

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:	GT-41062 Series: GT-41062-1305, GT-41062-1805, GT-41062-1806, GT-41062-1807, GT-41062-1809, GT-41062-1812, GT-41062-1815, GT-41062-1818, GT-41062-1820, GT-41062-1824																				
Rating:	<p>The models listed here are the standard models upon which custom versions are based. Custom units are obtained using an optional "-X.X" suffix. See Model Differences for details.</p> <p>Input: 100-240 Vac, 50-60 Hz, 0.6 A.</p> <p>Output:</p> <table><tr><td>GT-41062-1305</td><td>5.0 VDC @ 2.6 A</td></tr><tr><td>GT-41062-1805</td><td>5.0 VDC @ 3.2 A</td></tr><tr><td>GT-41062-1806</td><td>6.0 VDC @ 3.0 A</td></tr><tr><td>GT-41062-1807</td><td>7.0 VDC @ 2.57 A</td></tr><tr><td>GT-41062-1809</td><td>9.0 VDC @ 2.0 A</td></tr><tr><td>GT-41062-1812</td><td>12.0 VDC @ 1.5 A</td></tr><tr><td>GT-41062-1815</td><td>15.0 VDC @ 1.2 A</td></tr><tr><td>GT-41062-1818</td><td>18.0 VDC @ 1.0 A</td></tr><tr><td>GT-41062-1820</td><td>20.0 VDC @ 0.9 A</td></tr><tr><td>GT-41062-1824</td><td>24.0 VDC @ 0.75 A</td></tr></table> <p>Alternate: GT-41062-1812 12.0 VDC @ 1A with Tma = 50 Degree C. See Model Differences for details regarding ratings of custom models employing the "-X.X" suffix.</p>	GT-41062-1305	5.0 VDC @ 2.6 A	GT-41062-1805	5.0 VDC @ 3.2 A	GT-41062-1806	6.0 VDC @ 3.0 A	GT-41062-1807	7.0 VDC @ 2.57 A	GT-41062-1809	9.0 VDC @ 2.0 A	GT-41062-1812	12.0 VDC @ 1.5 A	GT-41062-1815	15.0 VDC @ 1.2 A	GT-41062-1818	18.0 VDC @ 1.0 A	GT-41062-1820	20.0 VDC @ 0.9 A	GT-41062-1824	24.0 VDC @ 0.75 A
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GT-41062-1820	20.0 VDC @ 0.9 A																				
GT-41062-1824	24.0 VDC @ 0.75 A																				
Applicant Name and Address:	GLOBTEK (HONG KONG) LTD UNIT 1402, BENSON TOWER 74 HUNG TO RD KWUN TONG KOWLOON HONG KONG																				

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Report Reference #

E341351-A13-UL

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.

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

Prepared by: Paul Wan / Steven Doo

Reviewed by: Brian Wong

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

The covered products are power supply units intended to supply power to IT Equipment.

Model Differences

All units are similar, differing only in minor changes to the transformer (number of winding turns) and the low voltage output circuitry, resulting in various output power ratings. Specific models and ratings are covered as defined by the nomenclature below.

Model number nomenclature is:
"GT-41062-AABB-X.X",

where:

GT-41062 denotes the GlobTek Series code,

AA denotes the maximum rated wattage, either "13" or "18",

BB denotes the standard maximum rated voltage, which may be 5.0-24.0 Vdc as shown in the ratings table, and

X.X - optional - denotes the voltage differentiator, where the value of X.X is subtracted from standard output voltage ("BB", above) in 0.1 volt increments - not applicable to Model GT-41062-1305.

Note - Units employing the voltage differentiator will have the model number marked according to the nomenclature above, however, the marked output voltage rating will be a value which is "X.X" less than that shown in the model number, e.g Model GT-41062-1824-0.5 would be marked as such, with a marked output rating of 23.5 Vdc at 0.75 A.

Technical Considerations

- Equipment mobility : direct plug-in
- 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 : +6%, -10%
- Tested for IT power systems : No

- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class II (double insulated)
- 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) : <=2000 m
- Altitude of test laboratory (m) : <=2000 m
- Mass of equipment (kg) : 0.13
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C (Alternate for Model GT-41062-1812 with 12.0 Vdc/1A: 50 Degree C.)
- The means of connection to the mains supply is: Pluggable A (DPIU)
- The product is intended for use on the following power systems: TN
- The equipment disconnect device is considered to be: Plug
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): Power supply outputs
- The unit was also evaluated to the maximum acceptable moment, centre of gravity, dimensions, weight of the unit, and blade securement in accordance with UL 1310.

