

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (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:	GT-41082-WWVV-X.X-TZ series: WW is the rated output wattage designation, with a maximum value of "18"; VV is the standard rated output voltage designation, with a maximum value of "15"; X.X designates the optional deviation, X.X should be VV minus the rated voltage, and it can be blank; Z presents different inlets, where "3" presents C14, "3A" presents C6.
Rating:	I/P: 100-240 Vac, 50-60 Hz, 0.5 A For model GT-41082-1505-T3 and GT-41082-1505-T3A: O/P: 5 Vdc, 3 A For Model GT-41082-1805-T3 and GT-41082-1805-T3A: O/P: 5 Vdc, 3.6 A For model GT-41082-1806-T3 and GT-41082-1806-T3A: O/P: 6 Vdc, 3 A For Model GT-41082-1812-T3 and GT-41082-1812-T3A: O/P: 12 Vdc, 1.5 A For model GT-41082-1815-T3 and GT-41082-1815-T3A: O/P: 15 Vdc, 1.2 A
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.

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

Prepared by: Angela Au

Reviewed by: William R. Carney

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

Detachable power supply cord, electronic components mounted on PWB and housed in a plastic enclosure.

Model Differences

All models are similar to each other except for transformer secondary winding turns, secondary components (Inductor, L1 and Resistor, R17, R18) and output rating. (See Enclosure 7-01 for model difference.) Models GT-41082-WWVV-X.X-T3A are similar to models GT-41082-WWVV-X.X-T3 except for inlet type.

Technical Considerations

- Equipment mobility : movable
- Operating condition : continuous
- Mains supply tolerance (%) : +10%, -10%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)
- Mass of equipment (kg) : 0.15 kg max.
- Protection against ingress of water : IP X0
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 40 degree C
- The means of connection to the mains supply is: Pluggable A , Detachable power cord ,
- 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, CY2
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Output port
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Additional Information

This report is copied from report

Revision: 46386.23327

USL/CNL - Transfer the File E170507, Vol. X7, E170507-A39 to the File E341351, Vol. X8, E341351-A62.

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Ratings	Ratings (voltage, frequency/dc, current)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
LPS	(Optional) Marked "LPS" or "Limited Power Supply".

Special Instructions to UL Representative

Inspect the transformer(s) listed in BD1.1 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 be conducted at the component manufacturer.

Production-Line Testing Requirements						
<u>Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.</u>						
Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All models	Transformer T1	N/A	Primary to Secondary	300 0	4242	1
<u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u>						
--						
<u>Electric Strength Test Exemptions - This test is not required for the following models:</u>						
--						
<u>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:</u>						
--						
<u>Sample and Test Specifics for Follow-Up Tests at UL</u>						
Model	Component	Material	Test	Sample(s)	Test Specifics	
--	--	--	--	--	--	

TABLE: List of Critical Components

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
Enclosure	Sabic Innovative Plastics Us L L C	SE1X	Two pieces construction, secured together by ultrasonic welding, rated V-1 or better, 105 degree C min., 2.0 mm thick min.	QMFZ2	UL
Appliance Inlet (For GT-41082-WWVV-X.X-T3A)	Tecx-Unions Technology Corp	TU-333	Rated 250Vac, 2.5 A, 105 degree C min.	AXUT2	UL
Appliance Inlet (Alternate) (For GT-41082-WWVV-X.X-T3A)	Supercom Wire & Cable Co Ltd	SC-14	Rated 250Vac, 2.5 A, 75 degree C min.	AXUT2	UL
Appliance Inlet (Alternate) (For GT-41082-WWVV-X.X-T3)	Tecx-Unions Technology Corp	TU-301-SP	Rated 250Vac, 10A, 105 degree C min.	AXUT2	UL
Appliance Inlet (Alternate) (For GT-41082-WWVV-X.X-T3)	Supercom Wire & Cable Co Ltd	SC-8R Series	Rated 250Vac, 10A 75 degree C	AXUT2	UL
Fuse (F1)	Various	Various	Listed, T1.0A, 250Vac	JDYX	UL
Fuse (F1) (Alternate)	Conquer Electronics Co Ltd	MST	Rated T1.0A, 250Vac.	JDYX2	UL
Fuse (F1) (Alternate)	Ever Island Electric Co Ltd & Walter Electric	2010	Rated T1.0A, 250Vac.	JDYX2	UL
Fuse (F1) (Alternate)	COOPER BUSSMANN INC	SS-5	Rated T1.0A, 250Vac.	JDYX2	UL
Fuse (F1) (Alternate)	Bel Fuse Inc	RST	Rated T1.0A, 250Vac.	JDYX2	UL
Line choke (NF1)* (optional)	--	NF00030	See enclosure 4-05 for details, class 130 degree C minimum.	--	--
- Coil	--	--	130 degree C, ANSI TYPE MW28 or MW75 or MW79 or MW80	OBMW2	UL
- Core	--	--	Ferrite, dimension 15.1mm by 10.1mm by 3.0mm	--	--
- Bobbin	Sumitomo Bakelite	PM-9820	Phenolic, rated V-0, max 150 degree C, measured	QMFZ2	UL

