



Test Report issued under  
the responsibility of:



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

**Report Reference No** .....: E141988-A33-CB-4

Date of issue .....: 2016-06-30

Total number of pages .....: 55

**CB Testing Laboratory** .....: UL Japan, Inc.

Address .....: 4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan

**Applicant's name** .....: KAGA COMPONENTS CO LTD

Address .....: 20 KANDAMATSUNAGACHO

Address .....: CHIYODA-KU

TOKYO 101-0023 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

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<b>Test item description</b> .....	Power Supply for building-in, switch mode type
Trade Mark .....	TRACO POWER
Manufacturer .....	TRACO ELECTRONIC AG SIHLBRUGGSTRASSE 111 CH-6340 BAAR SWITZERLAND
Model/Type reference .....	TMS06105, TMS06112, TMS06115, TMS06124, TMS06212, TMS06215
Ratings .....	TMS06105 Input: 115-230 Vac, 50/60 Hz, 0.11-0.07 A Output: 5 Vdc, 1.2 A TMS06112 Input: 115-230 Vac, 50/60 Hz, 0.11-0.07 A Output: 12 Vdc, 0.5 A TMS06115 Input: 115-230 Vac, 50/60 Hz, 0.11-0.07 A Output: 15 Vdc, 0.4 A TMS06124 Input: 115-230 Vac, 50/60 Hz, 0.11-0.07 A Output: 24 Vdc, 0.25 A TMS06212 Input: 115-230 Vac, 50/60 Hz, 0.12-0.07 A Output: ± 12 Vdc, 0.25 A TMS06215 Input: 115-230 Vac, 50/60 Hz, 0.12-0.07 A Output: ± 15 Vdc, 0.2 A

<b>Testing procedure and testing location:</b>	
<input checked="" type="checkbox"/> <b>CB Testing Laboratory</b>	Testing location / address .....: UL Japan, Inc. 4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan
<input type="checkbox"/> <b>Associated CB Test Laboratory</b>	Testing location / address .....:
	Tested by (name + signature) .....: Toshiyuki Suzuki, Project Handler <span style="float: right;"><i>Toshiyuki Suzuki</i></span>
	Approved by (name + signature).....: Masatomo Takiyama, Reviewer <span style="float: right;"><i>M. Takiyama</i></span>
<input type="checkbox"/> <b>Testing Procedure: TMP/CTF Stage 1</b>	Testing location / address .....:
	Tested by (name + signature) .....: _____
	Approved by (name + signature).....: _____
<input type="checkbox"/> <b>Testing Procedure: WMT/CTF Stage 2</b>	Testing location / address .....:
	Tested by (name + signature) .....: _____
	Witnessed by (name + signature) ...: _____
	Approved by (name + signature).....: _____
<input type="checkbox"/> <b>Testing Procedure: SMT/CTF Stage 3 or 4</b>	Testing location / address .....:
	Tested by (name + signature) .....: _____
	Approved by (name + signature).....: _____
	Supervised by (name + signature) ..: _____
<input type="checkbox"/> <b>Testing Procedure: RMT</b>	Testing location / address .....:
	Tested by (name + signature) .....: _____
	Approved by (name + signature).....: _____
	Supervised by (name + signature) ..: _____

<b>List of Attachments</b>	
National Differences (18 pages)	
Enclosures (62 pages)	
<b>Summary Of Testing</b>	
Unless otherwise indicated, all tests were conducted at UL Japan, Inc. 4383-326 Asama-cho, Ise-shi, Mie, 516-0021, Japan.	
<b>Tests performed (name of test and test clause)</b>	<b>Testing location / Comments</b>
Input: Single-Phase (1.6.2)	

Durability of Marking (1.7.11)  
Energy Hazard Measurements (2.1.1.5, 2.1.2, 1.2.8.10)  
Capacitance Discharge (2.1.1.7)  
SELV Reliability Test Including Hazardous Voltage  
Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 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)  
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: DE, DK, EU, FI, GB, KR, SE, SI

