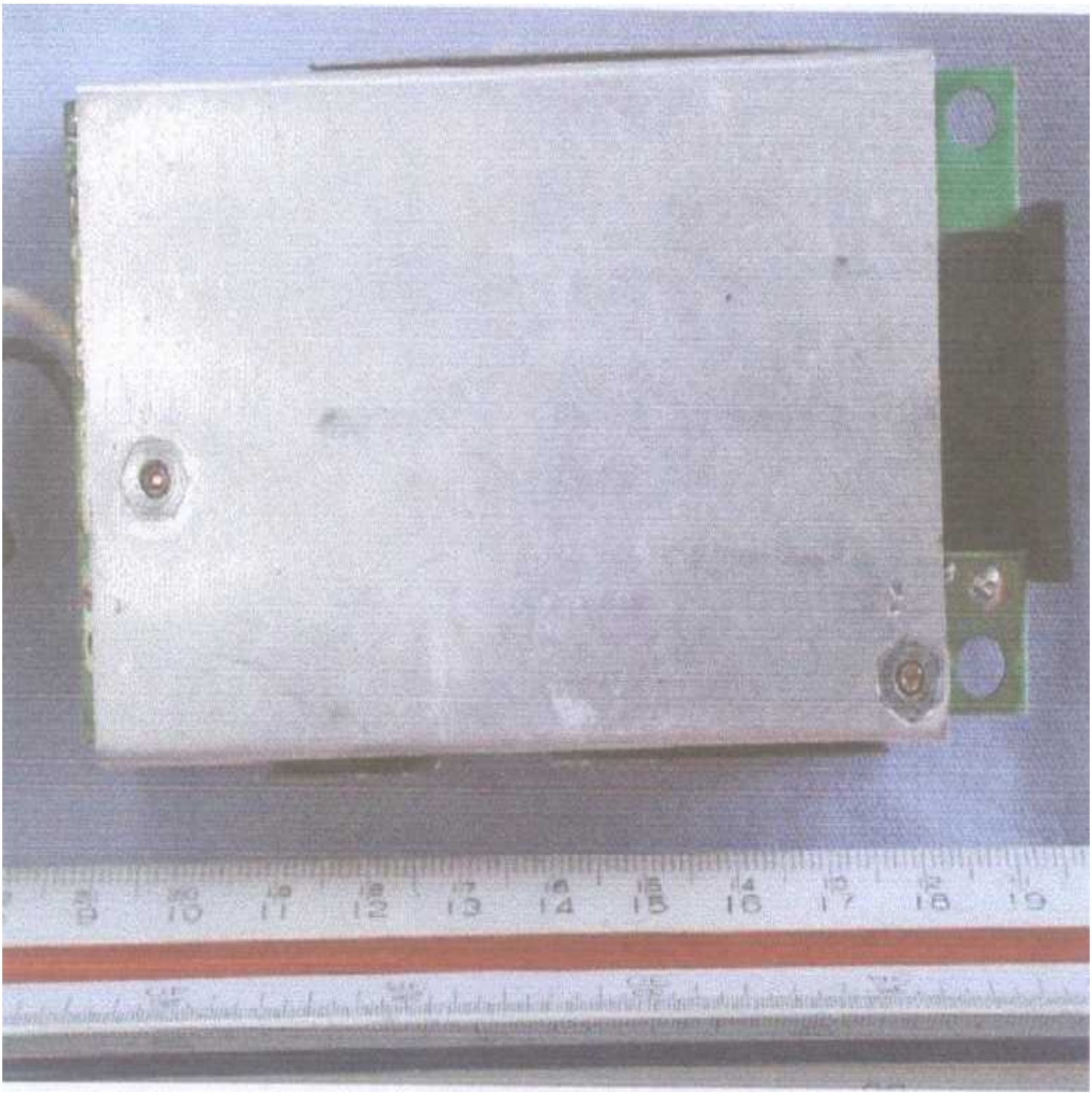
KPL: For PCB with fuses: F1 and F2 (with TVS2, TVS3, TVS4)

