

File E135493

March 20, 1991

REPORT

on

COMPONENT - POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT  
INCLUDING ELECTRICAL BUSINESS EQUIPMENT

Vicor Corp.  
Andover, MA

Copyright © 1991 Underwriters Laboratories Inc.

Underwriters Laboratories Inc. authorizes the above-named company to reproduce this Report provided it is reproduced in its entirety.

Underwriters Laboratories Inc. authorizes the above-named company to reproduce that portion of this Report consisting of this Cover Page through Page 3.

## DESCRIPTION

## PRODUCT COVERED:

USR, CNR: Component - Power Supply Modules, VI-J00 and IP-J00 Family, Model Nos. VI-Jbc-de-xxx, VI-aJbccc-deee-xx, and IP-Jbc-de-xx may be followed by additional suffixes.

Refer to Ill. 8 and 8a.

## GENERAL CHARACTER AND USE:

This product is a switching type power supply incorporating semiconductor components in the primary circuits. It is provided with input and output terminals for connection to the end use equipment. The power supply has been investigated to the Standard for Information Technology Equipment including Electrical Business Equipment, UL 60950-1:2003, First Edition \* CSA C22.2 No. 60950-1-03 1st Ed. April 1. The Standard for General Purpose Power Supplies, UL1012.

Based on the March 15, 1991 Industry Review and per the manufacturer's request. This section of this report was transferred to the category for Power Supplies For Use In Electronic Data Processing Equipment, General Purpose Power Supplies, and Power Supplies For Use In Information Technology Equipment, Including Electrical Business Equipment.

## NOMENCLATURE BREAKDOWN:

Model number coding breakdown is specified in Ill. 8 and 8a.

## VI-Jbc-de-xxx

### VI-J00 (MiniMOD) DC-DC Series

**VI = Product Type**

VI = VI (Vicor), VI = VE (Vicor RoHS), VI = MI (Military), VI = IP (Vicor Japan)

VI = IE (Vicor Japan RoHS)

**d = Product Grade**

C = Commercial -20C to 100C

I = Industrial -40C to 100C

M = Military -55C to 100C

E = Economy 0C to 100C

**e = Output Power /Current**

Vout ≥ 5V Vout &lt; 5V

W = 100W 20A

X = 75W 15A

Y = 50W 10A

Z = 25W 5A

**b = Input Voltage (Vdc)**

	Nominal	Range
0 =	12	10-20
V =	24	10-36
1 =	24	21-32
W =	24	18-36
2 =	36	21-56
3 =	48	42-60
N =	48	36-76
4 =	72	55-100
T =	110	66-160
F =	165	130-260
5 =	150	100-200
6 =	300	200-400
7 =	225	100-375

**c = Output Voltage (Vdc)**

	Nominal		Max(A)	Max(W)		Nominal		Max(A)	Max(W)	
Z =	2.0	@	20A	40W		2 =	15.0	@	6.6A	100W
Y =	3.3	@	20A	66W		N =	18.5	@	5.4A	100W
0 =	5.0	@	20A	100W		3 =	24.0	@	4.2A	100W
X =	5.2	@	19.2A	100W		L =	28.0	@	3.6A	100W
W =	5.5	@	18.2A	100W		J =	36.0	@	2.7A	100W
V =	5.8	@	17.2A	100W		K =	40.0	@	2.5A	100W
T =	6.5	@	15.4A	100W		4 =	48.0	@	2.1A	100W
R =	7.5	@	13.3A	100W		H =	52.0	@	1.9A	100W
M =	10.0	@	10A	100W		F =	72.0	@	1.4A	100W
1 =	12.0	@	8.3A	100W		D =	85.0	@	1.2A	100W
P =	13.8	@	7.2A	100W		B =	95.0	@	1.1A	100W

**xxx = Specials / Options**

F1-F7 = FinMOD (Heatsink)

S = SlimMOD (Flangeless Package)

B1 = BusMOD (screw / lug wiring interface)

0 – 999 = Customer special, unique label or testing, non-safety related changes, **d** and **e** are optional for specials