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

### Copy of Marking Plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



<b>Test item particulars :</b>	
Equipment mobility .....	for building-in (component-type)
Connection to the mains .....	Not connected to the mains directly.
Operating condition .....	continuous
Access location .....	N/A
Over voltage category (OVC) .....	OVC II
Mains supply tolerance (%) or absolute mains supply values .....	+10%, -10%
Tested for IT power systems .....	Considered in the end product.
IT testing, phase-phase voltage (V) .....	Considered in the end product.
Class of equipment .....	Class I (earthed)
Considered current rating of protective device as part of the building installation (A) .....	16 A (branch circuit)
Pollution degree (PD) .....	PD 2
IP protection class .....	IP X0
Altitude of operation (m) .....	less than 2000 m
Altitude of test laboratory (m) .....	approximately 10 to 20 m
Mass of equipment (kg) .....	approximately 30 g
<b>Possible test case verdicts:</b>	
- 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)
<b>Testing:</b>	
Date(s) of receipt of test item .....	2006-10-19, 2006-10-31, 2006-11-16, 2007-02-05, 2010-10-28
Date(s) of Performance of tests .....	2007-02-07, 2007-02-16, 2010-10-29
<b>General remarks:</b>	
"(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.	
<b>Manufacturer's Declaration per Sub Clause 4.2.5 of IEC 60950-1:</b>	
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 .....	
When differences exist, they shall be identified in the General Product Information section.	
<b>Name and address of Factory(ies):</b>	KAGA COMPONENTS CO LTD NIIGATA PLANT 1194-3 MOKKOUSHIN-MACHI, HIGASHI-KU, NIIGATA-SHI, NIIGATA-KEN 950-0807 JAPAN

DONGGUAN POWERTEK ELECTRONICS CO LTD  
CHILING INDUSTRIAL ESTATE, HOUJIE ZHEN, DONGGUAN  
CITY, GUANGDONG, CHINA

## GENERAL PRODUCT INFORMATION:

### Report Summary

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

### Product Description

These models covered in this report were component power supply intended for use in Information Technology Equipment.

### Model Differences

Model TMS061xx is single(+) output DC power supply unit.

Model TMS062xx is dual( $\pm$ ) output DC power supply unit.

The "xx" in model designation indicate output voltage of power supply unit.

Each model is identical, except for output ratings, minor differences in the secondary circuit components and the number of turns of secondary winding in the Transformer (T1).

### Additional Information

This report is a reissue of CBTR Ref. No. E141988-A33-CB-3, CB Test Certificate Ref. Nos. JP-10743-UL and JP-10744-UL due to the following modifications:

1. Upgrade of standard from IEC 60950-1, 2nd edition + Amendment 1 to IEC60950-1, 2nd edition + Amendment 1 + Amendment 2.
2. Deletion of Models KB6-05S, KB6-12S, KB6-15S, KB6-24S, KB6-122D and KB6-153D.
3. Deletion of Manufacturer "KAGA COMPONENTS CO LTD".
4. Update of address of Applicant and Manufacturer.
5. Change of Manufacturer of X-Capacitor (C1) from "Panasonic Electronic Devices Japan Co., Ltd." to "Panasonic Corp. Automotive & Ind. System Company Device Solutions Business Division."
6. The word "Various" was changed to "Interchangeable" in list of critical components.

Based on the previously conducted testing and the review of product technical documentation including photos, schematics, wiring diagrams and similar, it has been determined that the product continues to comply with the standard.

Maximum normal load: Rated output load.

### Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (T<sub>ma</sub>) permitted by the manufacturer's specification of: 40 °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: Primary-Earthed Dead Metal: 249 V rms, 524 V pk, Primary-SELV: 249 V rms, 524 V pk for Models TMS06105, TMS06112, TMS06115, Primary-Earthed Dead Metal: 246 V rms, 536 V pk, Primary-SELV: 258 V rms, 548 V pk for Models TMS06124, TMS06212, TMS06215.
- The following secondary output circuits are ELV: All model's output circuits
- The following secondary output circuits are at non-hazardous energy levels: All model's output circuits
- The power supply terminals and/or connectors are: Suitable for factory wiring only
- The maximum investigated branch circuit rating is: 16 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 OBJ2 insulation system with the indicated rating greater than Class A (105°C): T1 (Class B)
- The following end-product enclosures are required: Fire, Electrical
- A suitable disconnect device shall be provided in the end product. --
- A suitable protective device (overcurrent protection) shall be provided in the end product. --
- The evaluation of IT power systems shall be conducted in the end product. --

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)