File E341351 Project 4789507340

August 4, 2018

REPORT

on

Power Supplies for use with Audio/Video, Information and Communication Technology Equipment

GLOBTEK (HONG KONG) LTD

KOWLOON HONG KONG

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UL TEST REPORT AND PROCEDURE					
Standard:	UL 62368-1, 2nd Edition, 2014-12-01 (Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements) CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12 (Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirements)				
Certification Type:	Listing				
CCN:	QQJQ, QQJQ7 Power Supplies for use in Audio/Video, Information and Communication Technology Equipment)				
Complementary Certification CCN	N/A				
Product:	ICT/ITE POWER SUPPLY				
Model:	<pre>GT-46400-WWVV-X.X-T2* WW is the standard output wattage, with a maximum value of "40", VV is the standard rated output voltage designation, with a value of "12" "15" "19"and "24"; -X.X denote the output voltage differentiator, subtracting X.X volts from standard output voltage VV in 0.1V increments, the actual output voltage range is 12-24V, blank is to indicate the no voltage different. The last "*" denote any six character means "0- 9","A-Z","()","[]","-" or blank for marketing purposes.</pre>				
Rating:	I/P: 100-240Vac, 50-60Hz or 50/60Hz, 1.0A. O/P: See Illustration - 13 for details.				
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.

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Prepared by:	Amy Wong/	/Suki	Kwong		Revie by:	wed	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							
C. Listing Mark/Recognized Component Mark Data Page - 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 for Class II, intended for use with Information Technology Equipment (ITE), there electronic components mounted on PWB, and housed in a thermoplastic enclosure by ultrasonic welding.							
The plastic enclosure of EUT is secured by ultrasonic.							
There are two layout, Type A and B. Type B is identical to type A except removed D8, add secondary choke L1)and re-layout.							
Model Differences							
All models are similar to each other except equipment mobility, model designation, output rating, and model designation, see Illustration-13 for details.							

Test Item Particulars (NOT FOR FIELD REPRESE	NTATIVE'S USE)
Classification of installation and use by . :	☑ Ordinary person ☐ Instructed person ☐ Skilled person
Supply Connection:	<pre> pluggable equipment</pre>
Equipment mobility:	☐ stationary ☐ for building-in ☐ direct plug-in
	rack-mountingwall-mounted
Over voltage category (OVC):	□ OVC I □ OVC II □ OVC III □ OVC IV □ other:
Fundamental Frequency:	∑ 50/60 Hz 50 Hz 60 Hz ⊠ other 50-60 Hz □ N/A
Class of equipment:	□ Class I ⊠ Class II□ Class III □ Not classified □ Class II with functional earthing
Access location:	\Box restricted access location \boxtimes N/A
Pollution degree (PD)	□ PD 1
IP protection class:	∑ IP X0 □ IP
Tested for IT power systems:	🗌 Yes 🛛 No
IT testing, phase-phase voltage (V):	□ N/A
Altitude during operation (m)	🛛 Up to 2,000 🗌 Up to 3,000
Altitude of test laboratory (m)	🛛 Less than 2,000 🗌 Approximately
Mass of equipment (kg):	Max. 0.208 kg

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Technical Consideration (NOT FOR FIELD REPRESENTATIVE'S USE) The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C The means of connection to the mains supply is: Detachable power cord, Pluggable A The product is intended for use on the following power systems: TN • Considered current rating of protective device as part of the building installation (A) : 20 Mains supply tolerance (%) or absolute mains supply values : +10%, -10% The equipment disconnect device is considered to be: Appliance inlet The following are available from the Applicant upon request: Installation ٠ (Safety) Instructions / Manual LEDs provided in the product are considered low power devices: Yes • Engineering Conditions of Acceptability (NOT FOR FIELD REPRESENTATIVE'S USE) N/A Additional Information N/A Additional Standard The product fulfils the requirements of: N/A

