



America

# CERTIFICATE

No. U8V 021433 0631 Rev. 01

**Holder of Certificate:** **Vicor Corporation**  
25 Frontage Road  
Andover MA 01810  
USA

**Certification Mark:**



**Product:** Audio/Video, Information and Communication technology equipment  
DC-DC converter

This product was voluntarily tested to the relevant safety requirements referenced on this certificate. It can be marked with the certification mark above. The mark must not be altered in any way. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC 17067. 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.:** 72166503-000

**Date,** 2021-10-04

( William J. Stinson )



America

# CERTIFICATE

No. U8V 021433 0631 Rev. 01

**Model(s):** B048F480T30A or  
BCMbbbcddefffxzz

**Brand Name:** VI CHIP

**Tested according to:** CAN/CSA-C22.2 No. 62368-1:2019  
UL 62368-1:2019

**Parameters:**

Rated Input Voltage:	48 V DC
Rated Output Voltage:	48 V DC
Rated Output Power:	300W max
Degree of Protection:	IPX0
(see model matrix for additional rating information)	

**Special Considerations** – The following items are considerations that were used when evaluating these products.

The VI Chip Low Voltage BCM series of DC-DC converters are designed for building-in.

**Conditions of Acceptability** – When installed in the end use equipment, the following are among considerations to be made:

**License Conditions:**

1. The input to the Low Voltage BCM series is intended to be supplied from a ES1 or other non-hazardous secondary circuit
2. All Low Voltage BCM models provide 2250 Vdc of isolation from Input/Output to Case
3. BCM outputs 42.4 Vdc or less are considered ES1 in all conditions
4. BCM outputs greater than 42.4 Vdc are considered ES1 in normal conditions but may be considered ES2 during fault conditions due to repetitive pulse re-starts
5. Max Temperature: Keep the maximum semiconductor junction temperature of the VI Chip at 125°C or less. There are different 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 3:** 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 +27°C set point of 3.0 Vdc and a nominal gain of 10mV / °C.

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

6. FUSING: The Low Voltage BCM series requires a Littelfuse Nano<sup>2</sup>Fuse rated 10A or less



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## VI Chip Low Voltage BCM

Model Number Matrix: Bbbbeddfeffx

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

Temperature Grade (Operating internal temperature range)	
T	-40 to 125°C
M	-55 to 125°C
Maximum internal temperature, controlled by maintaining the Maximum defined external Case Temperature. See License Conditions.	

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

# CERTIFICATE

No. U8V 021433 0631 Rev. 01

VI Chip Low Voltage BCM alternate Model Number Matrix: BCMbbbcddefffxzz

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)

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

Temperature Grade (Operating internal temperature range)	
T	-40 to 125°C
M	-55 to 125°C
Maximum internal temperature, controlled by maintaining the Maximum defined external Case Temperature. See License Conditions.	

fff = 300

Output Power Designator (can be any three digits from 120 to 300) non-inclusive list of examples below, 300W Max			
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



Product Service

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25 Frontage Road  
Andover MA 01810  
USA

**Certification Mark:**



**Product:**

Audio/Video, Information and Communication technology  
equipment  
DC-DC converter

The product was tested on a voluntary basis and complies with the essential requirements.  
The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier.  
All applicable requirements of the testing and certification regulations of TÜV SÜD Group have to be complied. For details see: [www.tuvsud.com/ps-cert](http://www.tuvsud.com/ps-cert)

**Test report no.:** 72166503-000

**Valid until:** 2026-09-29

**Date,** 2021-10-04

( William J. Stinson )



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No. B 021433 0632 Rev. 01

**Model(s):** B048F480T30A or  
BCMbbbcddefffxzz

**Brand Name:** VI CHIP

**Parameters:** Rated Input Voltage: 48 V DC  
Rated Output Voltage: 48 V DC  
Rated Output Power: 300W max  
Degree of Protection: IPX0  
(see model matrix for additional rating information)

**Special Considerations** – The following items are considerations that were used when evaluating these products.

The VI Chip Low Voltage BCM series of DC-DC converters are designed for building-in.

**Conditions of Acceptability** – When installed in the end use equipment, the following are among considerations to be made:

**License Conditions:**

1. The input to the Low Voltage BCM series is intended to be supplied from a ES1 or other non-hazardous secondary circuit
2. All Low Voltage BCM models provide 2250 Vdc of isolation from Input/Output to Case
3. BCM outputs 42.4 Vdc or less are considered ES1 in all conditions
4. BCM outputs greater than 42.4 Vdc are considered ES1 in normal conditions but may be considered ES2 during fault conditions due to repetitive pulse re-starts
5. **Max Temperature:** Keep the maximum semiconductor junction temperature of the VI Chip at 125°C or less. There are different methods to demonstrate compliance.

**Method 1**

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**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.

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Example: B048F480T30A

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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

Temperature Grade (Operating internal temperature range)	
T	-40 to 125°C
M	-55 to 125°C
Maximum internal temperature, controlled by maintaining the Maximum defined external Case Temperature. See License Conditions.	

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

# CERTIFICATE

No. B 021433 0632 Rev. 01

VI Chip Low Voltage BCM alternate Model Number Matrix: BCMbbbeddfeffxzz

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)

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

Temperature Grade (Operating internal temperature range)	
T	-40 to 125°C
M	-55 to 125°C
Maximum internal temperature, controlled by maintaining the Maximum defined external Case Temperature. See License Conditions.	

fff = 300

Output Power Designator (can be any three digits from 120 to 300) non-inclusive list of examples below, 300W Max			
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

Tested according to: EN 62368-1:2014/A11:2017