Test Report issued under the responsibility of:

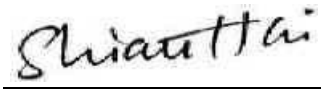
UL International Demko A/S

TEST REPORT
IEC 60950-1:2005 (2nd Edition)
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E252373-A18-CB-2
Date of issue ..... :	2009-07-06
Total number of pages ..... :	146
CB Testing Laboratory ..... :	UL International Demko A/S
Address ..... :	Lyskaer 8, 2730, Herlev, Denmark
Applicant's name ..... :	TDK-LAMBDA SINGAPORE PTE LTD
Address ..... :	#06-01/08 1008 TOA PAYOH NORTH SINGAPORE 318996 SINGAPORE
Test specification:	
Standard ..... :	IEC 60950-1:2005, Second Edition
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IECEN60950_1C
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	2006-06

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Switching Power Supply for building-in
Trade Mark ..... :	TDK-Lambda
Model/Type reference ..... :	LS25-X /YYYYYY, where X can be 3.3, 5, 7, 12, 15, 18, 24, 28, 36, 40, 48, or 56. And /YYYYYY can be /B, /BCO, /BCO2, /BCOL, /BCO2L, /BL, /BM, /BMCO, /BMCO2, /BMCOL, /BMCO2L, /BML, /CO, /COL, /CO2, /CO2L, /L, or blank.
Manufacturer ..... :	(SAME AS APPLICANT)
Rating ..... :	Input: AC 100-240V, 0.7A, 50/60Hz; Output: LS25-3.3, 3.3Vdc, 6A; LS25-5, 5Vdc, 5A; LS25-7, 7Vdc, 3.6A; LS25-12, 12Vdc, 2.1A; LS25-15, 15Vdc, 1.7A; LS25-18, 18Vdc, 1.4A; LS25-24, 24Vdc, 1.1A; LS25-28, 28Vdc, 0.9A; LS25-36, 36Vdc, 0.75A; LS25-40, 40Vdc, 0.7A; LS25-48, 48Vdc, 0.57A; LS25-56, 56Vdc, 0.5A.

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address..... :		
[ ]	**Associated CB Test Laboratory**		
	Testing location / address..... :		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
[x]	**Testing Procedure: TMP**		
	Tested by (name + signature) ..... :	Chiang Shiau Hui	
	Approved by (+ signature) ..... :	Royston Ng	
	Testing location / address..... :	TDK-LAMBDA SINGAPORE PTE LTD, #06-01/08, 1008 TOA PAYOH N, SINGAPORE 318996 SINGAPORE	
[ ]	**Testing Procedure: WMT**		
	Tested by (name + signature) ..... :		
	Witnessed by (+ signature)..... :		
	Approved by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: SMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		
[ ]	**Testing Procedure: RMT**		
	Tested by (name + signature) ..... :		
	Approved by (+ signature) ..... :		
	Supervised by (+ signature) ..... :		
	Testing location / address..... :		

Summary of Testing:
Unless otherwise indicated, all tests were conducted at TDK-LAMBDA SINGAPORE PTE LTD, #06-01/08, 1008 TOA PAYOH N, SINGAPORE 318996 SINGAPORE.

Tests performed (name of test and test clause)	Testing location / Comments
End Product Reference Page	
General Guidelines	
Power Supply Reference Page	
Input: Single-Phase (1.6.2)	
Transformer and Wire /Insulation Electric Strength (2.10.5.6, 2.10.5.13)	

Summary of Compliance with National Differences:

AT, AU, BE, CA, CH, CZ, DE, DK, EU, FI, FR, GB, GR, HU, IT, JP, KR, NL, NO, PL, SE, SI, SK, US

Copy of Marking Plate

Test item particulars :	
Equipment mobility ..... :	for building-in
Connection to the mains ..... :	N/A
Operating condition ..... :	continuous
Over voltage category ..... :	OVC II
Mains supply tolerance (%) ..... :	+10%, -10%
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class I (earthed)
Mass of equipment (kg) ..... :	< 18 (0.17kg)
Pollution degree ..... :	PD 2
IP protection class ..... :	IP X0
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing:	
Date(s) of receipt of test item ..... :	2009-05-13
Date(s) of Performance of tests ..... :	2009-05-14 to 2009-05-26

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

Refer to the Cover Page For Test Report for a list of all Factory Locations.