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Markings, in	Istruction	s and instructio	nar barogaarab			
Clause Title	e 1	Marking or Instr	uction Details			
Equipment identificati marking – Manufacturer identificati	ion :	Listee's or Reco Number.	gnized company's name,	Trade Nar	ne, Traden	nark or File
Equipment identificati marking - mc identificati	ion odel	Model Number				
Equipment ra marking -rat	-		oltage, frequency, curr voltage, dc, current)	rent)		
Fuses - repl by skilled p (component I	person	F1, T2A, 250V lo	cated on or adjacent to	fuse or	fuseholde	er.
Power rating II symbol	g - Class	Symbol for Class	II construction	(60417-2-	-IEC-5172)	
			are conducted at other			
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4.1.2	1.2 TABLE: list of critical components						
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformit Y	Supplement ID	
01. Enclosure	SABIC INNOVATIVE PLASTICS US L L C	915R(GG)	Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 120 degree C min. Minimum 2.0 mm thickness. See Illustion-1 for dimensions	QMFZ2	UL		
01a. Enclosure	SABIC JAPAN L L C	945 (GG)	Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 120 degree C min. Minimum 2.0 mm thickness. See Illustion-1 for dimensions	QMFZ2	UL		
01b. Enclosure	LG CHEM (GUANGZHOU) ENGINEERING PLASTICS CO LTD	LUPOY EF- 1006F(m)	Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 115 degree C min. Minimum 2.0 mm thickness. See Illustion-1 for dimensions	QMFZ2	UL		
01c. Enclosure	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR6005 + (z)	Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 105 degree C	QMFZ2	UL		

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			min. Minimum 2.0 mm thickness. See Illustion-1 for dimensions			
01d. Enclosure	SILVER AGE ENGINEERING PLASTICS (DONGGUAN) CO LTD	PC2330	Two pieces construction, secured together by ultrasonic welding, rated V-0 or better, 115 degree C min. Minimum 2.0 mm thickness. See Illustion-1 for dimensions	QMFZ2	UL	
02. Appliance Inlet	TECX-UNIONS TECHNOLOGY CORP	SO-222	Rated 250 V, 2.5 A, 105 degree C min. (C8 type)	AXUT2	UL	
02a. Appliance Inlet (alternate)	SUN FAIR ELECTRIC WIRE & CABLE (HK) CO LTD	S-01	Rated 250 V, 2.5 A, 75 degree C min. (C8 type)	AXUT2	UL	
02b. Appliance Inlet (alternate)	ZHEJIANG LECI ELECTRONICS CO LTD	DB-8	Rated 250 V, 2.5 A, 75 degree C min. (C8 type)	AXUT2	UL	
02c. Appliance Inlet (alternate)	ZHE JIANG BEI ER JIA ELECTRONIC CO LTD	ST-A03-005, ST-A03-002, ST-A03-004	Rated 250 V, 2.5 A, 75 degree C min. (C8 type)	AXUT2	UL	
03. Fuse (F1)	Various	Various	Listed, T2A, 250Vac	JDYX	UL	
03a. Fuse (F1) (Alternate)	CONQUER ELECTRONICS CO LTD	MST	Rated T2A, 250Vac.	JDYX2	UL	
03b. Fuse (F1) (Alternate)	EVER ISLAND ELECTRIC CO LTD & WALTER ELECTRIC	2010	Rated T2A, 250Vac.	JDYX2	UL	
03c. Fuse (F1) (Alternate)	HOLLYLAND CO LTD	5et	Rated T2A, 250Vac.	JDYX2	UL	
03d. Fuse (F1) (Alternate)	BEL FUSE INC	RST	Rated T2A, 250Vac.	JDYX2	UL	

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03e. Fuse (F1) (Alternate)	COOPER BUSSMANN LLC	SS-5	Rated T2A, 250Vac.	JDYX2	UL	
03f. Fuse (F1) (Alternate)	LITTELFUSE WICKMANN WERKE	392	Rated T2A, 250Vac.	JDYX2	UL	
03g. Fuse (F1) (Alternate)	DONGGUAN BETTER ELECTRONIC TECHNOLOGY CO LTD	932	Rated T2A, 250Vac.	JDYX2	UL	
04. X-Capacitor (CX1) (optional)	Cheng Tung Industrial Co Ltd	СТХ	Rated max 0.33 uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14)	FOWX2	UL	
04a. X-Capacitor (CX1) (optional) (Alternate)	Tenta Electric Industrial Co Ltd	MEX	Rated max 0.33uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14)	FOWX2	UL	
04b. X-Capacitor (CX1) (optional) (Alternate)	Ultra Tech Xiphi Enterprise Co Ltd	HQX	Rated max 0.33 uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14)	FOWX2	UL	
04c. X-Capacitor (CX1) (optional) (Alternate)	CARLI ELECTRONICS CO LTD	MPX	Rated max 0.33uF, min 250 V, X1 or X2 type, 100 degree C. (Compliance with IEC 60384-14)	FOWX2	UL	
04d. X-Capacitor (CX1) (optional) (Alternate)	JOEY ELECTRONICS (DONG GUAN) CO LTD	MPX	Rated max 0.33uF, min 250 V, X1 or X2 type, 105 degree C. (Compliance with IEC 60384-14)	FOWX2	UL	
04e. X-Capacitor (CX1) (optional) (Alternate)	XIANGTAI ELECTRONIC (SHENZHEN) CO LTD	MKP/MPX	Rated max 0.33uF, min 250 V, X1 or X2 type, 110 degree C. (Compliance with IEC	FOWX2	UL	

