Issue Date: 2013-02-05 Page 1 of 16 Report Reference # E341351-A59-UL

2016-08-05

## **UL TEST REPORT AND PROCEDURE**

Standard: UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology

Equipment - Safety - Part 1: General Requirements)

CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)

Certification Type: Listing

CCN: QQGQ, QQGQ7 (Power Supplies for Information Technology

Equipment Including Electrical Business Equipment)

**Product:** Switching Power Adapter

Model: GTM91099-WWVV-X.X-AB series,

M can be "M" or "-" for market identification and not related to safety WW is the rated output wattage designation, with a maximum value of

"60";

VV is the standard rated output voltage designation, with a maximum

value of "48";

-X.X denotes the optional deviation, subtracted or added from

standard output voltage in 0.1 volt increments or blank to indicate the

no voltage different;

VV-X.X together denotes the voltage range 5V to 48V;

A:T is External/Desktop model

B can be 2 or 3A, 2 presents Class II, 3A presents Class I;

**Rating:** Input: 100-240Vac, 50-60Hz, MAX. 1.5A or 1.5A

Output:

Refer to Enclosure ID: 7-01 for detail of output rating.

For Model GTM91099-3009-4.0-T2 and GTM91099-3009-4.0-T3A,

Output 5Vdc/3.0A at Tma=70 Degree C.

Applicant Name and Address: GLOBTEK (HONG KONG) LTD

UNIT 1402, BENSON TOWER

74 HUNG TO RD KWUN TONG

KOWLOON HONG KONG

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.

Issue Date: 2013-02-05 Page 2 of 16 Report Reference # E341351-A59-UL

2016-08-05

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

Prepared by: Leung Chi Wah Reviewed by: Paul Wan

Issue Date: 2013-02-05 Page 3 of 16 Report Reference # E341351-A59-UL

2016-08-05

#### **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 -
  - Part AC details important information which may be applicable to products covered by this Procedure.
     Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
  - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
  - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

### **Product Description**

The equipment is a Power Adaptor, Electronic components mounted to PWB, and housed in plastic enclosure, with Class II appliance inlet or Class I Inlet with desktop construction which intended to provide electrical power to Information technology equipment.

#### Model Differences

Model Differences can refer to enclosure 7-01.

#### **Technical Considerations**

- Equipment mobility: transportable
- Connection to the mains : pluggable A
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC): OVC II
- Mains supply tolerance (%) or absolute mains supply values: +10%, -10% (Manufacturer declared)
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V): N/A
- Class of equipment: With Class I and Class II (double insulated) construction
- Considered current rating of protective device as part of the building installation (A): 20 A
- Pollution degree (PD): PD 2
- IP protection class: IP X0
- Altitude of operation (m): Up to 3000m
- Altitude of test laboratory (m): Up to 3000m
- Mass of equipment (kg): <8 kg</li>
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C, 70°C (for Models GTM91099-3009-4.0-T2 and GTM91099-3009-4.0-T3A only)
- The means of connection to the mains supply is: Detachable power cord

Issue Date: 2013-02-05 Page 4 of 16 Report Reference # E341351-A59-UL

2016-08-05

The product is intended for use on the following power systems: TN

- The equipment disconnect device is considered to be: Appliance inlet
- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: CY1
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All Output
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

#### **Additional Information**

Revision (Project 4787098106)

- (1) Evaluate the Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A in Maximum Room Ambient Temperature 70 deg ree C;
- (2) Add the Label Artwork for Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A in Enclosure:
- (3) Add "Optional" for Fuse (FS2).

Revision (Project 4787488952)

- (1) correct model list
- (2) correct 1185 or 2464 to various for DC ouput cord in CCL
- (3) add Tubing (optional alternate used for HS2) in CCL as it was missed in original report
- (4) correct type LY-20 to LY-XX for Insulation tape provided on HS2
- (5) add label (Provided if not using engraving or silkscreen or Laser printing)with various manufacturer & type as it was missed in original report

#### **Additional Standards**

The product fulfills the requirements of: N/A

#### Markings and instructions

Clause Title	Marking or Instruction Details					
Warning to service personnel	"CAUTION: Double pole/neutral fusing"					
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)					
1.7.1 Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number					
1.7.1 Power rating - Model	Model Number					
1.7.1 Power rating - Class II symbol	Symbol for Class II construction ( Class II model only)					

Issue Date: 2013-02-05 Page 5 of 16 Report Reference # E341351-A59-UL

2016-08-05

1.7.6 Fuses - Rated current and voltage and type located on or adjacent to fuse or fuseholder.

Special Instructions to UL Representative
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Production-L	ine Testing Requ	uirements				
Electric Stre	ngth Test Specia	I Constructions	- Refer to Generic Inspe	ction Ins	structions. F	art AC for
further inforr			•			
		Removable		V		Test Time,
Model	Component	Parts	Test probe location	rms	V dc	s
All models	T1	N/A	Primary to Secondary	300 0		1
Earthing Cor	ntinuity Test Exe	mptions - This t	est is not required for th	e followi	ing models:	
GTM91099-W	/WVV-X.X-AB ser	ies (Class II prod	luct)			
Electric Stre	ngth Test Exemp	tions - This test	is not required for the f	ollowing	models:	
N/A						
Electric Stre	ngth Test Compo	nent Exemption	ns - The following solid-	state cor	nponents m	ay be
disconnected	d from the remain	nder of the circu	uitry during the performa	ance of t	his test:	
N/A						
Sample and	Test Specifics fo	r Follow-Up Tes	sts at UL			
Model	Component	Material	Test	Sa	ample(s)	Test Specifics

N/A

Issue Date: 2013-02-05 Page 6 of 16 Report Reference # E341351-A59-UL

1.5.1	TABLE: list of critical components					
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Plastic Enclosure	SABIC INNOVATIVE PLASTICS B V	CX7211(GG)	Rated min V-0, 90 degC. Overall around 113.97 by 53.47 by 19.25mm. Min. 2.1 mm thick. See enclosure 4-01 for details of enclosure dimension.	QMFZ2/8	UL/cUL (E45329)	
Insulator	SKC Co LTD	SH71S	Provided between PWB and Enclosure. Rated VTM-2, 105 degC. Overall measured 106.86 mm by 46.72 mm, 0.43 mm thick.	QMFZ2	UL (E74359)	
Insulator (Alternate)	TORAY	Lumirror H10	Provided between PWB and Enclosure. Rated VTM-2, 105 degC. Overall measured 106.86 mm by 46.72 mm, 0.43 mm thick.	QMFZ2	UL (E86511)	
Insulator (Alternate)	FORMEX	FORMEX GK	Provided between PWB and Enclosure. Rated VTM-2, 105 degC. Overall measured 106.86 mm by 46.72 mm, 0.43 mm thick.	QMFZ2	UL (E121855)	
Insulator (Alternate)	SABIC INNOVATIVE PLASTICS JAPAN L L C	FR63 (GG1), FR65 (GG1), FR7 (GG1), FR700	Provided between PWB and Enclosure. Rated VTM-2, 105 degC. Overall measured 106.86 mm by 46.72 mm, 0.43 mm thick.	QMFZ2	UL (E207780)	
Appliance –Inlet (For T2 series )	ZHEJIANG LECI ELECTRONICS CO LTD	DB-8	Rated 5A, 250Vac, 105 degC	AXUT2/8	UL/cUL (E302229)	
Appliance –Inlet (For T2 series ) (Alternate)	KUNSHAN DLK ELECTRONICS TECHNOLOGY CO LTD	CDJ-2	Rated 2.5A, 250Vac, 125 degC		UL/cUL (E317189)	
Appliance –Inlet (For T2	SHENZHEN	CDJ-2	Rated 2.5A, 250Vac, 125 degC	AXUT2/8	UL/cUL	

Issue Date: 2013-02-05 Page 7 of 16 Report Reference # E341351-A59-UL

series ) (Alternate)	DELIKANG ELECTRONICS TECHNOLOGY CO LTD				(E217394)
Appliance –Inlet (For T2 series ) (Alternate)	RICH BAY CO LTD	R-201SN90	Rated 2.5A, 250Vac, 105 degC	AXUT2/8	UL/cUL (E184638)
Appliance –Inlet (For T2 series ) (Alternate)	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-01	Rated 2.5A, 250Vac.	AXUT2/8	UL/cUL (E226643)
Appliance –Inlet (For T2 series ) (Alternate)	INALWAYS CORP	0721 series	Rated 2.5A, 250Vac, 105 degC	AXUT2	UL (E94191)
Appliance –Inlet (For T2 series ) (Alternate)	TECX-UNIONS TECHNOLOGY CORP	SO-222 series	Rated 2.5A, 250Vac, 75 degC	AXUT2	UL (E220004)
Appliance –Inlet (For T2 series ) (Alternate)	SUPERCOM ELECTRONICS CO LTD	SC-12S series	Rated 2.5A, 250Vac, 75 degC	AXUT2/8	UL/cUL (E152973)
Appliance –Inlet (for T3A series )	SUPERCOM ELECTRONICS CO LTD	SC-14 series	Rated 2.5A, 250Vac, 75 degC	AXUT2/8	UL/cUL (E152973)
Appliance –Inlet (Alternate) (for T3A series)	ZHEJIANG LECI ELECTRONICS CO LTD	DB-6	Rated 5A, 250Vac, 105 degC	AXUT2/8	UL/cUL (E302229)
Appliance –Inlet (Alternate) (for T3A series)	TECX-UNIONS TECHNOLOGY CORP	TU-333 series	Rated 2.5A, 250Vac, 75 degC	AXUT2	UL (E220004)
Appliance –Inlet (Alternate) (for T3A series)	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-02	Rated 2.5A, 250Vac.	AXUT2/8	UL/cUL (E226643)
Appliance –Inlet (Alternate) (for T3A series)	INALWAYS CORP	0724series	Rated 2.5A, 250Vac, 105 degC	AXUT2	UL (E94191)
Appliance –Inlet (Alternate) (for T3A series)	RICH BAY CO LTD	R-30790	Rated 2.5A, 250Vac, 105 degC	AXUT2/8	UL/cUL (E184638)
Earthing Conductor (For class I series)	Various	Various	Yellow and Green in Color, provided between inlet and	AVLV2/8	UL, cUL

Issue Date: 2013-02-05 Page 8 of 16 Report Reference # E341351-A59-UL

			PWB secondary side. Rated min 300V, min105 degC, VW-1, min18 AWG		
Fuse (FS1)	WALTER ELECTRONIC CO LTD	ICP	Rated 3.15A, 250Vac.	JDYX/7	UL/cUL (E56092)
Fuse (FS1) (Alternate)	CONQUER ELECTRONICS CO LTD	MST	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (E82636)
Fuse (FS1) (Alternate)	WALTER ELECTRONIC CO LTD	2010	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (E56092)
Fuse (FS1) (Alternate)	SUNNY EAST ENTERPRISE CO LTD	TSP	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (E133774)
Fuse (FS1) (Alternate)	Various	Various	Rated 3.15A, 250Vac.	JDYX/7	UL/cUL
Fuse (FS2) (Optional)	WALTER ELECTRONIC CO LTD	ICP	Rated 3.15A, 250Vac.	JDYX/7	UL/cUL (E56092)
Fuse (FS2) (Alternate) (Optional)	CONQUER ELECTRONICS CO LTD	MST	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (E82636)
Fuse (FS2) (Alternate) (Optional)	WALTER ELECTRONIC CO LTD	2010	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (E56092)
Fuse (FS2) (Alternate) (Optional)	SUNNY EAST ENTERPRISE CO LTD	TSP	Rated 3.15A, 250Vac.	JDYX2/8	UL/cUL (E133774)
Fuse (FS2) (Alternate) (Optional)	Various	Various	Rated 3.15A, 250Vac.	JDYX/7	UL/cUL
Varistor (MOV1) (optional) (Alternate)	BRIGHTKING (SHENZHEN) CO LTD	471KD07, 471KD10, 471KD14	Rated 300Vac.	VZCA2/8	UL/cUL (E327997)
Varistor (MOV1) (optional) (Alternate)	WALSIN TECHNOLOGY CORP	VZ07D471K, VZ10D471K, VZ14D471K	Rated 300Vac.	VZCA2/8	UL/cUL (E309297)
Varistor (MOV1)	LIEN SHUN	07D471K,	Rated 300Vac.	VZCA2/8	UL/cUL

