


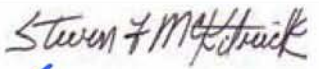
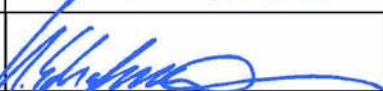



Test Report issued under the responsibility of:



<b>TEST REPORT</b>		
<b>IEC 60950-1</b>		
<b>Information technology equipment – Safety –</b>		
<b>Part 1: General requirements</b>		
Report Number .....	221868-CI3-2	CB DE1-56824
Date of issue .....	2016-02-11	
Total number of pages.....	167	
Applicant's name.....	TDK-Lambda Americas Inc.	
Address .....	3320 Matrix Drive; Suite 100; RICHARDSON TX 75082; USA	
<b>Test specification:</b>		
Standard .....	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013	
Test procedure .....	VDE, CB Scheme	
Non-standard test method.....	DIN EN 60950-1 (VDE 0805-1):2014-08 EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013	
Test Report Form No.....	IEC60950_1F	
Test Report Form(s) Originator.....	SGS Fimko Ltd	
Master TRF .....	Dated 2014-02	
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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.		
<b>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.</b>		
<b>General disclaimer:</b>		
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.		

<b>Test item description</b> ..... :	Component DC-DC Converters for building in IT equipment.
<b>Trade Mark</b> ..... :	 and/or <b>TDK-Lambda</b>
<b>Manufacturer</b> .....	TDK-Lambda Americas Inc.; 3320 Matrix Drive; Suite 100; RICHARDSON TX 75082; USA
<b>Model/Type reference</b> ..... :	iBC series (see model matrix – Appendix 3)
<b>Ratings</b> ..... :	The DC-DC Converters are not internally fused. An external input line normal blow fuse with a max. value of 30 A is required.
10003893 Rated voltage..... :	Input: DC 6.0 – 14.4 V (SELV) (0% Tolerance)
10004017 Rated current..... :	max. 8 A
10003951 Output voltages and currents..... :	DC 0.75 – 5.5 V, 16 A (refer to Appendix 3)
Ambient..... :	Max. 125°C temperature at reference point (Q1)
Supplementary information: The above listing was introduced only for internal VDE administration process.	

<b>Testing procedure and testing location:</b>		
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	VDE Prüf- und Zertifizierungsinstitut GmbH VDE <i>Testing and Certification Institute</i>
<b>Testing location/ address.....:</b>		Merianstrasse 28, D-63069 Offenbach, Germany
<input type="checkbox"/>	<b>Associated CB Testing Laboratory:</b>	
<b>Testing location/ address.....:</b>		
<b>Tested by (name + signature).....:</b>		(authorization of test report)
<b>Approved by (name + signature).....:</b>		
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: TMP/CTF Stage 1:</b>	
<b>Testing location/ address.....:</b>		
<b>Tested by (name + signature).....:</b>		(authorization of test report)
<b>Approved by (name + signature).....:</b>		
<hr/>		
<input checked="" type="checkbox"/>	<b>Testing procedure: WMT/CTF Stage 2:</b>	
<b>Testing location/ address.....:</b>		TDK Innoveta Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA CTF Stage 2 (TDAP under File No. 2520400-9501-0001)
<b>Tested by (name + signature).....:</b>		Steve McKitrick 
<b>Witnessed by (name + signature).....:</b>		Ulrich Schafranka (authorization of test report) 
<b>Approved by (name + signature).....:</b>		Holger Kreuzer 
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: SMT/CTF Stage 3 or 4:</b>	
<b>Testing location/ address.....:</b>		
<b>Tested by (name + signature).....:</b>		
<b>Witnessed by (name + signature).....:</b>		
<b>Approved by (name + signature).....:</b>		
<b>Supervised by (name + signature).....:</b>		

<b>List of Attachments (including a total number of pages in each attachment):</b>		
<b>Appendix No.</b>	<b>Description</b>	<b>Page(s)</b>
1	Photos	147
2	Rating Labels	148
3	Model Matrix	149
4	Circuit diagram (Schematics)	150
5	Layout	151-153
6	Data sheet	154-167
<b>Summary of testing:</b>		
<b>Tests performed (name of test and test clause):</b>		<b>Testing location:</b>
<p>For the upgrade are no tests required. All Test were done under previous Test Reports (VDE file: 2520400-3336-0017)</p>		<p>TDK Innoveta Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA WMT / CTF Stage 2 (TDAP under File No. 2520400-9501-0001)</p>

<b>Summary of compliance with National Differences:</b>				
<b>List of countries addressed</b>				
The product has been tested according to standard IEC 60950-1:2005 (2 <sup>nd</sup> Edition); am1:2009; am2:2013 / EN 60950-1:2006; A11:2009; A1:2010; A12:2011; A2:2013 and those deviations taken into account of				
<input checked="" type="checkbox"/> CENELEC common modifications	<input checked="" type="checkbox"/> United Kingdom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> Ireland	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Sweden	<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> Spain	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> Switzerland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b><input checked="" type="checkbox"/> CB Bull. NATIONAL DIFFERENCES IEC 60950-1:2005 (2nd Edition)</b>				
<input checked="" type="checkbox"/> Switzerland	<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> USA	<input checked="" type="checkbox"/> Japan
<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> United Kingdom	<input checked="" type="checkbox"/> Sweden	<input checked="" type="checkbox"/> Israel	<input type="checkbox"/>
<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> Ireland	<input checked="" type="checkbox"/> Group Differences	<input checked="" type="checkbox"/> Australia	<input type="checkbox"/>
<input checked="" type="checkbox"/> Spain	<input checked="" type="checkbox"/> Korea	<input checked="" type="checkbox"/> Canada	<input checked="" type="checkbox"/> New Zealand	<input type="checkbox"/>
<b><input checked="" type="checkbox"/> The product fulfils the requirements of</b>				
DIN EN 60950-1 (VDE 0805-1):2014-08 EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013 IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013				

