

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2007-03-27 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/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:	Non-Isolated Power Supply, DC-DC converter
Model:	Series iJA12***A%%V-0xx(-R) Model iJA12025A007V-0xx Model iJA12035A007V-0xx where *** represents rated output current between 10A - 35A, %% represents rated output voltage between 0.6V - 3.3V and 0xx indicates a number or alphanumeric character which affects non-safety related features. Optional -R indicates RoHS compliance. Series iJB12***A%%V-0xx(-R) Model iJB12060A006V-0xx Model iJB12070A006V-0xx where *** represents rated output current between 0A - 70A, %% represents rated output voltage between 0.6V - 3.3V and 0xx indicates a number or alphanumeric character which affects non-safety related features. Optional -R indicated RoHS compliance. Series iJC12***A%%V-0xx(-R) Model iJC12100A006V-0xx Model iJC12120A006V-0xx where *** represents rated output current between 0A - 120A, %% represents rated output voltage between 0.6V - 3.3V and 0xx indicates a number or alphanumeric character which affects non-safety related features. Optional -R indicated RoHS compliance.
Rating:	iJA12025A007V-0xx(-R) Input wide range: 8-13Vdc, 12A Max Output: 0.6-3.5Vdc, 25A, 87.50W Max iJA12035A007V-0xx Input wide range: 8-14Vdc, 16A Max Output: 0.6 - 3.3Vdc, 35 A, 100 W Max. iJB12060A006V-0xx(-R) Input wide range: 8-14Vdc, 35A Max Output: 0.6-3.3Vdc, 60A, 198W Max iJB12070A006V-0xx Input wide range: 8-14Vdc, 35A Max Output: 0.6-1.8Vdc, 70A, 126W Max iJC12100A006V-0xx(-R)

Input: 8-14Vdc, 32A Max
Output: 0.6-2.0Vdc, 100A, 200W Max

iJC12120A006V-0xx(-R)
Input: 8-14Vdc, 32A Max
Output: 0.6-1.5Vdc, 120A, 180W Max

Applicant Name and Address:	TDK-LAMBDA AMERICAS INC SUITE 100 3320 MATRIX DR RICHARDSON TX 75082 UNITED STATES
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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: Keith Wiebe

Reviewed by: David Feusier

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 product consists of high density Non-Isolated Power Supply, DC-DC converter module. The converter is provided with input terminal pins for factory installation onto a printed wiring board with a connection to a dc source of supply and output terminal pins.

Model Differences

The iJB product family is similar to iJA product family in that they are both Non-Isolated Digitally controlled POL modules that are PMBus compliant and perform a local bus conversion from a 12Vdc range. Both iJA and iJB product families use the same control IC. The iJB product family will have a different form factor, output inductor, Fets and control circuit values.

The iJC product family is similar to iJB product family in that they are both Non-Isolated Digitally controlled POL modules that are PMBus compliant and perform a local bus conversion from a 12Vdc range. Both iJB and iJC product families use the same control IC. The iJC product family will have a different form factor, output inductor, Fets and control circuit values.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : No direct connection
- Operating condition : continuous
- Access location : N/A
- Over voltage category (OVC) : for building-in
- Mains supply tolerance (%) or absolute mains supply values : N/A
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class III (supplied by SELV)
- Considered current rating (A) : 20 A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : up to 2000 m
- Altitude of test laboratory (m) : not more than 2000 m

- Mass of equipment (kg) : less than 1 kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 25°C
- The means of connection to the mains supply is: For Building in
- 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 secondary output circuits are SELV: All
- The following secondary output circuits are at non-hazardous energy levels: All
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 20 A,
- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The following components require special consideration during end-product Thermal (Heating) tests due to the indicated maximum temperature measurements during component-level testing: The PWB is rated 130°C. ,
- The maximum continuous power supply output (Watts) relied on forced air cooling from: Testing was conducted in a wind tunnel with no forced air cooling. , Model iJA12035A007V-0xx was tested in a wind tunnel with 200 LFM forced cooling, fan distance: 81 cm; fan location: above test section; Air-flow direction: upward., , Model iJC12120A006V-0xx was tested in a wind tunnel with 400 LFM forced cooling. iJC series temperature testing shall be performed in the end product using the airflow provided by unit under test.
- The power DC Converter is intended to be supplied isolated secondary circuitry in an end-use application.
- iJA12 - F1 is 20A external fuse on test fixture specified in manufacturer specification for end use application. iJB12 - F1 is 40A external fuse on test fixture specified in manufacturer specification for end use application.

Additional Information

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Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
1.7.1 Power rating - Ratings	Optional, (voltage dc, current)

	<p>Special Instructions to UL Representative</p> <p>Listee's or Recognized company's name, Trade Name (TDK-Lambda and/or TDK-Lambda Americas Inc), Trademark or File Number may be located on the unit or the smallest packaging. The rating of the unit is embedded as part of the part number.</p>
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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						

<u>Earthing Continuity Test Exemptions - This test is not required for the following models:</u>
All

<u>Electric Strength Test Exemptions - This test is not required for the following models:</u>
All

<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	
N/A						