Issue Date: 2013-02-05 Page 9 of 16 Report Reference # E341351-A59-UL

(optional) (Alternate)	ELECTRONICS CO LTD	10D471K, 14D471K			(E315524)
Varistor (MOV1) (optional) (Alternate)	CERAMATE TECHNICAL CO LTD	GNR07D471K, GNR10D471K, GND14D471K	Rated 300Vac.	VZCA2/8	UL/cUL (E315429)
Bleeder Resistors (RS2, RS1)	Various	Various	Max. 1.5Mohm, 1/4W		
X-Capacitor (CX1) (Optional)	CHENG TUNG INDUSTRIAL CO LTD	СТХ	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E193049)
X-Capacitor (CX1) (Optional) (Alternate)	WINDAY ELECTRONIC INDUSTRIAL CO LTD	MPX	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E302125)
X-Capacitor (CX1) (Optional) (Alternate)	ULTRA TECH XIPHI ENTERPRISE CO LTD	HQX	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E183780)
X-Capacitor (CX1) (Optional) (Alternate)	OKAYA ELECTRIC INDUSTRIES CO LTD	RE series	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E47474)
X-Capacitor (CX1) (Optional) (Alternate)	VISHAY CAPACITORS BELGIUM N V	F1772	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E100682)
X-Capacitor (CX1) (Optional) (Alternate)	TENTA ELECTRIC INDUSTRIAL CO LTD	MEX	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E186475)
X-Capacitor (CX1) (Optional) (Alternate)	DAIN ELECTRONICS CO LTD	MEX, MPX, NPX	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E147776)
X-Capacitor (CX1) (Optional) (Alternate)	SINHUA ELECTRONICS (HUZHOU) CO LTD	MPX	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E237560)
X-Capacitor (CX1) (Optional) (Alternate)	FOSHAN SHUNDE CHUANG GE ELECTRONIC INDUSTRIAL CO LTD	MKP-X2	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E308832)

Issue Date: 2013-02-05 Page 10 of 16 Report Reference # E341351-A59-UL

X-Capacitor (CX1) (Optional) (Alternate)	SHUN DE DAHUA ELECTRIC CO LTD	HD	Rated 0.33uF max. Min 250Vac, 100degC, marked X1 or X2	FOWX2/8	UL/cUL (E227157)
Y-Capacitors (CY1, CY2) –(Optional)	WELSON INDUSTRIAL CO LTD	WD	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E104572)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	SUCCESS ELECTRONICS CO LTD	SE, SB	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E114280)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	TDK CORP	CD	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E37861)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	WALSIN TECHNOLOGY CORP	AH	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E146544)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	JYA-NAY CO LTD	JN	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E201384)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	KUNSHAN WANSHENG ELECTRONICS CO LTD	CT7	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E249006)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	MURATA MFG CO LTD	KX	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E37921)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	MITSUBISHI MATERIALS CORP	AH	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E89615)
Y-Capacitors (CY1, CY2) –(Optional) (Alternate)	HAOHUA ELECTRONIC CO	CT7	Rated max.2200pF Min 250V, 105degC, marked with Y1 or Y2	FOWX2/8	UL/cUL (E233106)
Line Filter (LF2) (optional)	GLOBTEK	NF00031	130 degree C (OBMW2) coil wound on a core. See Enclosure 4-06 for details.		
- Core			Ferrite core, approximate overall 16 by 12 by 8 mm.		
- Wire	TA YA ELECTRIC	TYPU-	MW 75-C, 130 Degree C	OBMW2	UL/cUL

Issue Date: 2013-02-05 Page 11 of 16 Report Reference # E341351-A59-UL

	WIRE & CABLE CO LTD	130(UEW/QA -B)			(E84201)
- Varnish	E57	SHENZHEN CHANGXIAN TECHNOLOGY CO., LTD	130 degree C		
Line Filter (LF2) (optional) (Alternate)	Various	Various	130 degree C (OBMW2) coil wound on a core.		
Transistor (Q1)	Various	Various	Rated min 10A, Min. 600V		
Transformer (T1)			(OBJY2) Class B. See enclosure 4-05 for construction details.		
- Insulation system used in T1			Class 130 (B) Insulation System.	OBJY2/8	UL/cUL (E308897)
- Primary winding used in T1	Various	Various	Polyurethane with or without overcoat Polyamide, 130 degC min. Type MW-75.	OBMW2	ÜL
- Secondary winding used in T1	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	Rated 130 degC Triple insulated wire	OBJT2	UL (E211989)
- Bobbin used in T1	SUMITOMO BAKELITE CO LTD	PM-9820	Phenolic, rated V-0, 150 degC	QMFZ2	UL (E41429)
- Bobbin used in T1 (Alternate)	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, rated V-0, 150 degC,	QMFZ2	UL (E59481)
- Insulation Tape used in T1	ELECTRICAL MARKETS DIV (EMD)	1350F, 44	Rated 130 degC	OANZ2	UL (E17385)
- Varnish used in T1	P D GEORGE/VIKING	V1630FS	Rated 130 degC	OBOR2	UL (E73071)
- Varnish used in T1 (Alternate)	JOHN C DOLPH CO	BC-346A	Rated 130 degC	OBOR2	UL (E51047)
- Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFL	VW-1. Rated 150V, 200 degC	YDPU2	UL (E156256)
Transformer (T1)	GLOBTEK INC /	XF00694,	(OBJY2) Class B. See		

Issue Date: 2013-02-05 Page 12 of 16 Report Reference # E341351-A59-UL

(Alternate)			enclosure 4-05 for details.			
- Insulation system used in T1	GLOBTEK INC	GTX-130-TM	Class 130 (B) Insulation Systems.	OBJY2	UL (E243347)	
- Insulation system used in T1 (Alternate)	WUXI ZHONGTONG ELECTRONICS CO LTD	ZT-130	Class 130 (B) Insulation Systems.	OBJY2	UL (E315275)	
- Primary winding used in T1	Various	Various	Polyurethane with or without overcoat Polyamide, 130 degC Min. Type MW-75 or MW-28.	OBMW2	UL	
- Secondary winding used in T1	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	Rated 130 degC Triple insulated wire	OBJT2	UL (E211989)	
- Secondary winding used in T1 (Alternate)	COSMOLINK CO LTD	TIW-M	Rated 130 degC Triple insulated wire	OBJT2	UL (E213764)	
- Bobbin used in T1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, rated V-0, 150 degC,	QMFZ2	ÙL (E59481)	
- Insulation Tape used in T1	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT	Rated 130 degC.	OANZ2	UL (E165111)	
- Insulation Tape used in T1 (Alternate)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Rated 130 degC.	OANZ2	UL (E246950)	
- Varnish used in T1	WU JIANG TAIHU INSULATING MATERIAL CO LTD	T-4260(a)	MW 28. Rated 130 degC.	OBOR2	UL (E228349)	
- Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFL, TFT	VW-1. Rated 150V, 200 degC for TFL; Rated 300V, 200 degC for TFT	YDPU2	UL (E156256)	
- Tube (Alternate)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	VW-1. Rated 600V, 200 degC	YDPU2	UL (E203950)	
Transformer (T1) (Alternate)	SHAN DONG BOAM ELECTRIC CO LTD	XF00694, XF00695, XF00731,	(OBJY2) Class B. See enclosure 4-05 for details.			

Issue Date: 2013-02-05 Page 13 of 16 Report Reference # E341351-A59-UL

		XF00794			
- Insulation system used in T1	SHAN DONG BOAM ELECTRIC CO LTD	BOAM-01	Class 130 (B) Insulation System.	OBJY2	UL (E252329)
- Primary winding used in T1	Various	Various	Polyurethane with or without overcoat Polyamide, 130 degC Min. Type MW-75 or MW-28.	OBMW2	UL
- Secondary winding used in T1	FURUKAWA ELECTRIC CO LTD	TEX-E	Rated 130 degC Triple insulated wire	OBJT2	UL (E206440)
- Bobbin used in T1	CHANG CHUN PLASTICS CO LTD	4130	Phenolic, rated V-0, 120degC, min 0.74 mm thick	QMFZ2	ÙL (E59481)
- Bobbin used in T1	CHANG CHUN PLASTICS CO LTD	T375J	Phenolic, rated V-0, 150 degC,	QMFZ2	UL (E59481)
- Insulation Tape used in T1	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350FB-1; 1350FB-2; 1350FW-1; 1350FW-2; 1350FY-1; 1350FY-2	Rated 130 degC.	OANZ2	UL (E17385)
- Insulation Tape used in T1 (Alternate)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ	Rated 130 degC.	OANZ2	UL (E165111)
- Varnish used in T1	NOROO PAINT & COATINGS CO LTD	DVB-2085(1); DVB-2085(C)	MW 28. Rated 130 degC.	OBOR2	UL (E93947)
- Tube	GREAT HOLDING INDUSTRIAL CO LTD	TFL	VW-1. Rated 150V, 200 degC for TFL	YDPU2	UL (E156256)
Opto-couplers (U1)	EVERLIGHT ELECTRONICS CO LTD	EL817	Rated min. 110degC Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL/cUL (E214129)
Opto-couplers (U1) (Alternate)	COSMO ELECTRONICS CORP	K1010, KP1010	Rated min. 115degC Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL/cUL (E169586)
Opto-couplers (U1) (Alternate)	LITE-ON TECHNOLOGY CORP	LTV-357T, LTV- 357, LTV-817CN, LTV-817	Rated min. 115degC Provide min 3750Vac isolation test voltage rating for LTV-357T and LTV-357, 5300Vac	FPQU2/8	UL/cUL (E113898)

Issue Date: 2013-02-05 Page 14 of 16 Report Reference # E341351-A59-UL

			isolation test voltage rating for LTV-817CN.		
Opto-couplers (U1) (Alternate)	FAIRCHILD SEMICONDUCTOR CORP	H11A817B, F0D817B	Rated min. 110degC Provide min 5000Vac isolation test voltage rating.	FPQU2/8	UL/cUL (E90700)
Opto-couplers (U1) (Alternate)	SHARP CORP ELECTRONIC COMPONENTS AND DEVICES GROUP	PC817	Rated min. 100degC Provide min 5000Vac isolation test voltage rating.	FPQU2	UL (E64380)
Heat Sink - HS1			Aluminum. Approximate overall dimension 82mm by 43mm by 23.5mm, 2.0mm thick, secured to PWB by soldering.		
Heat Sink - HS2			Aluminum. Approximate overall dimension 103mm by 24mm by 14.5mm, 2.0mm thick, secured to PWB by soldering.		-
Insulation tape provided on HS2	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350T-1, 44	Rated 130 degC	OANZ2	UL (E17385)
Insulation tape provided on HS2 (Alternate)	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F, 350-1	Rated 130 degC	OANZ2	UL (E17385)
Insulation tape provided on HS2 (Alternate)	SYMBIO INC	35660Y	Rated 130 degC	OANZ2	UL (E50292)
Insulation tape provided on HS2 (Alternate)	YAHUA ADHESIVE TAPE CO LTD	СТ	Rated 130 degC	OANZ2	UL (178516)
Insulation tape provided on HS2 (Alternate)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Rated 130 degC	OANZ2	UL (E246820)
Tubing (optional alternate used for HS2)	Interchangeable	Interchangeable	Minimum 300V, 125 degree C, marked with VW-1	YDPU2	UL
DC output cord	Various	Various	Jacketed wire. Min. 24AWG, min. VW-1, 80°C, min. 60V.	AVLV2/ZJCZ2	UL