Additional Information

Revision: SR8227620-T001

Transfer File from the File E336418, Vol. X2, E336418-A12 into the File E341351, Vol. X3, E341351-A13.

Revision: 13CA34516

1. Add alternate enclosure material Type SE1X and CX7211 (GG)
2. Add alternate fuse Type 2010, SMT
3. Add alternate Y-capacitor Type CT7, JX and AH
4. Add alternate insulation system designated GTX-130-TM, ZT-130 and BOAM-01
5. Upgrade standard to UL60950-1, 2nd Edition, dated 2011-12-19 and CSA C22.2 No. 60950-1-07, 2nd Edition, dated 2011-12-19.

Revision project 4787876899

-Add alternate model GT-41062-1805 which is previously GT-41062-1305 - 5V@3.2A;

-Update the output rating of previous model GT-41062-1305 from 5V@3.2A to 5V@2.6A.

-Insulation system for T1: Update manufacturer name from WUXI ZHONGTONG ELECTRONICS CO LTD (E315275) to WUXI HAOPUWEI ELECTRONICS CO LTD;

Additional Standards

The product fulfills the requirements of: N/A

Markings and instructions

Clause Title	Marking or Instruction Details
1.7.1 Power rating - Ratings	Ratings (voltage, frequency/dc, current)
1.7.1 Power	Listee's or Recognized company's name, Trade Name, Trademark or File

rating - Company identification	Number
1.7.1 Power rating - Model	Model Number
1.7.1 Power rating - Class II symbol	Symbol for Class II construction
Special Instructions to UL Representative	
N/A	

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
n/a	n/a	n/a	n/a	n/a	n/a	n/a
<u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u>						
GT-41062-1305, GT-41062-1806, GT-41062-1807, GT-41062-1809, GT-41062-1812, GT-41062-1815, GT-41062-1818, GT-41062-1820, GT-41062-1824						
<u>Electric Strength Test Exemptions - This test is not required for the following models:</u>						
n/a						
<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>						
n/a						
<u>Sample and Test Specifics for Follow-Up Tests at UL</u>						
Model	Component	Material	Test	Sample(s)	Test Specifics	
n/a	n/a	n/a	n/a	n/a	n/a	n/a

1.5.1	TABLE: list of critical components					Pass
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Enclosure	Sabic Innovative Plastics B V	SE1, SE1X	V-1 min., 105 degree C, overall measured 43 by 74 by 33.7 mm, min. 1.9 mm thick	QMFZ2	UL	3-01
Enclosure (Alternate)	Sabic Innovative Plastics B V	CX7211(GG)	V-1 min., 90 degree C, overall measured 43 by 74 by 33.7 mm, min. 1.9 mm thick	QMFZ2	UL	
Plastic Material for AC Plug	Sabic Innovative Plastics B V	SE1, SE1X	V-1 min., 105 degree C, min. 1.9 mm thick	QMFZ2	UL	3-01
Plastic Material for AC Plug (Alternate)	Sabic Innovative Plastics B V	CX7211(GG)	V-1 min., 105 degree C, min. 1.9 mm thick	QMFZ2	UL	
Fuse (F1)	--	--	T2A, 250 V ac	JDYX	UL	3-06
Fuse (F1) (Alternate)	Wickmann-Werke GMBH	392	T2A, 250 V ac	JDYX2	UL	3-06
Fuse (F1) (Alternate)	Conquer Electronics Co., Ltd.	MST	T2A, 250 V ac	JDYX2	UL	5-01
Fuse (F1) (Alternate)	Save Fusetech Inc	SS-5,	T2A, 250 V ac	JDYX2	UL	3-06
Fuse (F1) (Alternate)	Walter Electronic Co Ltd	2010	T2A, 250 V ac	JDYX2	UL	
Fuse (F1) (Alternate)	SHENZHEN LANSON ELECTRONICS CO LTD	SMT	T2A, 250 V ac	JDYX2	UL	
Varistor (ZNR)	--	--	SPD type 1, 2 or 3. Min. 300Vac, Min. 385Vdc	VZCA2	UL	3-06
Resistor (RA, RB)	--	--	Max. 2Mohm, min. 1/4W	--	--	3-06
X-Capacitor (CX1) (Optional)	--	--	Max. 0,22 uF, min. 250 Vac, 100 degree C. Provided with 21 days damp heat condition according to IEC or EN60384-14.	FOWX2	UL	3-06
Line Choke (NF1) (Optional)	Top Nation Electronic Ltd	NF00030	130 degree C	--	--	4-01
Line Choke (NF1)	GlobTek	NF00030	130 degree C	--	--	

