

Aegis Power Solution

VME550A-001-000

VME Power Converter

(Rev A01, 09/15/11)



28Vinut, 4 Output, 550W Max VME Card

Features

- 28VDC per MIL-STD-704A/F and MIL-STD-1275D
- 4 Output Voltages, 550W
- MIL-STD-810F Environmental
- MIL-STD-461E EMI
- Dual Slot VME Power Card
- CE Marked (Low Voltage Directive 2006/95/EC)

Table 1 Maximum Ratings

Parameter	Rating	Unit	Notes
Vin max range	18 to 36	Vdc	
Temperature	-40 to +85	°C	Baseplate temperature
Combined output power	550	W	
Input power	640	W	@ 550W out (28VDC input)
Max +5 V power	224	W	
Max +3.3 V power	224	W	
Max +12 V power	112	W	
Max -12 V power	112	W	

Product Highlights

This dual slot filtered 28VDC VME550A power card with four outputs (3.3, 5, ±12V) at 550W, is a military COTS solution compliant to MIL-STD-810F vibration and shock requirements and MIL-STD-461D/E/F EMI requirements. When compared to VME power supplies using conventional technology, the dual slot VME550A-001 provides users with higher efficiency (86%), lower weight (4.14 pounds), and higher power (up to 550W). It also has a keyed connector that offers keying options when using multiple power supplies in one chassis.

AEGIS Power Systems, Inc. specializes in the front end design, development, and manufacture of Rapid Response Custom switching power supplies for the defense, industrial, telecommunications industries and suppliers of Electric Vehicle Power Convertors.

SPECIFICATIONS

(Typical at 25°C, nominal line and 100 % load, unless otherwise specified.)

- DC input voltage:** Meets MIL-STD-704A/F and MIL-STD-1275D, continuous operation. 22 Vdc to 33 Vdc, 28 Vdc nominal. 100 Vdc 50 msec transient.
- DC input line current:** 29.1 A max @ 22 Vdc; 22.85 A typical @ 28 Vdc input (550 Wout).
- Input power:** 524 W max @ 450 Wout, 640 W max @ 550 Wout.
- Output power:** 550 W max. all outputs combined
- Output voltages:** See table 2.

Efficiency:	86% minimum, 87% typical.
Start up time:	500 millisecond maximum.
Voltage set point/ Line/Load regulation:	+/- 2% Vout nominal (for any combination).
Temperature regulation:	+/- 0.01% / °C.
Output ripple:	50 mV pk-pk Max. (20 MHz BW) all except; +/-12 Vdc 100 mV pk-pk Max.
Current Limit:	Short circuit protected with automatic recovery.
Temperature:	-40°C to +85°C Operating baseplate temperature 550 W. -55°C to +100°C Non-operating.
Size:	6U x 8hp x 160 mm (see mechanical drawing).
Weight:	4.14 lb. Typical.
Connector:	1ea Positronics PCIH47M400A1 or equivalent (see page 3 for pin assignments).
Vibration:	MIL-STD-810F, Method 514.5, Procedure I.
Shock:	MIL-STD-810F, Method 516.5, Procedure I.
Humidity:	0 – 95% non-condensing.
EMI:	MIL-STD-461E, CE101, CE102, CS101.
Safety Approvals:	CE Mark (Low Voltage Directive 2006/95/EC)

