

## Aegis Power Solution

# VME450GA-01

### VME Power Converter

(Rev A02, 06/08/10)



## 28Vdc Input, 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-461D/E/F EMI
- Dual Slot VME Power Card

### Product Highlights

This dual slot filtered 28VDC VME450GA power card with four outputs (3.3, 5, ±12V) at 550W, is a military COTS solution compliant to MIL-STD-810F vibration requirements and MIL-STD-461D/E/F.EMI Requirements.

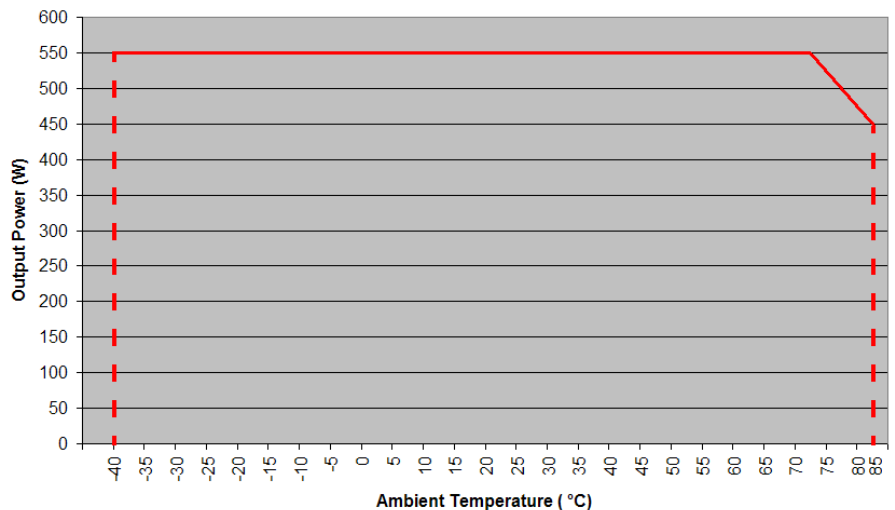
When compared to VME power supplies using conventional technology, the dual-slot VME450GA provides users with higher efficiency (85%), lower weight (4.4 pounds), and higher power (up to 550W).

**AEGIS Power Systems, Inc.** specializes in the front end design, development, and manufacture of Rapid Response Custom switching power supplies for VME, Defense, Industrial, Telecomm, and Electric Vehicle Power applications.

**Table 1 Maximum Ratings**

| Parameter             | Rating     | Unit | Notes                      |
|-----------------------|------------|------|----------------------------|
| Vin max range         | 18 to 36   | Vdc  |                            |
| Temperature           | -40 to +85 | °C   | Use output derating Fig. 1 |
| Combined output power | 550        | W    |                            |
| Input power           | 650        | W    | @ 550W out                 |
| Max +5 V power        | 224        | W    |                            |
| Max +3.3 V power      | 224        | W    |                            |
| Max +12 V power       | 100        | W    |                            |
| Max -12 V power       | 100        | W    |                            |

**Figure 1. VME 450GA-01**



Operation from 0°C to 75°C - minimum 600LFM airflow required (800LFM recommended)  
 Operation from 75°C to 85°C - minimum 1200 LFM airflow required

### SPECIFICATIONS

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

|   |  |
|---|--|
| <b>DC input voltage:</b>                            | Meets Mil-Std-704A/F and Mil-Std-1275D, continuous operation normal range.<br>22 Vdc to 33 Vdc, 28 Vdc nominal.<br>100 Vdc 50 millisecond transient. |
| <b>DC input line current:</b>                       | 24.1 A max @ 22 Vdc; 18.7 A typical @ 28 Vdc input (450 Wout).<br>29.4 A max @ 22 Vdc; 22.9 A typical @ 28 Vdc input (550 Wout).                     |
| <b>Input power:</b>                                 | 529 W max @ 450 Wout, 650 W max @ 550 Wout.  |
| <b>Output power:</b>                                | 450 to 550 W maximum all outputs combined (see Fig. 1).  |
| <b>Output voltages:</b>                             | See table 2.   |
| <b>Efficiency:</b>                                  | 85% minimum, 86% typical.  |
| <b>Start up time:</b>                               | 500 millisecond maximum.   |
| <b>Voltage set point/<br/>Line/Load regulation:</b> | +/- 2% Vout nominal (for any combination).   |
| <b>Temperature regulation:</b>                      | +/- 0.01% / °C.  |
| <b>Output ripple:</b>                               | 50 mV pk-pk Max. (20 MHz BW) all except; +/-12 Vdc 100 mV pk-pk Max.   |
| <b>Current Limit:</b>                               | Short circuit protected with automatic recovery.   |
| <b>Temperature:</b>                                 | -40°C to +75°C Operating ambient 550W (See Figure 1).<br>-40°C to +85°C Operating ambient 450W.(See Figure 1).<br>-55°C to +100°C Non-operating.     |
| <b>Size:</b>  | 6U x 8hp x 160 mm (see mechanical drawing).  |
| <b>Weight:</b>                                      | 4.4 lb. Typical.   |
| <b>Connector:</b>                                   | 1ea Positronics PCIH47M400A1 or equivalent (see page 3 for pin assignments).   |
| <b>Vibration:</b>                                   | MIL-STD-810F, Method 514.5, Procedure I.   |
| <b>Shock:</b>                                       | MIL-STD-810F, Method 516.5, Procedure I.   |
| <b>Humidity:</b>                                    | 0 – 95% non-condensing.  |
| <b>EMI:</b>   | MIL-STD-461E, CE102, CS101.  |