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			60384-14)		
05. Bleeder Resistors (R1, R2)	TZAI YUAN ENTERPRISE CO LTD	HSMD******** , SMD*******	Max. 2M ohms, min. 1/4W	AZOP2	UL
05a. Bleeder Resistors (R1, R2)	PROSPERITY DIELECTRICS CO LTD	FVS03, TF06V, FVS05, TF08V, FVS06, TF12V, FVS20, TF20V, FSV25, TF25V	Max. 2M ohms, min. 1/4W	AZOT2	UL
05b. Bleeder Resistors (R1, R2)	Ralec Electronic Corp	RTV05, RTV06, RTV12, RTV20, RTV25 series	Max. 2M ohms, min. 1/4W		
06. Bridge Diode (BD1)			Rated 2A, minimum 600 V.		
07. Storage Capacitor (C1) (For output power 30-40W)			Rated 400 V, max. 82uF, min. 105 degree C, provided with integral pressure relief		
07a. Storage Capacitor (C1) (For output power ≤30W)			Rated 400 V, max. 68uF, min. 105 degree C, provided with integral pressure relief		
08. Transistor (01)	Various	Various	Rated 6-15 A, minimum 600 V.		
09. Bridge Capacitors (CY1, CY2) (optional)	Success Electronics Co Ltd	SE, SB, SF	CY1 rated max. 2200pF; CY2 rated max. 100pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14)	FOWX2	UL
09a. Bridge Capacitors (CY1, CY2) (optional) (Alternate) ULS-62368-1-00J0-Desc	TDK CORPORATION	CD	CY1 rated max. 2200pF; CY2 rated max. 100pF, min. 250 Vac, 125 degree C, Y1 type. (Compliance with IEC 60384-14) Form Issued: 2015-02-25	FOWX2	UL

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09b. Bridge	Walsin	AH	CY1 rated max. 2200pF;	FOWX2	UL
Capacitors (CY1,	Technology Corp		CY2 rated max. 100pF,		
CY2) (optional)			min. 250 Vac, 125		
(Alternate)			degree C, Y1 type.		
			(Compliance with IEC		
			60384-14)		
09c. Bridge	JUHONG ELE CO	JB	CY1 rated max. 2200pF;	FOWX2	UL
Capacitors (CY1,			CY2 rated max. 100pF,		
CY2) (optional)			min. 250 Vac, 125		
(Alternate)			degree C, Yl type.		
			(Compliance with IEC		
			60384-14)		
09d. Bridge	XIANGTAI	YOB, YOF, YOE	CY1 rated max. 2200pF;	FOWX2	UL
Capacitors (CY1,	ELECTRONIC		CY2 rated max. 100pF,		
CY2) (optional)	(SHENZHEN) CO		min. 250 Vac, 125		
(Alternate)	LTD		degree C, Yl type.		
			(Compliance with IEC		
			60384-14)		
09e. Bridge	MURATA MFG CO	КX	CY1 rated max. 2200pF;	FOWX2	UL
Capacitors (CY1,	LTD		CY2 rated max. 100pF,		
CY2) (optional)			min. 250 Vac, 125		
(Alternate)			degree C, Yl type.		
			(Compliance with IEC		
			60384-14)		
10. Optical	Lite-On	LTV-817	Isolation: 5000 Vac,	FPQU2	UL
Isolator (PC1)	Technology Corp		minimum 100 degree C.		
10a. Optical	Everlight	EL817	Isolation: 5000 Vac,	FPQU2	UL
Isolators (PC1)	Electronics Co		minimum 110 degree C.		
(Alternate)	Ltd				
10b. Optical	COSMO	К1010	Isolation voltage	FPQU2	UL
Isolators (PC1)	ELECTRONICS CORP		minimum 5000 Vac,		
(Alternate)			minimum 115 degree C.		
10c. Optical	BRIGHT LED	BPC-	Isolation voltage	FPQU2	UL
Isolators (PC1)	ELECTRONICS CORP	817xxxxxx,	minimum 5000 Vac,		
(Alternate)		BPC-	minimum 100 degree C.		
		817MXXXXXX,			
		BPC-			