Photographs-15 Page-1

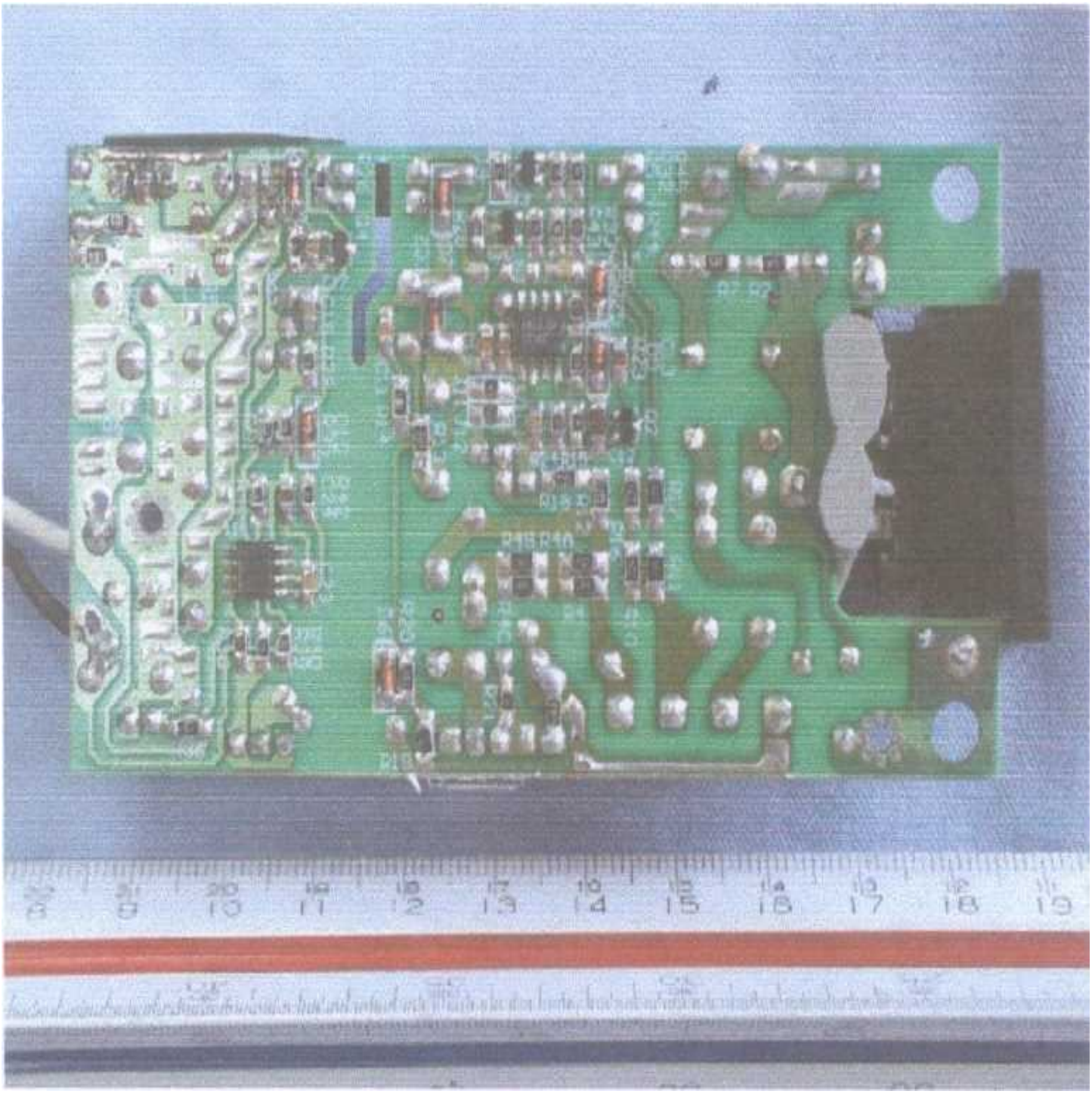
Photographs-17 Page-1



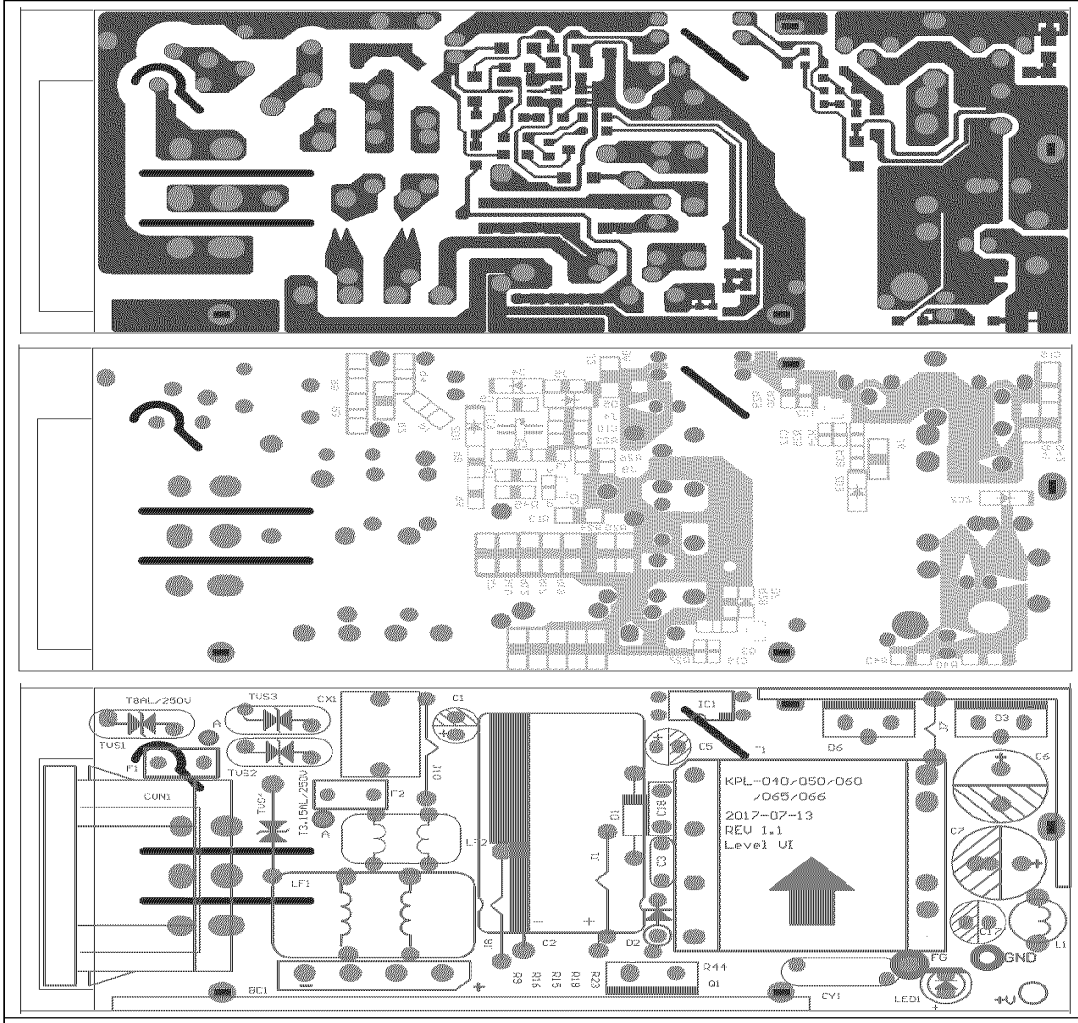
