Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	4786910624-12
Date of issue ..... :	2015-09-15
Total number of pages ..... :	125
CB Testing Laboratory ..... :	UL Japan, Inc.
Address ..... :	4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan
Applicant's name ..... :	TDK-LAMBDA CORP
Address ..... :	NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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.

General disclaimer

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Switching Power Supply
Trade Mark ..... :	TDK, TDK·Lambda or TDK·Lambda
Manufacturer ..... :	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV 2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN
Model/Type reference ..... :	MTW60-51212xy, MTW60-51515xy x = "-" or blank, y = 0-9, A-Z or blank
Ratings ..... :	Input: AC 100–240V, 50–60Hz, 1.4–0.8A Output:

MTW60-51212xy	DC +5V/5.0A (7.0A peak), DC +12V/2.5A (3.5A peak), DC -12V/0.5A (0.7A peak)	Total max. output power: 61W (peak load for 10s max., total power shall not exceed 61W during peak load)
MTW60-51515xy	DC +5V/5.0A (7.0A peak), DC +15V/2.0A (3.5A peak), DC -15V/0.5A (0.7A peak)	Total max. output power: 62.5W (peak load is for 10s max., total power shall not exceed 62.5W during peak load.)

Testing procedure and testing location:			
[ ]	**CB Testing Laboratory**		
	Testing location / address	:	
[ ]	**Associated CB Test Laboratory**		
	Testing location / address	:	
	Tested by (name + signature)	:	
	Approved by (name + signature)....	:	
[x]	**Testing Procedure: TMP/CTF Stage 1**		
	Testing location / address	:	TDK-LAMBDA CORPORATION, NAGAOKA TECHNICAL CENTER 2704-1 SETTAYA-MACHI, NAGAOKA-SHI, NIIGATA-KEN, 940-1195 JAPAN
	Tested by (name + signature)	:	Ayano Matsumoto A. Matsumoto
	Approved by (name + signature)....	:	Tetsuo Iwasaki Tetsuo Iwasaki
[ ]	**Testing Procedure: WMT/CTF Stage 2**		
	Testing location / address	:	
	Tested by (name + signature)	:	
	Witnessed by (name + signature) ..	:	
	Approved by (name + signature)....	:	
[ ]	**Testing Procedure: SMT/CTF Stage 3 or 4**		
	Testing location / address	:	
	Tested by (name + signature)	:	
	Approved by (name + signature)....	:	
	Supervised by (name + signature) .	:	
[ ]	**Testing Procedure: RMT**		
	Testing location / address	:	
	Tested by (name + signature)	:	
	Approved by (name + signature)....	:	
	Supervised by (name + signature) .	:	

List of Attachments

National Differences (24 pages)
Enclosures (33 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at TDK-LAMBDA CORPORATION, NAGAOKA TECHNICAL CENTER, 2704-1 SETTAYA-MACHI, NAGAOKA-SHI, NIIGATA-KEN, 940-1195 JAPAN.	
Tests performed (name of test and test clause)	**Testing location / Comments**
Input: Single-Phase (1.6.2)	
Capacitance Discharge (2.1.1.7)	
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4)	
Limited Power Source Measurements (2.5)	
Protective Bonding I (2.6.3.4, 2.6.1)	
Humidity (2.9.1, 2.9.2, 5.2.2)	
Determination of Working Voltage; Working Voltage Measurement (2.10.2)	
Transformer and Wire /Insulation Electric Strength (2.10.5.13)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Ball Pressure (4.5.5, 4.5)	
Touch Current (Single-Phase; TN/TT System) (5.1, Annex D)	
Electric Strength (5.2.2)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	
Abnormal Operation (5.3.1 - 5.3.9)	
Transformer Abnormal Operation (5.3.3, 5.3.7b, Annex C.1)	
Power Supply Output Short-Circuit/Overload (5.3.7)	
Summary of Compliance with National Differences:	
Countries outside the CB Scheme membership may also accept this report.	
List of countries addressed: CA, DE, DK, EU, FI, GB, KR, SE, SI, US	
The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013	

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
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 ..... :	-10%, +6%
Tested for IT power systems ..... :	Yes
IT testing, phase-phase voltage (V) ..... :	230 V
Class of equipment ..... :	Not classified, class I construction
Considered current rating of protective device as part of the building installation (A) ..... :	Considered 20A (even though built-in application)
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	Not rated, Indoor-use only
Altitude of operation (m) ..... :	≤ 2000 m
Altitude of test laboratory (m) ..... :	< 1000 m
Mass of equipment (kg) ..... :	Approx. 0.30kg
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 ..... :	N/A
Date(s) of Performance of tests ..... :	2004-08 to 2004-10, 2004-12, 2005-05, 2006-02 to 2006- 03, 2012-12 2014-08-06 to 2014-08-23 2015-02-27
General remarks: "(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.	
Manufacturer's Declaration per Sub Clause 4.2.5 of IECEE 02: The application for obtaining a CB Test Certificate includes more than one factory and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	Yes

When differences exist, they shall be identified in the General Product Information section.

Name and address of Factory(ies):	TDK-LAMBDA MALAYSIA SDN BHD PLO33 KAWASAN PERINDUSTRIAN SENAI 81400 SENAI MALAYSIA TDK-LAMBDA MALAYSIA SDN BHD LOT 2 & 3, BATU 9 3/4 KAWASAN PERINDUSTRIAN BANDAR BARU JAYA GADING 26070 KUANTAN MALAYSIA ALPS LOGISTICS FACILITIES CO LTD 593-1 NISHIOOHASHI TSUKUBA-SHI IBARAKI-KEN 305-0831 JAPAN

GENERAL PRODUCT INFORMATION:

Report Summary

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

Product Description

The product testes is built-in type switching power supply (host equipment is not specified).

Model Differences

Two models are identical to each other except for output ratings, transformer T2 and electrical ratings of secondary components.

Suffixes "x" and "y" are not safety relevant.

Additional Information

This report is a reissue of CBTR Ref. No.:12027306 001, 12027306 002 and 12027306 003, CB Test Certificate Ref. No.JPTUV-048684, JPTUV-048684-M1and JPTUV-048684-M2. Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, has been determined that the product continues to comply with the standard.

Sample Received date is 2014-09-16.
Construction review was conducted on 2014-09-19.

Abbreviations used in the report.
- built-in application: B/I

In this Test Report, CENELEC mark license indicating compliance to EN standard was used to verify component compliance to IEC standard because the standards are technically equivalent.

It was considered that UL Standard has requirements that meet or exceed the relevant IEC requirements.

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma)

permitted by the manufacturer's specification of: 50°C

- The product is intended for use on the following power systems: TN
- The product was investigated to the following additional standards: EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 (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 end-product Electric Strength Test is to be based upon a maximum working voltage of: max working voltage: 285 Vrms, 566 Vpk
- The following secondary output circuits are SELV: All output
- 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: Not been conducted
- 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), T2 (Class B)
- The following end-product enclosures are required: Fire, Electrical

Abbreviations used in the report:

- normal condition	N.C.	- single fault condition	S.F.C
- operational insulation	OP	- basic insulation	BI
- basic insulation between parts of opposite polarity:	BOP	- supplementary insulation	SI
- double insulation	DI	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	Pass
1.5.2	Evaluation and testing of components	Components, which are certified for IEC and/or national standards, are used correctly within their ratings.	Pass
1.5.3	Thermal controls	Not used.	N/A
1.5.4	Transformers	(see Annex C)	Pass
1.5.5	Interconnecting cables	No interconnecting cables.	N/A
1.5.6	Capacitors bridging insulation	Type X2 capacitors used between lines, type Y1 capacitors used between line and earth comply with IEC 60384-14. (see appended table 1.5.1)	Pass
1.5.7	Resistors bridging insulation	See below.	Pass
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Only resistors bridging functional insulations.	Pass
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such components.	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such components.	N/A
1.5.8	Components in equipment for IT power systems	Line to PE components are rated for line to line voltage.	Pass
1.5.9	Surge suppressors		Pass
1.5.9.1	General	Only approved VDR (CR1) used in primary.	Pass
1.5.9.2	Protection of VDRs		Pass
1.5.9.3	Bridging of functional insulation by a VDR		Pass
1.5.9.4	Bridging of basic insulation by a VDR	No such VDRs.	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6	**Power interface**		Pass
1.6.1	AC power distribution systems	TN, IT	Pass
1.6.2	Input current	(see appended table 1.6.2)	Pass
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment.	N/A
1.6.4	Neutral conductor	Neutral insulated from earth and body like as line conductor.	Pass
1.7	**Marking and instructions**		Pass
1.7.1	Power rating and identification markings	See below.	Pass
1.7.1.1	Power rating mark		Pass
	Multiple mains supply connections .....:		N/A
	Rated voltage(s) or voltage range(s) (V) .....:	100–240V	Pass
	Symbol for nature of supply, for d.c. only .....:	AC supply	N/A
	Rated frequency or rated frequency range (Hz) ....:	50–60Hz	Pass
	Rated current (mA or A).....:	1.4A–0.8A	Pass
1.7.1.2	Identification markings		Pass
	Manufacturer's name or trademark or identification mark .....:	TDK, TDK·Lambda or TDK·Lambda	Pass
	Model identification or type reference.....:	MTW60-51212, MTW60-51515	Pass
	Symbol for Class II equipment only .....:		N/A
	Other markings and symbols .....:		N/A
1.7.1.3	Use of graphical symbols		N/A
1.7.2	Safety instructions and marking	B/I. Installation instruction provided, containing necessary instructions and caution information. English version checked.	Pass
1.7.2.1	General		Pass
1.7.2.2	Disconnect devices	B/I.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.3	Overcurrent protective device	B/I.	N/A
1.7.2.4	IT Power distribution systems	Considered for Norway. No special modification, no instruction required.	Pass
1.7.2.5	Operator access with a tool	B/I.	N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles	Continuous operation.	N/A
1.7.4	Supply voltage adjustment.....:		N/A
	Method and means of adjustment; reference to installation instructions.....:		–
1.7.5	Power outlets on the equipment .....:	No power outlets provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference).....:	Fuse is clearly and adequately marked with fuse number and rating. F1: T3.15AH, 250V Caution: Replace with same type and rating of fuse. No user accessible fuse holder.	Pass
1.7.7	Wiring terminals	See below.	Pass
1.7.7.1	Protective earthing and bonding terminals .....:	B/I, gnd conductor shall be connected to PE in host equipment through connector CN1. It is marked on PCB with symbol IEC 60417, No. 5017 (⏚).	Pass
1.7.7.2	Terminals for a.c. mains supply conductors	B/I, AC mains supply connection by connector CN1. Live and neutral connection terminals are marked as ”L” and ”N” on PCB next to the connector.	Pass
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators	No safety relevant controls nor indicators.	N/A
1.7.8.1	Identification, location and marking.....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.2	Colours.....:		N/A
1.7.8.3	Symbols according to IEC 60417.....:		N/A
1.7.8.4	Markings using figures.....:		N/A
1.7.9	Isolation of multiple power sources.....:	Single supply.	N/A
1.7.10	Thermostats and other regulating devices.....:	No such thermostats or the like.	N/A
1.7.11	Durability	Marking is durable and legible.	Pass
1.7.12	Removable parts	Safety relevant markings are located on fixed installed parts	Pass
1.7.13	Replaceable batteries .....:	No batteries.	N/A
	Language(s).....:		–
1.7.14	Equipment for restricted access locations .....:	B/I.	N/A
2	**PROTECTION FROM HAZARDS**		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	(see cl. 2.1.1.7)	Pass
2.1.1.1	Access to energized parts		N/A
	Test by inspection .....:		N/A
	Test with test finger (Figure 2A).....:		N/A
	Test with test pin (Figure 2B).....:		N/A
	Test with test probe (Figure 2C) .....:		N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm).....:		–
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards.....:		N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment	B/I. Test conducted anyway with model MTW60-51212xy.	Pass
	Measured voltage (V); time-constant (s).....:	Measured time-constant; 0.5s	–

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.8	Energy hazards - d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply...:		N/A
	b) Internal battery connected to the mains supply.:		N/A
2.1.1.9	Audio amplifiers.....:	Not provided.	N/A
2.1.2	Protection in service access areas	B/I.	N/A
2.1.3	Protection in restricted access locations	B/I.	N/A
2.2	**SELV circuits**		Pass
2.2.1	General requirements		Pass
2.2.2	Voltages under normal conditions (V).....:	Measured DC 30V max. (on model MTW60-51515)	Pass
2.2.3	Voltages under fault conditions (V).....:	Limits of 71V peak and 120Vdc were not exceed, SELV limits not for longer than 0.2s.	Pass
2.2.4	Connection of SELV circuits to other circuits.....:	SELV not connected to primary.	N/A
2.3	**TNV circuits**		N/A
2.3.1	Limits		N/A
	Type of TNV circuits.....:		-
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions.....:		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed .....:		-
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed .....:		-
2.3.5	Test for operating voltages generated externally		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.4	**Limited current circuits**		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values		N/A
	Frequency (Hz) .....:		-
	Measured current (mA) .....:		-
	Measured voltage (V).....:		-
	Measured circuit capacitance (nF or µF) .....:		-
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	**Limited power sources**		Pass
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		Pass
	Use of integrated circuit (IC) current limiters .....:		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) .....:	(see appended table 2.5)	–
	Current rating of overcurrent protective device (A):		–
2.6	**Provisions for earthing and bonding**		Pass
2.6.1	Protective earthing	B/I.	N/A
2.6.2	Functional earthing	Functional earthing either separated from hazardous voltages by double- or reinforced insulation or connected to PB.	Pass
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors		Pass
2.6.3.1	General		Pass
2.6.3.2	Size of protective earthing conductors	No power cord provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), cross-sectional area (mm²), AWG.....:		_
2.6.3.3	Size of protective bonding conductors	No protective bonding conductors.	N/A
	Rated current (A), cross-sectional area (mm²), AWG.....:		_
	Protective current rating (A), cross-sectional area (mm²), AWG.....:		_
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (ohm), voltage drop (V), test current (A), duration (min).....:	B/I. Test conducted anyway with model MTW60-51212xy. Location; FG pin (CN1) to gnd trace on PCB (CN20) Measured voltage drop; 0.1V (test condition; 40A for 2min)	Pass
2.6.3.5	Colour of insulation .....:		N/A
2.6.4	Terminals	No terminals.	N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm).....:		_
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	No protective earth conductors.	N/A
2.6.5	Integrity of protective earthing		Pass
2.6.5.1	Interconnection of equipment	B/I.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductors.	Pass
2.6.5.3	Disconnection of protective earth	B/I.	N/A
2.6.5.4	Parts that can be removed by an operator	B/I.	N/A
2.6.5.5	Parts removed during servicing	B/I.	N/A
2.6.5.6	Corrosion resistance	All protective earth connections in compliance with Annex J. Specifically no direct Al – Cu contacts.	Pass
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	No TNV circuits.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.7	**Overcurrent and earth fault protection in primary circuits**		Pass
2.7.1	Basic requirements	B/I. The built-in device fuse F1 provides overcurrent protection.	Pass
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not covered in 5.3.7		Pass
2.7.3	Short-circuit backup protection	B/I. Additionally verified by short/abnormal tests.	Pass
2.7.4	Number and location of protective devices.....:	B/I, overcurrent protections by fuse F1 in primary phase.	Pass
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel .....:	B/I.	N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles		N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm).....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		Pass
2.9.1	Properties of insulating materials	Natural rubber, asbestos or	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
		hygroscopic materials are not used.	
2.9.2	Humidity conditioning	Humidity treatment conducted for 48h.	Pass
	Relative humidity (%), temperature (°C) .....:	95%, 40°C	–
2.9.3	Grade of insulation	Kind of insulation and working voltage considered.	Pass
2.9.4	Separation from hazardous voltages		Pass
	Method(s) used .....:	Method 1	–
2.10	**Clearances, creepage distances and distances through insulation**		Pass
2.10.1	General	Adequate dimensioning confirmed. Overvoltage category I used to determine clearances in secondary circuits.	Pass
2.10.1.1	Frequency .....:		Pass
2.10.1.2	Pollution degrees .....:	Pollution degree 2.	Pass
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions	Not applied.	N/A
2.10.1.6	Special separation requirements	No TNV circuits.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	No such construction.	N/A
2.10.2	Determination of working voltage	The r.m.s. and the peak voltages were measured on all sources of the switching power supply.	Pass
2.10.2.1	General		Pass
2.10.2.2	RMS working voltage		Pass
2.10.2.3	Peak working voltage		Pass
2.10.3	Clearances		Pass
2.10.3.1	General	Comply with 2.10.3.3/.4, Annex G not applied.	Pass
2.10.3.2	Mains transient voltages	Not measured, normal transient levels considered.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	a) AC mains supply.....:		Pass
	b) Earthed d.c. mains supplies.....:		N/A
	c) Unearthed d.c. mains supplies.....:		N/A
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	Pass
2.10.3.4	Clearances in secondary circuits	Only functional insulation.	N/A
2.10.3.5	Clearances in circuits having starting pulses	No starting pulses.	N/A
2.10.3.6	Transients from a.c. mains supply .....:		N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems.....:		N/A
2.10.3.9	Measurement of transient voltage levels	Not measured, normal transient levels considered.	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply.....:		N/A
	For a d.c. mains supply.....:		N/A
	b) Transients from a telecommunication network		N/A
2.10.4	Creepage distances		Pass
2.10.4.1	General		Pass
2.10.4.2	Material group and comparative tracking index	See below.	Pass
	CTI tests.....:	Material group IIIa and IIIb are assumed to be used.	–
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	Pass
2.10.5	Solid insulation		Pass
2.10.5.1	General		Pass
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	Pass
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices	Photo-couplers are approved components.	Pass
2.10.5.5	Cemented joints	Not considered.	N/A
2.10.5.6	Thin sheet material - General		Pass