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		817SXXXXXX, where XXXXXX can be any alphanumeric character or blank.				
10d. Optical Isolators (PC1) (Alternate)	RENESAS ELECTRONICS CORPORATION	PS2561-1	Isolation voltage minimum 5000 Vac, minimum 100 degree C.	FPQU2	UL	
10e. Optical Isolators (PC1) (Alternate)	SHENZHEN ORIENT COMPONENTS CO LTD	ORPC-817Mx, ORPC-817Sx, ORPC-817x	Isolation voltage minimum 5000 Vac, minimum 100 degree C.	FPQU2	UL	

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11. Line filter	Various	NF00025	Open type construction.		
(NF1) (Optional)	Various	NF 00025	Rated 105 dehree C.		
lla Core	Various	Various	Ferrite, toroidal, measured overall approx. 8mm OD by 4 mm ID by 4 mm wide.		
11b Coil	Various	Various	Rated minimum 105 degree C.	OBMW2	UL
12. Line filter (NF2) (Optional)	Various	NF00124	Open type construction. Rated 105 degree C.		
12a Core	Various	Various	Ferrite, toroidal, measured overall approx. 16mm OD by 12 mm ID by 8 mm wide.		
12b Coil	Various	Various	Rated minimum 105 degree C.	OBMW2	υL
13. Varistor (MOV1) (optional)	CENTRA SCIENCE CORP	CNR 14V511K	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL
13a. Varistor (MOV1) (optional) (Alternate)	CENTRA SCIENCE CORP	CNR 10V471K, CNR 14D471K	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL
13b. Varistor (MOV1) (optional) (Alternate)	CENTRA SCIENCE CORP	CNR 14D511K	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL
13c. Varistor (MOV1) (optional) (Alternate)	JOYIN CO LTD	10N511K, 10N471K	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL
13d. Varistor (MOV1) (optional) (Alternate)	JOYIN CO LTD	14N471K, 14N511K, 14S511K	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL
13e. Varistor (MOV1) (optional) (Alternate)	THINKING ELECTRONIC INDUSTRIAL CO LTD	TVR 10471K, TVR 10511K, TVR 10471-V	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL
13f. Varistor (MOV1) (optional) (Alternate)	THINKING ELECTRONIC INDUSTRIAL CO	TVR 14471K, TVR 14511K	Rated minimum 300 Vac, minimum 385 Vdc.	VZCA2	UL, C-UL

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	LTD				
13g. Varistor	CERAMATE	GNR 14D471K,	Rated minimum 300 Vac,	VZCA2	UL, C-UL
(MOV1) (optional)	TECHNICAL CO LTD	GNR 14D511K	minimum 385 Vdc.		
(Alternate)					
13h. Varistor	CERAMATE	GNR10D471K	Rated minimum 300 Vac,		
(MOV1) (optional)	TECHNICAL CO LTD		minimum 385 Vdc.		
(Alternate)					
13i. Varistor	SUCCESS	SVR10D471K,	Rated minimum 300 Vac,	VZCA2	UL, C-UL
(MOV1) (optional)	ELECTRONICS CO	SVR10D511K	minimum 385 Vdc.		
(Alternate)	LTD				
13j. Varistor	SUCCESS	SVR14D471K,	Rated minimum 300 Vac,	VZCA2	UL, C-UL
(MOV1) (optional)	ELECTRONICS CO	SVR14D511K	minimum 385 Vdc.		
(Alternate)	LTD				
14. Transformer	ENG Electric Co	XF00928	Class B, See Illustion-		
(T1) (for output	Ltd		5 for construction		
12-13.5Vdc)			details.		
14. Transformer	ENG Electric Co	XF00942	Class B, See Illustion-		
(T1) (for output	Ltd		6 for construction		
13.6-17Vdc)			details.		
14. Transformer	ENG Electric Co	XF00943	Class B, See Illustion-		
(T1) (for output	Ltd		7 for construction		
17.1-21Vdc)			details.		
14. Transformer	ENG Electric Co	XF00944	Class B, See Illustion-		
(T1) (for 21.1-	Ltd		8 for construction		
24Vdc)			details.		
14-01. Insulation	ENG Electric	ENG130-1	Insulation system Class	OBJY2	UL
system for	Co., Ltd.		B (130 degree C,		
Transformer (T1)			adapted form GREAT		
			LEOFLON INDUSTRIAL CO		
			LTD, Type GH-130)		
14-02. Core			EE type, Ferrite,		
			dimension 8mm OD,		
14-03. Coil			130 degree C	OBMW2	UL
14-04. Bobbin	Chang Chun	T375J	V-0, 150degree C,	QMFZ2	UL
	Plastics Co.,		Phenolic, thickness		
	Ltd.		0.8mm minimum		
14-04a. Bobbin	SUMITOMO	PM-9820	V-0, 150degree C,	QMFZ2	UL

