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:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	Switching Power Supply
Model:	1) LWT30H-5FF 2) LWT30H-522 3) LWT30H-525 4) LWT30H-5FF/SCC 5) LWT30H-522/SCC 6) LWT30H-525/SCC 7) LWT30H-522/FJ Maybe followed by optional suffix "/SAF" denoting minor variation.
Rating:	Input: AC 100-240V, 1.0A, 50/60 Hz Output : Total Output Power: 30W 1) Model: LWT30H-5FF DC +5V/5.0A, +15V/1.2A, -15V/0.6A 2) Model: LWT30H-522 DC +5V/5.0A, +12V/1.2A, -12V/0.6A 3) Model: LWT30H-525 DC +5V/5.0A, +12V/1.2A, -5V/0.6A 4) Model: LWT30H-5FF/SCC DC+5V/5.0A, +15V/1.2A, -15V/0.6A 5) Model: LWT30H-522/SCC DC +5V/5.0A, +12V/1.2A, -12V/0.6A 6) Model: LWT30H-525/SCC DC +5V/5.0A, +12V/1.2A, -5V/0.6A 7) Model: LWT30H-522/FJ DC+5V/5.0A, +12V/1.2A, -12V/0.6A
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: Nao Maede / Project Handler Reviewed By: Tetsuo Iwasaki / 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

Switching power supply for use in general office equipment (host equipment is not specified).

Model Differences

All the models are identical except output voltage, transformer (refer to table 4.1.2), output current and some additional circuit below.

LWT30H-5FF/SCC, LWT30H-522/SCC and LWT30H-522/SCC provided with additional circuit to stabilize the switching frequency. LWT30H-522/FJ provided with additional circuit to have OVP function for two channels.

Model with suffix "/SAF" - VR50 replaced with jumper wire J50 for fixing frequency setting of control IC.

If not stated otherwise, tests were conducted on model LWT30H-5FF to represent the other similar models.

Test Item Particulars

Classification of use by	Ordinary person (See OVERVIEW OF EMPLOYED SAFEGUARDS)
Supply Connection	AC Mains
Supply % Tolerance	+10%/-10%
Supply Connection – Type	Internal connection (for building-in)
Considered current rating of protective device as part of building or equipment installation	20 A; building;
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)	Refer to Enclosure Id. 7-02.
IP protection class	IP is not classified (for building-in)
Power Systems	TN

Altitude during operation (m)	Up to 3000 m
Altitude of test laboratory (m)	less than 2000 m
Mass of equipment (kg)	Approximately 0.40

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : Refer to output derating curve in Enclosure Id. 7-02.
- The product is intended for use on the following power systems : TN
- Considered current rating of protective device as part of the building installation (A) : 20
- Mains supply tolerance (%) or absolute mains supply values : +10%/-10%
- The product was evaluated to be used in tropical climates.

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 : Primary-Secondary: 264Vrms, 536Vpk
- The following output circuits are at ES1 energy levels : All outputs of all models
- The following output circuits are at PS3 energy levels : All outputs of all models
- 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
- An investigation of the protective bonding terminals has : not been conducted
- The following input terminals/connectors must be connected to the end-product supply neutral : CN1 (3pin)
- The following end-product enclosures are required : Electrical, Fire
- 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 terminals and/or connectors are: Suitable for factory wiring only.
- Earth terminal provided on Connector (CN1) has not been evaluated as protective earthing terminal. This component is intended to be connected to a protective earth via earthed parts of end-product.
- 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.
- Temperature measurement were performed according to the maximum operating temperature, mounting direction and load conditions specified in instruction manual and output derating curve.
- Line to Line Capacitor (C1) may have variations in capacitance up to 0.47 uF. Therefore, consideration shall be given in controlling the capacitance value in the end-product application with respect to capacitance discharge issue.
- Primary to Ground Capacitors (C3, C5, C6) may have variations in capacitance up to 4700pF. Therefore, consideration shall be given in controlling the capacitance values in end product application with respect to touch Current issue.
- The secondary outputs are SELV and are not at hazardous energy levels.

Additional Information

Unless otherwise specified, tests were performed on model LWT30H-5FF to representative other models.

Additional Standards

The product fulfills the requirements of: UL 60950-1, 2nd Edition, Revised October 14, 2014, CSA CAN/CSA-C22.2 No. 60950-1 2nd Edition, Revised October 14, 2014
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