Photographs-18 Page-1



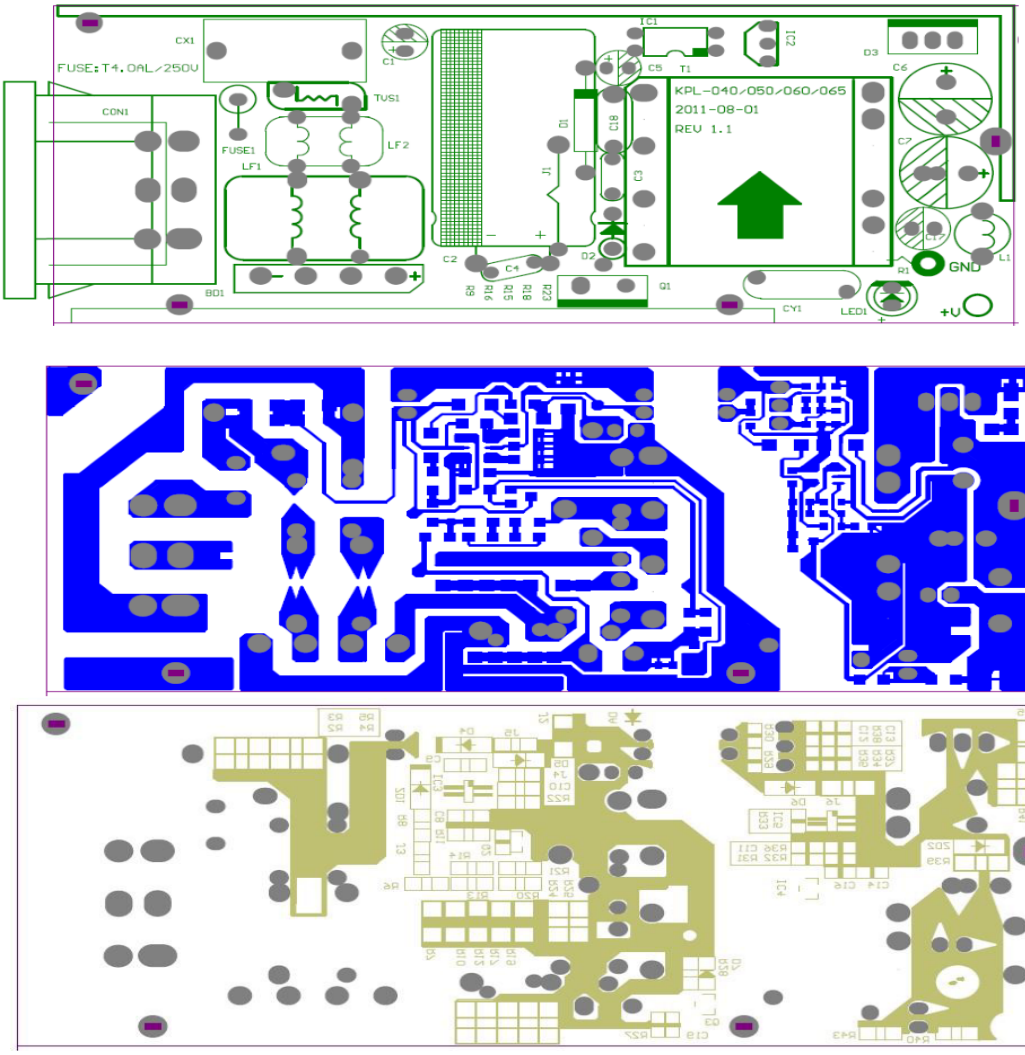
Photographs-19 Page-1