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.7	Separable thin sheet material	Provided within transformers T1 and T2	Pass
	Number of layers (pcs).....:	3 layers	–
2.10.5.8	Non-separable thin sheet material	No such construction.	N/A
2.10.5.9	Thin sheet material - standard test procedure		N/A
	Electric strength test .....:		–
2.10.5.10	Thin sheet material - alternative test procedure		Pass
	Electric strength test .....:	(see appended table 2.10.5)	–
2.10.5.11	Insulation in wound components		Pass
2.10.5.12	Wire in wound components		N/A
	Working voltage .....:		N/A
	a) Basic insulation not under stress.....:		N/A
	b) Basic, supplementary, reinforced insulation.....:		N/A
	c) Compliance with Annex U.....:		N/A
	Two wires in contact inside wound component; angle between 45° and 90°.....:		N/A
2.10.5.13	Wire with solvent-based enamel in wound components	Not used.	N/A
	Electric strength test .....:		–
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress.....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		Pass
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3/.4)	Pass
2.10.6.2	Coated printed boards	Coating not tested.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	Not used to provide supplementary or double/reinforced insulation.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Distance through insulation		N/A
	Number of insulation layers (pcs) .....:		N/A
2.10.7	Component external terminations	No such components.	N/A
2.10.8	Tests on coated printed boards and coated components	Coating not tested.	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts	Photo-couplers are approved components. Not applied for other components.	N/A
3	**WIRING, CONNECTIONS AND SUPPLY**		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection	PCB traces only.	N/A
3.1.2	Protection against mechanical damage		N/A
3.1.3	Securing of internal wiring		N/A
3.1.4	Insulation of conductors		N/A
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	B/I.	N/A
3.1.7	Insulating materials in electrical connections	Relevant current carrying connections are metal to metal.	Pass
3.1.8	Self-tapping and spaced thread screws	Thread cutting or space thread screws not used for current carrying electrical connections.	N/A
3.1.9	Termination of conductors	Conductors are suitable terminated, creepage and clearances maintained, second	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
		securing for soldered terminations provided.	
	10 N pull test	10N applied to relevant parts.	Pass
3.1.10	Sleeving on wiring		N/A
3.2	**Connection to mains supply**		N/A
3.2.1	Means of connection		N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) .....:		-
3.2.4	Appliance inlets		N/A
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type .....:		-
	Rated current (A), cross-sectional area (mm²), AWG.....:		-
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N).....:		-
	Longitudinal displacement (mm).....:		-
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter of minor dimension D (mm); test mass (g) .....:		-
	Radius of curvature of cord (mm) .....:		-
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm²) .....:		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm).....:		-
3.3.6	Wiring terminals design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A
3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement		N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		N/A
3.5.1	General requirements		N/A
3.5.2	Types of interconnection circuits.....:		N/A
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4	**PHYSICAL REQUIREMENTS**		Pass
4.1	Stability		N/A
	Angle of 10°	B/I.	N/A
	Test force (N) .....:		N/A
4.2	**Mechanical strength**		Pass
4.2.1	General		Pass
	Rack-mounted equipment	B/I.	N/A
4.2.2	Steady force test, 10 N	Applied to relevant parts, no hazard.	Pass
4.2.3	Steady force test, 30 N	B/I.	N/A
4.2.4	Steady force test, 250 N	B/I.	N/A
4.2.5	Impact test	B/I.	N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm) .....:	B/I.	N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes	No CRTs.	N/A
	Picture tube separately certified.....:		N/A
4.2.9	High pressure lamps	No such lamps.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N).....:	B/I.	N/A
4.3	**Design and construction**		Pass
4.3.1	Edges and corners		N/A
4.3.2	Handles and manual controls; force (N) .....:		N/A
4.3.3	Adjustable controls	Full range circuit, no voltage adjustment necessary.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
		stress.	
4.3.5	Connection by plugs and sockets	In service areas, mismatching prevented by incompatible form or location.	Pass
4.3.6	Direct plug-in equipment	Not direct plug-in.	N/A
	Torque.....:		–
	Compliance with the relevant mains plug standard:		N/A
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	No batteries.	N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	B/I.	N/A
4.3.10	Dust, powders, liquids and gases	B/I.	N/A
4.3.11	Containers for liquids or gases	No liquid contained.	N/A
4.3.12	Flammable liquids.....:	No flammable liquids present.	N/A
	Quantity of liquid (l).....:		N/A
	Flash point (°C).....:		N/A
4.3.13	Radiation	No radiation hazards.	N/A
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg).....:		–
	Measured high-voltage (kV).....:		–
	Measured focus voltage (kV).....:		–
	CRT markings.....:		–
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No ultraviolet (UV) radiation.	N/A
	Part, property, retention after test, flammability classification.....:		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation.....:		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.5.1	Lasers (including laser diodes)		N/A
	Laser class.....:		_
4.3.13.5.2	Light emitting diodes (LEDs)		N/A
4.3.13.6	Other types.....:		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		N/A
4.4.2	Protection in operator access areas .....:		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations.....:		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a) .....:		N/A
	Is considered to cause pain, not injury. b) .....:		N/A
	Considered to cause injury. c) .....:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning .....:		N/A
4.4.5.3	Protection for service persons		N/A
	Use of symbol or warning .....:		N/A
4.5	**Thermal requirements**		Pass
4.5.1	General		Pass
4.5.2	Temperature tests		Pass
	Normal load condition per Annex L.....:	Method L.7	_
4.5.3	Temperature limits for materials	(see appended table 4.5)	Pass
4.5.4	Touch temperature limits		N/A
4.5.5	Resistance to abnormal heat .....:	(see appended table 4.5.5)	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
4.6	**Openings in enclosures**		N/A
4.6.1	Top and side openings		N/A
	Dimensions (mm).....:		-
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm).....:		-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm).....:		-
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks).....:		-
4.7	**Resistance to fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame	Materials with the required flammability classes are used. Safety relevant components used within their specified rating. Electrical parts are not likely to ignite nearby materials. Temperatures see 4.5.1.	Pass
	Method 1, selection and application of components wiring and materials		Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	See below.	N/A
4.7.2.1	Parts requiring a fire enclosure	B/I. Fire enclosure is required through host equipment.	N/A
4.7.2.2	Parts not requiring a fire enclosure	All parts must be located inside fire enclosure of host equipment.	N/A
4.7.3	Materials		Pass
4.7.3.1	General	Materials with the required	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
		flammability classes are used.	
4.7.3.2	Materials for fire enclosures	B/I.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	B/I.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2, HF-2 or better. Small parts were mounted on min. V-1 PCB.	Pass
4.7.3.5	Materials for air filter assemblies	No air filter assemblies.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage (> 4kV) components.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		Pass
5.1	Touch current and protective conductor current		Pass
5.1.1	General	B/I. Tested anyway with model MTW60-51212xy for TN system.	Pass
5.1.2	Configuration of equipment under test (EUT)		Pass
5.1.2.1	Single connection to an a.c. mains supply		Pass
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Per figure 5A.	Pass
5.1.4	Application of measuring instrument	Per Annex D.	Pass
5.1.5	Test procedure		Pass
5.1.6	Test measurements		Pass
	Supply voltage (V).....:	AC 255V, 60Hz	–
	Measured touch current (mA) .....:	0.65mA	–
	Max. allowed touch current (mA) .....:	3.5mA	–
	Measured protective conductor current (mA) .....:		–
	Max. allowed protective conductor current (mA) ...:		–
5.1.7	Equipment with touch current exceeding 3,5 mA	Leakage current does not	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
		exceed 3.5mA	
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No TNV circuits.	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V).....:		_
	Measured touch current (mA) .....:		_
	Max. allowed touch current (mA) .....:		_
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports.....:		N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	**Electric strength**		Pass
5.2.1	General	(see appended table 5.2)	Pass
5.2.2	Test procedure		Pass
5.3	**Abnormal operating and fault conditions**		Pass
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	Pass
5.3.2	Motors	No motors.	N/A
5.3.3	Transformers	Adequate protection against overload provided. (see appended table 5.3)	Pass
5.3.4	Functional insulation .....:	Short circuit tests. (see appended table 5.3)	Pass
5.3.5	Electromechanical components	Not provided.	N/A
5.3.6	Audio amplifiers in ITE .....:	Not provided.	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.8	Unattended equipment	B/I.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		Pass
5.3.9.1	During the tests	No fire propagated beyond the equipment. No molten metal was emitted.	Pass
5.3.9.2	After the tests	Electric strength test primary to SELV passed.	Pass
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V).....:		-
	Current in the test circuit (mA) .....:		-
6.1.2.2	Exclusions.....:		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) .....:		-
	Current limiting method.....:		-
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		N/A
7.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		N/A
A.1.1	Samples .....:		-
	Wall thickness (mm).....:		-
A.1.2	Conditioning of samples; temperature (°C).....:		N/A
A.1.3	Mounting of samples.....:		N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D.....:		N/A
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		-
	Sample 2 burning time (s).....:		-
	Sample 3 burning time (s).....:		-
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		N/A
A.2.1	Samples, material .....:		-
	Wall thickness (mm).....:		-
A.2.2	Conditioning of samples; temperature (°C).....:		N/A
A.2.3	Mounting of samples.....:		N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Flame A, B or C.....:		-
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s).....:		-
	Sample 2 burning time (s).....:		-
	Sample 3 burning time (s).....:		-
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s).....:		-
	Sample 2 burning time (s).....:		-
	Sample 3 burning time (s).....:		-
A.3	Hot flaming oil test (see 4.6.2)		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	General requirements		N/A
	Position .....:		-
	Manufacturer.....:		-
	Type .....:		-
	Rated values .....:		-
B.2	Test conditions		N/A
B.3	Maximum temperatures		N/A
B.4	Running overload test		N/A
B.5	Locked-rotor overload test		N/A
	Test duration (days).....:		-
	Electric strength test: test voltage (V).....:		-
B.6	Running overload test for d.c. motors in secondary circuits		N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) .....:		N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) .....:		N/A
B.8	Test for motors with capacitors		N/A
B.9	Test for three-phase motors		N/A
B.10	Test for series motors		N/A
	Operating voltage (V).....:		-
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		Pass
	Position .....:	Pri – sec transformer: T1, T2	–
	Manufacturer.....:	(see appended table 1.5.1)	–
	Type .....:	(see appended table 1.5.1)	–
	Rated values .....:	(see appended table 1.5.1)	–
	Method of protection .....:	Overcurrent protection circuits	–
C.1	Overload test	(see appended table 5.3)	Pass
C.2	Insulation	(see appended tables 2.10.3/4, 2.10.5 and 5.2)	Pass
	Protection from displacement of windings .....:	Adequate construction; for further details, see appended table 2.10.3/4)	Pass
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		Pass
D.1	Measuring instrument		Pass
D.2	Alternative measuring instrument		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**	Pass

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**	Pass

G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	Clearances		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	Determination of mains transient voltage (V)		N/A
G.2.1	AC mains supply .....:		N/A
G.2.2	Earthed d.c. mains supply.....:		N/A
G.2.3	Unearthed d.c. mains supply .....:		N/A
G.2.4	Battery operation.....:		N/A
G.3	Determination of telecommunication network transient voltage (V) :		N/A
G.4	Determination of required withstand voltage (V)		N/A
G.4.1	Mains transients and internal repetitive peaks.....:		N/A
G.4.2	Transients from telecommunication networks .....:		N/A
G.4.3	Combination of transients		N/A
G.4.4	Transients from cable distribution systems		N/A
G.5	Measurement of transient voltages (V)		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	Determination of minimum clearances		N/A

H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		Pass
	Metal(s) used .....:		-

K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) .....:		N/A
K.3	Thermostat endurance test; operating voltage (V) :		N/A
K.4	Temperature limiter endurance; operating voltage (V) .....:		N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation		N/A

L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		Pass
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment		Pass

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) .....:		-
M.3.1.2	Voltage (V) .....:		-

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Clause	Requirement + Test	Result - Remark	Verdict
M.3.1.3	Cadence; time (s), voltage (V) .....:		-
M.3.1.4	Single fault current (mA) .....:		-
M.3.2	Tripping device and monitoring voltage .....:		N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V).....:		N/A
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A
P	**ANNEX P, NORMATIVE REFERENCES**		-
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		Pass
	- Preferred climatic categories .....:		Pass
	- Maximum continuous voltage .....:	300V or 320V	Pass
	- Combination Pulse current .....:		Pass
	Body of the VDR Test according to IEC60695-11-5 .....:		N/A
	Body of the VDR. Flammability class of material (min V-1) .....:	Certified component and complied with IEC60950-1:2013, Annex Q.	Pass
R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		N/A
S.1	Test equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
	.....:		-
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
	.....:		-
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		Pass
V.1	Introduction		Pass
V.2	TN power distribution systems		Pass
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		Pass
X.1	Determination of maximum input current		Pass
X.2	Overload test procedure		Pass
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
Y.1	Test apparatus .....:		N/A
Y.2	Mounting of test samples .....:		N/A
Y.3	Carbon-arc light-exposure apparatus .....:		N/A
Y.4	Xenon-arc light-exposure apparatus.....:		N/A
Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**		Pass
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		-
CC	**ANNEX CC, EVALUATION OF INTEGRATED CIRCUIT (IC) CURRENT LIMITERS**		N/A
CC.1	General		N/A
CC.2	Test program 1.....:		N/A
CC.3	Test program 2.....:		N/A
CC.4	Test program 3.....:		N/A
CC.5	Compliance .....:		N/A
DD	**ANNEX DD, REQUIREMENTS FOR THE MOUNTING MEANS OF RACK-MOUNTED EQUIPMENT**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N.....:		N/A
DD.3	Mechanical strength test, 250 N, including end stops.....:		N/A
DD.4	Compliance .....:		N/A
EE	**ANNEX EE, HOUSEHOLD AND HOME/OFFICE DOCUMENT/MEDIA SHREDDERS**		N/A
EE.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
EE.2	Markings and instructions		N/A
	Use of markings or symbols.....:		N/A
	Information of user instructions, maintenance and/or servicing instructions .....:		N/A
EE.3	Inadvertent reactivation test.....:		N/A
EE.4	Disconnection of power to hazardous moving parts		N/A
	Use of markings or symbols.....:		N/A
EE.5	Protection against hazardous moving parts.....:		N/A
	Test with test finger (Figure 2A)		N/A
	Test with wedge probe (Figure EE1 and EE2) .....:		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: list of critical components**				Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (Edition or year)	mark(s) of conformity[1])
Connector/ CN1, CN2	Japan Solderless Terminal	VH	250Vac, 7A	IEC 61984	TUV
Fuse/ F1	Littelfuse	215	T3.15AH, 250V	IEC 60127-1, IEC 60127-2	VDE, SEMKO
(alternate)	Walter Electronic Co., Ltd.	TSC	T3.15AH, 250V	IEC 60127-1, IEC 60127-2, UL 248	VDE, SEMKO, UL
X-Capacitor/ C1, C2	Cheng Tung Industrial Co.,Ltd.	CTX	300V, max. 0.33µF	IEC 60384-14	SEMKO
(alternate)	Carli Electronics Co.,Ltd.	MPX	275V, max. 0.33µF	IEC 60384-14	VDE
(alternate)	Hua Jung Components Co., Ltd.	MKP	275V, max. 0.33µF	IEC 60384-14	SEMKO
(alternate)	Panasonic	ECQUL	275V, max. 0.33µF	IEC 60384-14	VDE
(alternate)	Epcos Corp.	B3293# or B3292#	305V, max. 0.33µF	IEC 60384-14	ENEC (VDE)
(alternate)	Panasonic	ECQUA	275V, max. 0.33µF	IEC 60384-14	VDE
(alternate)	Okaya	LE	Min. 250V, max. 0.33µF	IEC 60384-14	ENEC (SEMKO)
Y-Capacitor/ C3, C4	TDK-EPC Corp.	CD	250V, max. 2200pF	IEC 60384-14	VDE, SEMKO
(alternate)	Murata Mfg. Co., Ltd.	KX	250V, max. 2200pF	IEC 60384-14	VDE, SEMKO
Y-Capacitor/ C19, C20	TDK-EPC Corp.	CD	250V, max. 3300pF	IEC 60384-14	VDE, SEMKO
(alternate)	Murata Mfg. Co., Ltd.	KX	250V, max. 3300pF	IEC 60384-14	VDE, SEMKO
Varistor/ CR1	Panasonic	V10511U (ERZV10D511)	Rated 320V, clamp voltage 510V	IEC 61051-1, IEC 61051-2, IEC 61051-2-2, IEC 60950-1 Annex Q	VDE
(alternate)	Panasonic	V10471U (ERZV10D471)	Rated 300V, clamp voltage 470V	IEC 61051-1, IEC 61051-2, IEC 61051-2-2,	VDE

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Clause	Requirement + Test	Result - Remark	Verdict

				IEC 60950-1 Annex Q	
(alternate)	Nippon Chemi-Con Corp.	TND12V-471K, TNR12V471K, TND12V-511K or TNR12V511K	Rated 300V or 320V, clamp voltage 510V or 470V	IEC 61051-2, IEC 61051-2-2, IEC 60950-1 Annex Q	VDE
(alternate)	Epcos Corp	S10K300E2K1 or S10K320E2K1	Rated 300V or 320V, clamp voltage 510V or 470V	IEC 61051-2, IEC 61051-2-2, IEC 60950-1 Annex Q	OVE
(alternate)	Thinking Electronic Industrial Co., Ltd.	TVR10471-V or TVR10511-V	Rated 300V or 320V, clamp voltage 510V or 470V	IEC 61051-2, IEC 61051-2-2, IEC 60950-1 Annex Q	VDE
Photo-Coupler/ IC2, IC4	Renesas Electronics	PS2561L1-1	DTI > 0.4mm	IEC 60950-1	SEMKO
(alternate)	Sharp	PC123	DTI > 0.4mm	IEC 60950-1	SEMKO
(alternate)	Toshiba	TLP621 or TLP421	DTI > 0.4mm	IEC 60950-1	SEMKO
(alternate)	Toshiba	TLP781F or TLP785F	Isolation voltage 5000V	EN 60950-1	ENEC (SEMKO)
(alternate)	Renesas Electronics	PS2581L1	Isolation voltage 5000V	IEC 60950-1	ENEC (SEMKO)
Power Thermistor/ R4	Thinking Electronic Industrial	SCK	10Ω, 4 A	IEC 60950-1	(tested in unit)
(alternate)	SEMITEC	M10010	10Ω, 2.3 A	IEC 60950-1	(tested in unit)
Discharge Resistor/ R1, R2, R3	Interchangeable	Interchangeable	Min. 1/4W, 100k	IEC 60950-1	(tested in unit)
Electrolytic Capacitor/ C5, C12	Interchangeable	Interchangeable	Min. 400V, max. 120µF, 105°C	IEC 60950-1	(tested in unit)
PCB	Interchangeable	Interchangeable	V-0, min. 130°C	UL 796	UL
Inductor/ L1	TDK-EPC	2R0A392K24Y	Class E	IEC 60950-1	(tested in unit)
(alternate)	Tokyo Parts	2R0A392K24Y	Class E	IEC 60950-1	(tested in unit)
Bobbin of L1	Chang Chun Plastics Co. Ltd.	4115	PBT, min. 0.75mm thick	UL 746C	UL
Base of L1	Chang Chun Plastics Co. Ltd.	T-355J or T375J	Phenolic, min. 0.62mm thick	UL 746C	UL
Transformer/ T1	TDK	SRW28LEC-T83H014	Class B	IEC 60950-1	(tested in unit)
Insulation tape in T1	Symbio	No. 35660	130°C	UL 510	UL

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(alternate)	Teraoka	No. 632S or No. 630F	130°C	UL 510	UL
(alternate)	Jingjiang Yahua Pressure Sensitive Glue	No. PZ	130°C	UL 510	UL
(alternate)	3M	No. 1318-1 or No. 1350F-1	130°C	UL 510	UL
(alternate)	Nitto Denko	No. 31CT	130°C	UL 510	UL
Transformer/ T2 for model MTW60-51212xy	TDK-EPC	SRW28LEC-T82H015	Class B	IEC 60950-1	(tested in unit)
Insulation tape in T2 for model MTW60-51212xy	Symbio	No. 35660	130°C	UL 510	UL
(alternate)	Teraoka	No. 632S or No. 630F	130°C	UL 510	UL
(alternate)	Jingjiang Yahua Pressure Sensitive Glue	No. PZ	130°C	UL 510	UL
(alternate)	3M	No. 1318-1 or No. 1350F-1	130°C	UL 510	UL
(alternate)	Nitto Denko	No. 31CT	130°C	UL 510	UL
Transformer/ T2 for model MTW60-51515xy	TDK-EPC	SRW28LEC-T99H015	Class B	IEC 60950-1	(tested in unit)
Insulation tape in T2 for model MTW60-51515xy	Symbio	MY95	130°C	UL 510	UL
(alternate)	Jingjiang Yahua Pressure Sensitive Glue	CT286	130°C	UL 510	UL
(alternate)	3M	No. 1318	130°C	UL 510	UL
(alternate)	Nitto Denko	No. 31CT	130°C	UL 510	UL
Insulation tube/ TU2	Iwase	AH-3	105°C, 300V, VW-1	UL 224	UL
(alternate)	Iwase	F-LINK-NHX	105°C, VW-1	UL 224	UL
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					
The CBTL has verified the component information.					

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: Opto Electronic Devices**			Pass
Manufacturer				
Type				
Separately tested				
Bridging insulation				
External creepage distance				
Internal creepage distance				
Distance through insulation				
Tested under the following conditions				
Input				
Output				
supplementary information:				
Certified Component Optical Isolators as Reinforced Insulation in accordance with IEC 60950-1 used. (see appended table 1.5.1)				

1.6.2	**TABLE: Electrical data (in normal conditions)**					Pass
U (V)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	condition/status
Model MTW60-51212xy						
AC 100V, 50Hz	1.35	1.4	80.2	F1	3.15	Rated output
AC 100V, 60Hz	1.35	1.4	80.2	F1	3.15	Rated output
AC 240V, 50Hz	0.7	0.8	79.3	F1	3.15	Rated output
AC 240V, 60Hz	0.7	0.8	79.3	F1	3.15	Rated output
Model MTW60-51212 (alternate 1 PCB pattern)						
AC 100V, 50Hz	1.28	1.4	81.0	F1	3.15	Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A
AC 100V,	1.29	1.4	81.0	F1	3.15	Output ch1 : +5V, 5A

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60Hz						ch2 : +12V, 2.5A ch3 : -12V, 0.5A
AC 240V, 50Hz	0.66	0.8	79.7	F1	3.15	Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A
AC 240V, 50Hz	0.67	0.8	79.6	F1	3.15	Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A
Model MTW60-51212 (alternate 2 PCB pattern)						
AC 100V, 50Hz	1.41	1.4	80.3	F1	3.15 Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A	
AC 100V, 60Hz	1.43	1.4	80.1	F1	3.15	Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A
AC 240V, 50Hz	0.73	0.8	80.8	F1	3.15	Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A
AC 240V, 50Hz	0.73	0.8	80.9	F1	3.15	Output ch1 : +5V, 5A ch2 : +12V, 2.5A ch3 : -12V, 0.5A
Model MTW60-51515xy						
AC 100V, 50Hz	1.40	1.4	81.4	F1	3.15	Rated output
AC 100V, 60Hz	1.41	1.4	81.4	F1	3.15	Rated output
AC 240V, 50Hz	0.74	0.8	81.8	F1	3.15	Rated output
AC 240V, 60Hz	0.74	0.8	81.8	F1	3.15	Rated output
Model MTW60-51515 (alternate 1 PCB pattern)						
AC 100V, 50Hz	1.42	1.4	80.7	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
AC 100V, 60Hz	1.44	1.4	80.5	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
AC 240V, 50Hz	0.76	0.8	80.8	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A

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AC 240V, 50Hz	0.76	0.8	80.5	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
Model MTW60-51515 (alternate 2 PCB pattern)						
AC 100V, 50Hz	1.43	1.4	81.0	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
AC 100V, 60Hz	1.45	1.4	81.0	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
AC 240V, 50Hz	0.75	0.8	80.4	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
AC 240V, 50Hz	0.76	0.8	80.4	F1	3.15	Output ch1 : +5V, 5A ch2 : +15V, 2A ch3 : -15V, 0.5A
supplementary information:						

2.1.1.5 c) 1)	**TABLE: Max. V, A, VA test**				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
supplementary information:					

2.1.1.5 c) 2)	**TABLE: Stored energy**		N/A
Capacitance C (µF)	Voltage U (V)	Energy E (J)	
supplementary information:			

2.2	**TABLE: Evaluation of voltage limiting components in SELV circuits**			Pass
Component (measured between)	max. voltage (V) (normal operation)		Voltage limiting components	
	V peak	V d.c.		
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)			

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Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:
See clause 2.2.