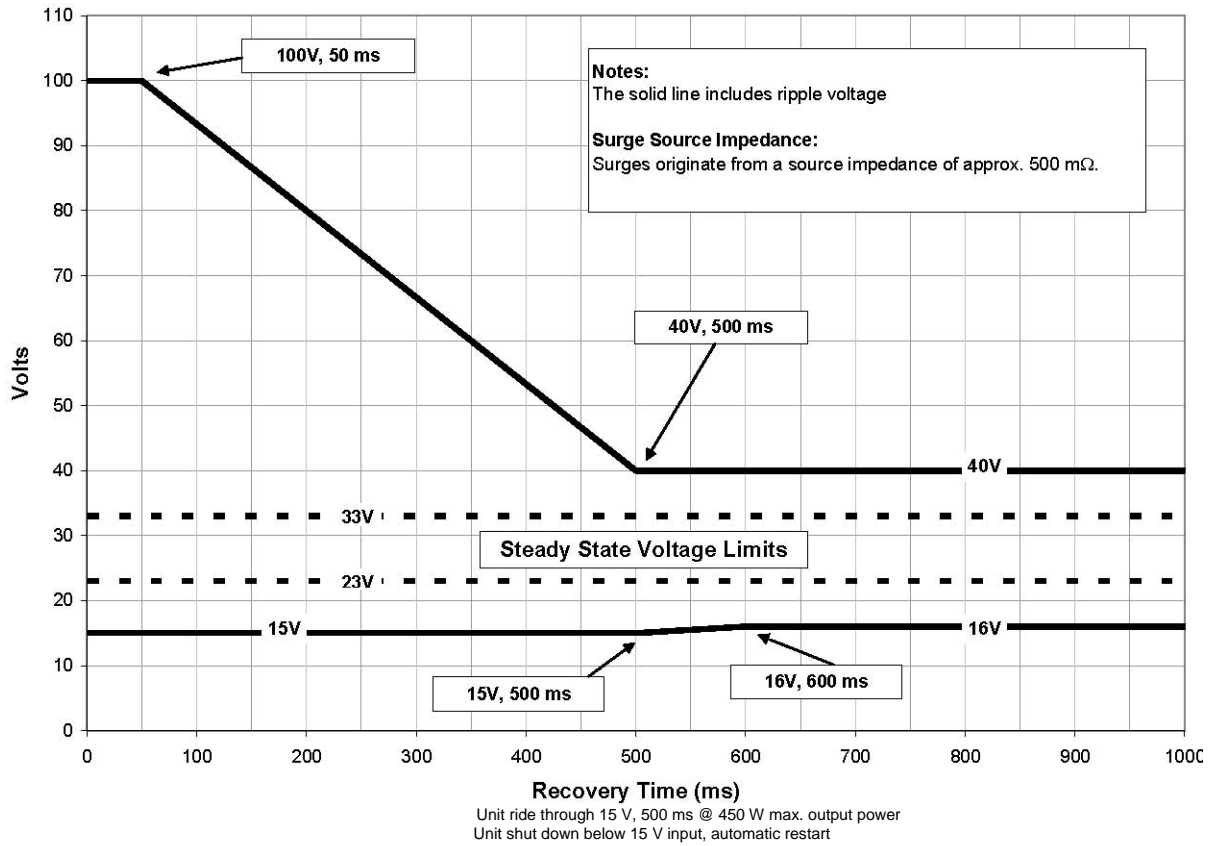
Table 2 Voltage Outputs

	V1	V2	V3	V4
VME550A-001-000	+5Vdc	+3.3Vdc	+12Vdc	-12Vdc
Maximum individual	44.8A	67.8A	9.33A	9.33A
DC outputs	224W	224W	112W	112W
* VME550A-001 Maximum total output power is 550W (all DC outputs combined) Output voltage variants possible. VME550A can be configured with one to six outputs (one can be negative) each capable of up to 112W maximum from (-48VDC to +48VDC). Contact AEGIS sales for details.				

Table 3 Customer selected options

-xxx	Custom Options
-000	No options
-001	Conformal coating on PWB
-002	Metric wedgelocks
-003	Split inhibit control for V1/V3 and V2/V4
-004	Connector keyed (position #1)
-005	Connector keyed (position #2)
-006	Connector keyed (position #3)
-007	Conformal coating & split inhibit for V4

Transient Immunity



VME550A-001-000 Pin Out Assignment

Connector Positronic P/N PCIH47M400A1 or Equivalent

Pins 1, 2, 3, 4	+5 Vdc
Pins 5, 6, 7, 8	+5 V RTN (Common)
Pins 9, 10, 11, 12	+3.3 V RTN (Common)
Pins 13, 14, 15, 16	+3.3 Vdc
Pin 17	+12 Vdc
Pin 18	+12 V RTN (Common)
Pin 19	-12 Vdc
Pin 20	-12 V RTN (Common)
Pin 21	NC
Pin 22	POWER OK RTN (Common)
Pins 23, 24, 25, 26	NC
Pins 27, 28, 29	NC
Pin 30	NC
Pin 31	NC
Pin 32	NC
Pins 33, 34, 35, 36	NC
Pins 37, 38	NC
Pin 39	Inhibit (Connect pin to negative input to disable)
Pins 40, 41	NC
Pin 42	Power OK, (Open collector = Fail)
Pins 43, 44	NC
Pin 45	Chassis Ground
Pin 46	Positive
Pin 47	Negative Input
Pin 48, 49	(Available for unique keying of supply)