GENERAL PRODUCT INFORMATION:

Report Summary

All applicable tests according to the referenced standard(s) have been carried out.

Product Description

Electronic components mounted on PWB.

Model Differences

All Models are similar to each other, except the following:-
a) Output rating;
b) Layout;
c) Transformer (T1) primary and secondary windings;
d) Model designation (refer to below for more designation information);

LS25-X /YYYYYY, where X can be 3.3, 5, 7, 12, 15, 18, 24, 28, 36, 40, 48, or 56. And /YYYYYY can be /B, /BCO, /BCO2, /BCOL, /BCO2L, /BM, /BMCO, /BMCO2, /BMCOL, /BMCO2L, /BL, /BML, /CO, /COL, /CO2, /CO2L, /L, or blank.

1) B => Input Connector (CN1) and Ouput connector (CN2) are from JST;
2) BM => Input Connector (CN1) and Ouput connector (CN2) are from Molex;
3) CO => PCB with one (1) side coating;
4) CO2 => PCB with two (2) sides coating;
5) L => Open frame (Cover removed);
6) blank => Input connector and output connector using terminal block TB1

Additional Information

The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

This test report shall be read in conjunction with the original report, number:

E252373-A18-CB-1, issued 2009-01-19 with CB Certificate No. (DK-14950), issued 2009-01-20.

This report has been reissued, due to:
1) Upgrade standard to IEC 60950-1:2005 Second Edition.
2) Alternate source for L1. P/N: JLB10801, Shenzhen Jewel.
3) Alternate source for TB1. P/N: DT-2, Dinkle Enterprise and P/no. YK301, Anytek
4) Alternate source for T1. P/N: A09-0048 - A09-0054, AXIS

Technical Considerations

The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40°C for LS25-3.3, , 50°C for LS25-5, LS25-7, LS25-12, LS25-15, LS25-18, LS25-24, LS25-28, LS25-36, LS25-40, LS25-48, LS25-56.

The product is intended for use on the following power systems: TN

The product was investigated to the following additional standards: IEC 60950-1 2nd Edition & EN 60950-1:2006 (which includes all European national differences, including those specified in this test report).

Engineering Conditions of Acceptability

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, Earthing Continuity

The end-product Electric Strength Test is to be based upon a maximum working voltage of: Primary-SELV: 250.3 Vrms, 504.9 Vpk, Primary-Earthed Dead Metal: 403.1 Vrms,

The following secondary output circuits are SELV: LS25-3.3: 3.3Vdc; LS125-5: 5Vdc; LS25-7: 7Vdc; LS25-12: 12Vdc; LS25-15: 15Vdc; LS25-18: 18Vdc; LS25-24: 24Vdc; LS25-28: 28Vdc; LS25-36: 36Vdc; LS25-40: 40Vdc; LS25-48: 48Vdc; LS25-56: 56Vdc.

The following secondary output circuits are at non-hazardous energy levels: LS25-3.3: 3.3Vdc; LS125-5: 5Vdc; LS25-7: 7Vdc; LS25-12: 12Vdc; LS25-15: 15Vdc; LS25-18: 18Vdc; LS25-24: 24Vdc; LS25-28: 28Vdc; LS25-36: 36Vdc; LS25-40: 40Vdc; LS25-48: 48Vdc; LS25-56: 56Vdc.

The following output terminals were referenced to earth during performance testing: T1 pin 6, 7

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

Proper bonding to the end-product main protective earthing termination is: Required

An investigation of the protective bonding terminals has: Been conducted

The following input terminals/connectors must be connected to the end-product supply neutral: For model LS25-x, where input is terminal block TB1 (pin 2); For model LS25-x, where input is connector CN1 (pin 2)

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 B)

The following end-product enclosures are required: Mechanical, Fire

Power Supply Unit is only evaluated at flat (bottom) horizontal position for all test.