Issue Date: 2013-02-05 Page 15 of 16 Report Reference # E341351-A59-UL

Label (Optional)	DONGGUAN XIANGQUAN	XQ03	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	UL (MH27594)
Label (Optional) (Alternate)	PRINTING CO LTD FAN JA PAPER PRINTING CO LTD	FJ-03-3	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	UL (MH19546)
Label (Optional) (Alternate)	FAN JA PAPER PRINTING CO LTD	FJ07	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	UL (MH19546)
Label (Optional) (Alternate)	DONGGUAN XIANGQUAN PRINTING CO LTD	XQ004-B	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGJI2	UL (MH47303)
Label (Optional) (Alternate)	E-LIN ADHESIVE LABEL CO LTD	EL-15	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	UL (MH45549)
Label (Optional) (Alternate)	SHENZHEN CORWIN PRINTING CO LTD	CW-01	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	ÜL (MH47077)
Label (Optional) (Alternate)	YUEN CHANG SPECIAL PRINTING (SHENZHEN) CO LTD	JL-08	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	UL (MH29752)
Label (Optional) (Provided if not using engraving or silkscreen or Laser printing)	Various	Various	Rated min 80 deg C. Suitable for use on the plastic enclosure.	PGDQ2	UL
PWB	Various	Various	Min. V-1, 130°C	ZPMV2	UL

Issue Date: 2013-02-05 Page 16 of 16 Report Reference # E341351-A59-UL

2016-08-05

# **Enclosures**

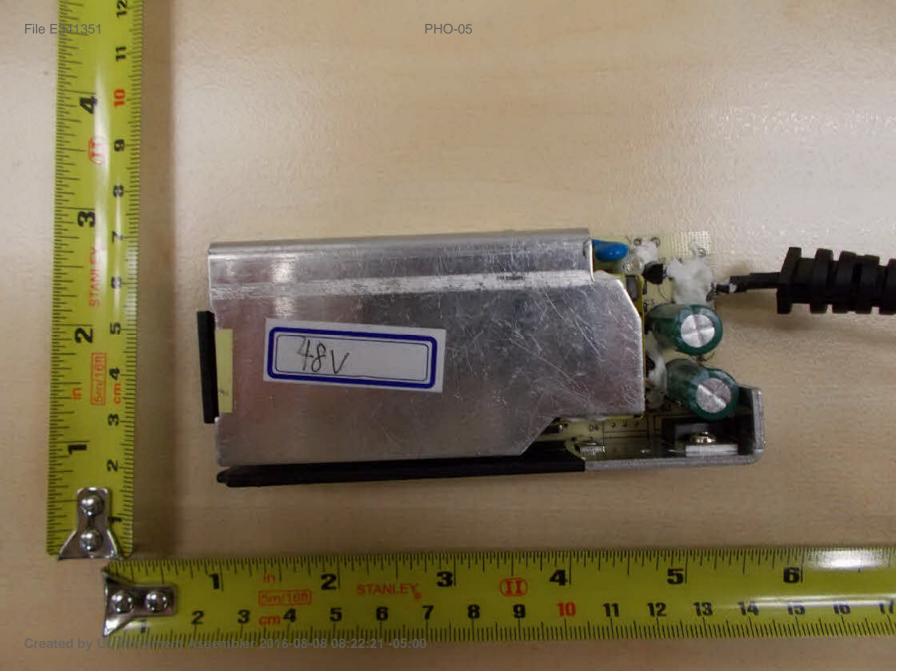
<u>Type</u>	Supplement Id	<u>Description</u>
Photographs	3-01	Top View (Desktop Type)
Photographs	3-02	Bottom View (Desktop Type)
Photographs	3-03	Inlet View (Desktop Type: Class II)
Photographs	3-04	PCB View - Trace Side (Desktop Type: Class II)
Photographs	3-05	PCB View - Component Side (Desktop Type: Class II)
Photographs	3-06	PCB View - Component Side without Heatsink (Desktop Type: Class II)
Photographs	3-07	Inlet View (Desktop Type: Class I)
Photographs	3-08	PCB View - Component Side without Heatsink (Desktop Type: Class I)
Diagrams	4-01	Dimension of the enclosure (Desktop type )
Diagrams	4-02	Dimension of HS1
Diagrams	4-03	Dimension of HS2
Diagrams	4-04	Dimension of Mylar Sheet between PWB and enclosure
Diagrams	4-05	T1 Spec
Diagrams	4-06	LF2 Spec
Schematics + PWB	5-01	PWB Layout of Desktop Construction
Manuals	6-01	User Manual
Miscellaneous	7-01	Output List
Miscellaneous	7-04	Label Artwork for Models GTM91099-3009-4.0-T2 and GTM91099-3009-4.0-T3A