Schematics-01 Page-1

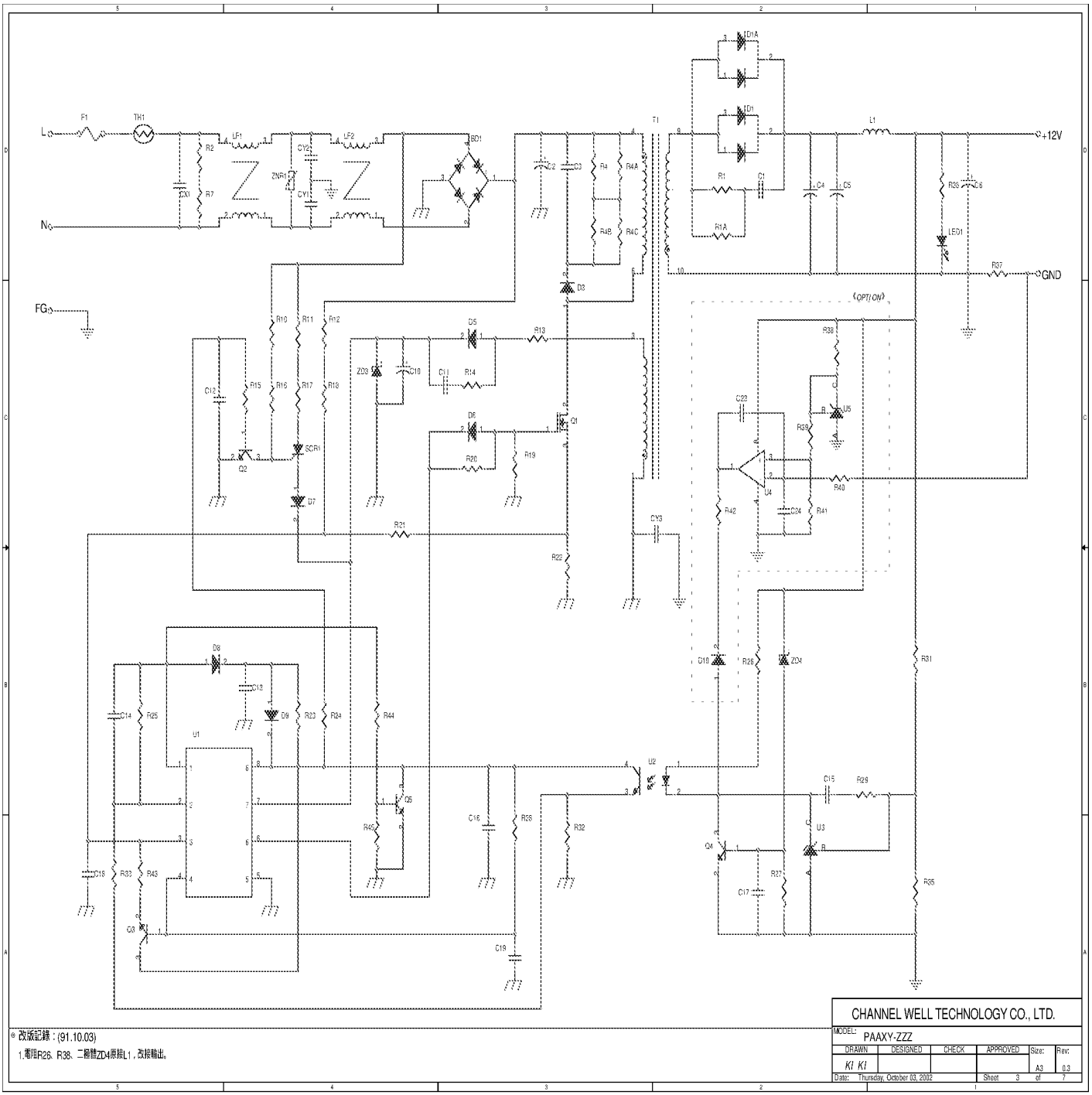


PCB with fuses: F1, F2 (With TVS2, TVS3, TVS4)