2.5	**TABLE: Limited power sources**						Pass
Circuit output tested:			See below.				
Note: Measured Uoc (V) with all load circuits disconnected:			See below.				
Components	Sample No.	Uoc (V)	Isc (A)		VA		
			Meas.	Limit	Meas.	Limit	
Model MTW60-51212xy							
DC -12V output							
Normal condition	--	-12.0	1.3	8.0	13.0	100	
IC55 shorted	--	-12.0	1.7	8.0	24.8	100	
Model MTW60-51212xy (alternate 1 PCB pattern)							
Normal condition	--	-12.0	1.48	8.0	17.6	100	
IC55 shorted	--	-12.0	2.24	8.0	27.6	100	
Model MTW60-51515xy							
DC -15V output							
Normal condition	--	-14.7	1.7	8.0	25.0	100	
IC55 shorted	--	-14.7	4.3	8.0	56.8	100	
supplementary information:							
Sc=Short circuit, Oc=Open circuit							

2.10.2	**TABLE: Working voltage measurements**			Pass
Location		RMS voltage (V)	Peak voltage (V)	Comments
supplementary information:				
See appended table 2.10.3 and 2.10.4.				

2.10.3 and 2.10.4	**TABLE: Clearance and creepage distance measurements**						Pass
Clearance (cl) and creepage distance (cr) at/of/between:		U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)

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Functional:						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Model MTW60-51212xy						
PCB						
Pri – pri (before fuse)	< 420	< 250	1.5	3.5	2.5	3.5
Basic/supplementary:						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Model MTW60-51212xy						
PCB						
Pri – gnd (traces)	< 420	< 250	2.0	5.2	2.5	5.2
Reinforced:						
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Model MTW60-51212xy						
PCB						
Pri – sec (traces at IC4)	< 420	< 250	4.0	6.4	5.0	6.4
Pri – sec (traces at IC2, T1)	566	285	4.4	8.0	5.7	8.0
Transformer T1						
Pri – core – sec	566	285	4.4	12.0	5.7	12.0
Pri – sec (internal)	566	285	4.4	6.4	5.7	6.4
Transformer T2						
Pri – core – sec	566	285	4.4	10.8	5.7	10.8
Pri – sec (internal)	566	285	4.4	6.4	5.7	6.4
supplementary information:						

2.10.5	**TABLE: Distance through insulation measurements**				Pass
Distance through insulation (DTI) at/of:	Upeak (V)	Urms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Basic:					
Insulation tube TU2 on grounding wire, type AH-3 by Iwase	566	--	AC 3000	--	--
Insulation tube TU2 on grounding wire, type F- LINK-NHX by Iwase	566	--	AC 3000	--	--
Reinforced:					

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2 layers of insulation tape in transformer T1 or T2					
Type No. 35660 by Symbio	566	--	AC 3000	--	3 layers
Type No. 632S by Teraoka	566	--	AC 3000	--	3 layers
Type No. 630F by Teraoka	566	--	AC 3000	--	3 layers
Type No. PZ by Jingjiang Yahua Pressure Sensitive Glue	566	--	AC 3000	--	3 layers
Type No. 1318-1 by 3M	566	--	AC 3000	--	3 layers
Type No. 1350F-1 by 3M	566	--	AC 3000	--	3 layers
Type No. 31CT by Nitto Denko	566	--	AC 3000	--	3 layers
Type MY95 by Symbio	566	--	AC 3000	--	3 layers
Type CT286 by Jingjiang Yahua Pressure Sensitive Glue	566	--	AC 3000	--	3 layers
Type No. 1318 by 3M	566	--	AC 3000	--	3 layers
supplementary information:					

4.3.8	**TABLE: Batteries**								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available.									
Is it possible to install the battery in a reverse polarity position									
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. specs.		Meas. current	Manuf. specs.	Meas. current	Manuf. specs.	Meas. current	Manuf. specs.
Max. current during normal condition									
Max. current during fault condition									

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Clause	Requirement + Test	Result - Remark	Verdict

Test results:		Verdict
- Chemical leaks		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
supplementary information:		

4.3.8	**TABLE: Batteries**			N/A
Battery category (lithium, NiMh, NiCad, lithium ion, etc.)				
Manufacturer				
Type / model				
Voltage				
Capacity (mAh)				
Tested and Certified by (incl. Ref. No.)				
Circuit protection diagram (refer to indicated supplement of Enclosure - Miscellaneous)				
MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)				
Location of replaceable battery				
Language(s)				
Close to the battery				
In the servicing instructions				
In the operating instructions				
supplementary information:				
Additional devices may be described in Enclosure - Miscellaneous				

4.5	**TABLE: Thermal requirements**						Pass
	Supply voltage (V) :	See below	See below	See below	--	--	---
	Ambient Tmin (°C) :	See below	See below	See below	--	--	---
	Ambient Tmax (°C) :	--	--	--	--	--	---

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Maximum measured temperature T of part/at:	T (°C) #1	T (°C) #2	T (°C) #3	T (°C) #4	T (°C) #5	Allowed Tmax (°C)
Model MTW60-51212xy						
Input voltage	AC 90V, 50Hz	AC 90V, 50Hz	AC 255V, 50Hz	AC 255V, 50Hz	--	--
Ambient	30.0	Tma= 50	30.7	Tma= 50	--	--
F1	62.9	82.9	47.7	67.0	--	--
CN1	41.7	61.7	36.0	55.3	--	85
CN2	60.9	80.9	58.0	77.3	--	85
C2	58.1	78.1	43.0	62.3	--	85
C5	43.5	63.5	42.6	61.9	--	105
C6	63.5	83.5	72.4	91.7	--	105
C9	50.1	70.1	50.4	69.7	--	105
C16	46.6	66.6	46.7	66.0	--	105
C20	46.7	66.7	40.0	59.3	--	105
C53	67.5	87.5	67.3	86.6	--	105
C60	69.8	89.8	70.2	89.5	--	105
CR1	57.6	77.6	46.0	65.3	--	85
CR2	63.5	83.5	42.1	61.4	--	--
CR51	94.3	114.3	94.2	113.5	--	--
CR53	90.3	110.3	90.4	109.7	--	--
CR55	71.4	91.4	71.4	90.7	--	--
R4	68.7	88.7	50.8	70.1	--	--
R8	62.2	82.2	71.7	91.0	--	--
R25	54.2	74.2	74.7	94.0	--	--
Q1	58.6	78.6	70.8	90.1	--	--
Q2	66.1	85.4	83.7	103.0	--	--
IC1	55.2	75.2	58.7	78.0	--	--
IC2	39.8	59.8	39.0	58.3	--	100
IC3	47.7	67.7	53.8	73.1	--	--
IC4	54.5	74.5	56.8	76.1	--	100
IC55	90.8	110.8	91.3	110.6	--	--
T1 Winding	66.0	86.0	65.6	84.9	--	110/B
T1 Core	59.3	79.3	59.3	78.6	--	--
T2 Winding	67.1	87.1	66.4	85.7	--	110/B
T2 Core	54.8	74.8	76.0	95.3	--	--
L1	65.8	85.8	49.3	68.6	--	105/E
L51	65.8	85.8	64.2	83.5	--	105

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Clause	Requirement + Test	Result - Remark	Verdict

Model MTW60-51515xy						
Input voltage	AC 90V, 50Hz	AC 90V, 50Hz	AC 255V, 50Hz	AC 255V, 50Hz	--	--
Ambient	30.0	Tma= 50	30.7	Tma= 50	--	--
F1	73.4	93.4	58.8	78.1	--	--
CR2	77.1	97.1	55.3	74.6	--	--
CR53	103.1	123.1	106.7	126.0	--	--
CR55	95.0	115.0	103.5	122.8	--	--
R4	104.0	124.0	81.1	100.4	--	--
Q2	81.9	101.9	98.0	117.3	--	--
IC55	106.0	126.0	108.4	127.7	--	--
T1 Winding	78.0	98.0	83.2	102.5	--	110/B
T1 Core	75.6	95.6	81.7	101.0	--	--
T2 Winding	80.4	100.4	86.7	106.0	--	110/B
T2 Core	77.0	97.0	86.6	105.9	--	--
L1	72.1	92.1	58.2	77.5	--	105/E
Model MTW60-51212, Mounting A (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	29.1	Tma= 50	34.6	Tma= 50	--	--
Q1	65.0	85.9	80.3	95.7	--	130 *
Q2	72.0	92.9	84.3	99.7	--	130 *
T1 Core	52.6	73.5	61.3	76.7	--	--
T2 Winding	74.8	95.7	83.3	98.7	--	110/B
T2 Core	67.5	88.4	77.8	93.2	--	--
L1	57.7	78.6	48.2	63.6	--	105/E
L51	56.6	77.5	62.7	78.1	--	130 *
F1	46.4	67.3	42.2	57.6	--	130 *
IC1	51.3	72.2	57.3	72.7	--	130 *
IC2	43.7	64.6	48.0	63.4	--	100
IC3	51.6	72.5	55.6	71.0	--	130 *
IC4	48.4	69.3	56.6	72.0	--	100
CR1	52.9	73.8	51.3	66.7	--	85
CR2	71.0	91.9	51.2	66.6	--	130 *
CR51	94.3	115.2	99.8	115.2	--	130 *
CR53	93.4	114.3	99.3	114.7	--	130 *
CR55	85.7	106.6	93.0	108.4	--	130 *

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Clause	Requirement + Test	Result - Remark	Verdict

C2	45.7	66.6	42.8	58.2	--	85
C5	45.2	66.1	44.3	59.7	--	105
C20	47.3	68.2	41.7	57.1	--	105
C53	63.8	84.7	69.2	84.6	--	105
C60	72.4	93.3	78.6	94.0	--	105
CN1	37.9	58.8	37.7	53.1	--	85
CN2	46.7	67.6	51.5	66.9	--	85
T1 Winding	64.6	85.5	71.9	87.3	--	110/B
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51212, Mounting C (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	31.3	Tma= 50	32.6	Tma= 50	--	--
Q1	65.0	83.7	77.4	94.8	--	130 *
Q2	72.9	91.6	83.1	100.5	--	130 *
T1 Core	53.5	72.2	57.6	75.0	--	--
T2 Winding	78.8	97.5	81.8	99.2	--	110/B
T2 Core	69.9	88.6	75.1	92.5	--	--
L1	58.4	77.1	47.7	65.1	--	105/E
L51	62.5	81.2	63.3	80.7	--	130 *
F1	56.3	75.0	46.7	64.1	--	130 *
IC1	50.3	69.0	55.7	73.1	--	130 *
IC2	43.9	62.6	46.4	63.8	--	100
IC3	54.5	73.2	56.1	73.5	--	130 *
IC4	58.5	77.2	61.5	78.9	--	100
CR1	54.3	73.0	51.7	69.1	--	85
CR2	74.9	93.6	52.0	69.4	--	130 *
CR51	97.7	116.4	98.4	115.8	--	130 *
CR53	96.2	114.9	97.1	114.5	--	130 *
CR55	91.3	110.0	93.3	110.7	--	130 *
C2	49.1	67.8	43.4	60.8	--	85
C5	47.4	66.1	44.3	61.7	--	105
C20	54.6	73.3	43.1	60.5	--	105
C53	64.6	83.3	64.9	82.3	--	105
C60	74.3	93.0	75.2	92.6	--	105
CN1	42.5	61.2	38.1	55.5	--	85
CN2	47.8	66.5	47.7	65.1	--	85

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Clause	Requirement + Test	Result - Remark	Verdict

T1 Winding	63.7	82.4	66.1	83.5	--	110/B
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51212, Mounting D (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	31.3	Tma= 50	35.7	Tma= 50	--	--
Q1	69.6	88.3	86.1	100.4	--	130 *
Q2	73.0	91.7	86.3	100.6	--	130 *
T1 Core	62.1	80.8	70.4	84.7	--	--
T2 Winding	72.4	91.1	79.3	93.6	--	110/B
T2 Core	65.9	84.6	74.7	89.0	--	--
L1	56.4	75.1	47.1	61.4	--	105/E
L51	65.8	84.5	71.6	85.9	--	130 *
F1	46.8	65.5	42.8	57.1	--	130 *
IC1	56.3	75.0	63.7	78.0	--	130 *
IC2	59.7	78.4	67.0	81.3	--	100
IC3	49.3	68.0	53.7	68.0	--	130 *
IC4	45.1	63.8	51.0	65.3	--	100
CR1	62.0	80.7	57.4	71.7	--	85
CR2	68.7	87.4	51.0	65.3	--	130 *
CR51	100.1	118.8	105.4	119.7	--	130 *
CR53	94.6	113.3	99.9	114.2	--	130 *
CR55	85.5	104.2	91.6	105.9	--	130 *
C2	45.3	64.0	42.9	57.2	--	85
C5	43.7	62.4	44.3	58.6	--	105
C20	45.7	64.4	42.5	56.8	--	105
C53	68.5	87.2	73.9	88.2	--	105
C60	70.6	89.3	76.8	91.1	--	105
CN1	36.8	55.5	38.5	52.8	--	85
CN2	48.2	66.9	54.4	68.7	--	85
T1 Winding	69.3	88.0	76.0	90.3	--	110/B
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51212, Mounting E (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Ambient	29.6	Tma= 50	30.2	Tma= 50	--	--
Q1	76.0	96.4	87.2	107.0	--	130 *
Q2	82.1	102.5	89.8	109.6	--	130 *
T1 Core	62.6	83.0	65.8	85.6	--	--
T2 Winding	79.2	99.6	80.5	100.3	--	110/B
T2 Core	71.9	92.3	75.2	95.0	--	--
L1	64.4	84.8	54.5	74.3	--	105/E
L51	55.4	75.8	56.1	75.9	--	130 *
F1	58.8	79.2	50.2	70.0	--	130 *
IC1	61.6	82.0	65.9	85.7	--	130 *
IC2	55.0	75.4	56.6	76.4	--	100
IC3	60.9	81.3	62.6	82.4	--	130 *
IC4	56.4	76.8	58.0	77.8	--	100
CR1	63.0	83.4	59.2	79.0	--	85
CR2	77.1	97.5	58.0	77.8	--	130 *
CR51	97.5	117.9	97.8	117.6	--	130 *
CR53	94.2	114.6	94.6	114.4	--	130 *
CR55	87.9	108.3	89.2	109.0	--	130 *
C2	53.3	73.7	50.2	70.0	--	85
C5	54.8	75.2	52.9	72.7	--	105
C20	59.3	79.7	48.7	68.5	--	105
C53	60.0	80.4	59.6	79.4	--	105
C60	67.6	88.0	67.8	87.6	--	105
CN1	48.8	69.2	42.9	62.7	--	85
CN2	44.1	64.5	44.0	63.8	--	85
T1 Winding	69.5	89.9	70.8	90.6	--	110/B
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51212, Mounting F (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	29.1	Tma= 45	30.7	Tma= 45	--	--
Q1	67.1	83.0	78.7	93.0	--	130 *
Q2	72.4	88.3	80.8	95.1	--	130 *
T1 Core	58.1	74.0	63.1	77.4	--	--
T2 Winding	74.8	90.7	77.4	91.7	--	110/B
T2 Core	66.2	82.1	70.2	84.5	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

L1	57.5	73.4	44.7	59.0	--	105/E
L51	70.0	85.9	71.7	86.0	--	130 *
F1	43.3	59.2	37.9	52.2	--	130 *
IC1	52.8	68.7	55.7	70.0	--	130 *
IC2	50.1	66.0	54.6	68.9	--	100
IC3	50.7	66.6	49.3	63.6	--	130 *
IC4	47.7	63.6	49.0	63.3	--	100
CR1	65.2	81.1	54.8	69.1	--	85
CR2	68.3	84.2	46.0	60.3	--	130 *
CR51	99.7	115.6	101.7	116.0	--	130 *
CR53	95.3	111.2	97.3	111.6	--	130 *
CR55	87.3	103.2	90.3	104.6	--	130 *
C2	42.7	58.6	38.0	52.3	--	85
C5	46.2	62.1	40.0	54.3	--	105
C20	43.5	59.4	36.7	51.0	--	105
C53	71.2	87.1	73.2	87.5	--	105
C60	76.8	92.7	79.3	93.6	--	105
CN1	34.2	50.1	33.0	47.3	--	85
CN2	56.1	72.0	57.9	72.2	--	85
T1 Winding	66.8	82.7	70.0	84.3	--	110/B
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting A (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	32.3	Tma= 50	33.6	Tma= 50	--	--
Q1	77.7	95.4	93.0	109.4	--	130 *
Q2	84.3	102.0	100.2	116.6	--	130 *
T1 Winding	69.6	87.3	74.1	90.5	--	110/B
T2 Core	60.1	77.8	65.3	81.7	--	--
T2 winding	79.3	97.0	85.7	102.1	--	110/B
L1	64.7	82.4	50.5	66.9	--	105/E
L51	63.2	80.9	65.1	81.5	--	130 *
F1	78.3	96.0	59.9	76.3		130 *
IC1	57.3	75.0	59.8	76.2	--	130 *
IC2	48.8	66.5	51.7	68.1	--	100
IC3	56.5	74.2	58.7	75.1	--	130 *
IC4	52.9	70.6	56.8	73.2	--	100

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Clause	Requirement + Test	Result - Remark	Verdict

CR1	62.1	79.8	53.0	69.4	--	85
CR2	74.0	91.7	51.3	67.7	--	130 *
CR51	97.3	115.0	99.0	115.4	--	130 *
CR53	96.5	114.2	98.9	115.3	--	130 *
CR55	90.1	107.8	95.4	111.8	--	130 *
C2	48.9	66.6	43.3	59.7	--	85
C5	48.8	66.5	44.9	61.3	--	105
C20	57.1	74.8	62.9	79.3	--	105
C53	67.3	85.0	69.7	86.1	--	105
C60	76.9	94.6	77.1	93.5	--	105
CN1	40.7	58.4	38.4	54.8	--	85
CN2	52.4	70.1	53.4	69.8	--	85
T1 Core	57.1	74.8	61.8	78.2	--	--
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting C (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	31.4	Tma= 50	31.2	Tma= 50	--	--
Q1	71.8	90.4	89.5	108.3	--	130 *
Q2	79.9	98.5	98.4	117.2	--	130 *
T1 Winding	64.6	83.2	67.6	86.4	--	110/B
T2 Core	63.7	82.3	68.5	87.3	--	--
T2 winding	76.8	95.4	81.2	100.0	--	110/B
L1	61.9	80.5	50.1	68.9	--	105/E
L51	63.8	82.4	63.3	82.1	--	130 *
F1	77.7	96.3	59.8	78.6	--	130 *
IC1	52.7	71.3	57.3	76.1	--	130 *
IC2	45.1	63.7	46.2	65.0	--	100
IC3	56.5	75.1	59.8	78.6	--	130 *
IC4	58.1	76.7	62.1	80.9	--	100
CR1	51.0	69.6	48.0	66.8	--	85
CR2	74.7	93.3	52.2	71.0	--	130 *
CR51	95.3	113.9	95.8	114.6	--	130 *
CR53	95.0	113.6	96.0	114.8	--	130 *
CR55	91.6	110.2	94.6	113.4	--	130 *
C2	49.9	68.5	43.7	62.5	--	85
C5	47.6	66.2	44.9	63.7	--	105

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Clause	Requirement + Test	Result - Remark	Verdict