** ALL PINS DESIGNATED NC SHOULD HAVE NO CONNECTION ON THE BACKPLANE

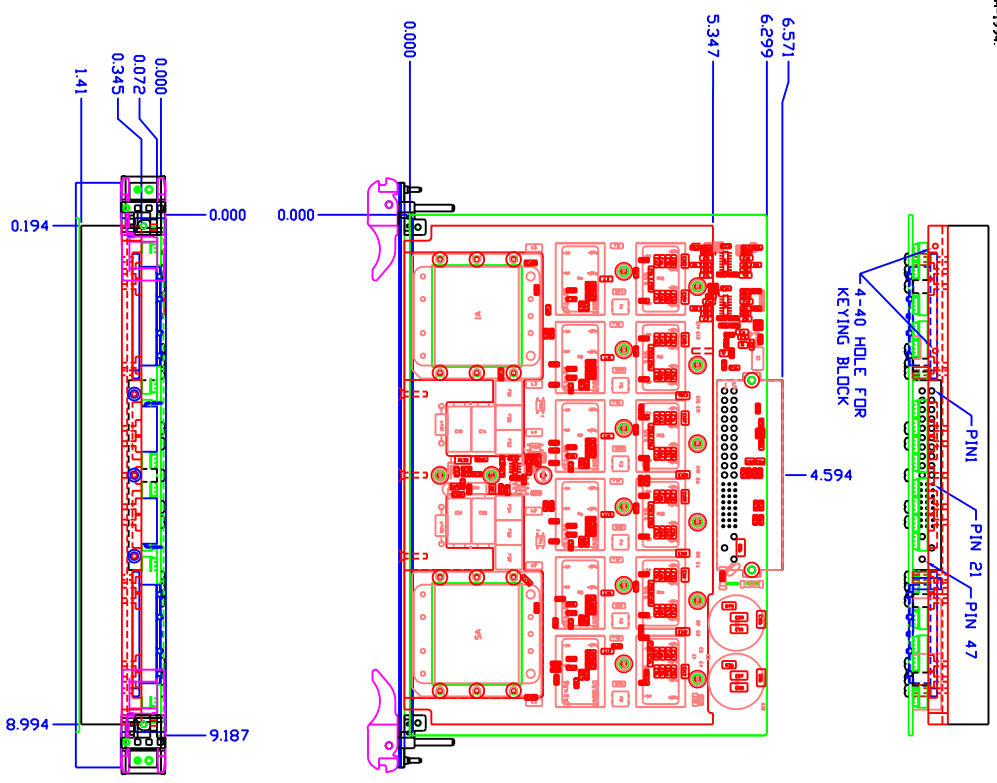
** ALL OUTPUT RTN PINS (COMMON) SHOULD BE TIED TOGETHER ON BACKPLANE

** ALL PINS OF THE SAME VOLTAGE SHOULD BE TIED TOGETHER ON THE BACKPLANE (i.e. ALL 4 OF THE +5V PINS SHOULD BE TIED TOGETHER)

** TO DISABLE ALL OF THE DC OUTPUTS FROM THIS CARD-CONNECT PIN 39 (INHIBIT) TO PIN 47 (NEGATIVE INPUT). THIS CAN BE ACCOMPLISHED USING A FET, TRANSISTOR, RELAY OR SWITCH THAT CAN SINK AT LEAST 15ma

** POWER OK SIGNAL IS AN OPEN-COLLECTOR TRANSISTOR OUTPUT. IT WILL BE LOW WHEN ALL OUTPUT VOLTAGES ARE WITHIN THEIR REGULATION WINDOW – IF ANY VOLTAGE IS INCORRECT POWER OK WILL BE HIGH. THIS OUTPUT IS REFERENCED TO THE COMMON DC OUTPUT RETURN AND CAN BE PULLED UP TO ANY OF THE DC OUTPUT VOLTAGES. SELECT A PULL-UP RESISTOR TO LIMIT THE CURRENT THROUGH THE TRANSISTOR TO LESS THAN 50Ma. (example – use a 1K pull-up for 5mA of current when pulled up to +5V output)

NOTES: UNLESS OTHERWISE SPECIFIED
 1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M-1994.



CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY

REV	DESCRIPTION	DATE	APPROVED
001	INITIAL RELEASE	01/14/09	NWS
002	UPDATED HEATSIK AND PVB	11/09/09	NWS
003	UPDATED TO REV 003 PVB	02/19/10	NWS

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 DECIMALS ARE TO 3 PLACES
 FRACTIONS ARE TO 16 PLACES
 UNLESS OTHERWISE SPECIFIED
 TOLERANCES ARE AS FOLLOWS
 FRACTIONS: ±0.005
 DECIMALS: ±0.005

APPROVALS

DATE	TITLE
08/20/07	VME 450A/VME550A MECH LAYOUT
DATE	ORDER
08/20/07	000000
DATE	REV
08/20/07	000000
DATE	SCALE
08/20/07	1/1

AGCIS P/N: VME450A/VME550A-XXX

AGCIS POWER SYSTEMS
 HARRIS, NORTH CAROLINA

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DO NOT SCALE DRAWING