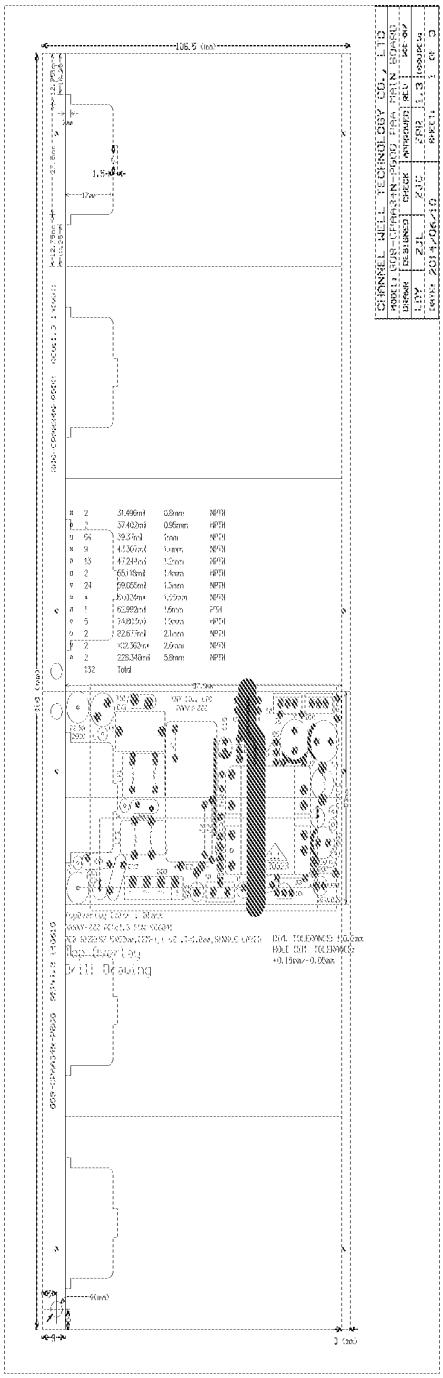


PCB with fuse:
FUSE1

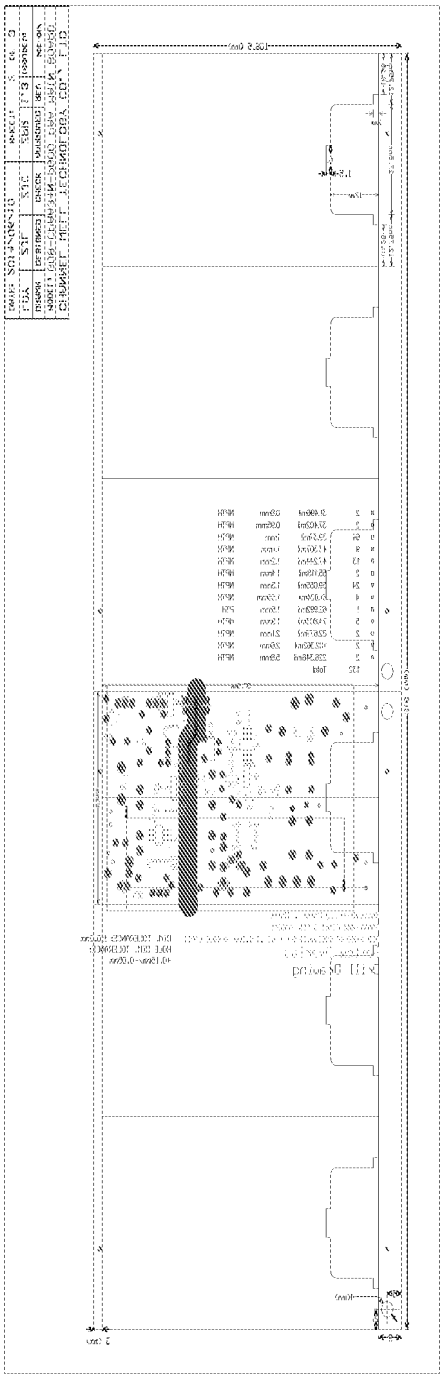
Schematics-03 Page-1



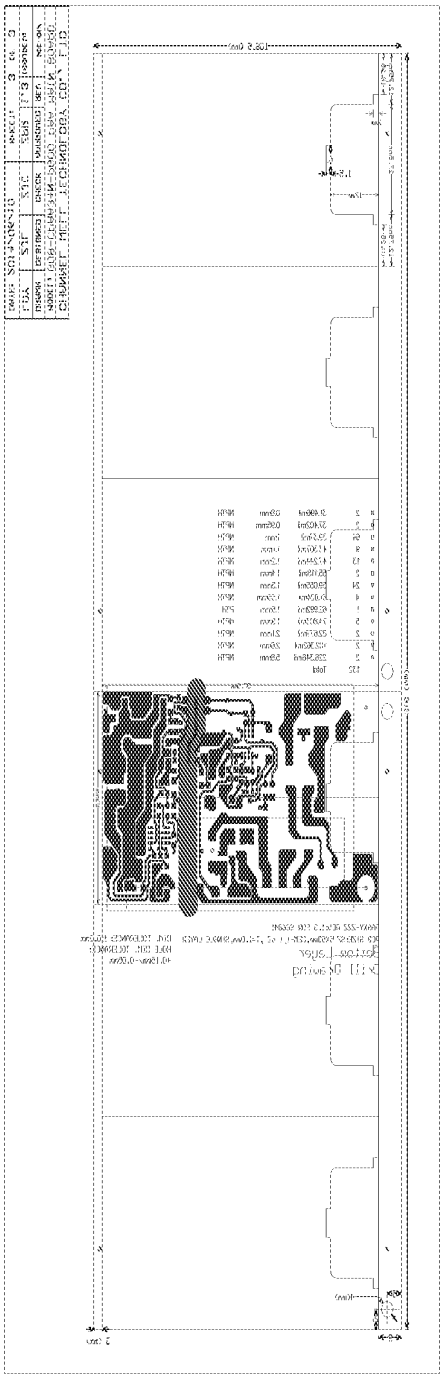
Schematics-03 Page-2



Schematics-03 Page-3



Schematics-03 Page-4



Test Record No. 1

This report is issued based on a previous evaluation to UL 60950-1:2005 (Second Edition), Am1:2009 + Am2:2013 under UL Report E161451-A68 and IEC 62368-1 under TUV CB Report 31581397.022 dated 2018-09-10 and 31581397.025 dated 2018-12-05. Based on the previously conducted performance testing, no further tests were considered necessary per UL 62368-1:2014 (Second Edition).

