UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed-(Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Component Recognition
CCN:	QQJQ2, QQJQ8 (Power Supplies for Use in Audio/Video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	Built-in Power Supply
Model:	[1] RDS30A-24-5 RDS30A-24-12, RDS30A-24-15, RDS30A-24-24, and [2] RDS30A-48-5 RDS30A-48-12, RDS30A-48-15, RDS30A-48-24
Rating:	Input Voltage: [1] 18-32 VDC [2] 36-63 VDC Input Current:: [1] 2.2 A [2] 1.1 A Output: Refer to General Product Information.
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 / Project Handler Reviewed By: Masatomo Takiyama / Reviewer

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

Built-in type switching power supply for use in office equipment (host equipment is not specified).

Unit is intended to be supplied DC power from the circuit in end product which is isolated by double or reinforced insulation from mains.

Model Differences

Output rating:

RDS30A-24-5: 5VDC, 6.0 A

RDS30A-24-12: 12VDC, 2.5 A

RDS30A-24-15: 15VDC, 2.0 A

RDS30A-24-24: 24VDC, 1.3 A

RDS30A-48-5: 5VDC, 6.0 A

RDS30A-48-12: 12VDC, 2.5 A

RDS30A-48-15: 15VDC, 2.0 A

RDS30A-48-24: 24VDC, 1.3 A

Test Item Particulars

Classification of use by	Ordinary person
Supply Connection	External Circuit - not Mains connected See Product Description for details
Supply % Tolerance	N/A
Supply Connection – Type	Terminal Block
Considered current rating of protective device as part of building or equipment installation	N/A
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer’s specified maximum operating ambient (°C)	60
IP protection class	IP class not specified (component for building-in)
Power Systems	N/A
Altitude during operation (m)	Up to 3000 m
Altitude of test laboratory (m)	2000 m or less

Mass of equipment (kg)	0.4 (approx.)
Classification of use by	Ordinary person
Supply Connection	External Circuit - not Mains connected See Product Description for details
Supply % Tolerance	N/A
Supply Connection – Type	Terminal Block
Considered current rating of protective device as part of building or equipment installation	N/A
Equipment mobility	for building-in
Over voltage category (OVC)	OVC II
Class of equipment	Class I
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	60
IP protection class	IP class not specified (component for building-in)
Power Systems	N/A
Altitude during operation (m)	Up to 3000 m
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	0.4 (approx.)

Technical Considerations

- Humidity conditioning used in this investigation is tropical climates condition.
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : max. 60°C. See Enclosure Id 7-02, 7-03 for details.
- Mains supply tolerance (%) or absolute mains supply values : No direct connection

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 end-product Electric Strength Test is to be based upon a maximum working voltage of : max working voltage: 149 Vrms, 263 Vpk
- The following output circuits are at ES1 energy levels : Output of all models
- The following output circuits are at PS3 energy levels : Output of all models
- The investigated Pollution Degree is : 2
- Proper bonding to the end-product main protective earthing termination is : Required (via chassis)
- The following end-product enclosures are required : Fire, Electrical
- 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) : Transformer T1 (Class 130(B))
- The power supply was evaluated to be used at altitudes up to : 3000 m
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- Classification of PIS has not been conducted. Therefore, all electrical components and conductors including printed wirings were assumed to be 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.
- The value of the mains transient voltage assumed in this evaluation is 1500V peak.
- Isolation between Input side circuit and Output side circuit/ FG are evaluated as Basic insulation.

Additional Information

The following are the output voltage ranges considered during the evaluation:
RDS30A-24-5: 4.0 - 6.0VDC, maximum 6.0 A and 30.0W
RDS30A-24-12: 10.3 -13.7VDC, maximum 2.5 A and 30.0W

RDS30A-24-15: 13.0 -17.0VDC, maximum 2.0 A and 30.0W
RDS30A-24-24: 21.1 -26.9VDC, maximum 1.3 A and 31.2W

RDS30A-48-5: 4.0 - 6.0VDC, maximum 6.0 A and 30.0W
RDS30A-48-12: 10.3 -13.7VDC, maximum 2.5 A and 30.0W
RDS30A-48-15: 13.0 -17.0VDC, maximum 2.0 A and 30.0W
RDS30A-48-24: 21.1 -26.9VDC, maximum 1.3 A and 31.2W

Adjustment was made via Variable Resistor (VR51)

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listees or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
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Equipment identification marking – model identification	Model Number