**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.



The label includes: Optional "-R" appended to product code to indicate ROHS compliance.  
eg. IBCXXXXXX-### -R Series

<b>Test item particulars.....:</b>	
<b>Equipment mobility.....:</b>	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input checked="" type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
<b>Connection to the mains.....:</b>	<input type="checkbox"/> pluggable equipment <input type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input type="checkbox"/> detachable power supply cord <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains
<b>Operating condition.....:</b>	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
<b>Access location .....</b>	<input type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> to be determined in the end use equipment
<b>Over voltage category (OVC) .....</b>	<input checked="" type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: DC supplied
<b>Mains supply tolerance (%) or absolute mains supply values .....</b>	N/A; not directly connected to the mains. see page 2 for input voltage range.
<b>Tested for IT power systems .....</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>IT testing, phase-phase voltage (V) .....</b>	N/A
<b>Class of equipment .....</b>	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input checked="" type="checkbox"/> Not classified
<b>Considered current rating of protective device as part of the building installation (A) .....</b>	N/A
<b>Pollution degree (PD) .....</b>	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
<b>IP protection class .....</b>	IP---
<b>Altitude during operation (m) .....</b>	≤ 2000 m
<b>Altitude of test laboratory (m) .....</b>	app. 179 m
<b>Mass of equipment (kg) .....</b>	< 18 kg

<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>	
<b>Date of receipt of test item .....</b>	2016-02-10
<b>Date (s) of performance of tests .....</b>	2016-02-10 (visible check)
<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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	

<b>Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location 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 .....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b>	TDK-Lambda Americas Inc.; 3320 Matrix Drive Suite 100; RICHARDSON TX 75082; USA / Reference 30014661  TDK-Lambda Malaysia Sdn. Bhd.; PLO 33 Kawasan Perindustrian Senai Locked Bag No. 110; 81400 SENAI, JOHOR; Johor; Malaysia / Reference 30017287



**General product information:**

Product has been already tested and certified under VDE-file 2520400-3336-0017

**Product Overview:**

The iBC Series offers an 35W power module in the industry's standard surface-mount footprint.

The iBC 12V in series offers an ultra wide input voltage range of 6.0-14.0V. It is highly suitable for use in conjunction with 4:1 and 5:1 unregulated bus converters as well as with fully regulated 12Vout bus converters. The open frame, compact design provides flexibility by performing local voltage conversion of a 12V bus.

The low weight, surface mount design is well suited for almost any manufacturing environment.

The output voltage will be between 0.80V-5.5V depending upon the model number

**The label includes:**

Optional "-R" appended to product code to indicate ROHS compliance.eg. iBCXXXXXX-### -R Series

**Operating Conditions:**

The units were tested with a maximum continuous output.

The Electrical and Fire Enclosures are to be provided by the end product.

The maximum temperature is specified with 125°C at reference point (Q1)

This DC-DC power converter module provides functional insulation, between input and output.

If the input meets all requirements for SELV, then the output may be considered SELV

The power models are not internally fused. An external input line normal blow fuse with a max. value of 15 A is required. (see Appendix 6)

**Information/comments:**


Tests were performed on model iBC12007A050-0##-R, output DC 5 V /7A /35 W , for reference, since all models uses the same electrical circuits. The unit was tested with a maximum continuous output.

For more detail and test results see previous Test Reports under VDE File 2520400-3336-0017

**Abbreviations used in the report:**

- normal conditions	<b>N.C.</b>	- single fault conditions	<b>S.F.C</b>
- functional insulation	<b>OP</b>	- basic insulation	<b>BI</b>
- double insulation	<b>DI</b>	- supplementary insulation	<b>SI</b>
- between parts of opposite polarity	<b>BOP</b>	- reinforced insulation	<b>RI</b>

**Indicate used abbreviations (if any)**

Information to test report reference No. :	<b>221868-CI3-2</b>		
VDE Test- and Certification Institute GmbH Merianstrasse 28  D - 63069 Offenbach	DIN EN 60950-1 (VDE 0805-1):2014-08 EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013 IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013		
Test item description:	Component DC-DC Converters for building in IT equipment.		
Made by :	TDK-Lambda Americas Inc.; 3320 Matrix Drive; Suite 100; RICHARDSON TX 75082; USA		
Trade mark :			
Model/type ref. :	iBC Series		
Rated :	Refer to page 2 (see model matrix Appendix 3)		
Commission received from	Steve McKittrick	Date:	2016-02-09
<b>Modification on the appliance:</b>			
1.	Standard upgrade to DIN EN 60950-1 (VDE 0805-1):2014-08 EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011+A2:2013 IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013		

<b>Test Report History:</b>			
Date: (jjjj-mm-dd)	VDE-Certificate: CB-Ref. No.:	VDE File No.: Test Report Number	Modifications:
2016-02-11	40018748 DE1-56824	2520400-3336-0017 221868-CI3-2	Origin Test Report (DC / DC converter iBC-series)