Object/part or Description	Manufacturer/trademark	type/model	technical data	CCN	Marks of Conformity
	Co Ltd		min 0.8 mm thick		
- Bobbin (alternate)	Plastics Co Ltd	T375J	Phenolic, rated V-0, max 150 degree C, measured min 0.8 mm thick	QMFZ2	UL
Bleeder Resistor (R1, R2)	--	--	Each Rated 1.5M ohm, 1/4 W, in series, SMD type.	--	--
X-Capacitor (CX1) (Optional)	Cheng Tung Industrial Co Ltd	CTX	Max. 0.22 uF, min. 275 Vac, 100 degree C, X1 type	FOWX2	UL
X-Capacitor (CX1) (Optional) (Alternate)	Tenta Electric Industrial Co Ltd	MEX	Max. 0.22 uF, min. 275 Vac, 100 degree C, X1 type	FOWX2	UL
X-Capacitor (CX1) (Optional) (Alternate)	Ultra Tech Xiphi Enterprise Co Ltd	HQX	Max. 0.22 uF, min. 275 Vac, 100 degree C, X1 type	FOWX2	UL
X-Capacitor (CX1) (Optional) (Alternate)	Carli Electronics Co Ltd	MPX	Max. 0.22 uF, min. 275 Vac, 100 degree C, X1 type	FOWX2	UL
Bridge Diode (D1, D2, D3, D4)	--	--	Rated 1A, minimum 600 V.	--	--
Storage Capacitor (C1)	--	--	Rated 400 V, max 33uf, min 105 degree C, provided with integral pressure relief	--	--
Transistor (Q1)	--	--	Rated 3.5A, minimum 600 V.	--	--
Semiconductor IC (U1)	--	--	Rated 32V, 3.0 mA.	--	--
Y capacitor (CY1) (Optional)	Success Electronics Co Ltd	SE	Max. 1000pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Y capacitor (CY1) (Optional) (Alternate)	TDK Corp	CD	Max. 1000pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Y capacitor (CY1) (Optional) (Alternate)	Walsin Technology Corp	AH	Max. 1000pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Y capacitor (CY1) (Optional) (Alternate)	Haohua Electronic Co	CT 7	Max. 1000pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Y capacitor (CY2) (Optional)	Success Electronics Co Ltd	SE	Max. 100pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Y capacitor (CY2) (Optional)	TDK Corp	CD	Max. 100pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL

Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
(Alternate)					
Y capacitor (CY2) (Optional) (Alternate)	Walsin Technology Corp	AH	Max. 100pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Y capacitor (CY2) (Optional) (Alternate)	Haohua Electronic Co	CT 7	Max. 100pF, min. 250 Vac, 125 degree C, Y1 type	FOWX2	UL
Optical Isolators (PC1)	Lite-On Technology Corp	LTV-817	Isolation: 5000 Vac, minimum 100 degree C.	FPQU2	UL
Optical Isolators (PC1) (Alternate)	Sharp Corp Electronic Components And Devices Group	PC817	Isolation: 5000 Vac, minimum 100 degree C.	FPQU2	UL
Optical Isolator (PC1) (alternate)	Everlight Electronics Co Ltd	EL817	Isolation: 5000 Vac, minimum 100 degree C.	FPQU2	UL
Optical Isolator (PC1) (alternate)	COSMO ELECTRONICS CORP	K1010	Isolation voltage minimum 3000 Vac, minimum 100 degree C.	FPQU2	UL
Transformer (T1) For GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A, GT-41082-1806-T3A,		XF00577	See below	--	--
Transformer (T1) For GT-41082-1812-T3, GT-41082-1815-T3, GT-41082-1812-T3A, GT-41082-1815-T3A		XF00578	See below	--	--
- Insulation system for Transformer (T1)*		130-1	Insulation system Class B (130 degree C)	OBJY2	UL
- Core	--	--	EE type, Ferrite, dimension 22.7mm by 6.5mm by 19.6mm	--	--
- Coil	Various	Various	130 degree C, ANSI TYPE	OBMW2	UL