C20	63.0	81.6	70.8	89.6	--	105
C53	64.7	83.3	64.5	83.3	--	105
C60	73.7	92.3	74.7	93.5	--	105
CN1	42.2	60.8	37.7	56.5	--	85
CN2	50.0	68.6	49.9	68.7	--	85
T1 Core	53.7	72.3	57.1	75.9	--	--
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting D (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	30.1	Tma= 50	29.2	Tma= 50	--	--
Q1	76.4	96.3	91.6	112.4	--	130 *
Q2	78.5	98.4	94.5	115.3	--	130 *
T1 Winding	69.2	89.1	72.3	93.1	--	110/B
T2 Core	53.0	72.9	55.9	76.7	--	--
T2 winding	70.3	90.2	73.8	94.6	--	110/B
L1	59.9	79.8	44.3	65.1	--	105/E
L51	69.1	89.0	68.8	89.6	--	130 *
F1	72.0	91.9	53.5	74.3	--	130 *
IC1	58.3	78.2	61.5	82.3	--	130 *
IC2	48.9	68.8	49.5	70.3	--	100
IC3	59.8	79.7	61.8	82.6	--	130 *
IC4	43.0	62.9	43.7	64.5	--	100
CR1	59.0	78.9	48.3	69.1	--	85
CR2	69.1	89.0	45.3	66.1	--	130 *
CR51	97.5	117.4	97.7	118.5	--	130 *
CR53	93.5	113.4	94.1	114.9	--	130 *
CR55	84.7	104.6	86.6	107.4	--	130 *
C2	45.8	65.7	37.6	58.4	--	85
C5	43.6	63.5	38.3	59.1	--	105
C20	48.9	68.8	51.9	72.7	--	105
C53	69.7	89.6	69.3	90.1	--	105
C60	72.1	92.0	72.7	93.5	--	105
CN1	36.5	56.4	32.4	53.2	--	85
CN2	51.3	71.2	50.4	71.2	--	85
T1 Core	61.6	81.5	65.2	86.0	--	--

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting E (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	31.4	Tma= 50	31.4	Tma= 50	--	--
Q1	85.2	103.8	99.9	118.5	--	130 *
Q2	91.7	110.3	107.2	125.8	--	130 *
T1 Winding	74.1	92.7	76.4	95.0	--	110/B
T2 Core	66.7	85.3	69.7	88.3	--	--
T2 winding	81.2	99.8	84.4	103.0	--	110/B
L1	69.1	87.7	59.8	78.4	--	105/E
L51	60.1	78.7	60.0	78.6	--	130 *
F1	84.0	102.6	68.1	86.7	--	130 *
IC1	66.3	84.9	71.2	89.8	--	130 *
IC2	64.3	82.9	68.3	86.9	--	100
IC3	58.7	77.3	59.7	78.3	--	130 *
IC4	57.0	75.6	58.7	77.3	--	100
CR1	64.3	82.9	59.8	78.4	--	85
CR2	80.0	98.6	62.2	80.8	--	130 *
CR51	97.5	116.1	97.7	116.3	--	130 *
CR53	95.1	113.7	95.8	114.4	--	130 *
CR55	91.8	110.4	94.5	113.1	--	130 *
C2	56.8	75.4	55.1	73.7	--	85
C5	59.0	77.6	59.2	77.8	--	105
C20	65.7	84.3	70.2	88.8	--	105
C53	63.0	81.6	63.0	81.6	--	105
C60	72.2	90.8	73.2	91.8	--	105
CN1	50.4	69.0	45.5	64.1	--	85
CN2	48.6	67.2	48.6	67.2	--	85
T1 Core	65.5	84.1	68.3	86.9	--	--
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting F (alternate 1 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	30.4	Tma=	30.1	Tma=	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

		45		45		
Q1	75.4	90.0	91.1	106.0	--	130 *
Q2	80.8	95.4	97.1	112.0	--	130 *
T1 Winding	70.9	85.5	75.0	89.9	--	110/B
T2 Core	60.1	74.7	63.9	78.8	--	--
T2 winding	75.8	90.4	80.5	95.4	--	110/B
L1	64.0	78.6	48.6	63.5	--	105/E
L51	74.6	89.2	75.6	90.5	--	130 *
F1	73.3	87.9	55.8	70.7	--	130 *
IC1	56.5	71.1	59.9	74.8	--	130 *
IC2	54.2	68.8	53.8	68.7	--	100
IC3	52.2	66.8	55.6	70.5	--	130 *
IC4	52.2	66.8	52.9	67.8	--	100
CR1	63.7	78.3	51.4	66.3	--	85
CR2	71.0	85.6	47.9	62.8	--	130 *
CR51	99.9	114.5	101.5	116.4	--	130 *
CR53	97.3	111.9	99.4	114.3	--	130 *
CR55	90.1	104.7	93.9	108.8	--	130 *
C2	46.3	60.9	40.0	54.9	--	85
C5	49.0	63.6	42.7	57.6	--	105
C20	58.6	73.2	63.1	78.0	--	105
C53	74.4	89.0	75.8	90.7	--	105
C60	78.6	93.2	80.8	95.7	--	105
CN1	37.5	52.1	34.2	49.1	--	85
CN2	60.0	74.6	60.1	75.0	--	85
T1 Core	60.0	74.6	65.2	80.1	--	--
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51212, Mounting A (alternate 2 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	21.8	Tma= 50	21.0	Tma= 50	--	--
Q1	65.1	93.3	85.9	114.9	--	130 *
Q2	68.8	97.0	88.2	117.2	--	130 *
T1 Core	60.1	88.3	63.8	92.8	--	--
T1 Winding	62.7	90.9	65.9	94.9	--	110/B
T2 Core	59.3	87.5	63.0	92.0	--	--
T2 Winding	65.8	94.0	69.2	98.2	--	110/B

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Clause	Requirement + Test	Result - Remark	Verdict

L1	51.4	79.6	37.2	66.2	--	105/E
L51	50.5	78.7	48.9	77.9	--	130 *
F1	61.1	89.3	44.0	73.0	--	130 *
IC1	50.1	78.3	53.7	82.7	--	130 *
IC2	42.5	70.7	45.9	74.9	--	100
IC3	46.2	74.4	46.8	75.8	--	130 *
IC4	40.8	69.0	42.7	71.7	--	100
CR1	52.6	80.8	43.2	72.2	--	85
CR2	61.3	89.5	37.4	66.4	--	130 *
CR51	92.3	120.5	91.8	120.8	--	130 *
CR53	86.0	114.2	85.6	114.6	--	130 *
CR55	78.8	107.0	80.4	109.4	--	130 *
C2	41.2	69.4	31.5	60.5	--	85
C5	38.1	66.3	32.4	61.4	--	105
C20	41.5	69.7	29.5	58.5	--	105
C53	59.9	88.1	58.0	87.0	--	105
C60	66.5	94.7	66.1	95.1	--	105
CN1	29.8	58.0	25.1	54.1	--	85
CN2	41.6	69.8	39.4	68.4	--	85
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51212, Mounting F (alternate 2 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	24.4	Tma= 45	24.4	Tma= 45	--	--
Q1	70.5	91.1	92.1	112.7	--	130 *
Q2	73.5	94.1	93.6	114.2	--	130 *
T1 Core	63.4	84.0	69.5	90.1	--	--
T1 Winding	67.6	88.2	73.1	93.7	--	110/B
T2 Core	64.0	84.6	69.8	90.4	--	--
T2 Winding	67.9	88.5	72.7	93.3	--	110/B
L1	57.9	78.5	42.6	63.2	--	105/E
L51	65.6	86.2	67.1	87.7	--	130 *
F1	65.0	85.6	48.3	68.9	--	130 *
IC1	52.8	73.4	56.1	76.7	--	130 *
IC2	46.9	67.5	49.6	70.2	--	100
IC3	45.8	66.4	44.5	65.1	--	130 *
IC4	46.5	67.1	48.5	69.1	--	100

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Clause	Requirement + Test	Result - Remark	Verdict

CR1	59.2	79.8	47.7	68.3	--	85
CR2	63.0	83.6	40.4	61.0	--	130 *
CR51	97.0	117.6	98.6	119.2	--	130 *
CR53	90.3	110.9	92.5	113.1	--	130 *
CR55	83.4	104.0	87.6	108.2	--	130 *
C2	45.7	66.3	36.1	56.7	--	85
C5	43.0	63.6	36.1	56.7	--	105
C20	44.0	64.6	33.1	53.7	--	105
C53	70.3	90.9	72.0	92.6	--	105
C60	71.8	92.4	74.7	95.3	--	105
CN1	34.8	55.4	30.1	50.7	--	85
CN2	55.2	75.8	56.8	77.4	--	85
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting A (alternate 2 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	24.1	Tma= 50	23.5	Tma= 50	--	--
Q1	66.9	92.8	84.7	111.2	--	130 *
Q2	74.4	100.3	89.8	116.3	--	130 *
T1 Core	61.6	87.5	65.3	91.8	--	--
T1 Winding	64.1	90.0	66.8	93.3	--	110/B
T2 Core	60.9	86.8	65.1	91.6	--	--
T2 Winding	69.4	95.3	73.2	99.7	--	110/B
L1	59.5	85.4	40.4	66.9	--	105/E
L51	52.0	77.9	53.2	79.7	--	130 *
F1	73.3	99.2	51.1	77.6	--	130 *
IC1	53.5	79.4	57.8	84.3	--	130 *
IC2	44.3	70.2	47.4	73.9	--	100
IC3	49.6	75.5	49.9	76.4	--	130 *
IC4	42.3	68.2	44.9	71.4	--	100
CR1	50.3	76.2	44.7	71.2	--	85
CR2	68.5	94.4	42.2	68.7	--	130 *
CR51	89.7	115.6	90.1	116.6	--	130 *
CR53	86.0	111.9	87.0	113.5	--	130 *
CR55	79.5	105.4	80.9	107.4	--	130 *
C2	48.7	74.6	36.9	63.4	--	85
C5	41.1	67.0	36.7	63.2	--	105

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Clause	Requirement + Test	Result - Remark	Verdict

C20	46.3	72.2	32.8	59.3	--	105
C53	60.1	86.0	60.2	86.7	--	105
C60	64.5	90.4	65.1	91.6	--	105
CN1	37.7	63.6	29.6	56.1	--	85
CN2	42.1	68.0	43.9	70.4	--	85
supplementary information:						
* : Considered material rating temperature of PCB.						
Model MTW60-51515, Mounting A (alternate 2 PCB pattern)						
Input voltage	AC 90V, 60Hz	AC 90V, 60Hz	AC 255V, 60Hz	AC 255V, 60Hz	--	--
Ambient	24.8	Tma= 45	25.2	Tma= 45	--	--
Q1	69.8	90.0	87.2	107.0	--	130 *
Q2	75.2	95.4	90.5	110.3	--	130 *
T1 Core	65.1	85.3	70.0	89.8	--	--
T1 Winding	67.6	87.8	72.0	91.8	--	110/B
T2 Core	67.9	88.1	72.7	92.5	--	--
T2 Winding	72.9	93.1	77.1	96.9	--	110/B
L1	58.3	78.5	40.9	60.7	--	105/E
L51	67.9	88.1	69.3	89.1	--	130 *
F1	68.4	88.6	50.0	69.8	--	130 *
IC1	53.3	73.5	55.7	75.5	--	130 *
IC2	47.6	67.8	50.5	70.3	--	100
IC3	49.9	70.1	48.0	67.8	--	130 *
IC4	48.1	68.3	49.9	69.7	--	100
CR1	58.9	79.1	46.9	66.7	--	85
CR2	67.1	87.3	42.3	62.1	--	130 *
CR51	96.3	116.5	97.7	117.5	--	130 *
CR53	92.2	112.4	94.1	113.9	--	130 *
CR55	86.7	106.9	88.9	108.7	--	130 *
C2	47.2	67.4	37.0	56.8	--	85
C5	44.0	64.2	36.9	56.7	--	105
C20	43.6	63.8	33.4	53.2	--	105
C53	71.0	91.2	72.7	92.5	--	105
C60	73.7	93.9	76.2	96.0	--	105
CN1	34.9	55.1	30.4	50.2	--	85
CN2	55.9	76.1	57.3	77.1	--	85
supplementary information:						
* : Considered material rating temperature of PCB.						

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Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	**TABLE: Ball pressure test of thermoplastic parts**		Pass
	allowed impression diameter (mm) :	less than or equal to ≤ 2 mm	---
part		test temperature (°C)	impression diameter (mm)
Bobbin material of L1, type 4115 by Chang Chun Plastics Co. Ltd.		125	1.5
supplementary information:			

4.7	**TABLE: Resistance to fire**				Pass
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
supplementary information:					
See appended Table 1.5.1.					

5.1	**TABLE: Touch current measurement**			Pass
Measured between	Measured (mA)	Limit (mA)	Comments/conditions	
supplementary information:				
See clause 5.1.6.				

5.2	**TABLE: Electric strength tests, impulse tests and voltage surge tests**			Pass
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
--		--	--	--
Basic/supplementary:				
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Model MTW60-51212xy				

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Clause	Requirement + Test	Result - Remark	Verdict

Pri (input connector) – FG (gnd trace)	--	AC 2000	No
Model MTW60-51515xy			
Pri (input connector) – FG (gnd trace)	--	AC 2000	No
Reinforced:			
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Model MTW60-51212xy			
Pri (input connector) – sec (output connector)	--	AC 3000	No
Model MTW60-51515xy			
Pri (input connector) – sec (output connector)	--	AC 3000	No
supplementary information:			

5.3	**TABLE: Fault condition tests**						Pass
	Ambient temperature (°C) :					24.1 – 31.0	---
	Power source for EUT: Manufacturer, model/type, output rating :					--	---
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
Model MTW60-51212xy							
CR2	S	AC 255 V	1s	F1	3.15	Unit shut down immediately. F1 opened.	
C12	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.	
C6	O	AC 255V	2h	F1	3.15	Unit continued operation. Max. temperature of - T1 (class B): 73.0°C - T2 (class B): 76.3°C	
CR3	O	AC 255V	2h	F1	3.15	Unit continued operation. Max. temperature of - T1 (class B): 73.4°C - T2 (class B): 79.7°C	
Q1, D	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 47.3°C - T2 (class B): 75.3°C	
Q1, D-G	S*	AC	1s	F1	3.15	Unit shut down immediately.	

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Clause	Requirement + Test	Result - Remark	Verdict

		255V				F1 opened.
Q2, D	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 60.7°C - T2 (class B): 40.0°C
Q2, D-G	S*	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
IC1, pin 4	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 48.4°C - T2 (class B): 74.5°C
IC1, pin 7	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 48.2°C - T2 (class B): 75.2°C
IC3, pin 4	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 63.1°C - T2 (class B): 42.6°C
IC3, pin 7	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 61.2°C - T2 (class B): 38.9°C
T1, pin 1 – pin 3	S*	AC 255V	5s	F1	3.15	Unit shut down. F1 opened.
T1, pin 5 – pin 6	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 131.8°C - T2 (class B): 82.6°C
T1, pin 7, 8 – pin 10, 11	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 48.0°C - T2 (class B): 74.9°C
T2, pin 4 – pin 6	S*	AC 255V	5s	F1	3.15	Unit shut down. F1 opened.
T2, pin 1 – pin 2	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 62.2°C - T2 (class B): 41.7°C
T2, pin 7, 8 – pin 9, 10	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of

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Clause	Requirement + Test	Result - Remark	Verdict

						- T1 (class B): 64.1°C - T2 (class B): 42.7°C
T2, pin 9, 10 – pin 11, 12	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 64.8°C - T2 (class B): 43.4°C
CR51	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 58.9°C - T2 (class B): 75.8°C
C59	S*	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 70.6°C - T2 (class B): 77.0°C
CR53	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 61.7°C - T2 (class B): 50.0°C
IC2 anode	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 50.1°C - T2 (class B): 71.3°C
IC4 anode	O	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 59.7°C - T2 (class B): 39.6°C
DC +5V output	S	AC 255V	2h	F1	--	Unit shut down immediately. Max. temperature of T1 (class B): 89.8°C
DC +12V output	S	AC 255V	2h	F1	--	Unit shut down immediately. Max. temperature of T2 (class B): 112.0°C
DC -12V output	S	AC 255V	2h	F1	--	Unit shut down immediately. Max. temperature of T2 (class B): 101.3°C
Model MTW60-51515xy						
CR2	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
C12	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
Q2, D-G	S*	AC 255V	1s	F1	3.15	Unit shut down immediately.

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Clause	Requirement + Test	Result - Remark	Verdict

						F1 opened.
DC +15V output	S	AC 255V	90min	F1	--	Unit shut down immediately. Max. temperature of T2 (class B): 85.8°C
DC -15V output	S	AC 255V	40min	F1	--	Unit shut down immediately. Max. temperature of T2 (class B): 76.2°C
DC +15V output	OL	AC 255V	--	F1	--	Max. load: DC +15V, 5.3A Max. temperature of T2 (class B): 120.0°C
DC +15V output	OL	AC 90V	--	F1	--	Max. load: DC +15V, 3.9A Max. temperature of T2 (class B): 103.9°C
DC -15V output	OL	AC 255V	--	F1	--	Max. load: DC -15V, 1.2A Max. temperature of T2 (class B): 84.9°C
supplementary information:						
S = short, O = open, OL = overload *) Test repeated 3 times.						

	Ambient temperature (°C) :	28.8 - 35.6	---
	Power source for EUT: Manufacturer, model/type, output rating :	--	---

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Model MTW60-51212xy (alternate 1 PCB pattern)						
CR2	S	AC 255 V	1s	F1	3.15	Unit shut down immediately. F1 opened.
Q1, D	O	AC 255V	1h	F1	3.15	CH1 shut down immediately. Input current decreased.
Q1 D-G	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
Q2, D	O	AC 255V	1h	F1	3.15	CH2, 3 shut down immediately. Input current decreased.
Q2 D-G	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
IC1, pin 5	O	AC 255V	30min	F1	3.15	Unit continued operation. Max. temperature of - T1 (class B): 79.8°C - T2 (class B): 90.4°C

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Clause	Requirement + Test	Result - Remark	Verdict

IC1, pin 7	O	AC 255V	1h	F1	3.15	CH1 shut down immediately. Input current decreased.
IC3, pin 5	O	AC 255V	30min	F1	3.15	Unit continued operation. Max. temperature of - T1 (class B): 85.3°C - T2 (class B): 90.4°C
IC3, pin 7	O	AC 255V	1h	F1	3.15	CH2,3 shut down immediately. Input current decreased.
DC +5V output	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 75.8°C - T2 (class B): 78.9°C
DC +12V output	S	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 67.0°C - T2 (class B): 83.1°C
DC -12V output	S	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 71.8°C - T2 (class B): 89.7°C
DC -12V output	OL	AC 255V	1h	F1	3.15	Input current increased. Max. temperature of - T1 (class B): 68.2°C - T2 (class B): 80.8°C
Model MTW60-51212 (alternate 2 PCB pattern)						
Q2 D-G	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
DC +5V output	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 49.4°C - T2 (class B): 66.9°C
DC +12V output	S	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 63.1°C - T2 (class B): 52.8°C
DC -12V output	S	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 69.1°C - T2 (class B): 71.1°C
DC +5V output	OL	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of

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Clause	Requirement + Test	Result - Remark	Verdict

						- T1 (class B): 86.2°C - T2 (class B): 76.6°C
DC +12V output	OL	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 74.2°C - T2 (class B): 95.2°C
DC -12V output	OL	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 71.1°C - T2 (class B): 77.1°C
Model MTW60-51515xy (alternate 1 PCB pattern)						
CR2	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
Q2 D-G	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
DC +15V output	S	AC 255V	1h 10min.	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 72.8°C - T2 (class B): 61.7°C
DC -15V output	S	AC 255V	40min	F1	3.15	Input current No change. Max. temperature of - T1 (class B): 85.4°C - T2 (class B): 95.7°C
Model MTW60-51515 (alternate 2 PCB pattern)						
Q1 D-G	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
Q2 D-G	S	AC 255V	1s	F1	3.15	Unit shut down immediately. F1 opened.
DC +5V output	S	AC 255V	2h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 49.2°C - T2 (class B): 69.1°C
DC +15V output	S	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 61.7°C - T2 (class B): 53.3°C
DC -15V output	S	AC 255V	1h	F1	3.15	Input current No change. Max. temperature of - T1 (class B): 67.9°C - T2 (class B): 75.7°C
DC +5V	OL	AC	1h	F1	3.15	Input current decreased.

