

TUV SUD CERTIFICATE ZERTIFIKAT CERTIFICADO CERTIFICAT



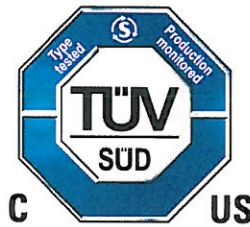
America

# CERTIFICATE

No. U8V 021433 0589 Rev. 00

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

**Certification Mark:**



**Product:** Information 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.:** 72109789-301

**Date,** 2019-05-16

( William J. Stinson )





America

# CERTIFICATE

No. U8V 021433 0589 Rev. 00

VICHP High Current VTM1 series of DC-DC Converters Model Matrix: VIV00wwxFy

VI =	Constant, VI Chip
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V =	VTM (Voltage Transformation Module)
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00 =	Constant
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ww = defines electrical ratings			
Model	Vin Nom (range)	Vout (Nom)	Iout
05	40 (26-55)	1.0	130A / 150A*
07	48 (26-55)	1.5	115A / 130A*

\* Special cooling required. See license conditions.

x =	Product Grade	Temp Range
T	Telecom	-40 to 125 C

F =	Constant, Full VIC Package Size
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y =	Output Lead Designator
J	J-Lead
T	Through-Hole

### Customer Special Model Numbers

Customer Special Model Numbers	Equivalent Standard Model Number
VIZ0026, VIZ0026x	VIV0005TFJ
VIZ0027, VIZ0027x	VIV0007TFJ
VIZ0037, VIB0037x	VIV0005TFJ
VIZ0038, VIZ0038x	VIV0007TFJ
VIZ0056, VIZ0056x	VIV0005TFJ
VIZ0057, VIZ0057x	VIV0007TFJ
VIZ0059, VIZ0059x	VIV0005TFJ
VIZ0060, VIZ0060x	VIV0007TFJ
VIZ0063, VIZ0063x	VIV0005TFJ
VIZ0064, VIZ0064x	VIV0007TFJ

x = revision, any letter A through Z, non-safety related

### Example part numbers:

VIV0005TFJ, VIV0007TFJ, VIZ0026, VIZ0027, VIZ0037, VIZ0038, VIZ0056, VIZ0057, VIZ0059, VIZ0060, VIZ0063, VIZ0064

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No. U8V 021433 0589 Rev. 00

VICHIP High Current VTM2 series of DC-DC Converters Model Matrix: VTMbbbccddefffxz

Example: VTM48EF015T115A00

VTM = Constant

VTM series Voltage Transformation Module	
VTM	Standard version
MVTM	MIL-COTS version

bbb = 48E

Input Voltage	Nominal (range)
48E	48 Vdc (26-55)

c = F

Package Size / Lead Designator	
F	Full VI Chip J-Lead
T	Full VI Chip Though-hole

ddd = 015

Output Voltage Designator			
010	1.0 Vdc	013	1.3 Vdc
011	1.1 Vdc	014	1.4 Vdc
012	1.2 Vdc	015	1.5 Vdc

e = T

Product Grade	
T	-40 to 125C
M	-55 to 125C

fff = 115

Output Current Designator	
115	115A / 130A*
130	130A / 150A*

\* Special cooling required. See license conditions.

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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No. U8V 021433 0589 Rev. 00

### Customer Special Part Number:

VTM2313T55Z02A3T0z is equivalent to VTM48KP020T130AAz where z = functionality (non-safety related)

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

The VICHIP High Current VTM series of DC-DC converters is designed for building-in.

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

- 1. Input Voltage:** Both a nominal input voltage and an input voltage range are specified. Operation over the entire range was evaluated
- 2. Max Temperature:** See de-rating curve for the 1323 VTM3 rated 107A. All other VTM3s are rated full current at 100C case. For VTM1 and VTM2, keep the maximum semiconductor junction temperature of the VI Chip at 125°C or less. There are 3 methods to achieve this condition:

#### Method 1: Monitor Case Temp.

Keep  $T_{casemax}$  100°C or below.  $T_{casemax}$  is the maximum case temperature of the VI Chip

#### Method 2: Calculate

Keep  $T_{casemax}$  equal to or below:

$125^{\circ}\text{C} - (P_{dissmax} \times 1.5)$  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 VI Chip from the internal semiconductor junction to the case is 1.5 °C/W

#### Method 3: Cold plate application

Keep  $T_{casemax}$  50°C or below.  $T_{casemax}$  is the maximum case temperature of the VI Chip

- The High Current VTM model numbers VIZ0026x, VIZ0027x, VIZ0056x, VIZ0057x, VIZ0063x, VIZ0064x and VTM3 converters provide Functional Insulation from Input to Output. The output can be considered SELV if the input is SELV.
- The High Current VTM model numbers VIZ0037x, VIZ0038x, VIZ0059x, VIZ0060x, VIV0005xFy, VIV0007xFy and VTM2 models provide Basic Insulation from Input to Output with 1500 Vdc of dielectric withstand.
- All VTM1 and VTM2 models provide Basic Insulation and 2250 Vdc of dielectric withstand from Input/Output to the Case. VTM3s do not provide any dielectric withstand capability.
- Fusing Requirements:** The High Current VTM1 and VTM2 series of DC-DC converters were evaluated with Littelfuse Nano<sup>2</sup> SMD fuse rated 10A / 125Vdc. The fuse may be replaced by an external current limiting circuit to be evaluated in the end product. VTM3 overcurrent protection to be evaluated in the end product.  
The VIZ0026x, VIZ0027x, VIZ0056x, VIZ0057x, VIZ0063x, and VIZ0064x, include a current limiting circuit on the interposer assembly, external to the VI Chip, and so it does not require any external fusing.
- The converters must be mounted on minimum V-1 rated PCB

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