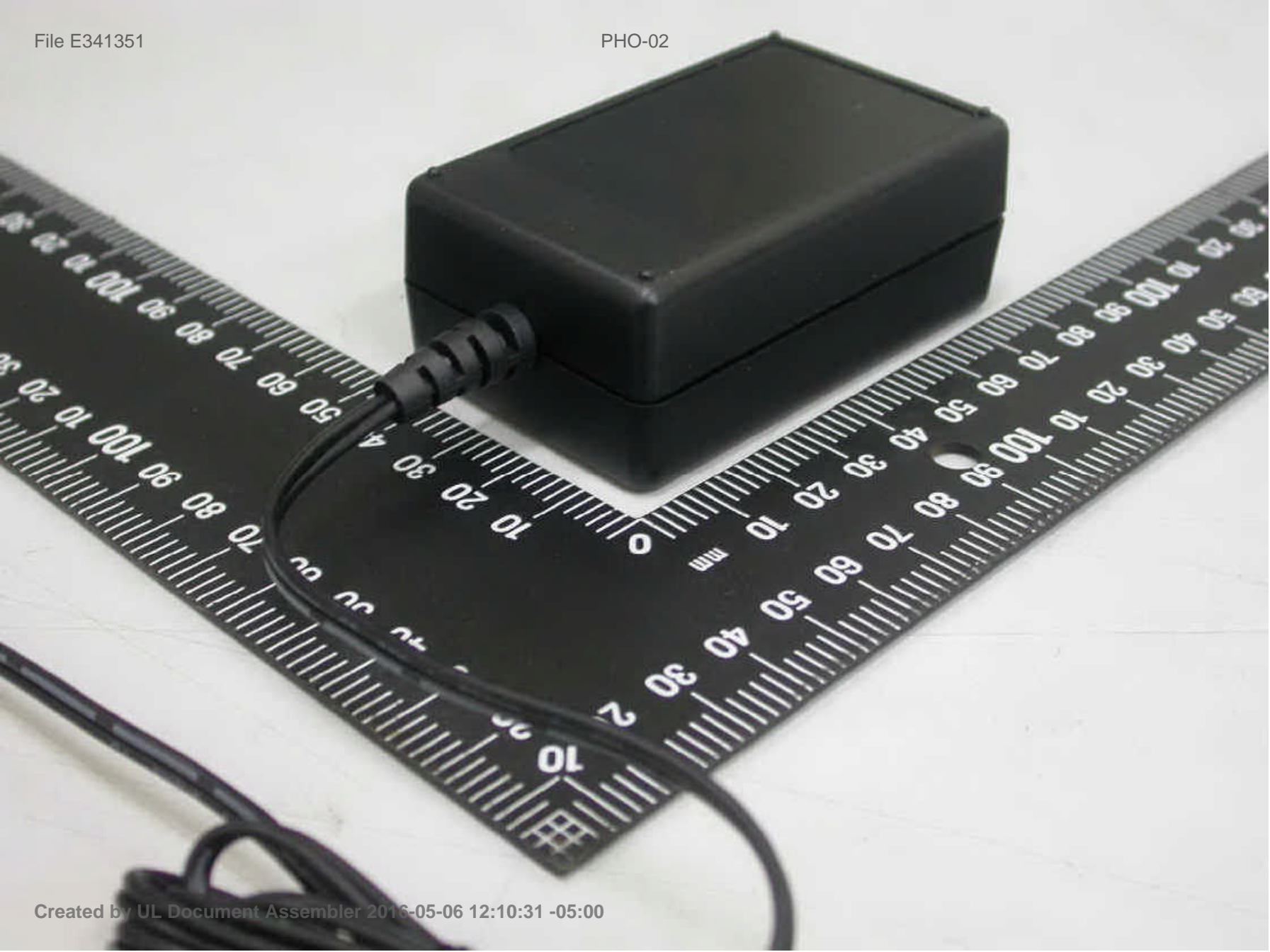
Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
			MW28 or MW75 or MW79 or MW80		
- Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150degree C, Phenolic, thickness 0.8mm minimum	QMFZ2	UL
- Bobbin (Alternate)	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150degree C, Phenolic, thickness 0.71mm minimum	QMFZ2	UL
- Tubing/Sleeving	Great Holding Industrial Co. Ltd.	TFL, TFS, TFT	Rated 200 degree C, 600V max.	YDPU2	UL
- Triple Insulated Wire	Great Leoflon Industrial Co. Ltd.	TRW-B	130 degree C	OBJT2	UL
- Varnish	John C. Dolph Co.	BC-346A	Rated minimum 200 degree C.	OBOR2	UL
- Varnish (Alternate)	P D GEORGE/VIKING	V1630FS	Rated minimum 130 degree C.	OBOR2	UL
- Insulation Tape	3M Company	1350T-1	130 degree C.	OANZ2	UL
- Insulation Tape (Alternate)	3M Company	1350F(#)	130 degree C.	OANZ2	UL
- Insulation Tape (Alternate)	3M Company	44	130 degree C.	OANZ2	UL
- Insulation Tape (Alternate)	Bondtec Pacific Co., Ltd.	370S	130 degree C.	OANZ2	UL
Internal Glue Materials	Various	Various	Rated V-2 minimum.	QMFZ2	UL
Internal Plastic Part Materials	Various	Various	Rated V-2 minimum.	QMFZ2	UL
Output cord	Various	Various	FEP, PTFE, PVC, TFE, Neoprene, Polyimide, VW-1 or FT-1, max 3.05 m in length, min 300 V, 80 degree C	AVLV2. ZJCZ	UL
PWB	Various	Various	V-1 or better, minimum 130 degree C.	ZPMV2	UL
Label	Various	Various	Minimum 75 degree C. if maximum surface temperature not specified.	PGDQ2, PGJ12	UL
Earthing/ bonding	--	--	Green/Yellow, 18 AWG minimum, one end mechanically secured then soldered to earthing	--	--

