CERTIFICATE OF COMPLIANCE

Certificate Number	20131231-E135493
Report Reference	E135493-A22-UL
Issue Date	2013-DECEMBER-31
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: Model VI Chip High Voltage Panel Mold DCM Series
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 60950-1 and 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 for additional information

Only those products bearing the UL Recognized Component Marks for the U.S. and Canada should be considered as being covered by UL's Recognition and Follow-Up Service and meeting the appropriate U.S. and Canadian requirements.

The UL Recognized Component Mark for the U.S. generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions. The UL Recognized Component Mark for Canada consists of the UL Recognized Mark for Canada: and the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory.

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 Recognized Component Mark on the product.

William R. Carney

William R. Carney, Director, North American Certification Programs

UL LLC

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2011-12-19 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-07, 2nd Edition, 2011-12 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Component Recognition
CCN:	QQGQ2, QQGQ8 (Power Supplies for Information Technology Equipment Including Electrical Business Equipment)
Product:	DC/DC Converter
Model:	VI Chip High Voltage Panel Mold DCM Series See Miscellaneous Enclosure for model details.
Rating:	Rated Input Voltage: 290 Vdc max Rated Output Voltage: 13.8 Vdc Rated Output Power: 600W max See Miscellaneous Enclosure for model details.
Applicant Name and Address:	VICOR CORP 25 FRONTAGE RD ANDOVER MA 01810-5499 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: Gerard Soprych Reviewed by: Daniel Pirozzi

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 Panel Mold high voltage 4623 DCM family of DC-DC converters are designed for building-in.

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 : No direct connection
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : -
- Class of equipment : for building-in (reinforced insulation provided)
- 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) : <5000
- Altitude of test laboratory (m) : <2000
- Mass of equipment (kg) : 0.03
- See de-rating curves for maximum output power, case temperature, and input voltage.

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 following Production-Line tests are conducted for this product: Electric Strength
- The end-product Electric Strength Test is to be based upon a maximum working voltage of: Input to Output: 300 Vrms, 420 Vpk
- The following secondary output circuits are SELV: All
- The following secondary output circuits are at hazardous energy levels: All
- The investigated Pollution Degree is: 2
- The following end-product enclosures are required: Mechanical, Fire, Electrical
- The DCMs were evaluated with a Bussmann 5A PC-Tron fuse.
- The output is separated from the input by reinforced insulation.

Additional Information

N/A

Markings and instructions

Clause Title	Marking or Instruction Details
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number

Special Instructions to UL Representative

Optional - UR logo may appear on packaging.

VI Chip High Voltage Panel Mold DCM Model Number: DCMbbbwdddefffxyz
Example: DCM290P138T600A41

DCM = Constant

DCM Family Converter Module	
DCM	Standard version
MDCM	Military Version

bbb = 290

Nominal Input Voltage (Input Voltage Range), any 3 digit number from 160-420. Non-inclusive list of examples below.	
290	290V (160-420V)
375	375V (160-420)

w = P

Package Type and Lead designator	
P	Panel Mold Through-hole
R	Panel Mold SMT
N	Panel Mold Lead-less

ddd = 138

Output Voltage Designator, Vout = Designator / 10, any 3 digit number from 010 to 540. Non-inclusive list of examples below.	
120	12.0V
138	13.8V

e = T

Product Grade	
T	-40 to 125C
M	-55 to 125C
C	0 to 85C

fff = 600

Output Power, any 3 digit number from 000 – 600. Non-inclusive list of examples below.	
400	400W
600	600W