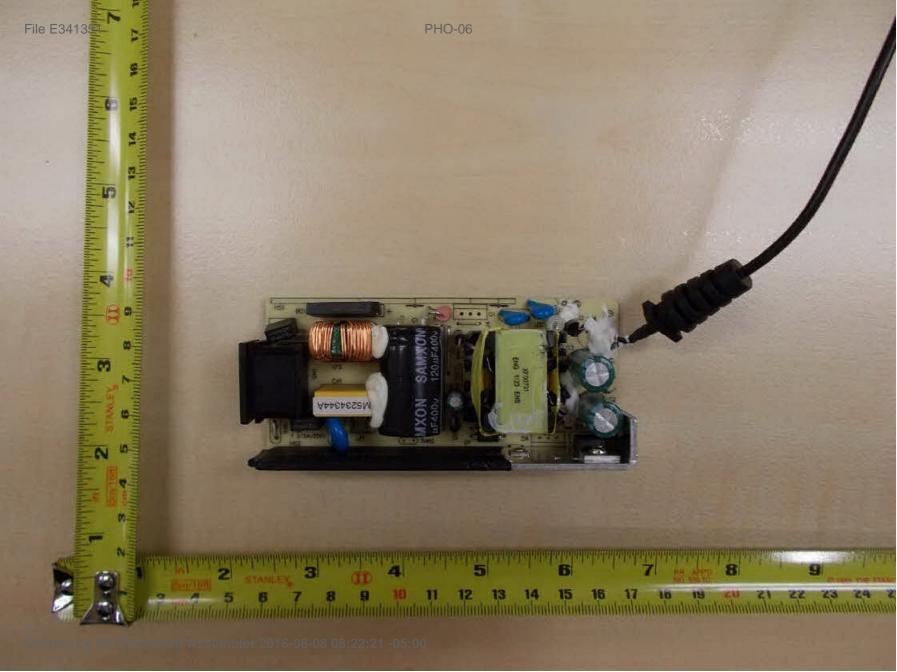




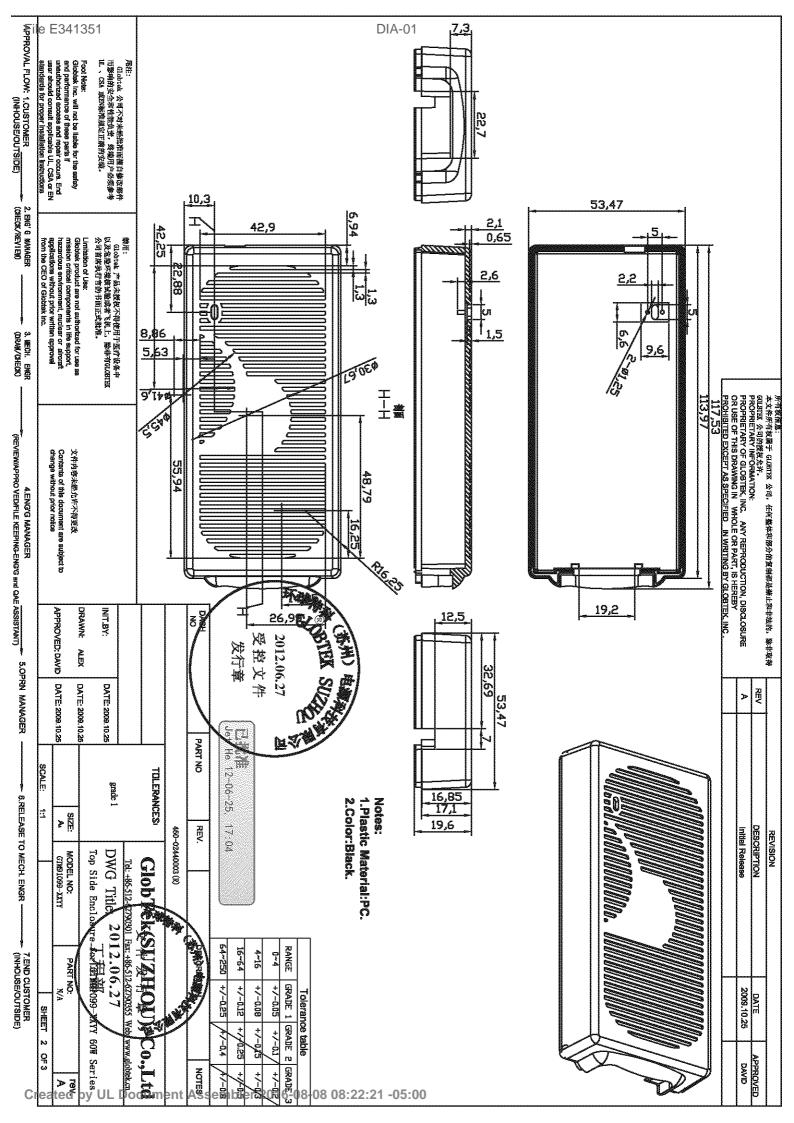


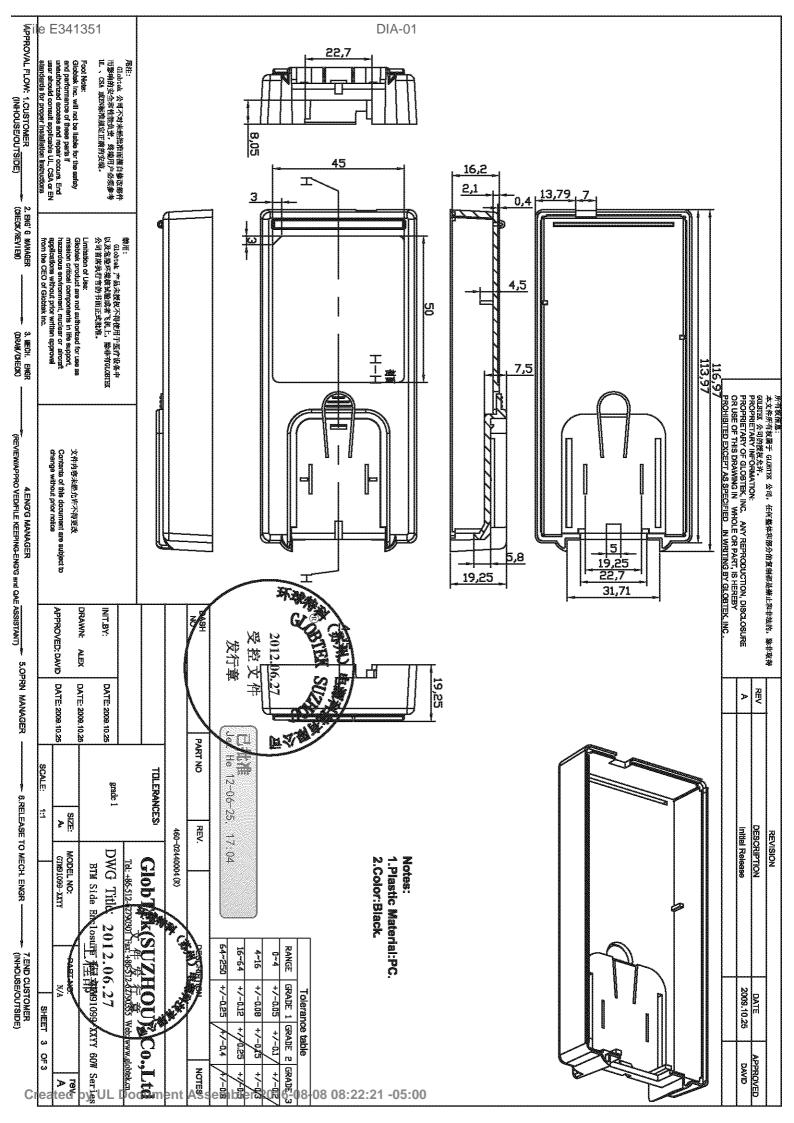


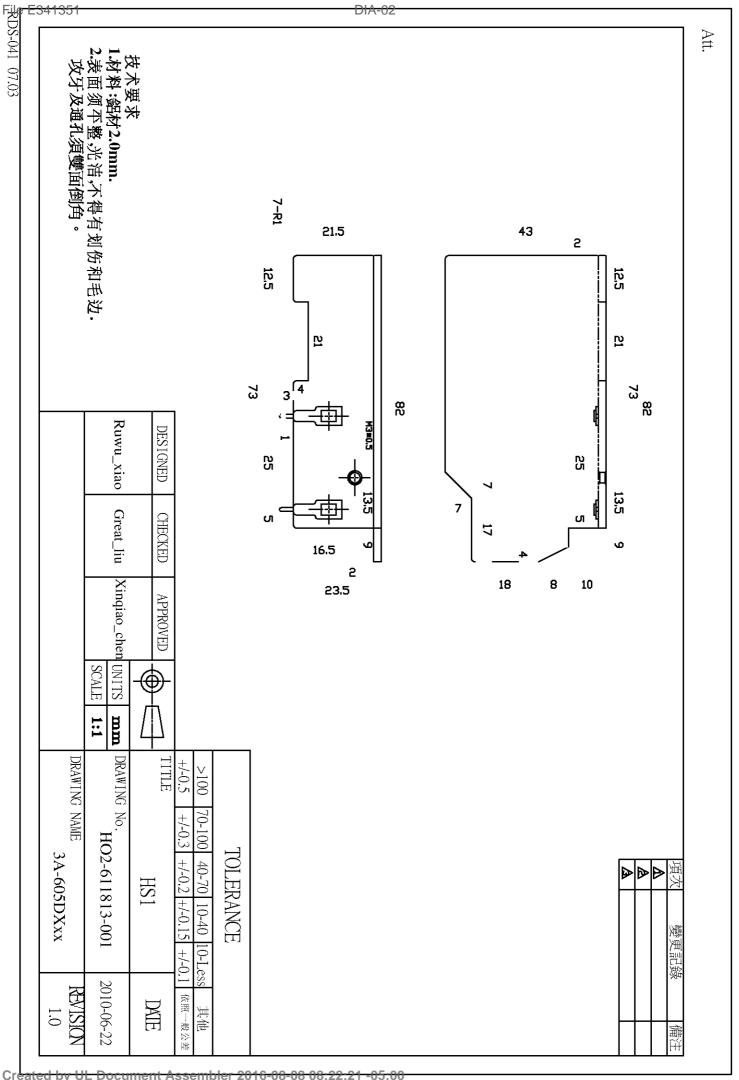


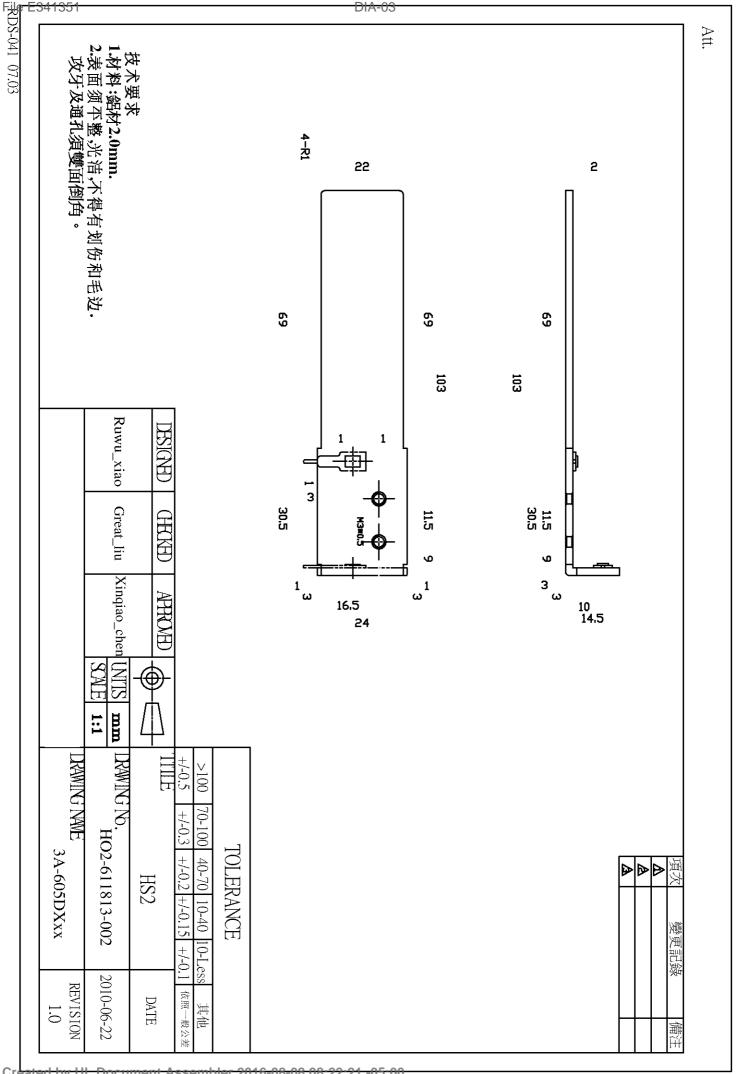


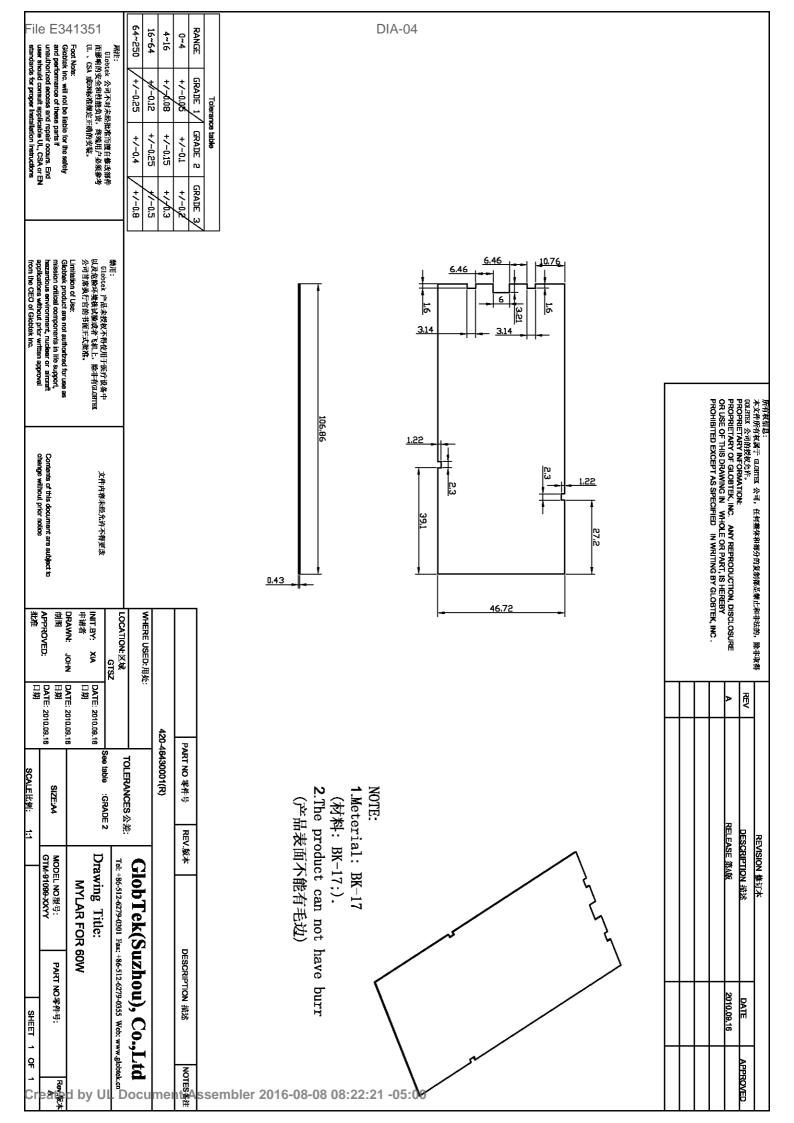






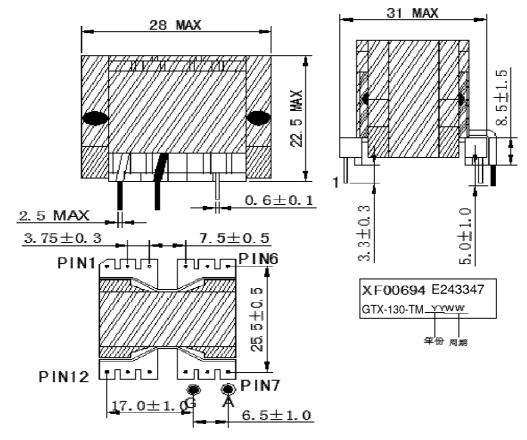






No.	Modify matter explain	Date	Rev.	Page
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		PART NO. /	产品型号	PAGE/页码
	GlobTek, Inc.	XF 00	694	1/5

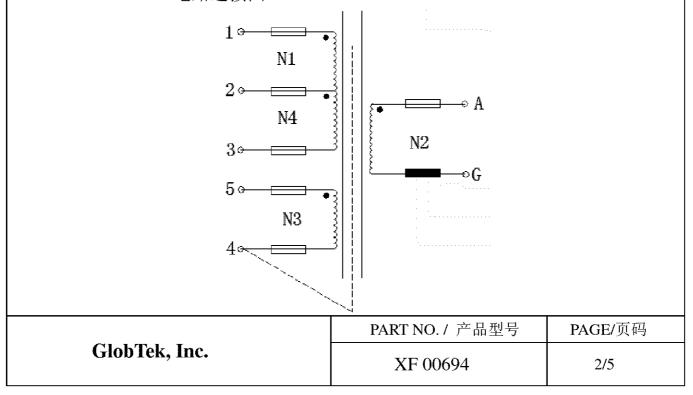




#### 注意/NOTE:

- 1. PIN6, 8, 9, 10, 12 CUT OFF. PIN2 CUT OFF2/3.
- 2、开气隙的一块磁芯装在骨架项部,平面磁芯用 29mm 的胶带背胶一层;然后磁芯用 12mm 胶带 包 3TS 固定。
- 3. 磁芯结合处需点黑胶固定, 共 4 点 (如图)
- 4. 含浸后,成品用 15mm 胶带沿线包方向包 3TS。
- 5. 标签字尾朝 PIN1-6 喷印或贴于产品顶部。
- 6. 飞线具体成型尺寸以 PCB 为准。

# 2. CONNECTION 电路连接图



3. 绕线明细表/Winding: PIN 朝右绕制

序号	Barrie 边墙	-		minal 号子	Winding 绕	线	Tape 绝缘 胶带	TUBE	套管	备注 Remark
No.	TOP	PIN	入 In	出 Out	WIRE 线	Ts	Ts	入 In	出 Out	Remark
N1			1	2	Φ0.32×2P 2UEW	25	2	20L	20L	1
E1			^	4~	T0.025*8W 背胶	1.1	2	26	6L	3
N2			A	G	Φ 0.50×5P 三层绝缘线	4	2	14L	14L	1, 2
N3			5	4	Φ0.25×2P 2UEW	5	3	23L	23L	4
N4			2	3	Ф0.30×2Р 2UEW	11	2	22L	22L	1

## 注解:。

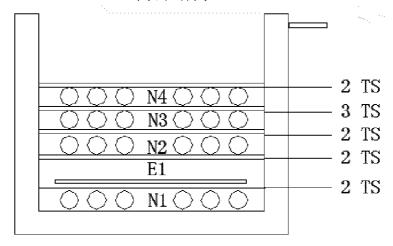
- 1、密绕,首尾线不交叉。
- 2、A,G为飞线,A穿透明套管从PIN7侧进线,G穿黑色套管从PIN9侧出线,具体出线要求参照外观图及PCB。
- 3、E1 铜箔焊点在中间,用 0.32 的引线接于 PIN4 (铜箔不能短路)。
- 4. 均绕。