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Clause	Requirement + Test	Result - Remark	Verdict

output		255V				Max. temperature of - T1 (class B): 79.7°C - T2 (class B): 73.7°C
DC +15V output	OL	AC 255V	1h	F1	3.15	Input current decreased. Max. temperature of - T1 (class B): 72.0°C - T2 (class B): 102.9°C
DC -15V output	OL	AC 255V	1h	F1	3.15	Input current No change. Max. temperature of - T1 (class B): 70.2°C - T2 (class B): 81.8°C
supplementary information:						
During the tests no fire or other hazard occurred, SELV limits were not exceeded for longer than 0.2 sec. The insulation system could withstand the dielectric strength test after fault conditions. HV test: 3000 Vac (Pri.-Sec.) , 2000 Vac (Pri.-Gnd.) S = short, O = open, OL = overload						

C.2	**TABLE: Transformers**							Pass
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)		Required distance thr. insul. (2.10.5)
Loc.	Tested insulation				Test voltage / V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Transformer type number				Enclosure - Miscellaneous ID				
supplementary information:								
See appended table 2.10.2, 2.10.3, 2.10.4, 2.10.5 and 5.2.								

Enclosure

National Differences

Denmark

Finland

Germany

Group

Korea

Slovenia**

Sweden

USA / Canada

United Kingdom

* No National Differences Declared

** Only Group Differences

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict

Denmark - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.2.4.1	In Denmark, certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.		N/A
1.7.2.1	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: : “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5	In Denmark, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For stationary equipment, the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.		N/A
1.7.5	For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. (Heavy Current Regulations, Section 107-2-D1)		N/A
3.2.1.1	Supply cord of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
Finland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.3	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	Touch current measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: - STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE EQUIPMENT TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT		N/A
6.1.2.1	Add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	- one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994 (EN 60384-14:2005), subclass Y2. A capacitor classified Y3 according to EN 132400 [EN 60384-14:2005], may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [EN 60384-14], which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14].		
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication center, and which has provision for a permanently connected		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		
7.2	Requirements according to this annex 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
Germany - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.7.2.1	If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.		N/A
Group - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Group Differences also includes the requirements in A11:2009 and A12:2011		Pass
1.3	A12:2011 - In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010		Pass
1.5.1	Add the following NOTE Z1: The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC	See enclosure Id 7-03.	Pass
1.7.2.1	Delete NOTE Z1 and the addition for Portable Sound System Add the following Zx clauses and annex to the existing standard and amendments		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		
2.7.2	Void		N/A
3.2.3	Delete the NOTE and conduit sizes in parentheses in Table 3A		N/A
3.2.5.1	Add the following Note: NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD. In Table 3B, replace the first four lines by the following: Up to and including 6 0.75 a) Over 6 up to and including 10 0.75 b) 1.0 Over 10 up to and including 16 1.0 c) 1.5 In the conditions applicable to table 3B, delete the words "in some countries" in condition a). In Note 1, applicable Table 3B, to delete the second sentence.		N/A
3.3.4	In table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 1.5 to 2.5 1.5 to by 4" Delete the fifth line: conductor sizes for 13 to 16A.		N/A
4.3.13.6	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	physical agents (artificial optical radiation). Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		
H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE - These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Zx	Protection against excessive sound pressure from personal music players		N/A
Zx.1	General - This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: - while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: - hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. - analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		
Zx.2	Equipment Requirements - No safety provision is required for equipment that complies with the following: - equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and - a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx. All other equipment shall:		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation		

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		
Zx.3	Warning - The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: - the symbol of Figure 1 (IEC 60417-6044) with a minimum height of 5 mm; and - the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.” Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level		N/A
Zx.4	Requirements for Listening devices (headphones and earphones)		N/A
Zx.4.1	Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A
Zx.4.2	Wired listening devices with digital input With any playing device playing the fixed “programme simulation noise” described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		
Zx.4.3	Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.)set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
Zx.5	Measurement Methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

Korea - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Korea has national differences declared for 60950-1:2005, Am 1:2009 (below).		Pass
1.5.101	Plugs for the connection of the apparatus to the mains supply shall comply with the Korean requirement (KSC 8305)		N/A
8	EMC - The apparatus shall comply with the relevant CISPR standards		N/A

Sweden - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013	

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
1.2.13.14	For requirements see 1.7.2.1 and 7.3.		N/A
1.5.1	(Ordinance (1990:944)) Add NOTE: Switches containing mercury are not permitted.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text shall be:"Apparaten skall anslutas till jordat uttag"		N/A
1.7.2.1	In Sweden, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: "Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing - and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)." NOTE: In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Swedish: "Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet."		
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT		N/A
6.1.2.1	Add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. Alternatively for components, there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400 [EN 60384-14:2005], may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400 [EN 60384-14], which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.]		
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	Requirements according to this annex 1.2.13.14		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	and 1.7.2.1 apply.		
USA / Canada - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.	Considered.	Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.	Unit intended for building-in.	N/A
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.	Unit intended for building-in.	N/A
1.4.14	For PLUGGABLE EQUIPMENT TYPE A, the protection in the installation is assumed to be 20 A.	Considered.	Pass
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.	No interconnecting cables provided.	N/A
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		N/A
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.	No telephone line and extension cords provided.	N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor.		N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses.	Fuses are not operator accessible.	N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.	Unit intended for building-in.	N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.	No TNV circuits.	N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.	No TNV circuits.	N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2.1	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.		N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A
2.6.3.3	For PLUGGABLE EQUIPMENT TYPE A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A		N/A
2.6.3.3	The first column on Table 2D requirement: “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.	Tested with 40 A, 2 minutes based on rating of branch circuit protection 20 A.	Pass
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.	No field wiring terminals provided.	N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A
2.10.5.12	Multi-layer winding wire subject to UL component		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	wire requirements in addition to 2.10.5.12 and Annex U.		
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.		N/A
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		N/A
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.		N/A
3.2.1	Permitted use for flexible cords and plugs.		N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing.		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may result in a hazard.		N/A
3.2.3	Permanently connected equipment has provision		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm²) and not less than 150 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Unit intended for building-in.	N/A
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.	Unit intended for building-in.	N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also comply with 3.3.		N/A
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	than those specified in 3.3 if wiring is reliably separated.		
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm²) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".	Unit intended for building-in.	N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
4.3.13.5.1	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m^3 of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.9 m^2 or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.		N/A
5.1.8.2	Special earthing provisions and instructions for equipment with high touch current due to telecommunication network connections.	No TNV circuits.	N/A
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.7	Overloading of SELV connectors and printed wiring		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	board receptacles accessible to the operator.		
5.3.7	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.		N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific primary or secondary protector marked with suitable instructions.		N/A

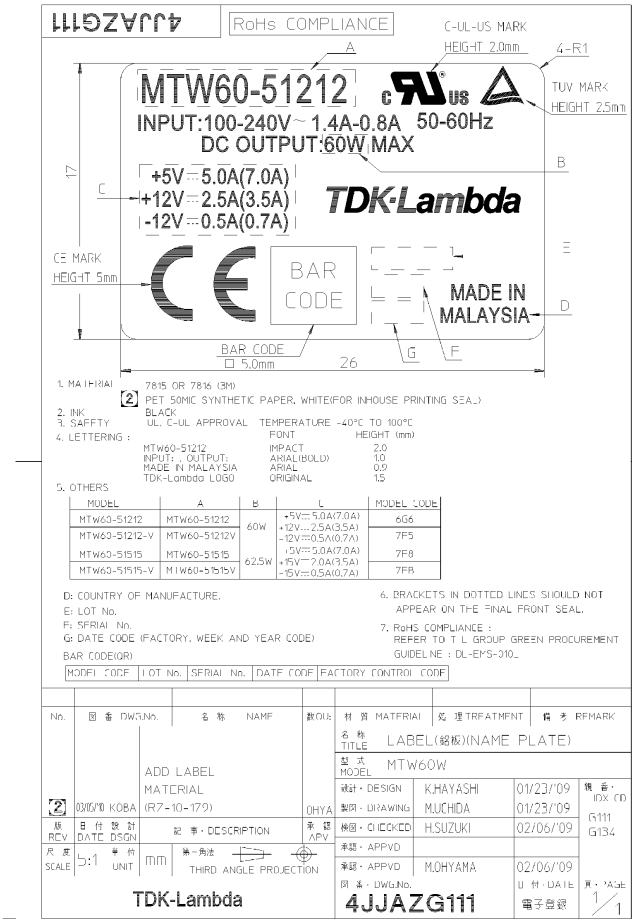
IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
NAD	Acoustic pressure from an ear piece less than 140 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets and insert earphones, for long duration disturbances.		N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
EE.5	UL articulated accessibility probe (Fig. EE.3) required for assessing accessibility to document/media shredders, instead of Figure 2A test finger.		N/A
United Kingdom - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	To protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.		N/A
3.2.1.1	Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a "standard plug" in accordance with Statutory Instrument 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.5.1	A power supply cord with conductor of 1.25 mm² is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A up to and including 13 A is		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	1.25 mm² to 1.5 mm² nominal cross-sectional area.		
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125°C.		N/A
4.3.6	Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

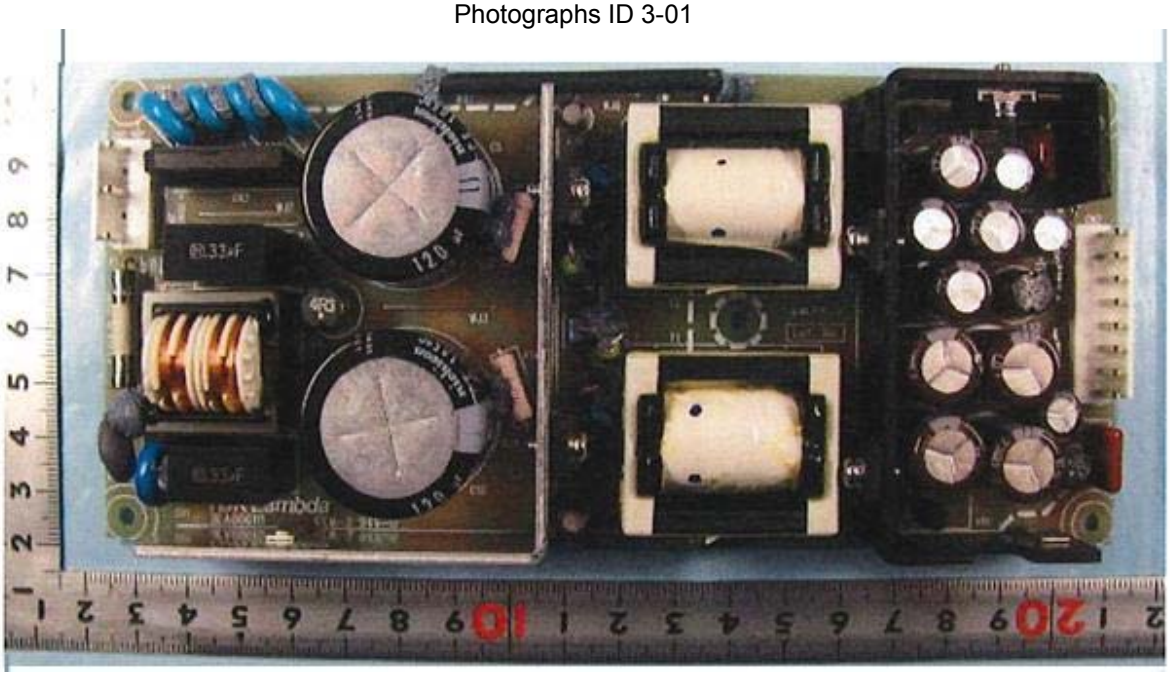
Enclosures

Type	Supplement Id	Description
Marking Plate	13-01	Marking Plate
Photographs	3-01	Components side view
Photographs	3-02	Solder side view
Diagrams	4-01	Specification of Inductor L1
Diagrams	4-02	Specification of Transformer T1
Diagrams	4-03	Specification of Transformer T2 for model MTW60-51212xy
Diagrams	4-04	Specification of Transformer T2 for model MTW60-51515xy
Schematics + PWB	5-01	PWB Trace
Schematics + PWB	5-02	Component Layout
Schematics + PWB	5-03	Circuit Diagram
Miscellaneous	7-01	Output Derating curve
Miscellaneous	7-02	Manufacturer's Declaration under IECEE CB Scheme
Miscellaneous	7-03	Manufacturer's Declaration (RoHS Declaration of Conformity)
Miscellaneous	7-04	List of test equipment

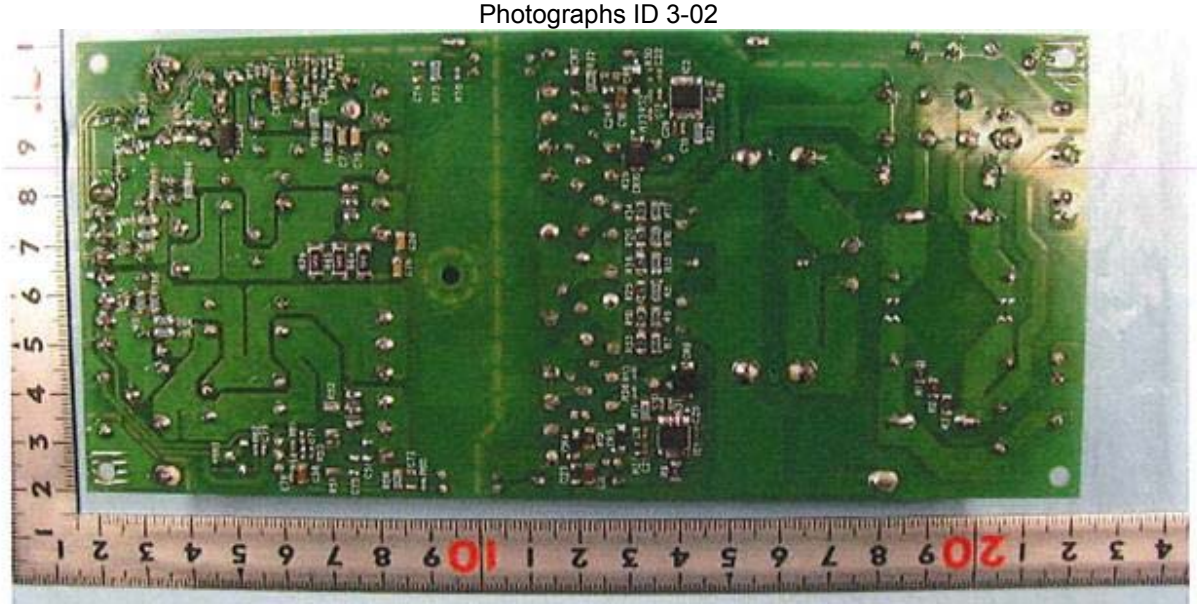
Marking Plate ID 13-01



Photographs ID 3-01



Photographs ID 3-02



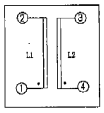
Diagrams ID 4-01

MESSRS	TDK 株式会社 御中	TYPE / SAMPLE NO. TLK24Y-SD41015A	P 2/10

1. SCOPE／適用
This specification is applied to the LINE FILTER which is supplied to TDK CO., LTD.
本仕様は TDK 株式会社 様へ納入するラインフィルターについて適用する。

2. APPLICATION/用途
This LINE FILTER is supplied to POWER. / 電源用ラインフィルター。

3. CONNECTION (BOTTOM VIEW) / 接続図 (底面図)



● Starting Position /● は巻始めを示す。

4. WINDING SPEC. / 巻線仕様

WIRE /線材	TUEW0.60	
PIN NO./端子	①—②	④—③
TURNS /巻数(±10%)	19 T + 19 T	19 T + 19 T

5. ELECTRICAL CHARACTERISTICS /電気的特性

NO.	ITEM / 項目	PIN NO. / 測定端子	SPEC. / 規格	CONDITION ・EQUIPMENT/ 測定器・条件
5-1	INDUCTANCE インダクタンス	①—② (L1) ④—③ (L2)	3.9mH MIN	HP 4284A or EQUIVALENT FREQ. = 1kHz OSC=0.1Vrms Ls
5-2	L DIFFERENCE インダクタンス偏差	|L1—L2|	0.195mH MAX	
5-3	DC RESISTANCE 直流抵抗	①—② ④—③	105 mΩ MAX	HIOKI 3220 mΩ HITESTER or EQUIVALENT (at 20°C)
5-4	RATED CURRENT 定格電流	———	2.0 A	TEMPERATURE RISE 45°C MAX 温度上昇 45°C以下
5-5	RATED VOLTAGE 定格電圧	———	AC 250 Vrms	———
5-6	WITHSTANDING VOLTAGE 耐電圧	COIL ～ COIL COIL ～ CORE	AC2.0kV/1 min or AC2.4kV/2 sec	KIKUSUI TOS5101 or EQUIVALENT (CC-1mA)
5-7	INSULATION RESISTANCE 絶縁抵抗	COIL ～ COIL COIL ～ CORE	100MΩ MIN at DC 500V	TOA SM-10E or EQUIVALENT
5-8	OPERATING TEMPERATURE RANGE 使用温度範囲	———	-20°C～+110°C	INCLUDING SELF-RESONANCE HEAT 自己発熱を含む
5-9	STORAGE TEMPERATURE RANGE 保存温度範囲	———	-40°C～+90°C	———

Pb Free/鉛フリー

NO	DATE	NOTE	DRAWN	DESIGNED	CHECKED	APPROVED	MODEL NO.
	05/02/18	新規品					PART NO. 2R0A392K24Y
			TOKYO PARTS IND. CO., LTD. R&D DEPARTMENT				PART NAME LINE FILTER

Diagrams ID 4-01

MESSRS	TDK 株式会社 御中	TYPE / SAMPLE NO. TLK24Y-S041015A	P 3/10

6. MATERIAL LIST / 部品明細表

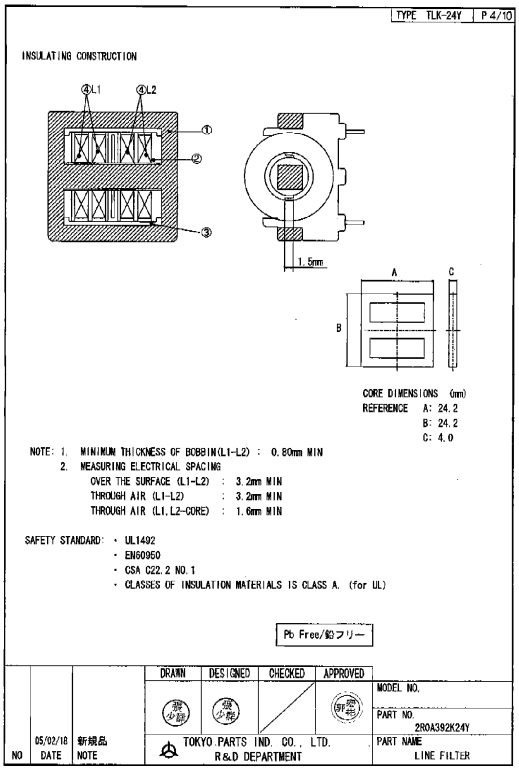
NO	COMPONENT 部品名	QT 員数	MATERIAL 材質	MANUFACTURER 材料メーカー	MATERIAL SPEC. 材料規格	UL NO.
1.	CORE コア	1	FERRITE フェライト	JFE FERRITE CORP. JFE フェライト(株)	MA100 ET-24A	
				or ISU CERAMICS CO., LTD.	HM5A ESQ2424	
				又は TDK CORPORATION. or TDK 株式会社	HS10 ET24	
2.	BOBBIN ボビン	1set	PBT4115 ポリブチレン・テレフタレート	CHANG CHUN PLASTICS CO., LTD. 長春人造樹脂厰股份有限公司	P-2401	E59481(S)
3.	BASE ベース	1	PHENOL T355J T375J	CHANG CHUN PLASTICS CO., LTD. 長春人造樹脂厰股份有限公司	P-2403-1	E59481(S)
4.	WIRE 線材		POLYURETHANE, COPPER ポリウレタン、銅	JUNG SHING WIRE CO., LTD. 栄星電線工業股份有限公司.	1UEW0.60	E174837
				SALOM ELECTRIC(XIAMEN)CO., LTD. 洪氏企業有限公司.		E189722
				TA YA ELECTRIC WIRE FACTORY 大亜電線有限公司.		E197768
5.	FIXATIVE Note1) 固定剤 注1)		POLYAMIDE ポリアミド樹脂	FUJIKASEI KOGYO CO., LTD. 富士化成工業(株).	TOHMIDE NO.558	E76100(M)
6.	SOLDER 半田		TIN, SILVER, COPPER 錫、銀、銅	NIPPON FILLER METALS CO.,LTD (株)日本フィラーメタルズ	PBF111	
7.	FLUX フラックス		PINE ROSIN 松脂	TAMURA S/S CO., LTD. タムラ S/S (株).	RM-26	
8.	FLUX THINNER フラックスシンナー		I.P.A イソプロピルアルコール	TAMURA S/S CO., LTD. タムラ S/S (株).	#4520	
9.	ADHESIVE 接着剤		EPOXY エポキシ樹脂	NAGASE CHEMTEX CORPORATION ナガセケムテックス株式会社	XNR3604SR	
10.	STAMP INK 捺印インク		OIL 油	BON MARK 株式会社ボンマーク	BON MARK A(B) ボンマークAシリーズブラック	又はM-195(B) (マシューズ)