The following tests were conducted:

Tests performed (name of test and test clause):	**Testing location:**
STEADY FORCE TEST, 30 N FOR SAFEGUARD THAT ACTS AS FIRE ENCLOSURE/BARRIER ONLY (4.4.4.2, T.3)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
STEADY FORCE TEST, 250 N (4.4.4.2, T.5)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
DROP TEST (4.4.4.3, T.7)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
IMPACT TEST (4.4.4.4, T.6)	Test was conducted during previous investigation under UL Test Report E161451-A68.
STRESS RELIEF TEST (4.4.4.7, T.8)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
CLASSIFICATION OF ELECTRICAL ENERGY SOURCES (5.2.2.1-5.2.2.6)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
DETERMINATION OF WORKING VOLTAGE (5.4.1.8)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
HUMIDITY CONDITIONING (5.4.8)	Test was conducted during previous investigation under UL Test Report E161451-A68.
ELECTRIC STRENGTH TEST – TYPE TESTING OF SOLID INSULATION (5.4.9.1)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
SAFEGUARDS AGAINST CAPACITOR DISCHARGE AFTER DISCONNECTION OF A CAPACITOR (5.5.2.2)	Test was conducted during previous investigation under TUV CB Report 31581397.022 dated 2018-10-09.
RESISTANCE OF THE PROTECTIVE BONDING SYSTEM (5.6.6.2)	Test was conducted during previous investigation under UL Test Report

	E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
TOUCH CURRENT MEASUREMENT – EARTHED ACCESSIBLE CONDUCTIVE PARTS – SINGLE-PHASE EQUIPMENT ON TN OR TT SYSTEM (5.7.4)	Test was conducted during previous investigation under UL Test Report E161451-A68.
POWER MEASUREMENTS (6.2.2.2, 6.2.2.3)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
RESISTIVE PIS DETERMINATION (6.2.3.2)	Test was conducted during previous investigation under TUV CB Report 31581397.022 dated 2018-10-09.
INPUT TEST: SINGLE PHASE (B.2.5)	Test was conducted during previous investigation under UL Test Report E161451-A68.
NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT (B.2.6, 5.4.1.4, 6.3, 9.2)	Test was conducted during previous investigation under UL Test Report E161451-A68.
SIMULATED SINGLE FAULT CONDITIONS (B.4)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
LIMITED POWER SOURCE (ANNEX Q.1)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)	Test was conducted during previous investigation under UL Test Report E161451-A68 and TUV CB Report 31581397.022 dated 2018-10-09.
The following tests were waived:	**Rationale for Waiving**

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

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

Type	Supplement Id	Description

Test Record No. 2

Testing of Models KPL Series were not considered necessary based upon previous evaluation under CB Scheme. The CB Scheme Test Certificate Ref. No. US-TUVR-011359-M2 and Report Ref. No. 31581397.028 dated October 17, 2019 were prepared by TUV Rheinland of North America, Inc. See Test Reference for CB report and Certificate. The following changes were made to the UL Report:
• Addition of LF1, type/model:SQ15, for KPL series [PCB with F1, F2] as an alternate source.
• Addition of TVSA and TVSB for KPL series [PCB with F1, F2] as an optional items.
• Update to the list of critical component (Table 4.1.2).

The following tests were conducted:

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

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

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

Type	Supplement Id	Description

Test Record No. 3

Due to addition of optional/alternate Gas Tube (TVSA, TVSB), type Littelfuse, SE200+, on model KPL Series for this manufacturer, no tests were considered necessary.

The following tests were conducted:

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

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

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

Type	Supplement Id	Description

Test Record No. 4

Testing of Models PA060M-ZZZ was not considered necessary based upon previous evaluation under CB Scheme. The CB Scheme Test Certificate Ref. No. US-TUVR-011359-M3 and Report Ref. No. 31581397.030 dated July 16, 202020 were prepared by TUV Rheinland of North America, Inc. See Test Reference for CB report and Certificate. The following changes were made to the UL Report:
• Addition of model PAA060M-ZZZ.
• Update to the list of critical component (Table 4.1.2).
• Update to Enclosures for model PA060M-ZZZ..
• Update to Tables for model PA060M-ZZZ.

The following tests were conducted:

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

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

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

Type	Supplement Id	Description

Test Record No. 5

-- No test was conducted due to alternate the manufacturer and models of AC Inlet, Varistor, Optical coupler, Gas tube. More details please refer to the CCL ID 02m, 02n,13d, 13k, 08j and 33c.
-- No test was conducted due to alternate fuses. More details please refer to the CCL ID 04h, 04-1g and 05k.
-- Additional tests were not considered necessary due to tests conducted in Test Record 1-4.

The following tests were conducted:

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

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

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

Type	Supplement Id	Description