	PART NO. / 产品型号	PAGE/页码
GlobTek, Inc.	XF 00694	3/5

# 4.ELECTRICAL PERFORMANCE 电气参数

No. 序号	ITEM 条款	TERMINAL 端子	SPEC. 要求	REMARK 备注
1	Inductance 电感量	1-3	720uH ±5%	
2	Leakage Inductance 漏感	1-3(SHORT SEC PIN)	15uH max	1KHz ,0.25Vrms
3	DC Resistance 直流电阻(mΩ)	1-3	250mΩ max	20±2℃
4	Withstanding	PS	AC3750V(rms)/3s/2mA	
7	Voltage 耐压	SC AC1500V(rms)/3s/2mA		60Hz
5	Insulation Resistance 绝缘电阻	Coil-Coil 线圈到线圈	100 M Ω MIN AT DC 500V	NF2511A

# 5. INTERNAL CONSTRUCTION 内部结构:



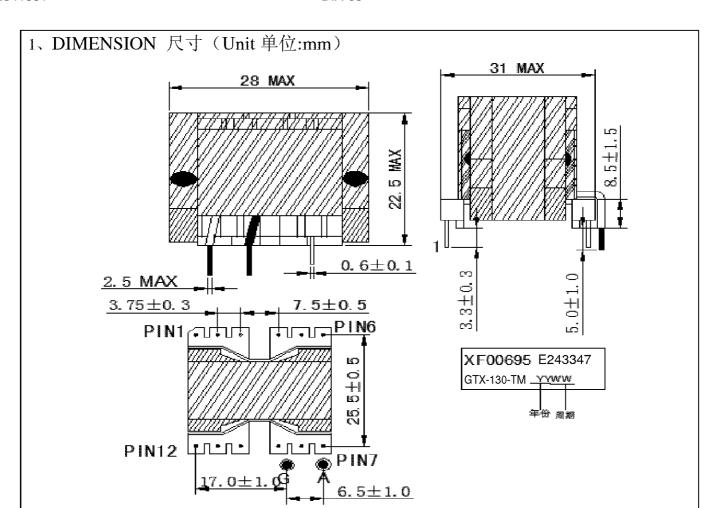
GlobTek, Inc.	PART NO. / 产品型号	PAGE/页码
3.00 2011, 2.101	XF 00694	4/5

# 6. MATERIAL LIST 材料清单:

No. 序号	NAME 名称	MATERIAL 材料	TYPE 规格	MANUFACTURE 生产商	UL FILE No. UL 档案号
1	CORE	RM2.3KD	PQ2620	YIBIN JINCHUAN ELECTRONICS CO.,LTD	
1	磁芯	KP4	1 Q2020	MIANYANG KAIYUAN MAGNETISM MATERIAL CO.,LTD	allo, tido, Add
2	BOBBIN 骨架	PHENOLIC	Т375Ј	CHANG CHUN PLASTICS CO LTD	E59481
3	WIRE 线	2UEW	Φ 0.25 Φ 0.30 Φ 0.32	CHENG DU SOUTH-WEST ELECTRIC CO.,LTD	E178366
4	INSULATION	POLYSTER FILM	PZ	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E165111
	TAPE TAPE		JY25-A	JINGJIANGJINGYI	E246950
5	FEATURES OF TRIPLE INSULATED	TRW(B)	φ 0.50、	GREATLEOFLONINDUSTRIAL CO LTD	E211989
	WIRE 三层绝缘线	TIW-M		Cosmolink	E213764
6	VARNISH 快干漆	EPOXY RESIN	T-4260 (a)	TAIHU INSULATING MATERIAL	E228349
_	TUBE	DONE	TFL TFT	GREATHOLDING INDUSTRIAL CO LTD	E156256
7	套管	PTFE	WF	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	E203950
8	SHIELDING	COPPER FOIL	0.025T*8w 背胶 T2	CHENGDU JINGLU COPPER CO., LTD	
	屏蔽带	铜带 		WUJIANG KAIQI ECECTRONIC CO., LTD	
9	SOLDER 焊料		99.3Sn/0.7 Cu	YUN NAN TIN CO.,LTD	

<b>2</b>	PART NO. / 产品型号	PAGE/页码
GlobTek, Inc.	XF 00694	5/5

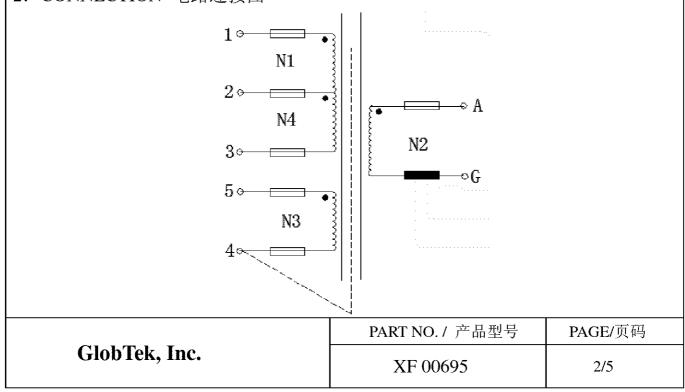
No.	Modify matter explain	Date	Rev.	Page
1	新订/NEW	2012-7-31	A	
<u> </u>	ClobToly Inc	PART NO. /	产品型号	PAGE/页码
	GlobTek, Inc.	XF 00	695	1/5



#### 注意/NOTE:

- 1. PIN6, 8, 9, 10, 12 CUT OFF, PIN2 CUT OFF2/3.
- 2、开气隙的一块磁芯装在骨架顶部,平面磁芯用29mm的胶带背胶一层;然后磁芯用12mm胶带包3TS固定。
- 3. 磁芯结合处需点黑胶固定, 共 4 点 (如图)
- 4. 含浸后,成品用 15mm 胶带沿线包方向包 3TS。
- 5. 标签字尾朝 PIN1-6 喷印或贴于产品顶部。
- 6. 飞线具体成型尺寸以 PCB 为准。

### 2. CONNECTION 电路连接图



3. 绕线明细表/Winding: PIN 朝右绕制

序号	Barrie 边墙	-		minal 号子	Winding 绕	线	Tape 绝缘 胶带	TUBE/	套管	备注 Remark
No.	TOP	PIN	入 In	出 Out	WIRE 线	Ts	Ts	入 In	⊞ Out	Remark
N1			1	2	Φ0.32×2P 2UEW	25	2	20L	20L	1
E1			~4~		T0.025*8W 背胶	1.1	2	26L		3
N2			A	G	Φ 0.55 × 3P 三层绝缘线	6	2	14L	14L	1, 2
N3			5	4	Φ0.25×2P 2UEW	5	3	23L	23L	4
N4			2	3	Ф0.30×2Р 2UEW	11	2	22L	22L	1

## 注解:。

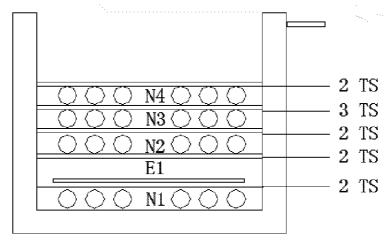
- 1、密绕,首尾线不交叉。
- 2、A,G为飞线,A穿透明套管从PIN7侧进线,G穿黑色套管从PIN9侧出线,具体出线要求参照外观图及PCB。
- 3、E1 铜箔焊点在中间,用 0.32 的引线接于 PIN4 (铜箔不能短路)。
- 4. 均绕。

Clob Toly Iso	PART NO. / 产品型号	PAGE/页码
GlobTek, Inc.	XF 00695	3/5

## 4.ELECTRICAL PERFORMANCE 电气参数

No. 序号	ITEM 条款	TERMINAL 端子	SPEC. 要求	REMARK 备注
1	Inductance 电感量	1-3	720uH ±5%	
2	Leakage Inductance 漏感	1-3(SHORT SEC PIN)	15uH max	1KHz ,0.25Vrms
3	DC Resistance 直流电阻(mΩ)	1-3	<b>250m</b> Ω max	20±2℃
4	Withstanding	PS	AC3750V(rms)/3s/2mA	
7	Voltage 耐压	SC	AC1500V(rms)/3s/2mA	60Hz
5	Insulation Resistance 绝缘电阻	Coil-Coil 线圈到线圈	100 M Ω MIN AT DC 500V	NF2511A

## 5. INTERNAL CONSTRUCTION 内部结构:



GlobTek, Inc.	PART NO. / 产品型号	PAGE/页码
Grow Teny The	XF 00695	4/5

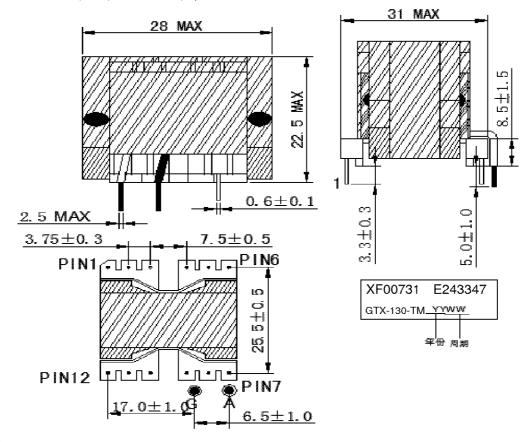
# 6. MATERIAL LIST 材料清单:

No. 序号	NAME 名称	MATERIAL 材料	TYPE 规格	MANUFACTURE 生产商	UL FILE No. UL 档案号
1	CORE	RM2.3KD	PQ2620	YIBIN JINCHUAN ELECTRONICS CO.,LTD	
	磁芯	KP4	1 Q2020	MIANYANG KAIYUAN MAGNETISM MATERIAL CO.,LTD	allo Nillo Add
2	BOBBIN 骨架	PHENOLIC	Т375Ј	CHANG CHUN PLASTICS CO LTD	E59481
3	WIRE 线	2UEW	Φ 0.25 Φ 0.30 Φ 0.32	CHENG DU SOUTH-WEST ELECTRIC CO.,LTD	E178366
4	INSULATION TAPE	POLYSTER FILM TAPE	PZ	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E165111
4	绝缘胶带	IAFE	JY25-A	JINGJIANGJINGYI	E246950
5	FEATURES OF TRIPLE INSULATED	TRW(B)	ф 0.55 、	GREATLEOFLONINDUSTRIAL CO LTD	E211989
<i>y</i>	WIRE 三层绝缘线	TIW-M		Cosmolink	E213764
6	VARNISH 快干漆	EPOXY RESIN	T-4260(a)	TAIHU INSULATING MATERIAL	E228349
	TUBE	PATE	TFL TFT	GREATHOLDING INDUSTRIAL CO LTD	E156256
7	套管			SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	E203950
	SHIELDING	ELDING COPPER FOIL		CHENGDU JINGLU COPPER CO., LTD	
8	屏蔽带	铜带	背胶 T2	WUJIANG KAIQI ECECTRONIC CO., LTD	
9	SOLDER 焊料		99.3Sn/0.7 Cu	YUN NAN TIN CO.,LTD	

	PART NO./ 产品型号	PAGE/页码
GlobTek, Inc.	XF 00695	5/5

No.	Modify matter explain	Date	Rev.	Page
1	新订/NEW	2012-5-14	01	
2	新增脚长为 3.3±0.3	2012-6-4	02	2/5
		PART NO. /	产品型号	PAGE/页码
	GlobTek, Inc.	XF 00	731	1/5

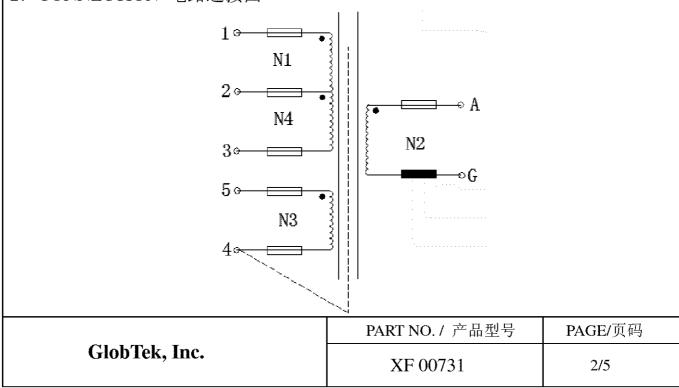




#### 注意/NOTE:

- 1. PIN6, 8, 9, 10, 12 CUT OFF. PIN2 CUT OFF2/3.
- 2、开气隙的一块磁芯装在骨架顶部,平面磁芯用29mm的胶带背胶一层;然后磁芯用12mm胶带包2TS固定。
- 3. 磁芯结合处需点黑胶固定, 共 4 点 (如图)
- 4. 含浸后,成品用 15mm 胶带沿线包方向包 3TS。
- 5. 标签字尾朝 PIN1-6 喷印或贴于产品顶部。
- 6. 飞线具体成型尺寸以 PCB 为准。

