

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20150720-E135493  
**Report Reference** E135493-A30-UL  
**Issue Date** 2015-July-20

**Issued to:** VICOR CORP  
25 FRONTAGE RD  
ANDOVER MA 01810

**This is to certify that  
representative samples of**

COMPONENT - POWER SUPPLIES,  
INFORMATION TECHNOLOGY EQUIPMENT  
INCLUDING ELECTRICAL BUSINESS  
EQUIPMENT  
DC-DC Converter- Low Voltage Panel Mold 6123 BCM and  
NBM Series

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 60950-1 and CAN/CSA C22.2 No. 60950-1-07-  
Information Technology Equipment - Safety - Part 1:  
General Requirements.

**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's  
Certification and Follow-Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance  
capabilities and are intended for use as components of complete equipment submitted for investigation rather  
than for direct separate installation in the field. The final acceptance of the component is dependent upon its  
installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Assistant Chief Engineer, Global Inspection and Field Services

UL LLC

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contact a local UL Customer Service Representative at [www.ul.com/contactus](http://www.ul.com/contactus)



## UL TEST REPORT AND PROCEDURE

<b>Standard:</b>	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
<b>Certification Type:</b>	Component Recognition
<b>CCN:</b>	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
<b>Product:</b>	DC-DC Converter
<b>Model:</b>	Low Voltage Panel Mold 6123 BCM and NBM Series
<b>Rating:</b>	See Miscellaneous Enclosure for model details. Rated Input Voltage: 60 Vdc Max Rated Output Voltage: 15 Vdc max Rated Output Current: 180 A max See Miscellaneous Enclosure for model ratings.
<b>Applicant Name and Address:</b>	VICOR CORP 25 FRONTAGE RD ANDOVER MA 01810-5424 UNITED STATES

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Hong Ung

Reviewed by: Lesley Green

### **Supporting Documentation**

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

- A. Authorization - The Authorization page may include additional Factory Identification Code markings.
- B. Generic Inspection Instructions -
  - i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
  - ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
  - iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

### **Product Description**

The Voltage Panel Mold 6123 BCMS and NBMS are a family of DC-DC converters that are designed for building-in. The output voltage is an unregulated fixed turns ratio of the input voltage. The BCMS provide insulation from input to output. The NBMS are non-isolating devices.

### **Model Differences**

See Miscellaneous Enclosure for model nomenclature.

### **Technical Considerations**

- Equipment mobility : for building-in
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : for building-in
- Over voltage category (OVC) : OVC II
- Mains supply tolerance (%) or absolute mains supply values : 36-60 Vdc
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Not classified
- Considered current rating of protective device as part of the building installation (A) : N/A
- Pollution degree (PD) : PD 2
- IP protection class : IP X0
- Altitude of operation (m) : Up to 5000 meters
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : 0.042

### **Engineering Conditions of Acceptability**

For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC. When installed in an end-product, consideration must be given to the following:

- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The output of the BCM is separated from the input by Basic insulation and is considered SELV.
- The output of the non-isolating NBM can be considered SELV if the input is SELV.
- The BCM was evaluated with a Littelfuse 456 series fuse rated 40A max.
- The NBM was evaluated without a fuse.
- The output has not been evaluated for energy hazards.
- See de-rating curves for maximum output current versus case temperature.

### **Additional Information**

N/A

**VICHIP Low Voltage Panel Mold 6123 BCM Model Matrix:** aaa6123bccdwwxyzz

Example: BCM6123T60F15A3T00

aaa = BCM

Product Function	
BCM	Isolated Bus Converter Module
NBM	Non-isolated Bus Converter Module

6123 = Constant

Package Size (Length x Width)	
6123	61 mm x 23 mm

b = T

Lead Designator	
T	Through-Hole
S	Surface Mount
L	Leadless

cc = 60

Maximum Input Voltage (range)	
46	46 Vdc (36-46)
60	60 Vdc (36-60)

d = F

Range Ratio (Vin high / Vin low)	
C	1.3
E	1.6
F	1.7

ww = 15

Maximum Output Voltage	
10	10 Vdc
12	12 Vdc
15	15 Vdc

xx = A3

Maximum Output Current			
A3	130A	65	65A
A5	150A	75	75A
A6	160A	80	80A
A7	170A	85	85A
A8	180A	90	90A

