



America

CERTIFICATE

No. U8V 15 10 21433 461

Holder of Certificate: Vicor Corporation

25 Frontage Road
Andover MA 01810
USA

Production Facility(ies):

67768

Certification Mark:



Product:

Converter
DC to DC Converter

Model(s):

BCM Model: B048F480T30A
BCM2 Model: BCMbbbcdddefffxzz
See attachment for model nomenclature.

Parameters:

Rated Input Voltage: 48 V DC
Rated Output Voltage: 12 V DC
Rated Output Power: 120 W Max
See attachment for additional rating
information and license conditions.

Tested according to:

CAN/CSA C22.2 No.60950-1:2007/A1:2011
UL 60950-1:2007/R:2011-12
EN 60950-1:2006/A2:2013

The product was voluntarily tested according to the relevant safety requirements noted above. It can be marked with the certification mark above. The mark must not be altered in anyway. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC Guide 67. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited certification body.

Test report no.: 090-1008657-300

Date, 2015-10-23

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Vicor Corporation
25 Frontage Road
Andover, MA 01810 USA



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VI Chip BCM Model Number Matrix: Bbbbcdddeffx (Example: B048F480T30A)

B = Constant

Buss Converter Module	
B	Standard BCM

bbb = 048

INPUT VOLTAGE	NOMINAL (RANGE)
048	48 Vdc (38-55)

c = F

Package Size	In Board BGA	On Board J-Lead	Through Hole
FULL VIC	K	F	T

ddd = 480

Output Voltage Designator			
010	1.0 Vdc	120	12 Vdc
015	1.5 Vdc	160	16 Vdc
030	3.0 Vdc	180	18 Vdc
040	4.0 Vdc	240	24 Vdc
060	6.0 Vdc	320	32 Vdc
080	8.0 Vdc	360	36 Vdc
096	9.6 Vdc	480	48 Vdc

e = T

PRODUCT GRADE	
T	-40 to 125C
M	-55 to 125C

ff = 30

OUTPUT POWER DESIGNATOR	
12	120 W
14	140 W
17	170 W
20	200 W
21	210 W
24	240 W
30	300 W

x = A

REVISION (OPTIONAL, NON-SAFETY RELATED)	
x	Any alphanumeric character

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Attachment to Certificate Number U8V 15 10 21433 401

Vicor Corporation
25 Frontage Road
Andover, MA 01810 USA



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VI Chip BCM2 Model Number Matrix: BCMbbbccdddefffxzz (Example: BCM48BF240T300A00)

BCM = Constant

Buss Converter Module	
BCM	Standard version
MBCM	Mil-COTS version

bbb = 48B

Input Voltage	Nominal (range)
48B	48 Vdc (38-55)
48C	48 Vdc (42-53)
48D	48 Vdc (38-60)

c = F

PACKAGE SIZE AND LEAD DESIGNATOR	
F	Full VI Chip J-Lead
T	Full VI Chip Though-hole

ddd = 240

Output Voltage Designator (can be any three digits from 010 to 480) Vout = (designator / 10), non-inclusive list of examples below			
010	1.0 Vdc	120	12 Vdc
015	1.5 Vdc	160	16 Vdc
030	3.0 Vdc	180	18 Vdc
040	4.0 Vdc	240	24 Vdc
060	6.0 Vdc	320	32 Vdc
080	8.0 Vdc	360	36 Vdc
096	9.6 Vdc	480	48 Vdc

e = T

PRODUCT GRADE	
T	-40 to 125C
M	-55 to 125C

fff = 300

Output Power Designator (can be any three digits from 120 to 300) non-inclusive list of examples below			
120	120 W	210	210 W
140	140 W	240	240 W
170	170 W	300	300 W
200	200 W		

x = A

Revision (non-safety related)	
x	Any alphanumeric character

zz = 00

Customer reference (non-safety related)	
zz	Any alphanumeric character

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License Conditions:

1. The input to the BCM is intended to be supplied from a TNV-2 or other non-hazardous secondary circuit
2. All BCM models provide 2250 Vdc of isolation from input to output with the exception of the B048F120T20 and the B048K120T20 which only provide 1500 Vdc of isolation
3. The output of the BCM is considered to be SELV
4. **Max Temperature:** Keep the maximum semiconductor junction temperature of the VI Chip at 125°C or less. There are two methods to demonstrate compliance.

Method 1

Keep $T_{casemax} < 100^{\circ}\text{C}$ under all conditions where $T_{casemax}$ is the maximum case temp of the VI Chip

Method 2

Keep $T_{casemax} < 125^{\circ}\text{C} - (P_{dissmax} \times 1.5)$ under all conditions where

$$P_{dissmax} = P_{input_max} - P_{output_max}$$

$P_{dissmax}$ is the amount of power in Watts dissipated within the device. The thermal resistance of the full size VI Chip from the internal semiconductor junction to the case is 1.5 Watts / °C.

Method Three: Maintain the internal semiconductor junction temperature at $T_j = 125^{\circ}\text{C}$ or less. This can be achieved by measuring the dc voltage at the TM (temperature monitor) lead and converting the voltage to temperature. The TM has a nominal +27C set point of 3.0 Vdc and a nominal gain of 10mV / °C.

Example; TM = 3.4Vdc, $T_j = (27 + 40) 67^{\circ}\text{C}$

5. BCM requires a Littelfuse Nano²Fuse rated 10A or less

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