Note 1) Either will do. (Use or no use)
注1) 固定剤は使用しなくても可。

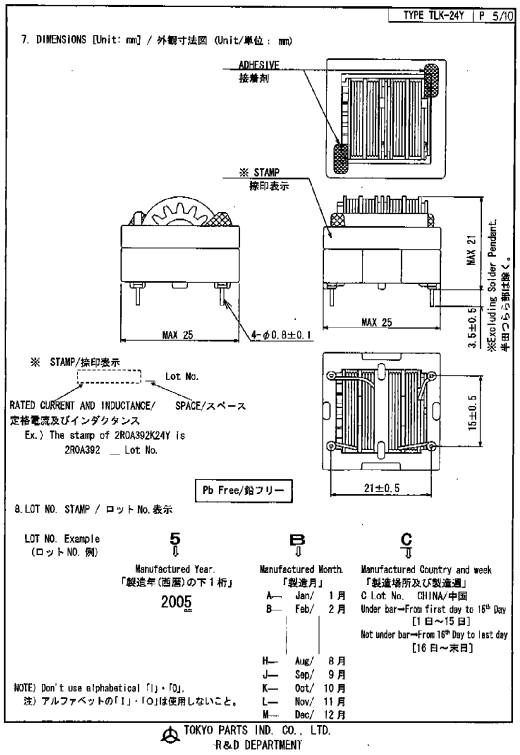
Pb Free/鉛フリー

NO	DATE	NOTE	DRAWN	DESIGNED	CHECKED	APPROVED	
	05/02/18	新規品	張少群	張少群		郭宏彬	Model No.
			TOKYO PARTS IND. CO., LTD. R&D DEPARTMENT				PART NO. 2R0A392K24Y
							PART NAME LINE FILTER

Diagrams ID 4-01



Diagrams ID 4-01



Diagrams ID 4-01

MESSRS TDK 株式会社 御中 | TYPE / SAMPLE NO. TLK24Y-S041015A | P 3/10

6. MATERIAL LIST / 部品明細表

NO	COMPONENT 部品名	QT 員数	MATERIAL 材質	MANUFACTURER 材料メーカー	MATERIAL SPEC. 材料規格	UL NO.
1.	CORE コア	1	FERRITE フェライト	JFE FERRITE CORP. JFE フェライト(株)	MA100 ET-24A	
				or ISU CERAMICS CO., LTD.	HM5A ESQ2424	
				又は TDK CORPORATION. or TDK 株式会社	HS10 ET24	
2.	BOBBIN ボビン	1set	PBT4115 ポリブチレン・テレフタレート	CHANG CHUN PLASTICS CO., LTD. 長春人造樹脂廠股份有限公司	P-2401	E59481(S)
3.	BASE ベース	1	PHENOL T355J T375J	CHANG CHUN PLASTICS CO., LTD. 長春人造樹脂廠股份有限公司	P-2403-1	E59481(S)
4.	WIRE 線材		POLYURETHANE, COPPER ポリウレタン、銅	JUNG SHING WIRE CO., LTD. 栄星電線工業股份有限公司.	1UEWO.60	E174837
				SALON ELECTRIC(XIAMEN)CO., LTD. 洪氏企業有限公司.		E189722
				TA YA ELECTRIC WIRE FACTORY 大亜電線有限公司.		E197768
5.	FIXATIVE Note1) 固定剤 注1)		POLYAMIDE ポリアミド樹脂	FUJIKASEI KOGYO CO., LTD. 富士化成工業(株).	TOHMIDE NO.558	E76100(M)
6.	SOLDER 半田		TIN, SILVER, COPPER 錫、銀、銅	NIPPON FILLER METALS CO.,LTD (株)日本フィラーメタルズ	PBF111	
7.	FLUX フラックス		PINE ROSIN 松脂	TAMURA S/S CO., LTD. タムラ S/S (株).	RM-26	
8.	FLUX THINNER フラックスシンナー		I.P.A イソプロピルアルコール	TAMURA S/S CO., LTD. タムラ S/S (株).	#4520	
9.	ADHESIVE 接着剤		EPOXY エポキシ樹脂	NAGASE CHEMTEX CORPORATION ナガセケムテックス株式会社	XNR3604SR	
10.	STAMP INK 捺印インク		OIL 油	BON MARK 株式会社ボンマーク	BON MARK A(B) ボンマークAシリーズブラック	又はM-195(B) (マジューズ)

Note1) Either will do. (Use or no use)
注1) 固定剤は使用しなくても可。

Pb Free/鉛フリー

DRAWN	DESIGNED	CHECKED	APPROVED
張少群	張少群		郭宏彬

Model No.

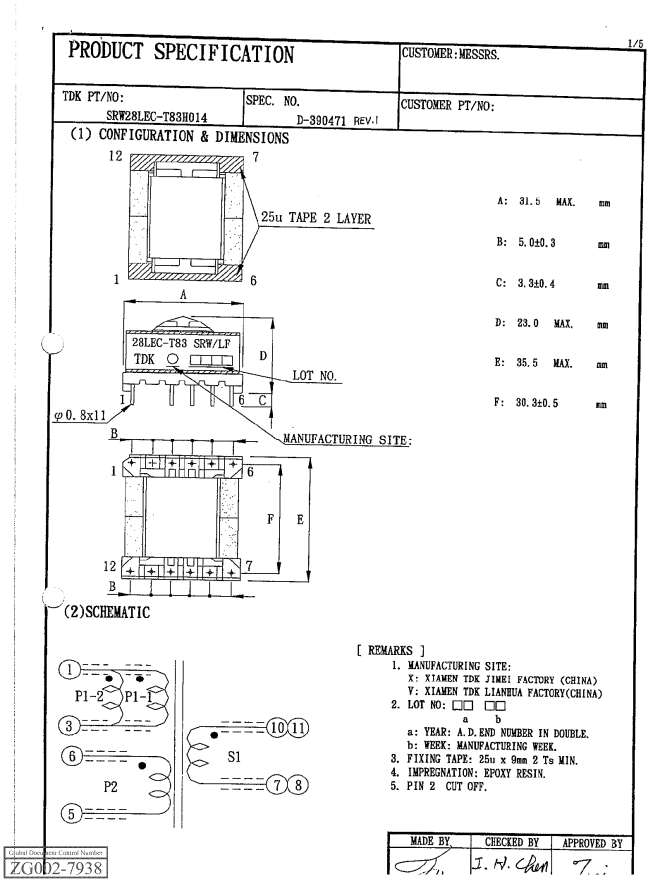
PART NO. 2R0A392K24Y

PART NAME LINE FILTER

NO	DATE	NOTE
	05/02/18	新規品

TOKYO PARTS IND. CO., LTD.
R&D DEPARTMENT

Diagrams ID 4-02



Diagrams ID 4-02

PRODUCT SPECIFICATION		CUSTOMER:MESSRS.
TDK PT/NO: SRW28LEC-T83H014	SPEC. NO. D-390471 REV.1	CUSTOMER PT/NO:

(3) WINDING SPECIFICATION

NO.	COIL	TERMINAL	WIRE	TURNS	WINDING METHOD
1	P1-1	1 --- 3	1-UEW φ0.25	58	CLOSE
2	S1	10,11 --- 7,8	1-UEW φ0.20/7x4	5	CLOSE
3	P1-2	1 --- 3	1-UEW φ0.25	58	CLOSE
4	P2	6 --- 5	1-UEW φ0.25	15	SPACE
5					

(4) ELECTRICAL CHARACTERISTICS

NO.	PARAMETER	TERMINAL	SPECIFICATION	TEST INSTRUMENTS
1	INDUCTANCE	1 --- 3	825μH ± 10 %	HP 4284A DIGITAL LCR METER or EQUIVALENT @1 kHz @1 Vrms
2	DC RESISTANCE	1 --- 3	0.460 Ω ± 20 %	NATIONAL VP-2941A DIGITAL MILLIOHM METER or EQUIVALENT
		10,11 --- 7,8	5.40 mΩ ± 30 %	
		6 --- 5	0.30 Ω ± 20 %	
3	INSULATION RESISTANCE	P --- S	DC 500V 100 MΩ MIN.	MEGOHM METER TOA SM-5E or SM-23GM or EQUIVALENT
		P,S - CORE		
4	DIELECTRIC WITHSTANDING VOLTAGE	P --- S	AC 3.0 kVrms, 2mA, 1min or AC 3.6 kVrms, 2mA, 2s. ⚠	KIKUSUI TOS-8650 or EQUIVALENT (f=60/50 Hz)
		P,S --- CORE	AC 1.0 kVrms, 2mA, 1min or AC 1.2 kVrms, 2mA, 2s.	
5	TURNS RATIO INPUT: 1 --- 3	10,11 --- 7,8	(0.0860 Vrms ± 10.0 %)	IKEDEN RATIO TESTER MODEL 3050HT @20kHz @1Vrms. or EQUIVALENT (Only for reference , so value will be revised later)
		6 --- 5	(0.2620 Vrms ± 5.5 %)	

Global Document Control Number
ZG002-7938

Diagrams ID 4-02

PRODUCT SPECIFICATION		CUSTOMER:MESSRS.
TDK PT/NO: SRW28LEC-T83H014	SPEC. NO. D-390471 REV.1	CUSTOMER PT/NO:

(3) WINDING SPECIFICATION

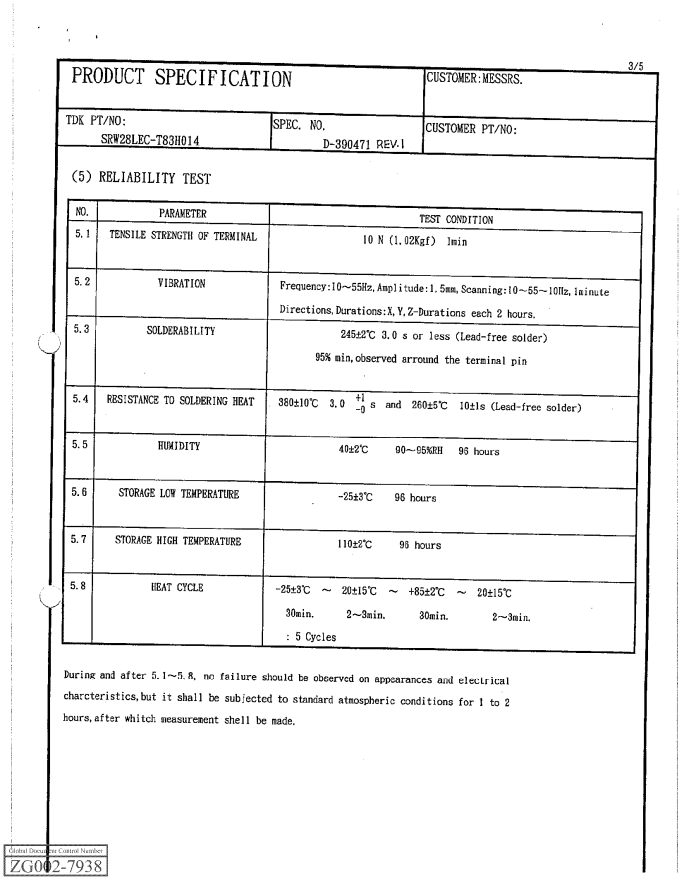
NO.	COIL	TERMINAL	WIRE	TURNS	WINDING METHOD
1	P1-1	1 --- 3	1-UEW φ0.25	58	CLOSE
2	S1	10,11 --- 7,8	1-UEW φ0.20/7x4	5	CLOSE
3	P1-2	1 --- 3	1-UEW φ0.25	58	CLOSE
4	P2	6 --- 5	1-UEW φ0.25	15	SPACE
5					

(4) ELECTRICAL CHARACTERISTICS

NO.	PARAMETER	TERMINAL	SPECIFICATION	TEST INSTRUMENTS
1	INDUCTANCE	1 --- 3	825μH ± 10 %	HP 4284A DIGITAL LCR METER or EQUIVALENT @1 kHz @1 Vrms
2	DC RESISTANCE	1 --- 3	0.460 Ω ± 20 %	NATIONAL VP-2941A DIGITAL MILLIOHM METER or EQUIVALENT
		10,11 --- 7,8	5.40 mΩ ± 30 %	
		6 --- 5	0.30 Ω ± 20 %	
3	INSULATION RESISTANCE	P --- S	DC 500V 100 MΩ MIN.	MEGOHM METER TOA SM-5E or SM-23GM or EQUIVALENT
		P,S - CORE		
4	DIELECTRIC WITHSTANDING VOLTAGE	P --- S	AC 3.0 kVrms, 2mA, 1min ⚠ or AC 3.6 kVrms, 2mA, 2s.	KIKUSUI TOS-8650 or EQUIVALENT (f=60/50 Hz)
		P,S --- CORE	AC 1.0 kVrms, 2mA, 1min or AC 1.2 kVrms, 2mA, 2s.	
5	TURNS RATIO INPUT: 1 --- 3	10,11 --- 7,8	(0.0860 Vrms ± 10.0 %)	IKEDEN RATIO TESTER MODEL 3050HT @20kHz @1Vrms. or EQUIVALENT (Only for reference , so value will be revised later)
		6 --- 5	(0.2620 Vrms ± 5.5 %)	

Global Document Control Number
ZG002-7938

Diagrams ID 4-02



3/5

PRODUCT SPECIFICATION		CUSTOMER:MESSRS.
TDK PT/NO: SRW28LEC-T83H014	SPEC. NO. D-390471 REV.1	CUSTOMER PT/NO:

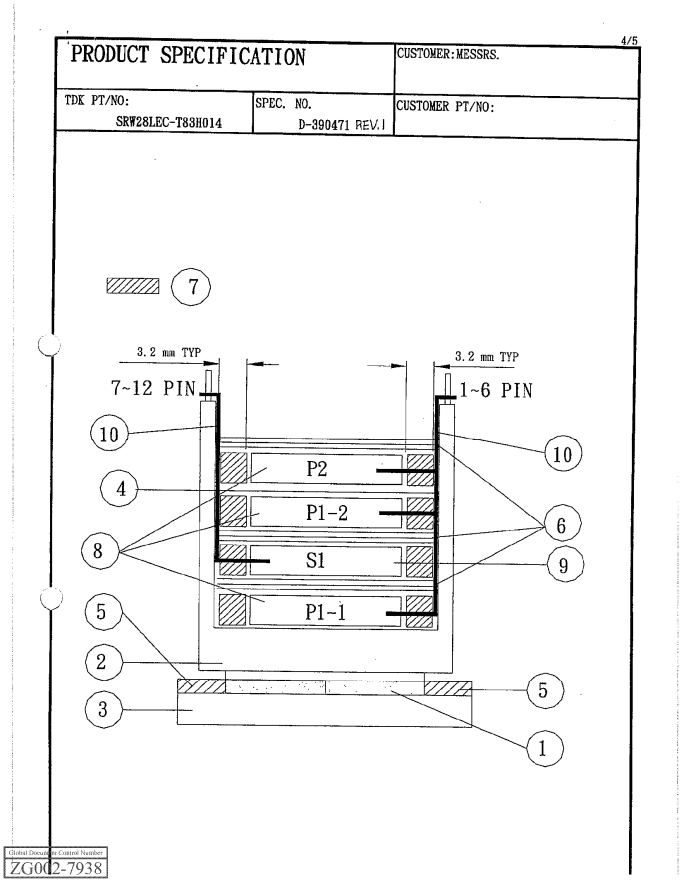
(5) RELIABILITY TEST

NO.	PARAMETER	TEST CONDITION
5.1	TENSILE STRENGTH OF TERMINAL	10 N (1.02Kgf) 1min
5.2	VIBRATION	Frequency:10~55Hz, Amplitude:1.5mm, Scanning:10~55~10Hz, 1minute Directions, Durations:X, Y, Z-Durations each 2 hours.
5.3	SOLDERABILITY	245±2℃ 3.0 s or less (Lead-free solder) 95% min, observed arround the terminal pin
5.4	RESISTANCE TO SOLDERING HEAT	360±10℃ 3.0 $^{+1}_{-0}$ s and 260±5℃ 10±1s (Lead-free solder)
5.5	HUMIDITY	40±2℃ 90~95%RH 96 hours
5.6	STORAGE LOW TEMPERATURE	-25±3℃ 96 hours
5.7	STORAGE HIGH TEMPERATURE	110±2℃ 96 hours
5.8	HEAT CYCLE	-25±3℃ ~ 20±15℃ ~ +85±2℃ ~ 20±15℃ 30min. 2~3min. 30min. 2~3min. : 5 Cycles

During and after 5.1~5.8, no failure should be obeerved on appearances and electrical charcteristics, but it shall be subjected to standard atmospheric conditions for 1 to 2 hours, after whitch measurement shell be made.

Global Document Control Number
ZG002-7938

Diagrams ID 4-02



Diagrams ID 4-02

Global Document Control Number ZG002-7938

PARTS MATERIAL IDENTIFICATION

PARTS NAME: TRANSFORMER
TDK PT/NO: SRW28LEC-T83H014

CUST. PT/NO.
SPEC. NO: D-390471 REV.1

5/5

ITEM	MATERIAL	BASE THICKNESS OF ONE LAYER	LAYERS	MINIMUM THICKNESS OF TOTAL LAYERS	UL FILE NO.	MANUFACTURER
	FERRITE PC40					TDK CORPORATION.
IN	PHENOLIC RESIN PM9820			0.76mm	E41429	SUMITOMO BAKELITE CO., LTD.
	PHENOLIC RESIN T375J				E59481	CHANG CHUN PLASTICS CO., LTD.
G TAPE FOR CORE	POLYESTER TAPE NO. 35660*@	0.025 mm	2	0.050 mm	E50292	SYMBIO INC
	or NO. 632S(a)*, 630F(a)				E56086	TERAOKA SEISAKUSHO CO., LTD.
	or NO. PZ				E165111	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
	or NO. 1318-1(a), 1350F-1(b)				E17385	3M.
	or NO. 31CT				E34833	NITTO DENKO CORP.
ATION TAPE	SAME AS NO. 3	0.025 mm	1	0.025 mm	SAME AS NO. 3	
ATION TAPE	SAME AS NO. 3	0.025 mm	2	0.050 mm	SAME AS NO. 3	
ATION TAPE	SAME AS NO. 3	0.025 mm	3	0.075 mm	SAME AS NO. 3	
G TAPE FOR WINDING	POLYESTER TAPE NO. 673F(a), 673AB				E56086	TERAOKA SEISAKUSHO CO., LTD.
	or NO. WF				E165111	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD
	or NO. 44(a), 44D(a), 44T-A(a)				E17385	3M.
	or NO. 343BN				E34833	NITTO DENKO CORP
	or NO. 35661S				E50292	SYMBIO INC
(P1-1, P1-2, P2)	POLYURETHANE ENAMELLED COPPER WIRE 1-UEW φ0.25				E169536	HUI HONG WIRE (HUI ZHOU) CO., LTD.
					E174837	JUNG SHING WIRE CO., LTD.
					E196072	PROSPERITY ELECTRIC WIRE & CABLE CO.
(S1)	POLYURETHANE ENAMELLED COPPER WIRE 1-UEW φ0.20/7				E189722	SALOM ELECTRIC (XIAMEN) CO., LTD.
					E218438	XIAMEN ZHI CHENG ELECTRON CO LTD
					E229341	HANGZHOU WEIFENG ELECTRONIC CO LTD
TION TUBE	POLYTETRAFIUOETHYLENE(PTFE) TFL. TFT or					
	SILICONE RSU-1 or				E156256	GREAT HOLDING INDUSTRIAL CO., LTD
	SILICONE E 651U-1				E67922	NISSEI ELECTRIC CO., LTD.
	EPOXY VARNISH 468-2				E88468	NIKKAN INDUSTRIES CO., LTD.
	468-2-7" 468-2FC				E81777	RIPLEY RESIN ENGINEERING CO INC.
	EPOXY VARNISH NO. TVB-2024				E83702	KYOCERA CHEMICAL CORPORATION

TDK TDK TAIWAN CORP.

MADE BY	CHECKED BY	APPROVED BY
[signature] Aug. 31. 2004	I. H. Chen Sep. 1. 2004	Tsai Sept. 1. 2004

Diagrams ID 4-03

DEVIATION REQUEST

DATE: AUG. 29, 2005

CUSTOMER: CUSTOMER PT/NO.

TDK PT/NO. SRW28LEC-T82H015 SAMPLE SUBMIT NO. D-390472 REV. 2

According to cust. drawing required or our improvement, herewith we submit the sample or approval sheet which we made some deviation. Hope that will be accepted after your evaluation.