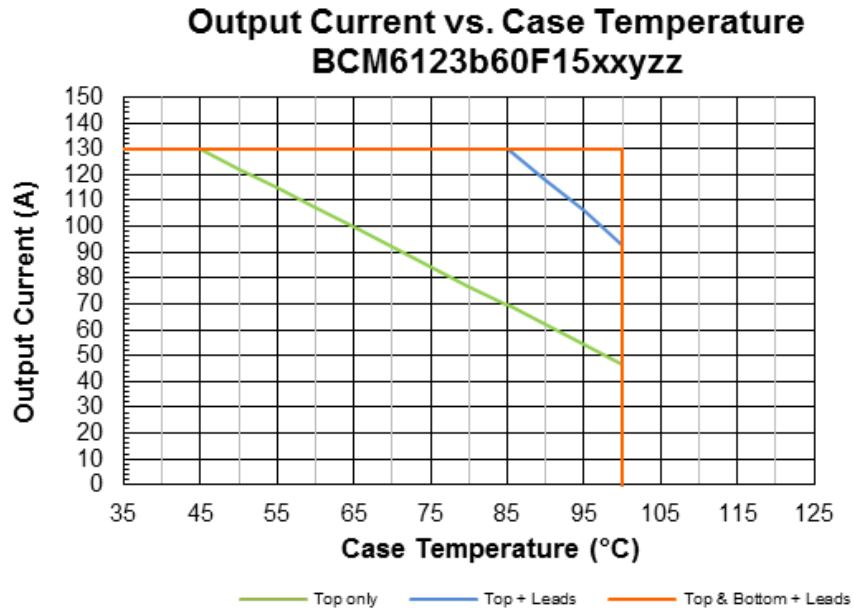
y = T

Product Grade	
C	-20 to 100°C
T	-40 to 100°C
M	-55 to 100°C

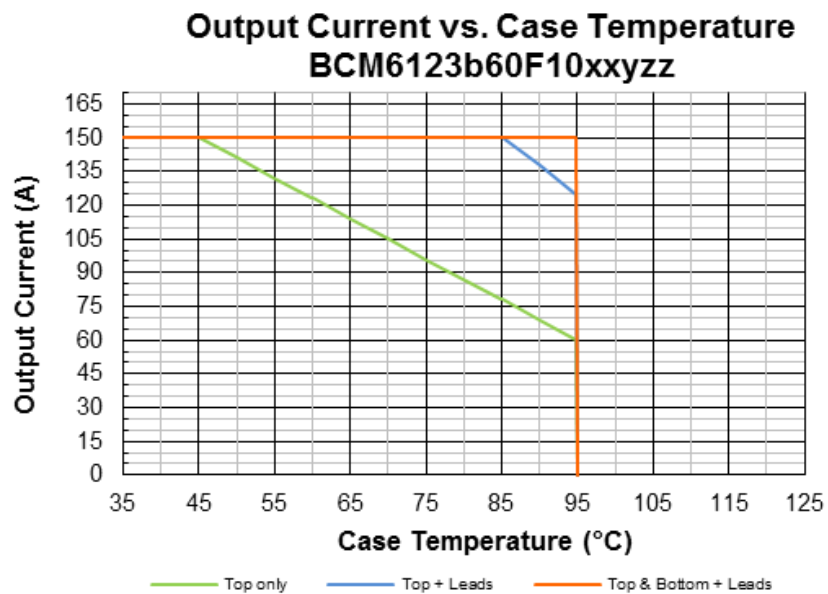
zz = 00

Options (non-safety related)	
00	Any alphanumeric

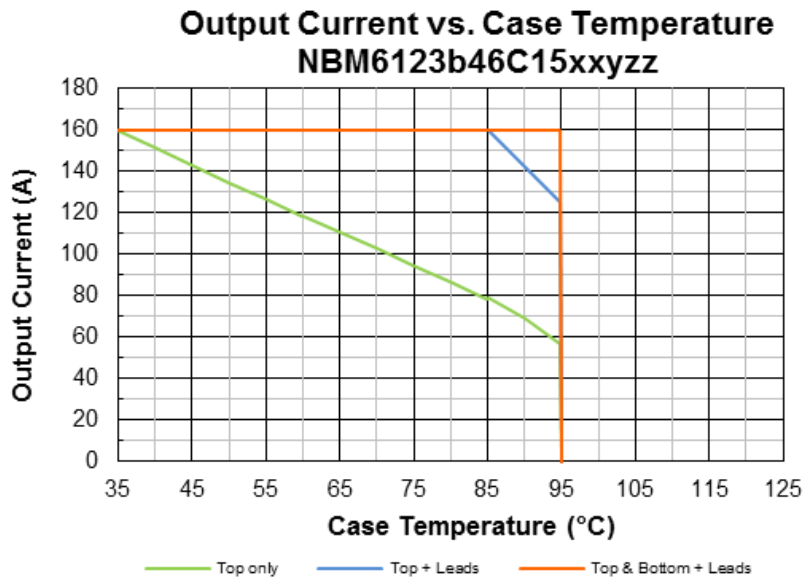
Customer Special Model Number	Equivalent Standard Part Number
BCM54Aw135x1K8Ayz	BCM6123b60F15A3yzz
BCM54Aw090x1K4Ayz	BCM6123b60F10A5yzz
NBM42Aw140x2K2Ayz	NBM6123b46C15A6yzz
NBM54Aw108x1K8Ayz	NBM6123b60F12A7yzz
NBM54Aw108x1K9Ayz	NBM6123b60F12A8yzz
<p>w = Lead Designator (P, Q, or N)            P = Through hole            Q = Surface Mount            N = Leadless</p> <p>x = Grade (T or M)            