## 2. CONNECTION 电路连接图



3. 绕线明细表/Winding: PIN 朝右绕制

序号	Barrie 边墙	-		minal 岩子	Winding 绕	线	Tape 绝缘 胶带	TUBE	套管	备注 Remark
No.	ТОР	PIN	入 In	出 Out	WIRE 线	Ts	Ts	入 In	出 Out	Remark
N1			1	2	Φ0.32×2P 2UEW	25	2	20L	20L	1
E1			~4~		T0.025*8W 背胶	1.1	2	26L		3
N2			A	G	Φ 0.45×2P 三层绝缘线	13	2	17L	17L	1, 2
N3			5	4	Φ0.25×2P 2UEW	5	3	23L	23L	4
N4			2	3	Ф0.30×2Р 2UEW	11	2	22L	22L	1

## 注解:。

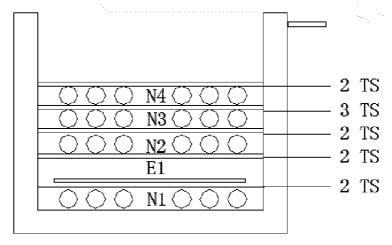
- 1、密绕,首尾线不交叉。
- 2、A,G为飞线,A穿透明套管从PIN7侧进线,G穿黑色套管从PIN9侧出线,具体出线要求参照外观图及PCB。
- 3、E1 铜箔焊点在中间,用 0.35 的引线接于 PIN4 (铜箔不能短路)。
- 4. 均绕。

	PART NO. / 产品型号	PAGE/页码
GlobTek, Inc.	XF 00731	3/5

## 4.ELECTRICAL PERFORMANCE 电气参数

No. 序号	ITEM 条款	TERMINAL 端子	SPEC. 要求	REMARK 备注
1	Inductance 电感量	1-3	720uH ±5%	
2	Leakage Inductance 漏感	1-3(SHORT SEC PIN)	15uH max	1KHz ,0.25Vrms
3	DC Resistance 直流电阻(mΩ)	1-3	250mΩ max	20±2℃
4	Withstanding	PS	AC3750V(rms)/3s/2mA	
7	Voltage 耐压	SC	AC1500V(rms)/3s/2mA	60Hz
5	Insulation Resistance 绝缘电阻	Coil-Coil 线圈到线圈	100 M Ω MIN AT DC 500V	NF2511A

# 5. INTERNAL CONSTRUCTION 內部结构:



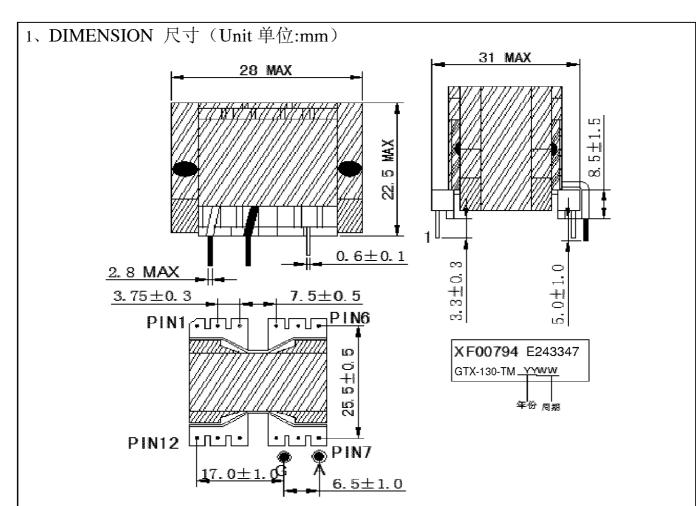
GlobTek, Inc.	PART NO. / 产品型号	PAGE/页码
	XF 00731	4/5

# 6. MATERIAL LIST 材料清单:

No. 序号	NAME 名称	MATERIAL 材料	TYPE 规格	MANUFACTURE 生产商	UL FILE No. UL 档案号
1	CORE	RM2.3KD	PQ2620	YIBIN JINCHUAN ELECTRONICS CO.,LTD	
1	磁芯	KP4	1 Q2020	MIANYANG KAIYUAN MAGNETISM MATERIAL CO.,LTD	Jan. Wa. Add
2	BOBBIN 骨架	PHENOLIC	Т375Ј	CHANG CHUN PLASTICS COLTD	E59481
3	WIRE 线	2UEW	Φ 0.25 Φ 0.30 Φ 0.32	CHENG DU SOUTH-WEST ELECTRIC CO.,LTD	E178366
4	INSULATION			JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E165111
	TAPE	TAPE	JY25-A	JINGJIANGJINGYI	E246950
5	FEATURES OF TRIPLE INSULATED	TRW(B)	ф 0.45 、	GREATLEOFLONINDUSTRIAL CO LTD	E211989
	WIRE 三层绝缘线	TIW-M		Cosmolink	E213764
6	VARNISH 快干漆	EPOXY RESIN	T-4260 (a)	TAIHU INSULATING MATERIAL	E228349
_	TUBE	DONE	TFL TFT	GREATHOLDING INDUSTRIAL CO LTD	E156256
7	套管	PTFE	WF	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	E203950
8	SHIELDING	COPPER FOIL	0.025T*8w 背胶 T2	CHENGDU JINGLU COPPER CO., LTD	
	屏蔽带	铜带 		WUJIANG KAIQI ECECTRONIC CO., LTD	
9	SOLDER 焊料		99.3Sn/0.7 Cu	YUN NAN TIN CO.,LTD	

a	PART NO./ 产品型号	PAGE/页码	
GlobTek, Inc.	XF 00731	5/5	

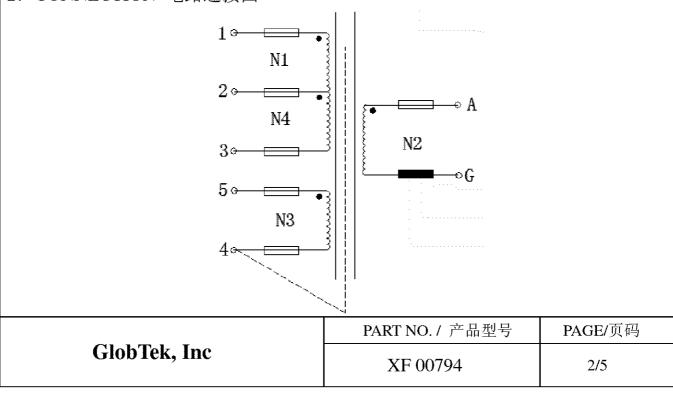
No.	Modify matter explain	Date	Rev.	Page
1	新订/NEW	2012-7-31	A	
				1
	GlobTek, Inc	PART NO. /	PAGE/页码	
		XF 00	794	1/5



#### 注意/NOTE:

- 1. PIN6, 8, 9, 10, 12 CUT OFF. PIN2 CUT OFF2/3.
- 2、开气隙的一块磁芯装在骨架顶部,平面磁芯用29mm的胶带背胶一层;然后磁芯用12mm胶带包3TS固定。
- 3. 磁芯结合处需点黑胶固定, 共 4 点 (如图)
- 4. 含浸后,成品用 15mm 胶带沿线包方向包 3TS。
- 5. 标签字尾朝 PIN1-6 喷印或贴于产品顶部。
- 6. 飞线具体成型尺寸以 PCB 为准。

## 2. CONNECTION 电路连接图



3. 绕线明细表/Winding: PIN 朝右绕制

序号	Barrie 边墙	-		minal 号子	Winding 绕	Winding 绕线		pe 缘 TUBE/套管 带		备注 Remark
No.	TOP	PIN	入 In	出 Out	WIRE 线	Ts	Ts	入 In	出 Out	Kemark
N1			A	G	Φ 0.50×3P 三层绝缘线	3	2	14L	14L	2
E1			3~~		T0.025*8W 背胶	1.1	2	26L		3
N2			1	2	Ф0.22×2Р 2UEW	30	2	24L	24L	1
E2			3~~		T0.025*8W 背胶	1.1	2	26L		3
N3			A	G	Φ0.50×3P 三层绝缘线	3	2	14L	14L	2
N4			5	4	Φ0.22×2P 2UEW	8	2	24L	24L	4
N5			2	3	Ф0.22×2Р 2UEW	15	2	24L	24L	1

## 注解:。

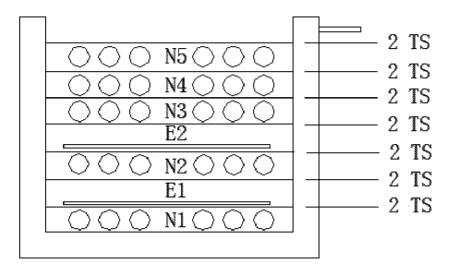
- 1、密绕。
- 2、A, G 为飞线, A 穿透明套管, G 穿黑色套管, 均从 PIN9-10 中间槽出线, 具体飞线成型要求参照外观图及 PCB。
- 3、E1 铜箔焊点在中间,用 0.22 的引线接于 PIN4 (铜箔不能短路)。
- 4. 均绕。

ClobTelz Inc	PART NO. / 产品型号	PAGE/页码	
GlobTek, Inc	XF 00794	3/5	

## 4.ELECTRICAL PERFORMANCE 电气参数

No. 序号	ITEM 条款	TERMINAL 端子	SPEC. 要求	REMARK 备注	
1	Inductance 电感量	1-3	1.5mH ±5%		
2	Leakage Inductance 1-3(SHORT SEC F 漏感		30uH max	1KHz ,0.25Vrms	
3	DC Resistance 直流电阻(mΩ)	1-3	<b>0.8</b> Ω max	20±2℃	
4	Withstanding	PS	AC3750V(rms)/3s/2mA		
7	Voltage 耐压	Voltage 耐压 SC		60Hz	
5	Insulation Resistance 绝缘电阻	Coil-Coil 线圈到线圈	100 M Ω MIN AT DC 500V	NF2511A	

# 5. INTERNAL CONSTRUCTION 内部结构:



GlobTek, Inc	PART NO. / 产品型号	PAGE/页码
Grow Terry The	XF 00794	4/5

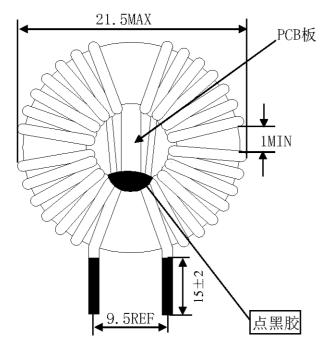
# 6. MATERIAL LIST 材料清单:

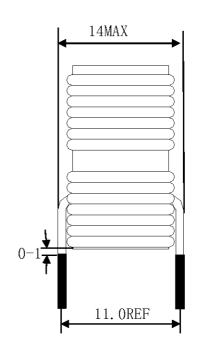
No.	NAME	MATERIAL	TYPE	MANUFACTURE	UL FILE No.
序号	名称	材料	规格	生产商	UL 档案号
	CORE	RM2.3KD	PQ2620	YIBIN JINCHUAN ELECTRONICS CO.,LTD	
ľ	磁芯	KP4	1 Q2020	MIANYANG KAIYUAN MAGNETISM MATERIAL CO.,LTD	alic 105 AM
2	BOBBIN 骨架	PHENOLIC	Т375Ј	CHANG CHUN PLASTICS CO LTD	E59481
3	WIRE 线	2UEW	ф 0.22	CHENG DU SOUTH-WEST ELECTRIC CO.,LTD	E178366
4	INSULATION TAPE	POLYSTER FILM	PZ	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	E165111
	绝缘胶带	TAPE	JY25-A	JINGJIANGJINGYI	E246950
5	FEATURES OF TRIPLE INSULATED	TRW(B)	ф 0.50 、	GREATLEOFLONINDUSTRIAL CO LTD	E211989
	WIRE 三层绝缘线	TIW-M		Cosmolink	E213764
6	VARNISH 快干漆	EPOXY RESIN	T-4260 (a)	TAIHU INSULATING MATERIAL	E228349
	TUBE	TUBE	TFL TFT	GREATHOLDING INDUSTRIAL CO LTD	E156256
7	套管 PTFE —		WF	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	E203950
0	SHIELDING COPPER FOIL		0.025T*8w	CHENGDU JINGLU COPPER CO., LTD	
8	屏蔽带	铜带	背胶 T2	WUJIANG KAIQI ECECTRONIC CO.,LTD	
9	SOLDER 焊料		99.3Sn/0.7 Cu	YUN NAN TIN CO.,LTD	

