

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)
Complementary CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Product:	Reverse Current Prevention Module
Model:	EVS-RP6020abcd, RP-60-20abcd Suffix; a = "/" or blank, b = B or blank, c = A, L, or blank, d = CO2 or blank.
Rating:	7-60 Vdc, 0-20 A
Applicant Name and Address:	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN

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: Tetsuo Iwasaki

Reviewed by: Ikuro Kinno

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

This unit is Reverse Current Prevention Module which is placed between AC-DC switching power supply (downstream) and batteries.

Model Differences

Suffix; a = "/" or blank, b = B or blank, c = A, L, or blank, d = CO2 or blank.

a; (separator),

b; B = Connector Type, blank = Terminal Block Type

c; A = with cover and chassis,

L = with chassis

d; CO2 = with coating for functional purpose,

Model RP-60-20abcd is identical to Model EVS-RP6020abcd except model designation.

Technical Considerations

- Equipment mobility : for building-in
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : N/A
- Over voltage category (OVC) : OVC II
- 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 : N/A
- Considered current rating of protective device as part of the building installation (A) : N/A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : Up to 3000 m
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 0.11 (With chassis and cover)
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma)

permitted by the manufacturer's specification of: 74°C (Depends on load factor. Refer to Enclosed Id 7-01.)

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 power supply terminals and/or connectors are: Suitable for factory wiring only
- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Fire, Electrical (depends on output circuit character of which locates upstream of unit)
- The following secondary output circuits are ES1: DC Output
- PS classification of this unit depends on the PS class of the output of power supply and/or battery in end product. In this report, PS3 is assumed.
- The unit is intended to be connected to ES1 output circuit of power supply unit.
- Classification of PIS has not been conducted. Therefore, PIS shall be determined in end product application, otherwise all electrical components and conductors including printed wirings are to be assumed as arcing/resistive PIS.
- This component has been evaluated in "control of fire spread" method assuming appropriate fire enclosure is provided in end product. Unless the fire enclosure is made of non-combustible or V-0 material, the separation from the PIS shall be considered.
- Need for evaluation of overload condition shall be considered in end-product application.

Additional Information

See Enclosure id. 7-01 for Output Derating Specification.

TEST CONDITION No/ Model/ COOLING/ LOAD
 TEST CONDITION 1/ EVS-RP6020/ Convection/ 100%
 TEST CONDITION 2/ EVS-RP6020/A/ Convection/ 100%
 TEST CONDITION 3/ EVS-RP6020/A/ Convection/ 50%
 TEST CONDITION 4/ EVS-RP6020/ Forced Air/ 100%
 TEST CONDITION 5/ EVS-RP6020/ Forced Air / 60%

Mounting Position was "A" for all test conditions.
 Mounting Position "A" is considered representative on the purpose of tests.

Additional Standards

The product fulfills the requirements of: The product fulfills the requirements of: UL 62368-1, 2nd Edition, 2014-12-01, CAN/CSA C22.2 No. 62368-1-14, 2nd Edition, 2014-12.

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