"C"=	Output V dc	Level	Max Current Amperes	Max Power Watts
2	15	SELV	13.3	200
3	24	SELV	8.3	200
L	28	SELV	7.1	200
4	48	NonSELV	4.2	200
Z	2	SELV	37.0	74
Y	3.3	SELV	30.3	100
X	5.2	SELV	28.8	150
W	5.5	SELV	27.3	150
V	5.8	SELV	25.9	150
T	6.5	SELV	23.1	150
R	7.5	SELV	26.6	200
M	10	SELV	20.0	200
P	13.8	SELV	14.5	200
N	18.5	SELV	10.8	200
J	36	SELV	5.6	200
K	40	SELV	5.0	200
H	52	NonSELV	3.8	200
F	72	NonSELV	2.8	200
D	85	NonSELV	2.4	200
B	95	NonSELV	2.1	200

D - Product Grade (does not effect description in this report),

C = Commercial  
I = Industrial  
M = Military  
E = Economy

E - Power Rating where,

W = 100 W output, 135 W input  
X = 75 W output, 100 W input  
Y = 50 W output, 75 W input  
Z = 25 W output, 30 W input

Special Cases - "DE" can alternately be a two digit number between 00 and 99 and signifies variations not effecting descriptions in this report, unless otherwise indicated. See "ratings" and "model differences" sections for correlation between models.

Additional Suffixes - Models may also have additional suffix "TM", representing "Tacho Mod". "S", Slim Mod; "F1-F4", Fin Mod; and "B1", Buss Mod. No safety critical parts effected.

Manufacturer's I.D.

**ELECTRICAL RATINGS:**

Input - Input voltage and power are given by positions B and E in Model number respectively, as indicated in nomenclature breakdown.

Output - Output voltages and power are given by positions C and E in Model number respectively, as indicated in nomenclature breakdown.

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

1. The power supply should be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the ultimate application.

2. The Normal Temperature Test was conducted with the unit in a 40°C ambient yielding a temperature of 100°C on the aluminum base plate. The transformer T1 temperature rise is less than the max permitted (100°C) measurement by thermocouple method rise for a Class F (155°C) insulation system. The 100°C temperature should not be exceeded to ensure that the transformer T1 will be within its 100°C rise limitation.

3. For models with 5 to 40 V dc outputs, the secondary circuits have been investigated for compliance with SELV requirements. Models with 48 to 95 V dc do not meet the SELV requirements.

4. The base plate is isolated by basic insulation from the primary circuit. As such it should be properly grounded if it is subject to operator contact in the end product.

5. The Leakage Test should be performed during the end product investigation.

6. The input and output terminals are not acceptable for field connections and are only intended for connection to mating connectors or 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.

7. The "Gate In" and "Gate Out" terminals are in low voltage primary connected circuits.

8. All units must have an external primary fuse provided in the end use application. See Table 1 for ratings.

**Table 1**

<u>Model</u>	<u>Max Input Fuse Rating</u>
VI-J7x-xx	Bussmann PC-Tron 2.5 A, 250 Vac/450 Vdc
VI-J6x-xx	Bussmann PC-Tron 3 A, 250 Vac/350 Vdc
VI-J5x-xx	Bussmann PC-Tron 5 A, 125 Vac/250 Vdc
VI-JTx-xx	Bussmann PC-Tron 5 A, 125 Vac/250 Vdc
VI-J4x-xx	Bussmann PC-Tron 5 A, 125 Vac/250 Vdc
VI-J3x-xx	Bussmann PC-Tron 5 A, 125 Vac/250 Vdc
VI-JNx-xx	Bussmann PC-Tron 5 A, 125 Vac/250 Vdc
VI-JNx-xX	Alternates - Littelfuse R251005 (5 A, 125 V ac/V dc) Bussmann MCR5 (5 A, 125 V ac/V dc)
VI-JNx-xY	Alternate - Littelfuse R251003 (3 A, 125 V ac/V dc)
VI-J2x-xx	Bussmann PC-Tron 5 A, 125 Vac/250 Vdc
VI-JWx-xx	8 A/60 V
VI-J1x-xx	8 A/60 V
VI-J0x-xx	8 A/60 V

Where x can be any character.