DEVIATION DESCRIPTIONS:

ITEM	~~CUST SPEC.~~ OR CURRENT SPEC.	~~TDK STD SPEC.~~ OR SUGGESTED SPEC.
WINDING SPECIFICATION	11,12 ---- 9,10 1-UEW φ0.40x2 13 Ts	11,12 ---- 9,10 1-UEW φ0.40x2 12 Ts
ELECTRICAL CHARACTERISTICS: DC RESISTANCE	11,12 ---- 9,10 64.4 mΩ ± 30 %	11,12 ---- 9,10 60.5 mΩ ± 30 %
ELECTRICAL CHARACTERISTICS: TURNS RATIO	11,12 ---- 9,10 (0.2800 Vrms ± 5.5 %)	11,12 ---- 9,10 (0.2588 Vrms ± 5.5 %)

THE REASONS ARE:	☐AUTOMATION	☐STANDARDIZATION	☐PROCESS CAPABILITY
STOCK DISPOSITION:	☑USE EXHAUST	☐REWORK	☐SCRAP
DEVIATION AFFECTS:	☐APPEARANCE	☐DIMENSION	☑CHARACTERISTICS

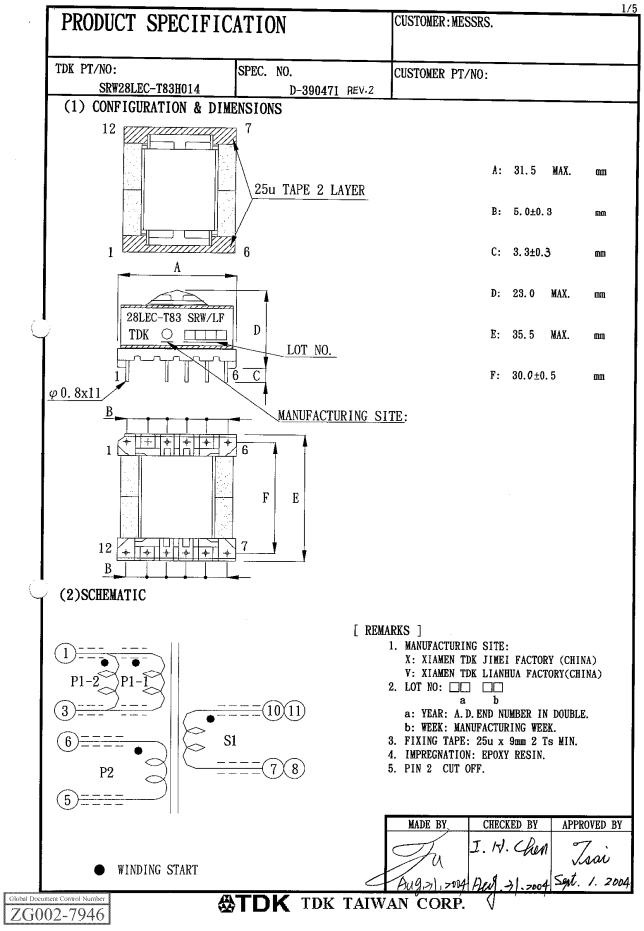
REMARKS:

MADE	CHECKED	APPROVED
AUG. 29, 2005	Aug. 31. 2005	Aug. 31. 2005

TDK TDK TAIWAN CORP.

Global Document Control Number ZG002-7946

Diagrams ID 4-03



Diagrams ID 4-03

PRODUCT SPECIFICATION		CUSTOMER:MESSRS.
TDK PT/NO: SRW28LEC-T82H015	SPEC. NO. D-390472 REV.2	CUSTOMER PT/NO:

(3) WINDING SPECIFICATION

NO.	COIL	TERMINAL	WIRE	TURNS	WINDING METHOD
1	P1-1	6 --- 4	1-UEW φ0.15x2	46	CLOSE
2	S1	9,10 --- 7,8	1-UEW φ0.35x4	9	CLOSE
3	S2	11,12 --- 9,10	1-UEW φ0.40x2	⚠ 12	CLOSE
4	P1-2	6 --- 4	1-UEW φ0.15x2	46	CLOSE
5	P2	1 --- 2	1-UEW φ0.25	13	SPACE

(4) ELECTRICAL CHARACTERISTICS

NO.	PARAMETER	TERMINAL	SPECIFICATION	TEST INSTRUMENTS
1	INDUCTANCE	6 --- 4	528 μH ± 10 %	HP 4284A DIGITAL LCR METER or EQUIVALENT @1 kHz @1 Vrms
2	DC RESISTANCE ⚠	6 --- 4	0.50 Ω ± 20 %	NATIONAL VP-2941A DIGITAL MILLIOHM METER or EQUIVALENT
		11,12 --- 7,8	60.5 mΩ ± 30 %	
		1 --- 2	0.25 Ω ± 20 %	
3	INSULATION RESISTANCE	P --- S	DC 500V 100 MΩ MIN.	MEGOHM METER TOA SM-5E or SM-23GM or EQUIVALENT
		P,S - CORE		
4	DIELECTRIC WITHSTANDING VOLTAGE ⚠	P --- S	AC 3.0 kVrms, 2mA, 1min or AC 3.6 kVrms, 2mA, 2s.	KIKUSUI TOS-8650 or EQUIVALENT (f=60/50 Hz)
		P,S --- CORE	AC 1.0 kVrms, 2mA, 1min or AC 1.2 kVrms, 2mA, 2s.	
5	TURNS RATIO INPUT: 6 --- 4 ⚠	9,10 --- 7,8	(0.1940 Vrms ± 8.0 %)	IKEDEN RATIO TESTER MODEL 3050HT @20kHz @1Vrms. or EQUIVALENT (Only for reference , so value will be revised later)
		11,12 --- 9,10	(0.2588 Vrms ± 5.5 %)	
		1 --- 2	(0.2826 Vrms ± 5.5 %)	

Global Document Control Number ZG002-7946

TDK TDK TAIWAN CORP.

Diagrams ID 4-03

PRODUCT SPECIFICATION		CUSTOMER:MESSRS.
TDK PT/NO: SRW28LEC-T82H015	SPEC. NO. D-390472 REV:2	CUSTOMER PT/NO:

(5) RELIABILITY TEST

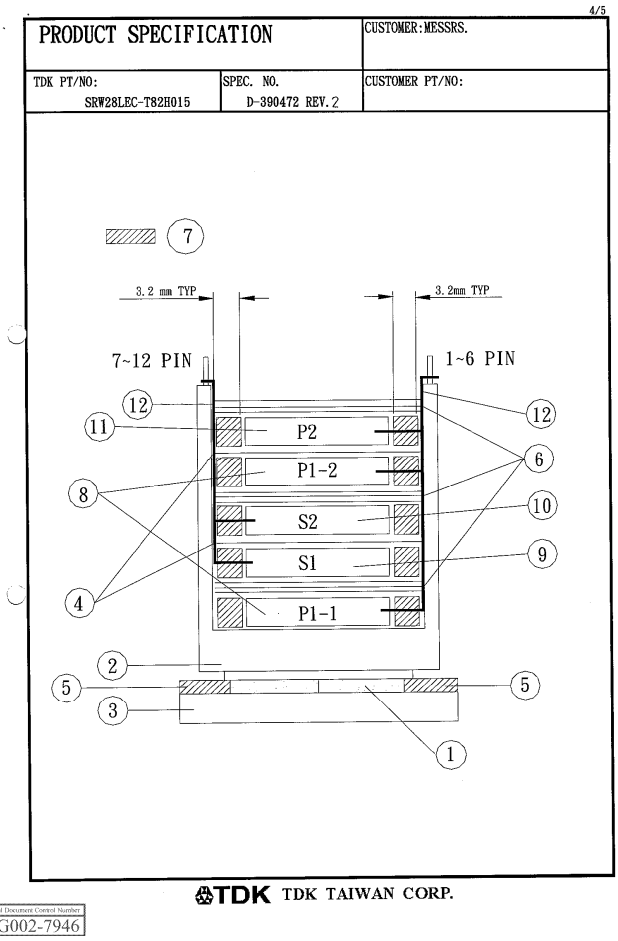
NO.	PARAMETER	TEST CONDITION
5.1	TENSILE STRENGTH OF TERMINAL	10 N (1.02Kgf) 1min
5.2	VIBRATION	Frequency:10～55Hz, Amplitude:1.5mm, Scanning:10～55～10Hz, 1minute Directions, Durations:X, Y, Z-Durations each 2 hours.
5.3	SOLDERABILITY	245±2℃ 3.0 s or less (Lead-free solder) 95% min, observed arround the terminal pin
5.4	RESISTANCE TO SOLDERING HEAT	380±10℃ 3.0 $^{+1}_{-0}$ s and 260±5℃ 10±1s (Lead-free solder)
5.5	HUMIDITY	40±2℃ 90～95%RH 96 hours
5.6	STORAGE LOW TEMPERATURE	-25±3℃ 96 hours
5.7	STORAGE HIGH TEMPERATURE	110±2℃ 96 hours
5.8	HEAT CYCLE	-25±3℃ ～ 20±15℃ ～ +85±2℃ ～ 20±15℃ 30min. 2～3min. 30min. 2～3min. : 5 Cycles

During and after 5.1～5.8, no failure should be observed on appearances and electrical charcteristics, but it shall be subjected to standard atmospheric conditions for 1 to 2 hours, after whitch measurement shell be made.

TDK TDK TAIWAN CORP.

Global Document Control Number
ZG002-7946

Diagrams ID 4-03



Diagrams ID 4-03

Global Document Control Number ZG002-7946

PARTS MATERIAL IDENTIFICATION

PARTS NAME: TRANSFORMER
TDK PT/NO: SRW28LEC-T82H015

CUST. PT/NO.
SPEC. NO: D-390472 REV. 2

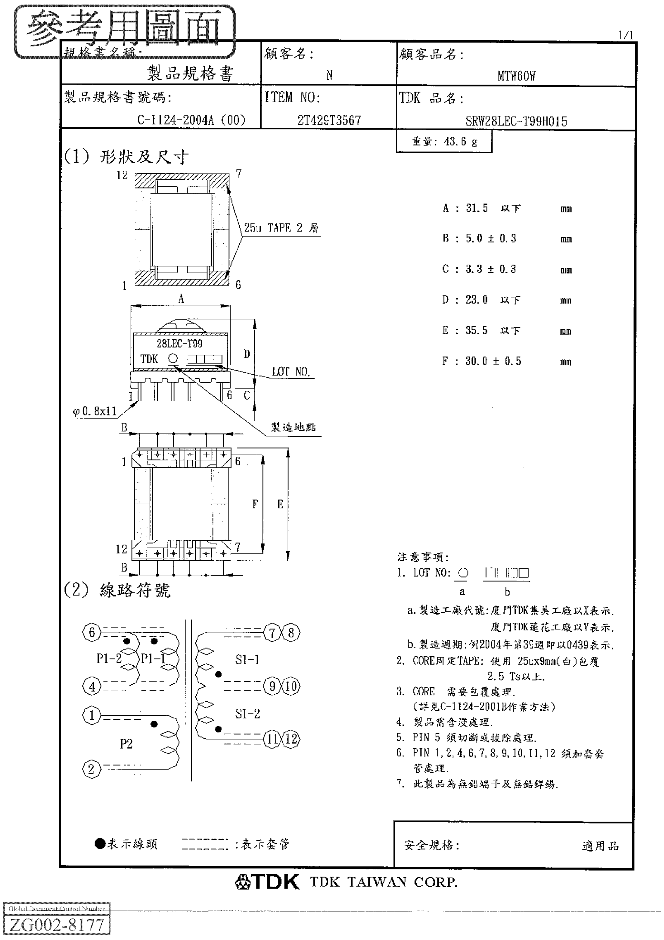
5/5

NO	ITEM	MATERIAL	BASE THICKNESS OF ONE LAYER	LAYERS	MINIMUM THICKNESS OF TOTAL LAYERS	UL FILE NO.	MANUFACTURER
1	CORE	FERRITE PC40					TDK CORPORATION.
2	BOBBIN	PHENOLIC RESIN PM9820 PHENOLIC RESIN T375J			0.76mm	E41429 E59481	SUMITOMO BAKELITE CO., LTD. CHANG CHUN PLASTICS CO., LTD.
3	FIXING TAPE FOR CORE	POLYESTER TAPE NO. 35660*@ or NO. 632S(a)*, 630F(a) or NO. PZ or NO. 1318-1(a), 1350F-1(b) or NO. 31CT	0.025 mm	2	0.050 mm	E50292 E56086 E165111 E17385 E34833	SYMBIO INC TERAOKA SEISAKUSHO CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD 3M. NITTO DENKO CORP.
4	INSULATION TAPE	SAME AS NO. 3	0.025 mm	1	0.025 mm	SAME AS NO. 3	
⚠ 5	INSULATION TAPE	SAME AS NO. 3	0.025 mm	2	0.050 mm	SAME AS NO. 3	
6	INSULATION TAPE	SAME AS NO. 3	0.025 mm	3	0.075 mm	SAME AS NO. 3	
7	FIXING TAPE FOR WINDING	POLYESTER TAPE NO. 673F(a), 673AB or NO. WF or NO. 44(a), 44D(a), 44T-A(a) or NO. 343BN or NO. 35661$				E56086 E165111 E17385 E34833 E50292	TERAOKA SEISAKUSHO CO., LTD. JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD 3M. NITTO DENKO CORP SYMBIO INC
8	WIRE (P1-1, P1-2)	POLYURETHANE ENAMELLED COPPER WIRE 1-UEW φ0.15				E169536 E174837	HUI HONG WIRE (HUI ZHOU) CO., LTD. JUNG SHING WIRE CO., LTD.
9	WIRE (S1)	POLYURETHANE ENAMELLED COPPER WIRE 1-UEW φ0.35				E196072 E189722	PROSPERITY ELECTRIC WIRE & CABLE CO. SALOM ELECTRIC (XIAMEN) CO., LTD.
10	WIRE (S2)	POLYURETHANE ENAMELLED COPPER WIRE 1-UEW φ0.40				E218438 E229341	XIAMEN ZHI CHENG ELECTRON CO LTD HANGZHOU WEIFENG ELECTRONIC CO LTD
11	WIRE (P2)	POLYURETHANE ENAMELLED COPPER WIRE 1-UEW φ0.25					
12	INSULATION TUBE	POLYTETRAFIUOETHYLENE(PTFE) TFL. TFT or SILICONE RSU-1 or SILICONE E 651U-1				E156256 E67922 E88468	GREAT HOLDING INDUSTRIAL CO., LTD NISSEI ELECTRIC CO., LTD. NIKKAN INDUSTRIES CO., LTD.
13	VARNISH	EPOXY VARNISH 468-2 468-2-7** 468-2FC				E81777	RIPLEY RESIN ENGINEERING CO INC.
		EPOXY VARNISH NO. TVB-2024				E83702	KYOCERA CHEMICAL CORPORATION

TDK TDK TAIWAN CORP.

MADE BY	CHECKED BY	APPROVED BY
[signature] Sep. 08. 2004	I. H. Chen Sep. 8. 2004	Tsai Sept. 10. 2004

Diagrams ID 4-04



參考用圖面

1/1

規格書名稱: 製品規格書	顧客名: N	顧客品名: MTW60W
製品規格書號碼: C-1124-2004A-(00)	ITEM NO: 2T429T3567	TDK 品名: SRW28LEC-T99H015

重量: 43.6 g

(1) 形狀及尺寸

A : 31.5 以下 mm

B : 5.0 ± 0.3 mm

C : 3.3 ± 0.3 mm

D : 23.0 以下 mm

E : 35.5 以下 mm

F : 30.0 ± 0.5 mm

(2) 線路符號

注意事項:

1. LOT NO: ○ (a) □□□□ (b)
   a. 製造工廠代號: 廈門TDK集美工廠以X表示.
   廈門TDK蓮花工廠以V表示.
   b. 製造週期: 例2004年第39週即以0439表示.
2. CORE固定TAPE: 使用 25ux9mm(白)包覆 2.5 Ts以上.
3. CORE 需要包覆處理.
   (詳見C-1124-2001B作業方法)
4. 製品需含浸處理.
5. PIN 5 須切斷或拔除處理.
6. PIN 1,2,4,6,7,8,9,10,11,12 須加套套管處理.
7. 此製品為無鉛端子及無鉛銲錫.

安全規格: 適用品

TDK TDK TAIWAN CORP.

Global Document Control Number ZG002-8177

Diagrams ID 4-04

參考用圖面

1/1

規格書名稱: 製品規格書	顧客名: N	顧客品名: MTW60W
製品規格書號碼: C-1124-2004B-(00)	ITEM NO. 2T429T3567	TDK 品名: SRW28LEC-T99H015

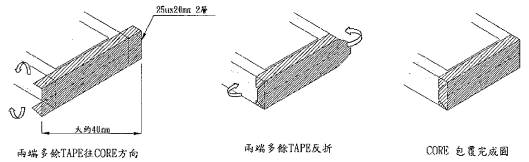
(3) 捲線規格

順序	卷組名	端子番號	線材	圈數	卷法
1	P1-1	6 --- 4	2 UEW φ0.15x2	46 Ts	密著卷
2	S1	9,10 --- 7,8	2-UEW φ0.35x4	9 Ts	密著卷
3	S2	11,12 --- 9,10	2-UEW φ0.4x2	12 Ts	密著卷
4	P1-2	6 --- 4	2-UEW φ0.15x2	46 Ts	密著卷
5	F2	1 --- 2	2-UEW φ0.25	9 Ts	均等卷
6					

(4) 電氣特性

測試項目	測試方式	測試條件	測試端子	規格	測試儀器
L 值 (TS)	全數	1 kHz (1 Vrms)	6 --- 4 間	528 μH ± 10 % (475.2 ~ 580.8)	HP 4284A LCR METER 或相等儀器
絕緣抵抗	抽測 n=10/LOT	DC 500V	P --- S	100 MΩ 以上	MEGOHM METER SM-5E 或相等儀器
			P,S --- CORE		
耐電壓		AC 3.6kVrms, 2mA	P --- S	2 秒 以上	KIKUSUI TOS-8650 PT METER (f:60/50 Hz) 或相等儀器
		AC 1.2kVrms, 2mA	P,S · CORE		
直流抵抗 RDC	抽測 n=10/LOT		6 4 間	0.49 Ω ± 20 %	NATIONAL VP-2841A DIGITAL MILLIOHM METER 或相等儀器
			11,12 --- 7,8 間	58.2 mΩ ± 30 %	
			1 --- 2 間	0.17 Ω ± 20 %	
卷數比 極性	全數	INPUT: 6 --- 4 間	9,10 --- 7,8 間	0.1950 Vrms ± 8.0 %	TURN RATIO METER TRD-09 或 TRD-08 或相等儀器
			11,12 --- 9,10 間	0.2600 Vrms ± 5.5 %	
			1 --- 2 間	0.1960 Vrms ± 8.0 %	
層間耐壓	全數 (內部規格)		6 --- 4 間	AC 1000 Vp p (無異常現象)	INPULSE TESTER ECC: DW-9565 或相等儀器

CORE 貼覆處理作業方法



兩端多餘TAPE往CORE方向　兩端多餘TAPE反折　CORE 包覆完成圖

TDK TDK TAIWAN CORP.

