

File E135493
Project 94ME35018

July 13, 1994

REPORT

on

COMPONENT - POWER SUPPLIES

Vicor Corp.
Andover, MA

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D E S C R I P T I O NPRODUCT COVERED:

*USR, CNR: Component - Power Supplies, Mega Module Junior Series, Model No. VI-aJbccc-deee-xx.

Refer to Ill. 1.

GENERAL CHARACTER AND USE:

This product is a switching type power supply incorporating semiconductor components in the primary circuit. It is provided with input and output terminals for connection to the end use equipment. The power supply has been investigated to , Standard for Information Technology Equipment including Electrical Business Equipment CAN/CSA C22.2 No. 60950-00, UL60950, CAN/CSA C22.2 No. 950-95, UL1950 3rd Edition., UL 1012, Standard for Power Supplies, Sixth Edition.

The Mega/Master Modules are dc-dc power supplies consisting of 1 to 3 Recognized (QQFU2) Vicor dc-dc converter modules combined together to provide 1 to 3 outputs. A Mega Module provides a single output. A Master Module provides 2 to 3 outputs. Input voltage varies based on dc-dc converters selected and can be between 300 V dc and 12 V dc. Output voltages can be between 95 V dc and 2 V dc. Output powers can be between 100 W and 25 W for each output.

NOMENCLATURE BREAKDOWN:

Refer to Ill. 1.

ELECTRICAL RATINGS:

Refer to Ill. 1.

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R E P L A C E M E N T P A G E

The above referenced page has been deleted from this Report.

RATINGS: Refer to Ill. 2 for input and output ratings.

ENGINEERING CONSIDERATIONS (NOT FOR UL REPRESENTATIVE USE):

For use only in or with electronic data processing equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - When installed in the end-use equipment, the following are among the considerations to be made.

1. These components have been judged on the basis of the required *spacings in the UL 1012, Fifth Edition, and Information Technology Equipment including Electrical Business Equipment, CAN/CSA C22.2 No. 60950-00, UL 60950, CAN/CSA C22.2 No. 950-95, UL 1950 3rd Edition, which covers the end-use product for which the component was designed.
2. The power supply should be installed in compliance with the enclosure, mounting, spacings, temperature, casualty, and segregation requirements of the ultimate application.
3. The Normal Temperature Test should be repeated in the end-product investigation. The baseplate temperature should be measured and should not exceed 100°C.

4. Secondary outputs 5 V - 40 V have been investigated for secondary interconnection and are compliant with SELV requirements in the configurations described in this report. Secondary outputs 48 V - 95 V are nonSELV outputs.
5. The input and output terminals are not acceptable for field connections and are only intended for connection to mating connectors of internal wiring inside the end-use machine. The acceptability of these and the mating connectors relative to secureness, insulating materials, and temperature should be considered.
6. The "Gate In" and "Gate Out" terminals are in low voltage primary connected circuits.
7. All testing was conducted using the input fusing specified below. This fusing is not provided as part of the module and must be provided in the end-use.

Mega/Master Jr.
Series No.

Max Input Fuse Rating

VI-*7XXX-XXX	Bussmann PC-Tron 2.5 A, 250 V ac/450 V dc
VI-*6XXX-XXX	Bussmann PC-Tron 3 A, 250 V ac/350 V dc
VI-*5XXX-XXX	Bussmann PC-Tron 5 A, 125 V ac/250 V dc
* VI-LJTXXX-XXX	Bussmann PC-Tron 5 A, 125 V ac/250 V dc
* VI-PJTXXX-XXX	Bussmann PC-Tron 5 A, 125 V ac/250 V dc
* VI-RJTXXX-XXX	Littelfuse R251007 7 A, 125 V ac/V dc
VI-*4XXX-XXX	Bussmann PC-Tron 5 A, 125 V ac/250 V dc
VI-*NXXX-XXX	Bussmann PC-Tron 5 A, 125 V ac/250 V dc
	Alternates - Littelfuse R251005 (5 A, 125 V ac/V dc)
	Bussmann MCR5 (5 A, 125 V ac/V dc)
VI-*3XXX-XXX	10 A, 32 V
VI-*2XXX-XXX	10 A, 32 V
VI-*WXXX-XXX	20 A, 32 V
VI-*1XXX-XXX	20 A, 32 V
VI-*0XXX-XXX	20 A, 32 V

+ Where X can be any number, or optional

* Where * can be LJ, PJ or RJ

8. Leakage current measurements should be performed in the end use application.
9. Based on Paragraph 35.1A of the Standard for Telephone Equipment, UL 1459, these products are acceptable for use with Telephone Equipment.

CONSTRUCTION DETAILS:

General - The design, shape, and arrangement of parts shall be as illustrated except where variations are specifically described.

Spacings - Min spacings between live parts of opposite polarity and between live and dead-metal parts shall be as indicated below.

Spacing Other Than at Field Wiring Terminals

Potential Involved Volts V rms (Peak)	Min Spacings, in (mm)	
	Over Surface	Through Air
0-50 (0-70.7)	3/64 (1.2) b	3/64 (1.2) b
51-125 (72.1-176.8)	1/16 (1.6) b	1/16 (1.6) b
126-250 (178.2-353.5)	3/32 (2.4) b	3/32 (2.4) b

- b - On printed wiring boards, their connectors, and board mounted electrical components, wired on the load side of line filters or similar voltage-peak reduction networks and components, a min spacing of 0.023 in (0.58 mm) plus 0.0002 in (0.005 mm) per volt peak shall be maintained over the surface and through air between uninsulated live parts and any other uninsulated live parts and any other uninsulated conductive part (live or dead) not of the same polarity.

Marking - All markings are located on outer chassis and are ink-stamped or applied with self-adhesive label. Marking includes Vicor, model number and ratings.

Sealants - Provided on internal components for limiting vibration, Type ECCOSIL SC71 by Emerson and Cuming or Type NUVA-SIL 88 Loctite. Not relied upon for securement of components.

Internal Wiring - Unless otherwise specified, all internal wiring is Recognized Component appliance wiring material (AVLV2), rated 300 V, 105°C min, and shall be PVC, TFE, PTFE, FEP or neoprene insulated, or shall be surface marked "VW-1".

Mechanical Assembly - Unless otherwise stated, all enclosure parts and component mounting assemblies are secured by welding or thread forming screws or machine screws provided with nuts and lockwashers.

Soldered Connections - All soldered connections are mechanically secured before soldering. When hand soldered, leads on printed circuit boards are bent over prior to soldering.

Exception - Printed circuit board assemblies that are wave soldered.

Electrical Tubing and Sleeving - Recognized Component tubing (YDPU2) and/or sleeving (UZFT2) rated 300 V, 105°C minimum, VW-1 min.

Printed Wiring Boards - Unless otherwise specified, all boards are Recognized Components (ZPMV2), suitable for the solder time and temperature used by the manufacturer, and having a minimum flame rating of 94V-0 and an operating temperature rating of at least 105°C.

Corrosion Protection - Parts are of corrosion resistant material or plated or painted as corrosion protection.

Tolerances - Unless specified otherwise, all indicated dimensions are nominal.

Differences Between Models - All models are a packaging of one, two, or three Recognized (QQGQ2) Vicor, dc-dc power converters, which are interconnected to provide varying input voltage, number of outputs, and output ratings.