y = Package Size (C = 2361, 3 = 6123)            z = Communication Type (0, 1, or R)</p>	<p>b = Lead Designator (T, S, or L)            T = Through hole            S = Surface Mount            L = Leadless</p> <p>y = Grade (C, T, or M)            zz = options (alphanumeric)</p>



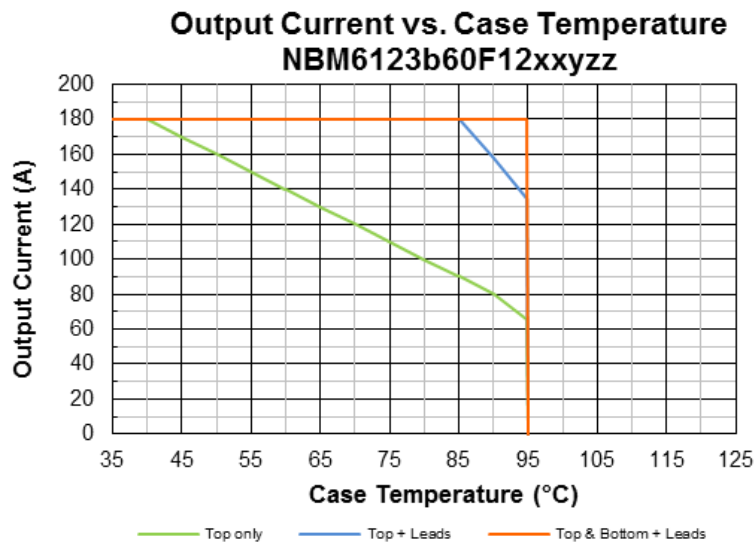
Maximum current = xx in product part number, see model matrix for actual value.



Maximum current = xx in product part number, see model matrix for actual value.



Maximum current = xx in product part number, see model matrix for actual value.



Maximum current = xx in product part number, see model matrix for actual value.