

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2007-03 (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:	Switching Power Supply
Model:	MINT1045VWWXXYZZ, where V represents the generational differences which may be the letters A or B (A is for Class I and B is for Class II construction), WW represents the output voltage which may be any number from 12 to 48, XX represents output connector which may be any two alphanumeric digits, Y represents the input connector which may be any letter from A thru Z, and ZZ represents non-safety related customer options and RoHS statements which may be any two alphanumeric digits.
Rating:	Input: 100-240 V~, 50-60 Hz, 1.0A Output: Refer to test report - Additional Information.
Applicant Name and Address:	SL POWER ELECTRONICS CORP BLDG A 6050 KING ST 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 Underwriters Laboratories Inc. ('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 Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

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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 MINT1045AWWXXYZZ Series (Class I type), and MINT1045BVWWXXYZZ Series (Class II type) are open-frame AC/DC power supplies, designed for building-in to an end-product.

All models have one dc output.

Model Differences

The power supplies in the MINT1045VWWXXYZZ Series are similar to each other and differ only in minor component changes in the secondary circuit and the number for windings for T1 to accommodate for the different output voltage and amps. The MINT1045VWWXXYZZ Series are Class I or Class II type, and are available with different types of input and output connectors.

Products (MINT1045AWWXXYZZ) with P1 connected to earth are considered as Class I construction.

Products (MINT1045BVWWXXYZZ) with P1 not connected to earth are considered as Class II construction.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : for building-in
- Operating condition : continuous
- Access location : To be determined in the end product.
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : +10%, -10%
- Tested for IT power systems : Yes

- IT testing, phase-phase voltage (V) : 230
- Class of equipment : Class I (earthed) and Class II (double insulated)
- Considered current rating (A) : 20A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : 3000 m or below
- Altitude of test laboratory (m) : 4
- Mass of equipment (kg) : 0.108
- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of: 50 degree C
- The product is intended for use on the following power systems: IT, TN
- The product was investigated to the following additional standards: EN 60950-1:2006+ A11:2009 (which includes all European national differences, including those specified in this test report).
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- The clearance has been evaluated at maximum 9,843 feet (3000 m) elevation. Based on IEC 60664-1, the requirement is 1.14 times the clearance requirement at elevation of 2000 meter specified in IEC 60950-1. The correction factor is based on barometric pressure of 70kPa and Overvoltage Category II. If the calculated clearance exceeded the creepage, the creepage was adjusted to the value of clearance.

Engineering Conditions of Acceptability

For use only in or with complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc. 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
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 298 Vrms, 650 Vpk, Primary-Earthed Dead Metal: 240 Vrms, 340 Vpk


- The following secondary output circuits are SELV: All outputs
- The following secondary output circuits are at non-hazardous energy levels: All outputs
- The following secondary output circuits are supplied by a Limited Power Source: All outputs
- The maximum investigated branch circuit rating is: 20 A
- The investigated Pollution Degree is: 2
- Proper bonding to the end-product main protective earthing termination is: Required for Class 1 models MINT1045AWWXXYZZ
- 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 (Class F)
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- Both Line and Neutral of the power supplies are fused, warning shall be provided in the end product.

Additional Information

Marking plate is representative of all models. Model number barcode label is located at a different location than Electrical ratings label.

Output: 12 Vdc, 3.75A to 48 Vdc, 0.95 A, maximum 45 Watts.

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
Power rating - Class II symbol	Symbol for Class II construction  (60417-2-IEC-5172)

Fuses - Rating	Rated current and voltage and type located on or adjacent to fuse or fuseholder.
Class II symbol	For Models MINT1045BWWXXYZZ only.
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
All models	Transformer T1	--	T1 Primary to Secondary	300 0	4242	Min. 1s
<u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u>						
MINT1045B family						
<u>Electric Strength Test Exemptions - This test is not required for the following models:</u>						
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<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>						
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<u>Sample and Test Specifics for Follow-Up Tests at UL</u>						
Model	Component	Material	Test	Sample(s)	Test Specifics	
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