Global Document Control Number ZG002-8177

Diagrams ID 4-04

參考用圖面

1/1

規格書名稱: 製品規格書 材料明細表

顧客名: N

TDK 品名: 2T429T3567 SRW28LEC-T99H015

製品規格書號碼: C-1124-2004C-(00)

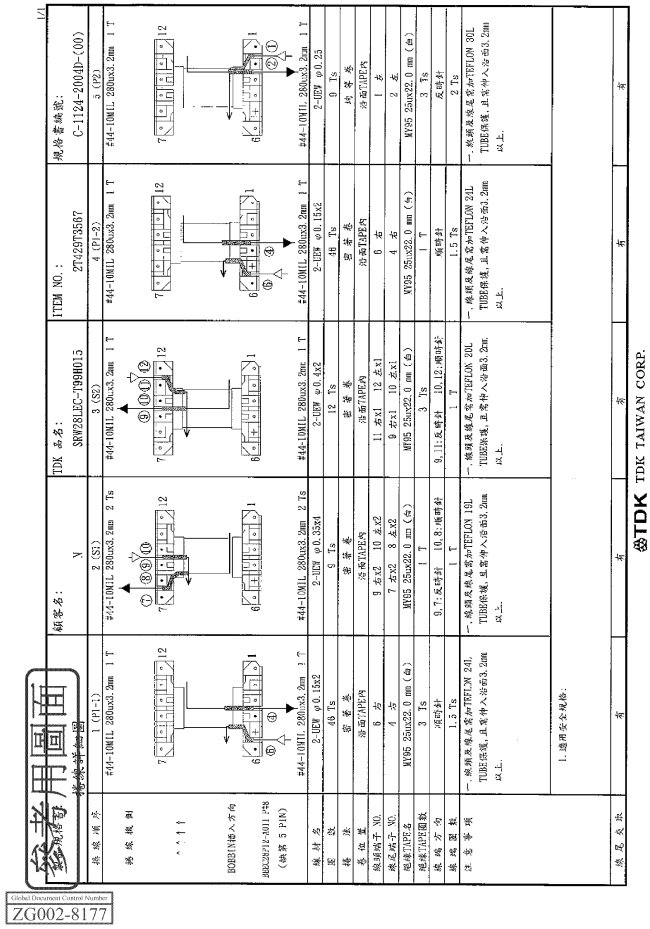
顧客品名: MTW60W

NO.	材料名稱	材料品名	工作站	單位用量	單位	材料 NO.	購買標準號碼	部品CODE	日本圖面番號	購入廠家
1	CORE	PC40 EER28L-A248	17060	1.0000	PC	LT114W5090	C-2720-015	(AL-248±5%, G≒0.50mm)		L部
		PC40 EER28L-Z		1.0000	PC	LT115W0070	C-2720-015			L部
2	BOBBIN	BEEC28P12-A011 P#8		1.0000	PC	CS151288	XD-2704-228	(ER-2850, 缺第5PIN 製品C尺寸:3.3±0.3)	BOBBIN為無鉛PIN	和 進
3	線 材	2-UEW φ0.15		1.5000	g	CS11064	C-2702-003			豐盛、洪氏、偉峰、智丞
4	線 材	2-UEW φ0.35	17020	1.9000	g	CS11046	C-2702-013			豐盛、洪氏、偉峰、智丞
5	線 材	2-UEW φ0.40		1.6600	g	CS11044	C-2702-013			豐盛、洪氏、偉峰、智丞
6	線 材	2-UEW φ0.25		0.2800	g	CS11054	C-2702-013			豐盛、洪氏、偉峰、智丞
7	固定TAPE	MY95 25ux9 mm 白	17060	0.2900	M	CS33001	C-2710-010			四 維
		CT286 25ux9 mm 白(PZ286)			or	CS33009E	XD-2710-004			舒利隆(壓敏)
		1318 25ux9 mm 白			or	CS33191B	C-2710-047			協榮(3M)
		31CT 25ux9 mm 白			or	CS33004C	C-2710-058			日 東
8	絕緣TAPE	MY95 25ux22.0 mm 白	17020	0.6800	M	CS33023	C-2710-010			四 維
		CT286 25ux22.0 mm白(PZ286)			or	CS33506EN	XD-2710-004			舒利隆(壓敏)
		1318 25ux22.0 mm 白			or	CS33249B	C-2710-047			協榮(3M)
		31CT 25ux22.0 mm 白			or	CS33040C	C-2710-058			日 東
9	CORE包覆TAPE	MY95 25ux20.0 mm 白	17060	0.0800	M	CS33127	C-2710-010			四 維
		CT286 25ux20.0 mm白(PZ286)			or	CS33473E	XD-2710-004			舒利隆(壓敏)
		1318 25ux20.0 mm 白			or	CS33723B	C-2710-047			協榮(3M)
		31CT 25ux20.0 mm 白			or		C-2710-058			日 東
10	沿面TAPE	#44-10MIL 280ux3.2mm	17020	0.8150	M	CS33426B	C-2710-039			協榮(3M)
		WF-2902 280ux3.2 mm			or	CS33474E				舒利隆(壓敏)
11	TUBE	TEFLON 19L		0.0230	M	CS19384	C-2704-198			藍菱,耀菱,文太
12	TUBE	TEFLON 20L	17020	0.0230	M	CS19103	C-2704-198			藍菱,耀菱,文太
13	TUBE	TEFLON 24L		0.0460	M	CS19135	C-2704-198			藍菱,耀菱,文太
14	TUBE	TEFLON 30L		0.0230	M	CS19022	C-2704-198			藍菱,耀菱,文太
15	無鉛錫材	M705	17040	0.1000	g	C350098			2CMNSEA00001	新原金屬
					or	CS35005			2CMNSEA00001	千住金屬
16	助銲劑	S-100	17040	0.0500	g	CS38001	XD-2706-002			祥樂田村(XIA)
17	油 墨	JP-K23 黑	17060	0.0020	g	CS320184				輝東(廈門代理處)
18	含浸劑	TVB-2024	17070	0.3300	g	CS38003	C-2707-007			協榮(KYOCERA)
19	溶 劑	TTE-8303S		0.3300	g	CS38004	C-2707-007			協榮(KYOCERA)
20	保利龍	SRW28LEC-H1		1/70	PC	CS21137N	XD-2711-142			欣欣(XIA)
21	紙箱	CW-D	17080	1/210	PC	CS22006	XD-2711-008			協進(XIA)
22	紙板	475x325x3		1/210	PC	CS22005	C-2711-029			協進(XIA)
23	保利龍片	450x290x8		1/210	PC	CS21009	XD-2711-033			欣欣(XIA)
24										

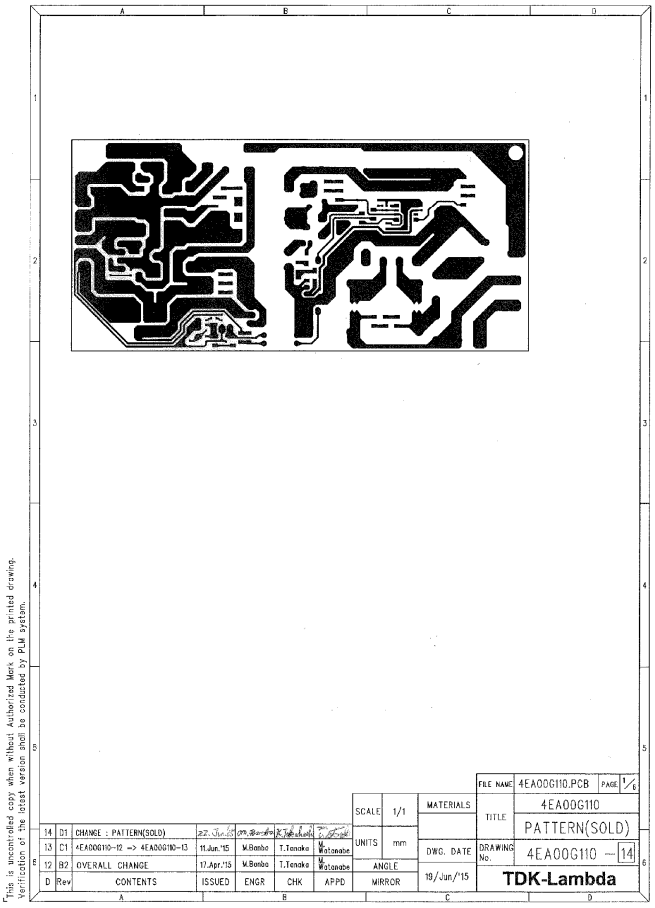
TDK TAIWAN CORP.

Global Document Control Number ZG002-8177

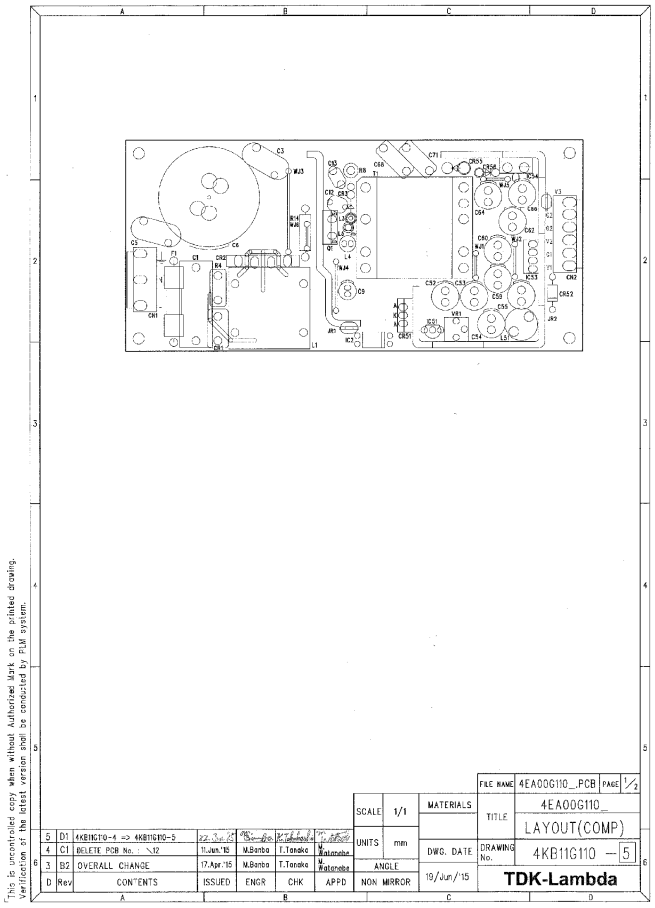
Diagrams ID 4-04



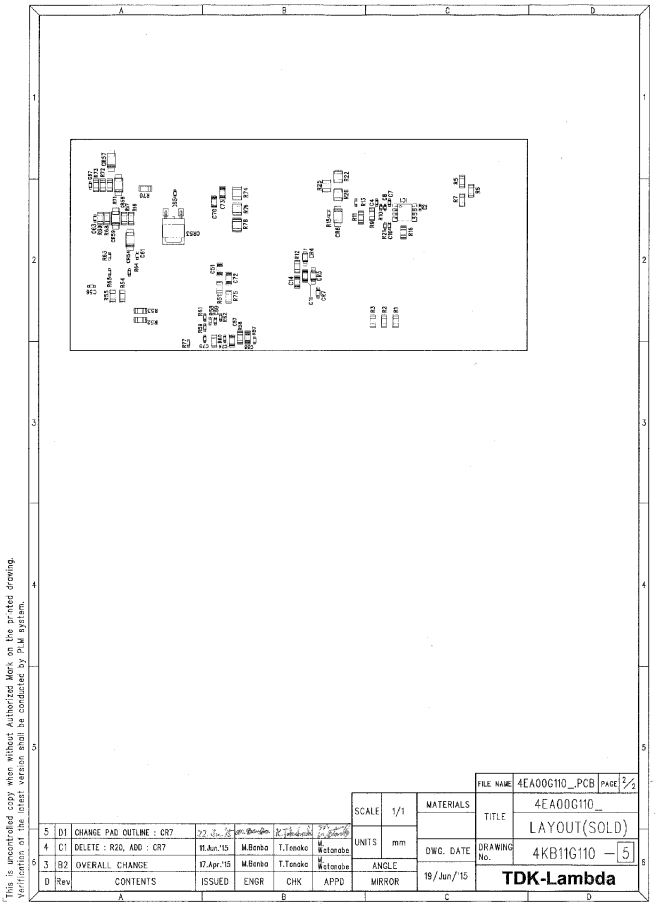
Schematics + PWB ID 5-01



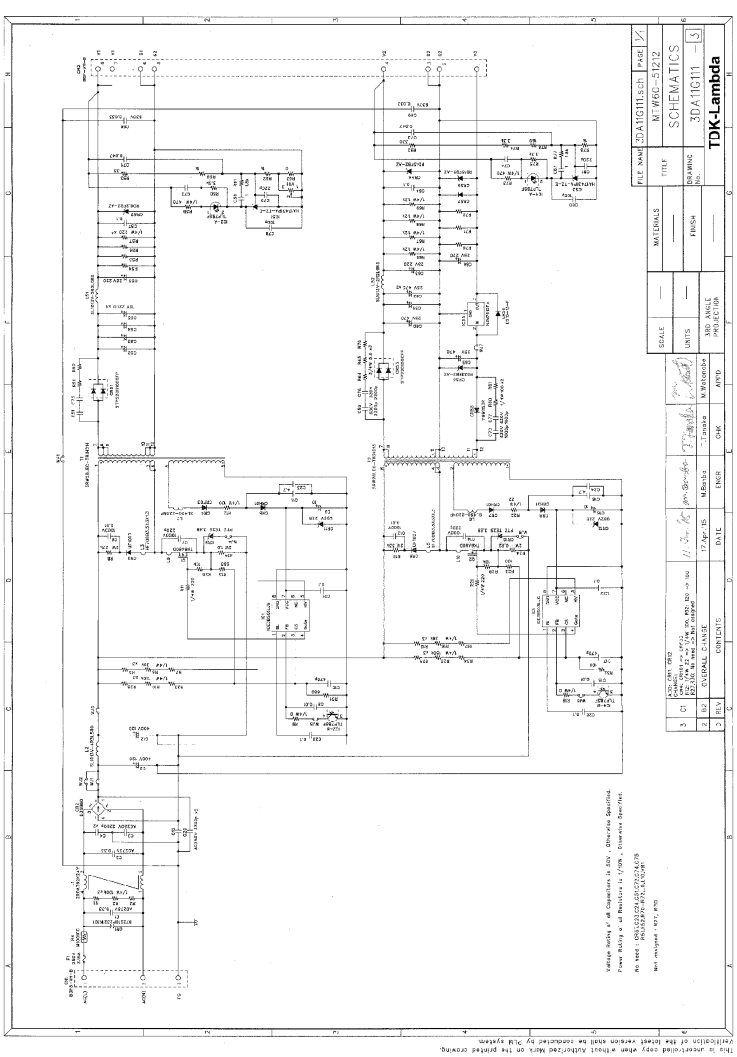
Schematics + PWB ID 5-02



Schematics + PWB ID 5-02



Schematics + PWB ID 5-03



Miscellaneous ID 7-01

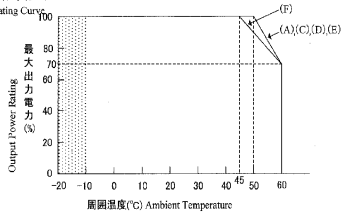
MOD-STD		DWG No.	4BA00G111	7	8/11

MTW60-51212

製品仕様書
SPECIFICATIONS

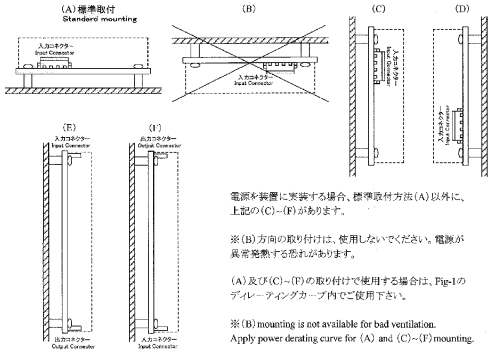
REV

11. ディレーティングカーブ
Power Derating Curve



: は動作可能ですが、特性は保証できません。
is only start-up but characteristics are not warranted.
Fig-1 Power Derating Curve

12. 設置方向
Mounting Direction



電源を装置に実装する場合、標準取付方法(A)以外に、上記の(C)~(F)があります。

※(B)方向の取り付けは、使用しないでください。電源が異常発熱する恐れがあります。

(A)及び(C)~(F)の取り付けで使用する場合は、Fig-1のディレーティングカーブ内でご使用下さい。

※(B) mounting is not available for bad ventilation.
Apply power derating curve for (A) and (C)~(F) mounting.

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TDK-Lambda

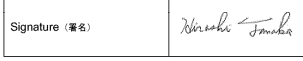
Miscellaneous ID 7-02

Manufacturer's Declaration under IECEE CB Scheme

（IECEE CB スキームに於ける製造者宣言書）

We as a manufacturer and/or a manufacturer of the original model declare that the submitted sample(s) descrived in Test Report for evaluation is/are representative of the products from the each factory in Test Report.

（製造者/オリジナルモデルの製造者として、評価のために提出したテストレポート中のサンプルは、テストレポートに記載される各工場を代表するサンプルであることを宣言します。）

Date of issue（発行日）	1/Sep./2015
Manufacturer name（製造者名）	TDK-LAMBDA CORP NAGAOKA TECHNICAL CENTER R&D DIV
Manufacturer Address（製造者住所）	2704-1 SETTAYA-MACHI NAGAOKA-SHI NIIGATA 940-1195 JAPAN
Name of person in charge（責任者名）	Hiroshi Tanaka
Title（役職）	Engineer
Signature（署名）	

Miscellaneous ID 7-03

TDK·Lambda

11/Sep./2015

Subject: Declaration of Conformity on RoHS

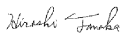
Dear UL Japan, Inc.,

We, TDK-Lambda Corp., declare, under our solo responsibility, that the product(s) noted below are in conformity with the requirements of Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).

Description of equipment:

Product description:	Switching Power Supply
Model:	MTW60-51212xy, MTW60-51515xy x = "-" or blank, y = 0-9, A-Z or blank

Sincerely yours,

SIGNATURE (script or attach) 

NAME Hiroshi Tanaka
TITLE Engineer

TDK TDK-Lambda Corporation 3-9-1 Shibaura, Minato-ku, Tokyo, 108-0023 Japan

Miscellaneous ID 7-04

No.	Kind of Instrument Precision Class	Manufacturer	Model	Serial No.	Control No.	Calibrated Until
1	Analyzing AC Power Supply	Takasago	AA2000XG2	507740070020	-----	-----
2	Analyzing AC Power Supply	Takasago	AA2000XG2	507740070024	-----	-----
3	Electronic DC Load	Takasago	FK-200L	5220199042	-----	-----
4	Electronic DC Load	Takasago	FK-200L	428400020018	-----	-----
5	Electronic DC Load	Takasago	FK-200L	428400060023	-----	-----
6	Electronic DC Load	Takasago	FK-200L	428400060040	-----	-----
7	Electronic DC Load	Takasago	FK-1000L	5220400090	-----	-----
8	Electronic DC Load	Takasago	FK-1000L	5220497069	-----	-----
9	Electronic DC Load	Takasago	FK-1000L	428430030081	-----	-----
10	Electronic DC Load	Takasago	FK-1000L	428430040001	-----	-----
11	Digital Oscilloscope	Yokogawa	DL1740	27C9408173	OS-1080	2015,09
12	Digital Oscilloscope	Yokogawa	DL1740EL	27E231928B	OS-1104	2015,09
13	Digital Power Meter	Yokogawa	WT110E	12W345456	AWM-1041	2015,09
14	Digital Power Meter	Yokogawa	WT200	12A918033	AWM-1051	2015,09
15	Digital Power Meter	Yokogawa	WT210	91H236369	AWM-1082	2015,09
16	Digital Power Meter	Yokogawa	WT210	91H236370	AWM-1083	2015,09
17	Data Acquisition/Switch Unit	Agirent	34970A	MY44026252	DMM-1169	2015,09
18	Data Acquisition/Switch Unit	Agirent	34970A	MY44034524	DMM-1175	2015,09
19	Shunt resistor	Yokogawa	2215 09	65YA3605	SH-1018	2015,09
20	Shunt resistor	Yokogawa	2215 11	61YA1443	SH-1056	2015,09
21	Shunt resistor	Yokogawa	2215 07	63YA1087	SH-1079	2015,09
22	Shunt resistor	Yokogawa	2215 11	67YA0854	SH-1147	2015,09
23	Shunt resistor	Yokogawa	2215 13	67YA0209	SH-1152	2015,09
24	Direct current meter	YEW	2051 04	4LU0440	DAM-1029	2015,09
25	Direct current meter	YEW	2051 04	42V0441	DAM-1030	2015,09
26	Direct current meter	YEW	2051 04	02326U	DAM-1059	2015,09
27	Digital mauti mater	Yokogawa	73401	1400486	DMM-1103	2015,09
28	Hibrid Recorder	Yokogawa	MV2048-1-4-1-1-1M	S5H207857	HB-1029	2015,09
29	Hibrid Recorder	Yokogawa	MV2048-1-4-1-1-1M	S5H207860	HB-1032	2015,09
30	Memory Hi-logger	Hioki	8430	080925839	SS-1003	2016,02
31	Leak Current Hitester	Hioki	3156	50935795	LA-1003	2016,02
32	Withstanding Voltage Tester	Kikusi	TOS8750	2050052	N1-20172	2016,02
33	Earth Conductive tester	Kikusi	TOS6210	NE002333	SS-1002	2016,02
34	Ballpressure Device	Exel	T-10.02	2002	SS-1005	2016,02
35	Test Finger	Exel	P-10.08	2002	SS-1--6	2016,02
36	Mechanical Force Gauge	Imada	PS-300N	238528	SS-1007	2016,02
37	Temperature and Humidity Chamber	Espec	PR-1KTH	14019726	-----	-----
38	Digital Temperature / Humidity Logger	Hioki	3641	090123869	SS-1004	2016,02
39	Anemometer	KANOMAX	6631	545317	ANM-1001	2015,09
40	Caliper	Mitsutoyo	CD-S20C	500-445	DVC-1001	2015,09
41	Memory Hi-logger	Hioki	LR8401	110706996	HB-1037	2015,09