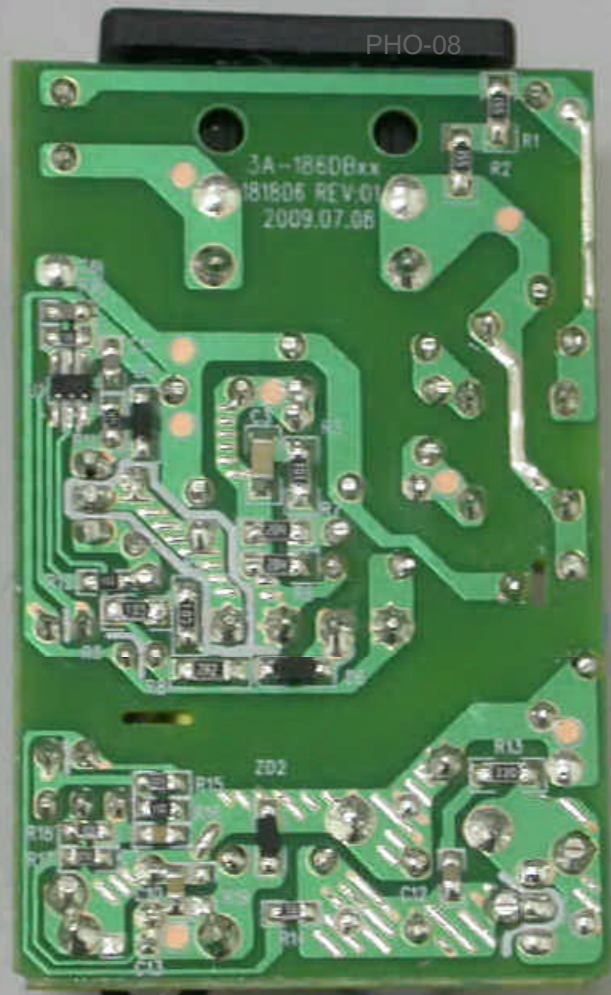
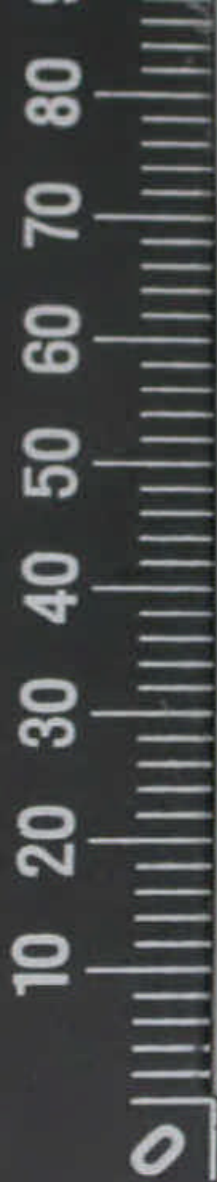
Object/part or Description	Manufacturer/ trademark	type/model	technical data	CCN	Marks of Conformity
			terminal of Appliance Inlet and wrapped by tubing; the other end soldered to PWB and fixed by glue, See enclosure 3-07 for detail.		
Insulating Tubing/Sleeving	Various	Various	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; 105 degree C, 300V.	UZFT2, YDPU2, or YDTU2	UL
Heat Sink (HS2) only for models GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A, GT-41082-1806-T3A	--	--	Aluminum, see enclosure 4-02 for detail	--	--
Power supply cord (Optional)	Various	Various	Detachable, max. 4.5 m (14.76 ft.) long, min. 1.5m, Type SVT or SJT or SPT-2 flexible cord, rated min. 125 V if one end terminated in NEMA 5-15P grounding type attachment plug; rated minimum 250 V if one end terminated in NEMA 6-15P grounding type attachment plug, the other end in an appliance coupler	ELBZ	UL