	PART NO./ 产品型号	PAGE/页码	
GlobTek, Inc	XF 00794	5/5	

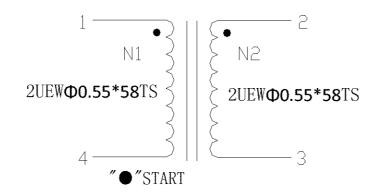
CUSTOMER GlobTek CUSTOMER P/N NF00031

# 1. MECHANICAL DIMENSION: (UNIT: mm)





## 2. SCHEMATIC:



#### NOTE:

- 1. 线圈需绕成"十"字型(如图);
- 2. 各整脚距离以实插PCB板为准。

# 3\ ELECTRICAL CHARACTERISTIC:

3.1 INDUCTANCE:(TH2811, 10KHZ, 0.05V 25°C)

L1 (1~4)=L2 (2~3): 10mH MIN

**BALANCE INDUCTANCE** 

 $|L1-L2| \le 0.5 \text{mH}$ 

3.2 DCR:(AT 25°C,60±5%RH)

 $R1(1\sim4)=R2(2\sim3)$ : 130.0m $\Omega$  MAX

ZHIJIE P/N	1008076
DATE	9/17/2010
PAGE №	Page 1of 2

DIA 00							
CUST	OMER	GlobTek	CUS	TOMER P/N	NF00083		
4. MAT	'ERIAL I	LIST:					
No.	ITEM	MATERIAL		SUPPLIER			
1	CORE	R10K					
2	WIRE	POLYURETHANE ENAMELLED WIRE MW75C (UEW) (2UEW)	та ұ	TA YA ELECTRIC WIRE & CABLE Co., LTD			
3	PCB	FR-4 1.0mm		KINGBOARD LAMINATES	S Co., LTD	E123995	
4	ЕРОХҮ	8558-2 BLACK	JUHEXING CHEMICAL GUANG ZHOU CO.LTD E2				
5	VARNISH	E57	SHENZHEN CHANGXIAN TECHNOLOGY CO., LTD				
ZHIJIE P/N 1003041							

DATE

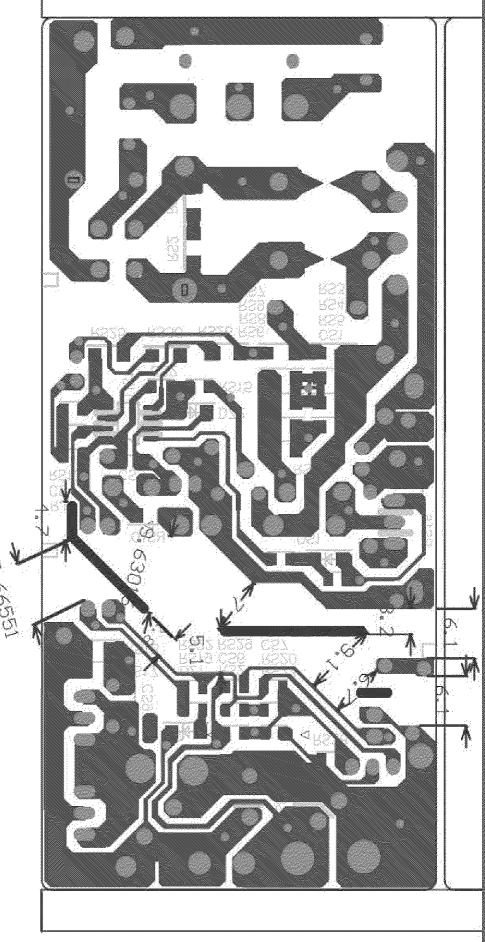
PAGE №

8/7/2010

Page 2of 2



SCH-01



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	REVISION		_
REV	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE、RFS. 18011、MS	01/28/10	НМ
_	CHANGE O/ CABLE FROM 18AWG/1830mm TO 16AWG/1200 mm, & PACKING, ADD CQC TO LABEL, RFS.22423, MS	02/16/12	НМ
C	REMOVE FERRITE、RFS. 22563、MS	03/12/12	НМ

PRELIMINARY



All models under this series are Certified to be in compliance with all the applicable requirements of UL60601-1 2nd Edition, CSA 22.2 No.601.1-M90 and EN 60601-1:A2. Globtek's Medical power supplies are designed to be used in applications that do not connect the output to Patient Circuits directly. The power supply can be used in systems with patient applied parts only when appropriate system level isolation is provided by the end user.

#### 1. NOTES:

DIMENSIONS ARE IN MM UNLESS SPECIFIED OTHERWISE.

#### 2. ELECTRICAL SPECIFICATIONS:

INPUT VOLTAGE: 90-264 VAC INPUT CURRENT: <1.5 A RMS MAX INPUT FREQUENCY: 47 - 63 HZ

OUTPUT VOLTAGE: 12 VDC, NO LOAD TO FULL LOAD, NO MINIMUM LOAD REQUIRED

OUTPUT CURRENT: 5.0 A

**OUTPUT POWER (RATED):** 60 WATTS MAX

OUTPUT RIPPLE VOLTAGE (PEAK TO PEAK): +/-1% OR 150 mV WHICHEVER IS GREATER AT NOMINAL OUTPUT VOLTAGE.

> MEASURED AT 20 MHz BANDWIDTH WITH 0.1µf CERAMIC CAPACITOR IN PARALLEL WITH 10  $\mu f$  ELECTROLYTIC CAPACITOR CONNECTED AT THE END

OF THE OUTPUT CONNECTOR.

OUTPUT REGULATION: ± 5 % OF NOMINAL OUTPUT VOLTAGE,

MEASURED AT O/P CONNECTOR AT NOMINAL LINE

LINE REGULATION: + 2 % MAX AT FULL LOAD

TURN ON/ TURN OFF OVERSHOOT: 5% MAX 500uS MAX RECOVERY TIME FOR 25% TO 50% STEP LOAD

TURN-ON DELAY: 2 SEC MAX AT FULL LOAD

HOLD-UP TIME: 8 mSEC MIN AT NOMINAL INPUT AND FULL LOAD

40 A MAX AT COLD START 120 VAC, 60A MAX COLD START 230VAC INRUSH CURRENT:

SWITCHING FREQUENCY: 100 KHz TYPICAL

OVER-VOLTAGE PROTECTION: PROTECTED, HICCUP WITH AUTO RECOVERY OVER-LOAD: PROTECTED, HICCUP WITH AUTO RECOVERY SHORT CIRCUIT: PROTECTED, HICCUP WITH AUTO RECOVERY

EFFICIENCY: 87% < AVERAGE EFFICIENCY IN ACTIVE MODE, 0.3W > NO-LOAD

EFFICIENCY LEVEL V REGISTERED WITH EPA ENERGY STAR® PROGRAM VERSION 2.0, INTERNATIONAL EFFICIENCY COMPLIANCE:

COMPLIES WITH U.S. ENERGY INDEPENDENCE AND SECURITY ACT OF 2007 (EISA). CALIFORNIA ENERGY COMMISSION (CEC), EU ECO-DESIGN DIRECTIVE 2005/32/EC (EC REGULATION 278/2009), AUSTRALIA / NEW-ZEALAND MEPS (AS/NZS4665), CHINA ENERGY COUNCIL ( CECP ), EUROPEAN CODE OF CONDUCT FOR POWER

SUPPLY EFFICIENCY

OUTPUT INDICATOR: BLUE LED FOR OUTPUT PRESENT INPUT LINE AND NEUTRAL FUSING OTHER PROTECTION:

SAFETY MEDICAL APPROVALS (PENDING): UL60601-1, CUL TO 22.2 # 601, SIQ TO EN60601-1, CE, CB REPORT

AS/NZ TO 60950-1, C-TICK TO 55022, EK TO K60950-1

SAFETY ITE APPROVALS (PENDING): UL60950-1, CUL TO 22.2 # 950, SIQ TO EN60950-1, CE, CB REPORT

AS/NZ TO 60950-1, C-TICK TO 55022, EK TO K60950-1 5656 VDC PRIMARY-SECONDARY (FOR MEDICAL) DIELECTRIC WITHSTAND VOLTAGE:

4242 VDC PRIMARY-SECONDARY (FOR ITE)

LEAKAGE CURRENT: < 0.3 mA AT 240 VAC

COMPLIES WITH EN55011 AND EN55022 CLASS B, VCCI AND FCC PART 15 CLASS B EMI:

WHEN TESTED WITH A RESISTIVE LOAD, BOTH CONDUCTED AND RADIATED EMI

TESTED TO COMPLY WITH EN 60601-1-2:2001, EN61000-3-2. CE MARK:

EN61000-3-3, INCLUDING EN61000-4-2, EN61000-4-3,

EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11

MTRF: 200,000 HOURS AT 25°C AMBIENT TEMPERATURE

OPERATING TEMPERATURE: 0°C TO 40° C STORAGE TEMPERATURE: -40°C TO 80° C

HUMIDITY: 0% TO 90% RELATIVE HUMIDITY

COMPLIES WITH EU 2002/95/EC AND CHINA SJ/T 11363-2006 ROHS:

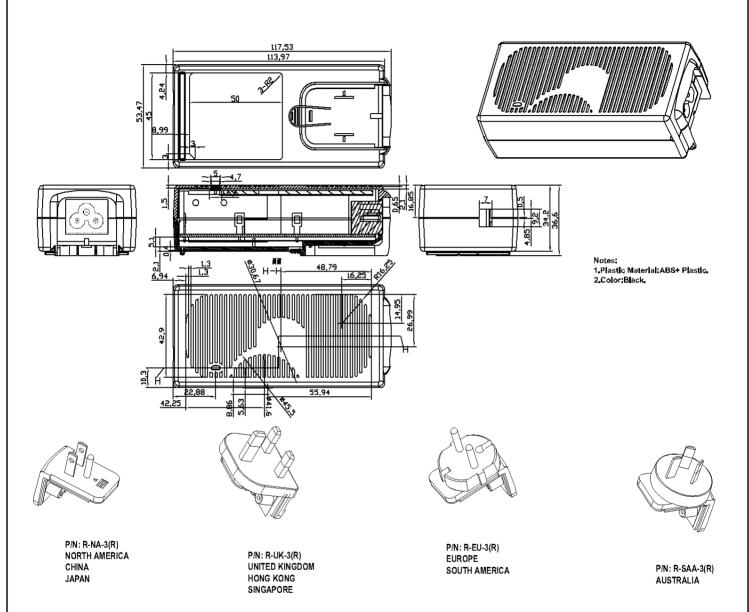
Foot Note: Globtek Inc. will not be liable for the	DASH NO.	PART NO	REV.	REV. DESCRIPTION				NOTES
safety and performance of these power supplies if unauthorized access and repair occurs. End user should consult for the	TABULATION BLOCK							
proper installation instruction the applica- ble UL,CSA and EN standards.		TOLERANCES: DECIMALS ANGULAR .xx =/-0.1 -/-1*		G Glo	bTek, Inc.	186 Veterans Dr. North Tel. 201-784-1000 Fax		
Limitation of Use: Globtek product are not authorized for use			.xxx =/005		ww	w.globtek.com	1el. 201-784-1000 Fax	201./84.0111
as mission critical components in life sup- port, hazardous environment, nuclear or aircraft applications without prior written	INIT.BY: MS	DATE: 01/28/10	MILLIMET. .xx =/- 0. .xxx =/0	.3 -/- 1"	DWG TITLE:	WALL PLUG-IN SWITE N.A., EURO. UK, SAA	CHING POWER SUPPLY, 60V UNIVERSAL INPUT, MEDIC	VATTS,12V@5A AL, CLASS I
	DRAWN: NF	DATE: 01/28/10	FSCN N G, N	lo.: SIZE A	MODEL NO:	GTM91099-6012-T3A		REV. C
	APRVD : HM	01/28/10		E: NONE	PART NO:	RR9LE5000CCP-C	-IM(RV	SHEET 1 OF 4