(Optional) (Alternate)						
Line Choke (NF1) (Optional) (Alternate)	Various	Various	130 degree C	--	--	
Bridge Diode (BD1)	--	--	Min. 600V, min. 1A	--	--	
Y-Capacitor (CY1) (optional)	WALSIN TECHNOLOGY CORP	AH	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	3-06
Y-Capacitor (CY1) (optional), alternate	JYA-NAY CO LTD	JN	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	MURATA MFG CO LTD	KX	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	TDK CORP	CD	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	SUCCESS ELECTRONICS CO LTD	SB SE	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	WELSON INDUSTRIAL CO LTD	WD	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	HAOHUA ELECTRONIC CO	CT7	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	JERRO ELECTRONICS CORP	JX	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	MITSUBISHI MATERIALS CORP	AH	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C.	FOWX2	UL/VDE	
Y-Capacitor (CY1) (optional), alternate	--	--	Max. 4700pF, min. 250Vac, subclass Y1. min. 125 Degree C. Provided with 21 days damp heat condition according to IEC or EN60384-14	FOWX2	UL/VDE	
Transistor (Q1)	--	--	Min. 600V, min. 7A	--	--	3-06

Electrolytic Capacitor (C1)	--	--	Max. 33uF, min. 400V, 105 degree C	--	--	3-06
Optical Isolator (U2)	--	--	Provides Reinforced Insulation, minimum 0.4 mm, isolation voltage 5000 Vac	FPQU2	UL	3-06
Transformer (T1) (for Models GT-41062-1305, GT-41062-1806-X.X, GT-41062-1807-X.X)	Yao Sheng Electronic Co. Ltd.	XF00209	Provides Reinforced Insulation, employs a Class B insulation system. See Diagrams enclosure for additional construction details.	--	--	4-02
Transformer (T1) (for Models GT-41062-1809-X.X, GT-41062-1812-X.X, GT-41062-1815-X.X)	Yao Sheng Electronic Co. Ltd.	XF00168	Provides Reinforced Insulation, employs a Class B insulation system. See Diagrams enclosure for additional construction details.	--	--	4-03
Transformer (T1) (for Models GT-41062-1818-X.X, GT-41062-1820-X.X, GT-41062-1824-X.X)	Yao Sheng Electronic Co. Ltd.	XF00169	Provides Reinforced Insulation, employs a Class B insulation system. See Diagrams enclosure for additional construction details.	--	--	4-04
Insulation system for T1	Hong Kok Electronics Co Ltd	HIS-8A	Max. 600V, Class B	OBJY2	UL	
Insulation system for T1 (Alternate)	Yu Jing Technology Co Ltd	SBI4.2	Max. 600V, Class B	OBJY2	UL	
Insulation system for T1 (Alternate)	Long Sail Electronic Co Ltd	HIS-8A	Max. 600V, Class B	OBJY2	UL	
Insulation system for T1 (Alternate)	Yao Sheng Electronic Co Ltd	M7A90	Max. 600V, Class B	OBJY2	UL	
Insulation system for T1 (Alternate)	Xepex Electronic Co Ltd	GPB-6	Max. 600V, Class B	OBJY2	UL	
Insulation system for Transformer (T1) - Alternate	GlobTek Inc (E243347)	GTX-130-TM	Insulation system Class B (130 degree C). The material of transformer should be constructed under same table.	OBJY2	UL	
Insulation system for Transformer (T1) – Alternate	WUXI ZHONGTONG ELECTRONICS CO LTD (E315275)	ZT-130	Insulation system Class B (130 degree C). The material of transformer should be	OBJY2	UL	