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(Alternate)	BAKELITE CO LTD		Phenolic, thickness 0.71mm minimum		
14-05. Tubing/Sleeving	Great Holding Industrial Co. Ltd.	TFL, TFS, TFT	Rated 200 degree C, VW- 1, 600V max.	YDPU2	UL
14-06. Triple Insulated Wire	Great Leoflon Industrial Co. Ltd.	TRW(B)	130 degree C	ОВЈТ2	UL
14-07. Varnish (Alternate)	Elantas Electrical Insulation Elantas Pdg Inc	V1630FS	Rated minimum 130 degree C.	OBOR2	UL
14-07a. Varnish (Alternate)	JOHN C DOLPH CO	BC-346A	Rated minimum 130 degree C.	OBOR2	UL
14-08. Insulation Tape	3M Company	1350F-1, 1350T-1	130 degree C.	OANZ2	UL
14-08a. Insulation Tape (Alternate)	BONDTEC PACIFIC CO LTD	370S	130 degree C.	OANZ2	UL
15. Internal Glue Materials			Rated V-2 minimum.	QMFZ2	UL
16. Internal Plastic Part Materials			Rated minimum V-2.	QMFZ2	UL
17. Strain Relief Of Output Cord	Various	Various	Refer to Illustion-2 for strain relief dimension details.	QMFZ2	UL
18. PWB	Various	Various	V-0 or better, minimum 130 degree C.	ZPMV2	
19. Label (optional)	Various	Various	Minimum 70 degree C. if maximum surface temperature not specified.	PGDQ2, PGJI2	UL
20. Output cord	Various	Various	Minimum 300 V, 80 degree C, maximum 3.05 m, marked VW-1 or FT-1. Suitable for external	AVLV2	UL

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			use.			
21. Heat Sink	Various	Various	Aluminum, minimum 2.0 mm			
(HS1)	Valious	Various	thick. See Enclosure for			
(Consideration as			detailed dimensions.			
Primary)			detailed dimensions.			
22. Heat Sink	Various	Various	Aluminum, minimum 1.0 mm			
(HS2)	Val 10 ab	Val Loub	thick. See Enclosure for			
(Consideration as			detailed dimensions.			
secondary)						
23. LPS resistor			0.56 ohm, 2W.			
(R10) (For output						
power 30-40W, the						
voltage except 15V)						
23. LPS resistor			0.51 ohm, 2W.			
(R10) (For output						
power 30-40W, the						
voltage 15V						
23. LPS resistor			0.51-0.62 ohm, 2W.			
(R10) (for output						
power ≤ 30 W, the						
output 12V)						
23. LPS resistor			0.62 ohm, 2W.			
(R10) (for output power						
\leq 30W, the output 12.1-						
13.5V)						
23. LPS resistor			0.68ohm, 2W.			
(R10) (for output						
power≤30W, the						
output 13.6-17V)						
24. LPS resistor			0.75 ohm, 2W.			
(R10) (for output						
power ≤ 30 W, the						
output 17.1-24V)						
23. LED barrier	Sabic Innovative	945 (GG)	Min. V-0, min. 1.0 mm	QMFZ2	UL	
(optional)	Plastics US L L C	2.20 (00)	thickness, 120°C			

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ENCLOSURES

Туре	Supplement ID	Description
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Illustrations	Illustration - 1	Enclosure
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	Illustration - 3	Heatsink HS1 drawing
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