

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Power Supply
Model:	TE240AXXYZWW Where XX represents the output voltage which may be any number from 12, 24, 28, 48 or any number from 12 to 48. Z may be any letter from A to Z. YY or WW can be any number between 00-99 or blank
Rating:	TE240B4849F02 Input: 100-240 V~, 50-60 Hz, 2.8-1.4 A Output: See enclosure for output ratings. For TE240B4849F02: 48Vdc, 5A, max.240W.
Applicant Name and Address:	SL POWER ELECTRONICS CORP BLDG A 6050 KING DR VENTURA CA 93003 UNITED STATES

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

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

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

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

Prepared by: Scholl Zhang

Reviewed by: Vonty Zhang

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

Switching Power Supply - Units were evaluated to operate at the altitude of 5000m.

Model Differences

All models were similar in construction except for secondary winding of transformer, secondary components and output rating. For model TE240B4849F02, output cord is different.

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%
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class I (earthed)
- Considered current rating of protective device as part of the building installation (A) : 20
- Pollution degree (PD) : PD 2
- IP protection class : IP22
- Altitude of operation (m) : up to 5000
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 1.232
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 40°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 product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 +

A1:2010 + A12:2011 + A2:2013 (which includes all European national differences, including those specified in this test report).

- The following accessible locations (with circuit/schematic designation) are within a limited current circuit: C60 secondary
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The following Production-Line tests are conducted for this product: Electric Strength, Earthing Continuity
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 261 Vrms, 440 Vpk
- The following secondary output circuits are SELV: Output connector.
- The following secondary output circuits are at hazardous energy levels: Output conector
- The following secondary output circuits are Limited Current Circuits: C60 secondary
- The following output terminals were referenced to earth during performance testing: output return
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- An investigation of the protective bonding terminals has: Been conducted
- The following magnetic devices (e.g. transformers or inductor) are provided with an OBJY2 insulation system with the indicated rating greater than Class A (105°C): T1, T2 (Class B)
- The following end-product enclosures are required: Mechanical, Electrical
- The equipment is suitable for direct connection to: AC mains supply
- Please refer below for actually output rating, and this normal load condition was used during test.
Model TE240A1251F01, input 90-264Vac, output: +12Vdc/16.6A (200W), , model TE240A2451F01, input 90-100Vac, output: +24Vdc/9.17A (220W), input 100-264Vac, output: +24Vdc/10A (240W) , model TE240A2851F01, input 90-100Vac, output: +28Vdc/7.86 A (220W), input 100-264Vac, output: +28Vdc/8.6A (240W) , model TE240A4851F01, input 90-100Vac, output: +48Vdc/4.584A (220W), input 100-264Vac, output: +48Vdc/5A (240W)

Additional Information

Additional Standards

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

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
Warning to service personnel	"CAUTION: Double pole/neutral fusing"
Other Symbols	IP22

Special Instructions to UL Representative

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

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
All	Transformers T1 and T2	-	Between Primary and Secondary Windings.	300 0	-	1

Earthing Continuity Test Exemptions - This test is not required for the following models:

Electric Strength Test Exemptions - This test is not required for the following models:

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:

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Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
N/A					