			constructed under same table.			
Coil	Various	Various	130 degree C, ANSI TYPE MW28 or MW75 or MW79 or MW80. Table IV and Table VII	OBMW2	UL	
Triple Insulated Wire	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	Rated 130 deg C Triple insulated wire. Table IV and Table VII	OBJT2	UL (E211989)	
Triple Insulated Wire(Alternate)	TOTOKU ELECTRIC CO LTD	TIW-2	Rated 130 degC Triple insulated wire. Table IV	OBJT2	UL(E166483)	
Bobbin	Chang Chun Plastics Co., Ltd.	T375J	V-0, 150degree C, Phenolic, thickness 0.8mm minimum. Table IV and Table VII	QMFZ2	UL(E59481)	
Bobbin (Alternate)	Chang Chun Plastics Co., Ltd.	T375HF	V-0, 150degree C, Phenolic, thickness 0.8mm minimum. Table VII	QMFZ2	UL(E59481)	
Bobbin (Alternate)	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, Three flanges, rated V-0, minimum 1.0 mm thick. Table IV and Table VII	QMFZ2	UL(E41429)	
Insulation Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT, WF	Rated 130 deg C. Table IV and Table VII	OANZ2	UL (E165111)	
Insulation Tape (Alternate)	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Rated 130 deg C. Table IV and Table VII	OANZ2	UL (E246950)	
Insulation Tape (Alternate)	SYMBIO INC	35660Y	Rated 130 deg C. Table IV and Table VII	OANZ2	UL(E50292)	
Insulation Tape (Alternate)	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Rated 130 deg C. Table IV and Table VII	OANZ2	UL(E246820)	
Varnish	WU JIANG TAIHU INSULATING MATERIAL CO LTD	T-4260(a)	MW 28. Rated 130 deg C. Table IV and Table VII	OBOR2	UL (E228349)	
Tube	SHENZHEN WOER HEAT-SHRINKABLE	WF	VW-1. Rated Min.150V,Min. 200 Vdc. Table IV and Table	YDPU2	UL (E203950)	

	MATERIAL CO LTD		VII			
Tube (Alternate)	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-L CB-TT-S CB-TT-T	VW-1. Rated Min. 150V, Min. 200 Vdc. Table VII	YDPU2	UL(E180908)	
Tube (Alternate)	GREAT HOLDING INDUSTRIAL CO LTD	TFL, TFT	VW-1. Rated Min. 150V, Min. 200 Vdc. Table IV	YDPU2	UL(E156256)	
Insulation system for Transformer (T1) – Alternate	Shan Dong Boam Electric Co Ltd (E252329)	BOAM-01	Insulation system Class B (130 degree C). The material of transformer should be constructed under same table.	OBJY2	UL	
Coil	Various	Various	130 degree C, ANSI TYPE MW28 or MW75 or MW79 or MW80	OBMW2	UL	
Secondary winding used in T1	FURUKAWA ELECTRIC CO LTD	TEX-E	Rated 130 deg C Triple insulated wire	OBJT2	UL (E206440)	
Bobbin	Sumitomo Bakelite Co Ltd	PM-9820	Phenolic, Three flanges, rated V-0, minimum 1.0 mm thick.	QMFZ2	UL(E41429)	
Insulation Tape	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ, CT, WF	Rated 130 deg C.	OANZ2	UL (E165111)	
Varnish	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, TFT	VW-1. Rated Min. 150V, Min. 200 Vdc	YDPU2	UL (E156256)	
Tube (Alternate)	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	VW-1. Rated Min. 150V, Min. 200 Vdc	YDPU2	UL (E203950)	
Silicone Sheet (for Model GT-41062-1305) (Optional)	Pioneer Conductor Rubber Industry Co., Ltd.	PMP-P-300	V-0 min., 150 degree C, 40 by 50 by 1 mm thick and 20 by 33 by 5 mm thick	QMFZ2	UL	3-05
Silicone Sheet (for	Various	Various	V-0 min., 150 degree C, 40 by	QMFZ2	UL	

Model GT-41062-1305) (Alternate) (Optional)			50 by 1 mm thick and 20 by 33 by 5 mm thick			
Heatsink For Q1	--	--	Aluminum, U shape, overall measured approximately 37.0 by 11.5 by 17 mm high, 1.4 mm thick.	--	--	3-06
Heatsink For D3	--	--	Aluminum, L shape, overall measured approximately 19.0 by 11.1 by 17 mm, 1.9 mm thick	--	--	3-06
Printed Wiring Boards	--	--	Rated minimum 130 degree C, minimum V-0.	ZPMV2	UL	3-07
Output Cable (SELV)	--	--	Minimum 80 degree C, min. 300 V, maximum 3.05 m long, VW-1 or FT-1.	AVLV2/ZJCZ	UL	
Label (optional)	Various	Various	40 degree C if maximum surface temperature not specified.	PGDQ2 or PGJ12	UL	
Internal Wiring	--	--	FEP, PTFE, PVC, TFE, neoprene, polyamide or marked VW-1; minimum 300 V, min. 80 degree C.	AVLV2	UL	
Plug blades	--	--	Non-polarized, solid copper alloy (NEMA 1-15P configuration), integrally molded on Enclosure. From any point of either blade to the plug face section of the edge of enclosure is spaced Min. 5.2 mm perimeter. See Enclosure for details.	--	--	3-02

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