#### PROPRIETARY INFORMATION:

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#### 3. ENCLOSURE:

UPPER HOUSING: HIGH IMPACT PLASTIC, 94V0 POLYCARBONATE, NON-VENTED, COLOR BLACK LOWER HOUSING: HIGH IMPACT PLASTIC 94V0 POLYCARBONATE, NON-VENTED, COLOR BLACK SIZE:  $117.53 \times 53.47 \times 36.6 \pm 1$  mm



İ	INPUT CONNECTORS OPTIONS	Input cannector
ł.	Pins or Kits must be ordered separately	R-Kit-3(R)
	CLASS I MODEL NEMA 5-15P. AC POWER PLUG. WITH 2 PRONGS, R-NA-J(R)	X
2	AUSTRALIAN CONFIGURATION: SAA 2 PINS PLUS GROUND CLASS I, R-SAA-J(R)	X
3	UK CONFIGURATION: UK 2 PINS PLUS GROUND CLASS I, R-UK-J(R)	X.
4	ELROPEAN CONFIGURATION: EUROPLUG 2 PINS PLUS GROUND, CLASS I, R-EU-3(R)	X

- **4. INDICATOR:** BLUE LED FOR OUTPUT PRESENT
- **5. INPUT CONNECTOR**: IEC320/C6 AC POWER INLET WITH 3 MALE PRONGS

GlobTek, Inc. www.globtek.com  186 Veterans Dr. Northvale, NJ 0 Tel. 201-784-1000 Fax 201.784.0			
OWG TITLE:	WALL PLUG-IN SWIT N.A., EURO. UK, SAA	CHING POWER SUPPLY, 60WA' UNIVERSAL INPUT, MEDICAL	TTS,12V@5A ., CLASS I
MODEL NO:	GTM91099-6012-T3A		REV. C
PART NO:	RR9LE5000CCP-C	-IM(RV	SHEET 2 OF 4

#### PROPRIÉTARY INFORMATION:

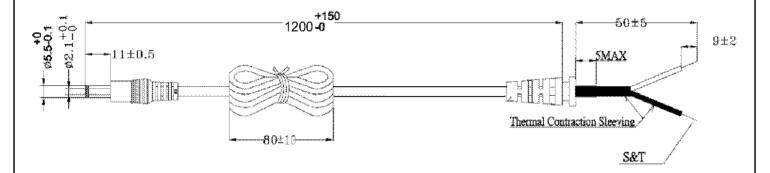
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#### 6. OUTPUT CORD:

1 CONDUCTOR+SHIELD, 16 AWG STRANDED WIRE, ROUND UL# 1185, COLOR BLACK, LENGTH (L) OF CORD: 1200+150, -0 mm. CORD IS MEASURED FROM THE HOUSING TO THE END OF OVERMOLD OF THE CONNECTOR. CABLE IS TO BE MARKED WITH WIRE GAUGE, AND ALL APPLICABLE RATING AND SAFETY APPROVALS.

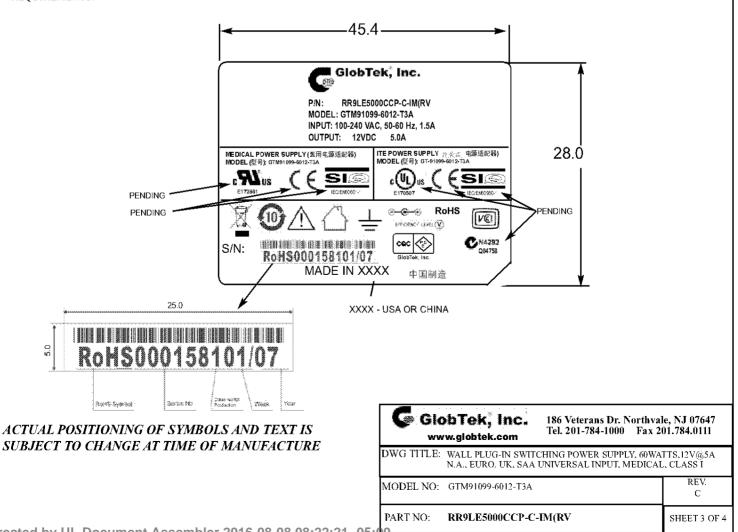
#### 7. OUTPUT CONNECTOR:

STANDARD, STRAIGHT FEMALE BARREL 5.5 x 2.1 x 11 mm WITH CENTER POSITIVE:



#### 8. LABEL:

MATERIAL: .007 (0.18) THICK FLAT THERMAL TRANSFER, IMPRINTABLE, BLACK POLYESTER SHEET WITH WHITE NOMENCLATURE. MANUFACTURER: STEVEN LABEL, MATERIAL I.D. NO.3302-33, UL FILE NO. MH12821(N), UL MATERIAL DESIGNATION FILE NO. GHW332RL. OPTIONAL LABEL MATERIAL CAN BE SUBSTITUTED PROVIDING MATERIAL IS UL LISTED AND COMPLIES WITH APPLICABLE SAFETY REQUIREMENTS.

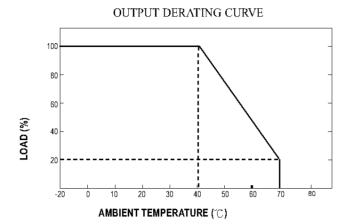


#### MAN-01

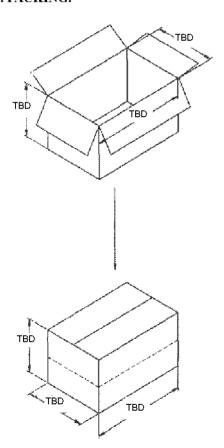
#### PROPRIETARY INFORMATION:

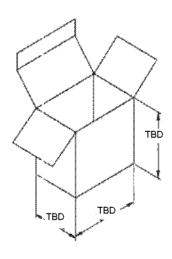
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#### 9. OUTPUT DERATING CURVE:



#### 10. PACKING:





**CARTON SIZE: TBD** 

Q'TY: TBD G.W.: TBD



186 Veterans Dr. Northvale, NJ 07647 Tel. 201-784-1000 Fax 201.784.0111

DWG TITLE: WALL PLUG-IN SWITCHING POWER SUPPLY, 60WATTS, 12V@5A N.A., EURO. UK, SAA UNIVERSAL INPUT, MEDICAL, CLASS I

MODEL NO: GTM91099-6012-T3A C PART NO: RR9LE5000CCP-C-IM(RV

<del>'eated by UL Document Assembler 2016-08-08 08:22:21 -05:0</del>0

File E341351 MIS-01

## **Model List**

#### GTM91099-WWVV-X.X-AB series

M can be "M" or "-" for market identification and not related to safety

WW is the rated output wattage designation, with a maximum value of "60";

VV is the standard rated output voltage designation, with a maximum value of "48";

-X.X denotes the optional deviation, subtracted or added from standard output voltage in 0.1 volt increments or blank to indicate the no voltage different;

VV-X.X together denotes the voltage rang 5V to 36V.

A: T is External/Desktop model;

When A=T, B can be 2 or 3A, 2 presents Class II, 3A presents Class I

GTM91099-WW09-X.X-T2	5-9V	6A	50W	XF00794	
GTM91099-WW15-X.X-T2	9.1-15V	6A	60W	XF00694	Class II
GTM91099-WW24-X.X-T2	15.1-24V	4A	60W	XF00695	Class II
GTM91099-WW48-X.X-T2	24.1-48V	2.5A	60W	XF00731	
GTM91099-WW09-X.X-T3A	5-9V	6A	50W	XF00794	
GTM91099-WW15-X.X-T3A	9.1-15V	6A	60W	XF00694	Class I
GTM91099-WW24-X.X-T3A	15.1-24V	4A	60W	XF00695	Class I
GTM91099-WW48-X.X-T3A	24.1-48V	2.5A	60W	XF00731	

File E341351 MIS-04

# Label for GTM91099-T3A







Issue Date: 2013-02-05 Page 1 of 3 Report Reference # E341351-A59-UL

Revision Date: 2016-08-05 Test Record

#### Test Record No. 1

Only limited tests are consider necessary for model GTM91099-WWVV-X.X-AB series, due to identical to the same model in section E341350-A20.

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Power Supply Reference Page	
Guide Information Page - Maximum Output Voltage, Current, and Volt Ampere Measurement (1.2.2.1)	
Limited Power Source Measurements (2.5)	
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	

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

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

<u>Type</u>	Supplement Id	<u>Description</u>
Datasheet	2-01	Datasheet DS-1
Datasheet	2-02	Datasheet DS-2

Issue Date: 2013-02-05 Page 2 of 3 Report Reference # E341351-A59-UL

Revision Date: 2016-08-05 Test Record

#### Test Record No. 2

Only limited tests were considered necessary for Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A due to similarities to previously tested construction except for employing the following different:

- (1) Evaluate the Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A in Maximum Room Ambient Temperature 70 degree C;
- (2) Add the Label Artwork for Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A in Enclosure;
- (3) Add "Optional" for Fuse (FS2).

See Test Record No. 1 for details.

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Power Supply Reference Page	
Input: Single-Phase (1.6.2)	
Stress Relief (4.2.7, 4.2.1)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	
Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)	
Power Supply Output Short-Circuit/Overload (5.3.7)	

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

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

<u>Type</u>	Supplement Id	<u>Description</u>
Attachment	2-03	CRD
Datasheet	2-04	DataSheet

Issue Date: 2013-02-05 Page 3 of 3 Report Reference # E341351-A59-UL

Revision Date: 2016-08-05 Test Record

### **Test Record No. 3**

No test was considered necessary for correcting typo errors and adding missing components.

File E341351 03-ATT-03

Project No. 4787098106 File E341351 Page 1

Compliance Review

Conducted by: Gato Lin/Clifton Ho Gato Lin/Clifton Ho Date 2015-10-19

Printed Name Signature

When a measurement is needed to determine compliance with a clause the actual measured value must be recorded in the space provided. A simple 'Yes' / 'No' response is not sufficient. (See 'UL Certification Program - Work Instructions for Completion of Construction Review Datasheets (CRD) For C-UL Mark' (00-OP-W0038) for details).

CONSTRUCTION COMPLIANCE REVIEW RECORD

Sample Identification -

Sample Card No.		Sampl e No.	Manufacturer, Product Identification and Ratings
2218834	2015-10-02	S1	GLOBTEK (HONG KONG) LTD, Switching Power Adapter, MODEL: GTM91099-3009-4.0-T2

Measurement Instrument Information -

Inst. ID No.	Instrument Type	Function/Range	Last Cal. Dat	e Next Cal. Date	
See LPM for details					

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

Inst. ID No.	Make/Model/Serial Number/Asset No.

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

#### Remark:

No construction review has been required due to only employing with the following revision:

- (1) Evaluate the Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A in Maximum Room Ambient Temperature 70 degC;
- (2) Add the Label Artwork for Model GTM91099-3009-4.0-T2 and Model GTM91099-3009-4.0-T3A in Enclosure:
- (3) Add "Optional" for Fuse (FS2).

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File E341351 03-ATT-03

Project No. 4787098106 File E341351 Page 2

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CONSTRUCTION COMPLIANCE REVIEW:

The sample was reviewed for compliance with the construction requirements in the standard indicated below and a complete record including measurements to support compliance with those requirements is detailed in Report Reference No. E341351-A59.

CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 2
Standard UL 60950-1, 2nd Edition, 2014-10-14 Edition 2

ULS-02377-AAAG-ConstructionReview-2004 Form Issued: 2004-12-21 Form Page 2 Form Revised: 2007-04-03

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