Enclosures

<u>Type</u>	<u>Supplement Id</u>	<u>Description</u>
Photographs	3-01	Overall View - 1 for Models GT-41082-WWVV-X.X-T3
Photographs	3-02	Overall View - 2 (For Models GT-41082-WWVV-X.X-T3 and GT-41082-WWVV-X.X-T3A)
Photographs	3-03	Internal View - 1 for models GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A and GT-41082-1806-T3A
Photographs	3-04	Internal View - 2 for models GT-41082-1812-T3, GT-41082-1815-T3, GT-41082-1812-T3A and GT-41082-1815-T3A
Photographs	3-05	Component side of PWB for models GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A and GT-41082-1806-T3A
Photographs	3-06	Solder side of PWB for models GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A and GT-41082-1806-T3A
Photographs	3-07	Component side of PWB for models GT-41082-1812-T3, GT-41082-1815-T3, GT-41082-1812-T3A and GT-41082-1815-T3A
Photographs	3-08	Solder side of PWB for models GT-41082-1812-T3, GT-41082-1815-T3, GT-41082-1812-T3A and GT-41082-1815-T3A
Photographs	3-09	Overall View for Models GT-41082-WWVV-X.X-T3A
Diagrams	4-01	Enclosure Dimension
Diagrams	4-02	Heat Sink (HS2) only for models GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A and GT-41082-1806-T3A
Diagrams	4-03	Transformer T1 (XF00577) for models GT-41082-1505-T3, GT-41082-1805-T3, GT-41082-1806-T3, GT-41082-1505-T3A, GT-41082-1805-T3A and GT-41082-1806-T3A
Diagrams	4-04	Transformer T1 (XF00578) for models GT-41082-1812-T3, GT-41082-1815-T3, GT-41082-1812-T3A and GT-41082-1815-T3A
Diagrams	4-05	Noise Filter (NF1) spec.
Schematics + PWB	5-01	PWB Layout
Manuals		
Miscellaneous	7-01	Model difference list







3A-186DBxx
181806 REV.01
2009.07.08

R1
R2

R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R47
R48
R49
R50
R51
R52
R53
R54
R55
R56
R57
R58
R59
R60
R61
R62
R63
R64
R65
R66
R67
R68
R69
R70
R71
R72
R73
R74
R75
R76
R77
R78
R79
R80
R81
R82
R83
R84
R85
R86
R87
R88
R89
R90
R91
R92
R93
R94
R95
R96
R97
R98
R99
R100

ZD2

R13

C1

C2

mm

10 20

40 50

60 70

80 90

100



Input Rating: Input Voltage: 100-240 Vac
 Frequency: 50-60 Hz
 Input Current: 0.5 A

GT-41082-WWVV-X.X-TZ Model Differences

Model	Input (V)	Output		Watt (W)	Resistor		Transformer (T1)
		Voltage(V)	Current(A)		R17(Ohm)	R18(Ohm)	
GT-41082-1505-T3	100-240	5	3	15	6.65K±1%	6.2K±1%	XF00577
GT-41082-1805-T3	100-240	5	3.6	18	6.65K±1%	6.2K±1%	
GT-41082-1806-T3	100-240	6	3	18	8.25K±1%	5.6K±1%	
GT-41082-1812-T3	100-240	12	1.5	18	8.25K±1%	2.15K±1%	XF00578
GT-41082-1815-T3	100-240	15	1.2	18	12.7K±1%	2.49K±1%	
GT-41082-1505-T3A	100-240	5	3	15	6.65K±1%	6.2K±1%	XF00577
GT-41082-1805-T3A	100-240	5	3.6	18	6.65K±1%	6.2K±1%	
GT-41082-1806-T3A	100-240	6	3	18	8.25K±1%	5.6K±1%	
GT-41082-1812-T3A	100-240	12	1.5	18	8.25K±1%	2.15K±1%	XF00578
GT-41082-1815-T3A	100-240	15	1.2	18	12.7K±1%	2.49K±1%	

Test Record No. 1

Tests on Models GT-41082-WWVV-X.X-TZ series are not required due to transferring file from Applicant Globtek Inc., E170507, Vol. X7, E170507-A39.