x = A

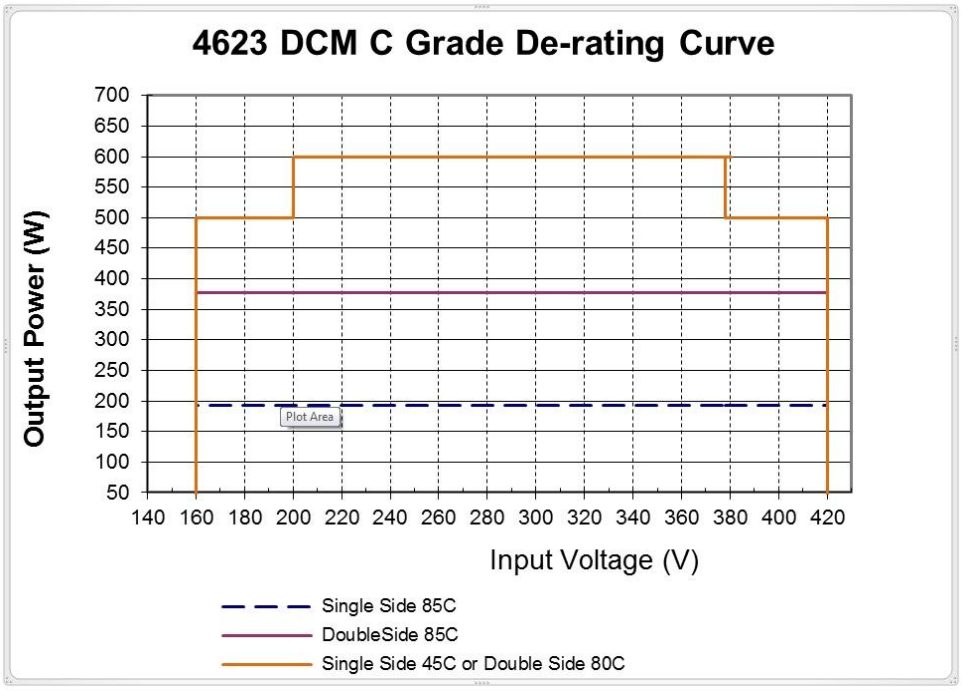
Revision (non-safety related)	
x	Any alphanumeric character

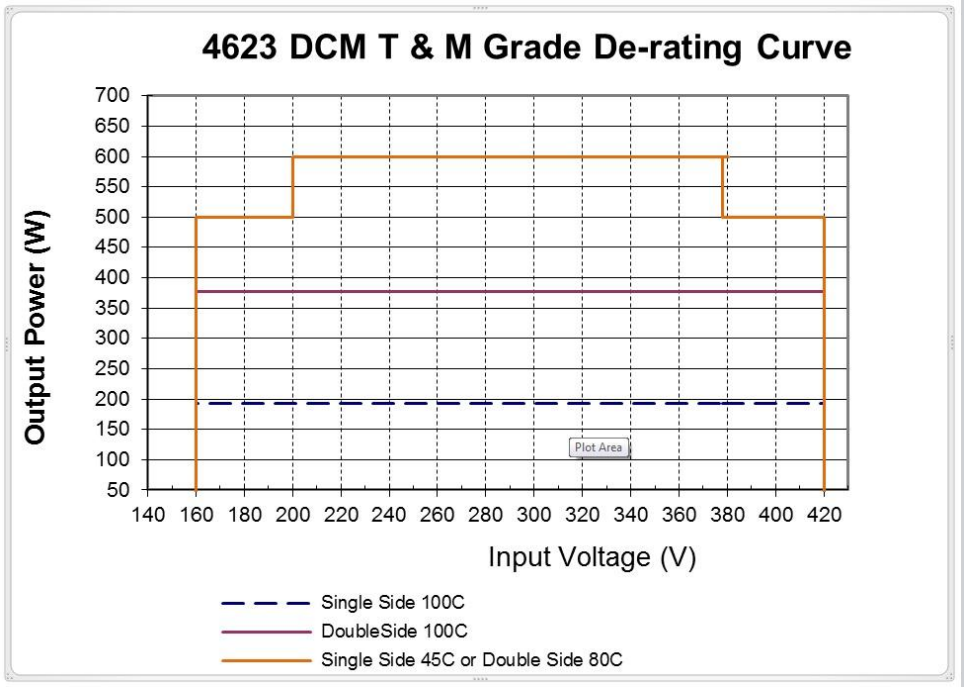
y = 4

Package Size	
4	4623

z = 1

Functionality (non-safety related), any alphanumeric character non-inclusive list of examples below.			
0	No communication	R	Reversible
1	Communication enabled		


4623 DCM C Grade De-rating Curve
Output Power (W)
700
650
600
550
500
450
400
350
300
250
200
150
100
50
Plot Area
140 160 180 200 220 240 260 280 300 320 340 360 380 400 420
Input Voltage (V)
Single Side 85C
DoubleSide 85C
Single Side 45C or Double Side 80C


4623 DCM T & M Grade De-rating Curve
Output Power (W)
700
650
600
550
500
450
400
350
300
250
200
150
100
50
Plot Area
140 160 180 200 220 240 260 280 300 320 340 360 380 400 420
Input Voltage (V)
Single Side 100C
DoubleSide 100C
Single Side 45C or Double Side 80C