**Table 2 Voltage Outputs**

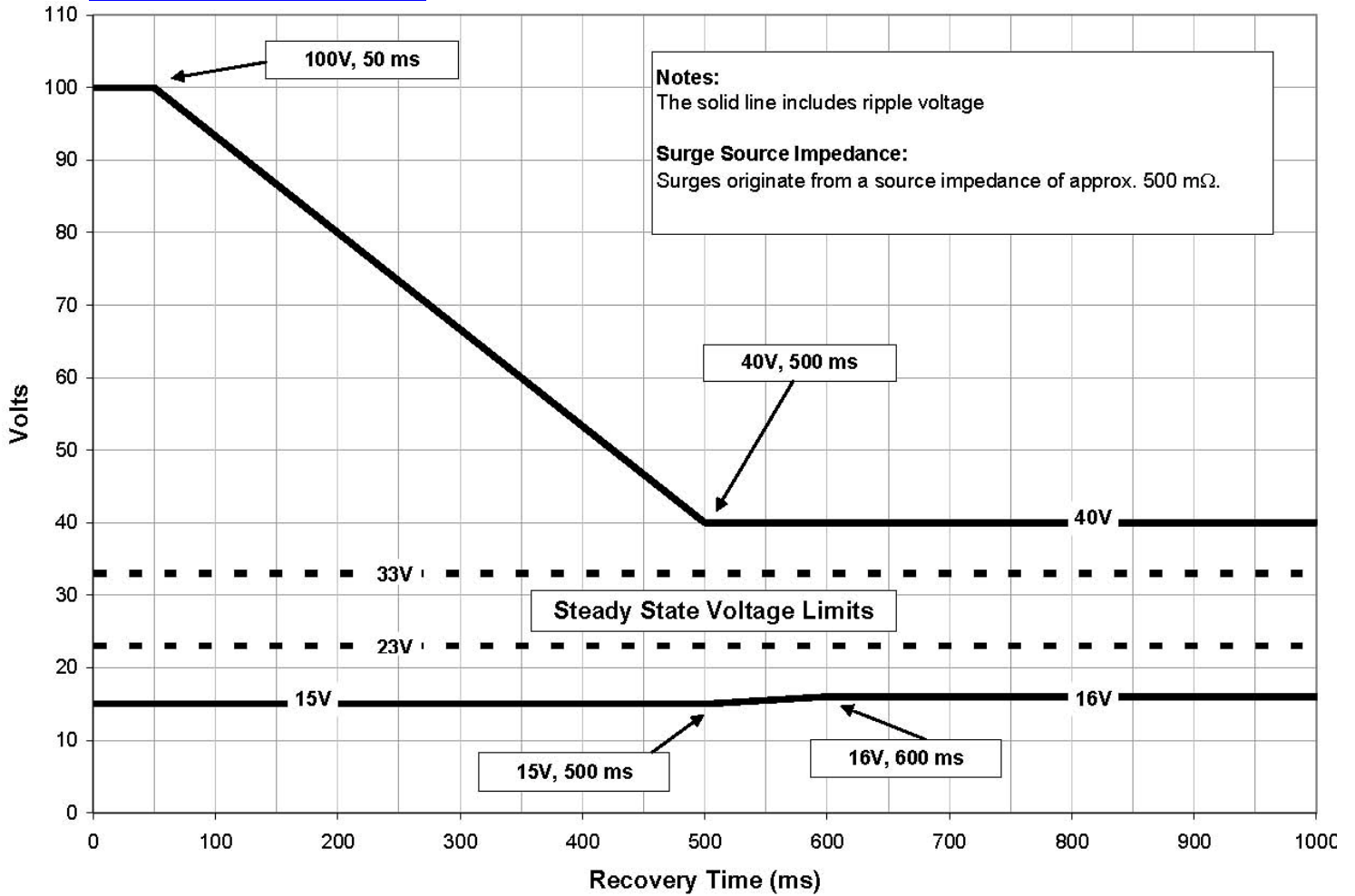
| VME450GA-XX  | V1    | V2      | V3     | V4     |
|--|-------|---------|--------|--------|
| 01   | +5Vdc | +3.3Vdc | +12Vdc | -12Vdc |
|  | 40A   | 55A     | 7.1A   | 7.1A   |
|  | 200W  | 182W    | 85W    | 85W    |
| Output voltage variants possible. Contact AEGIS sales for details. |       |         |        |        |

## VME450A-01 Pin Out Assignment

Connector Positronic P/N PCIH47M400A1 or Equivalent

|                            |   |
|----------------------------|---|
| <b>Pins 1, 2, 3, 4</b>     | <b>+5 Vdc</b>   |
| Pins 5, 6, 7, 8            | +5 V RTN (Common)   |
| Pins 9, 10, 11, 12         | +3.3 V RTN (Common)                                       |
| <b>Pins 13, 14, 15, 16</b> | <b>+3.3 Vdc</b>   |
| <b>Pin 17</b>              | <b>+12 Vdc</b>  |
| <b>Pin 18</b>              | <b>+12 V RTN (Common)</b>                                 |
| Pin 19                     | -12 Vdc   |
| Pin 20                     | -12 V RTN (Common)  |
| Pin 21                     | NC  |
| Pin 22                     | Signal 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  |
| <b>Pin 39</b>              | <b>Inhibit (Connect pin to negative input to disable)</b> |
| Pins 40, 41                | NC  |
| <b>Pin 42</b>              | <b>Power OK, (Open collector = Fail)</b>                  |
| Pins 43, 44                | NC  |
| <b>Pin 45</b>              | <b>Chassis Ground</b>                                     |
| <b>Pin 46</b>              | <b>Positive</b>   |
| <b>Pin 47</b>              | <b>Negative Input</b>                                     |

# Transient Immunity



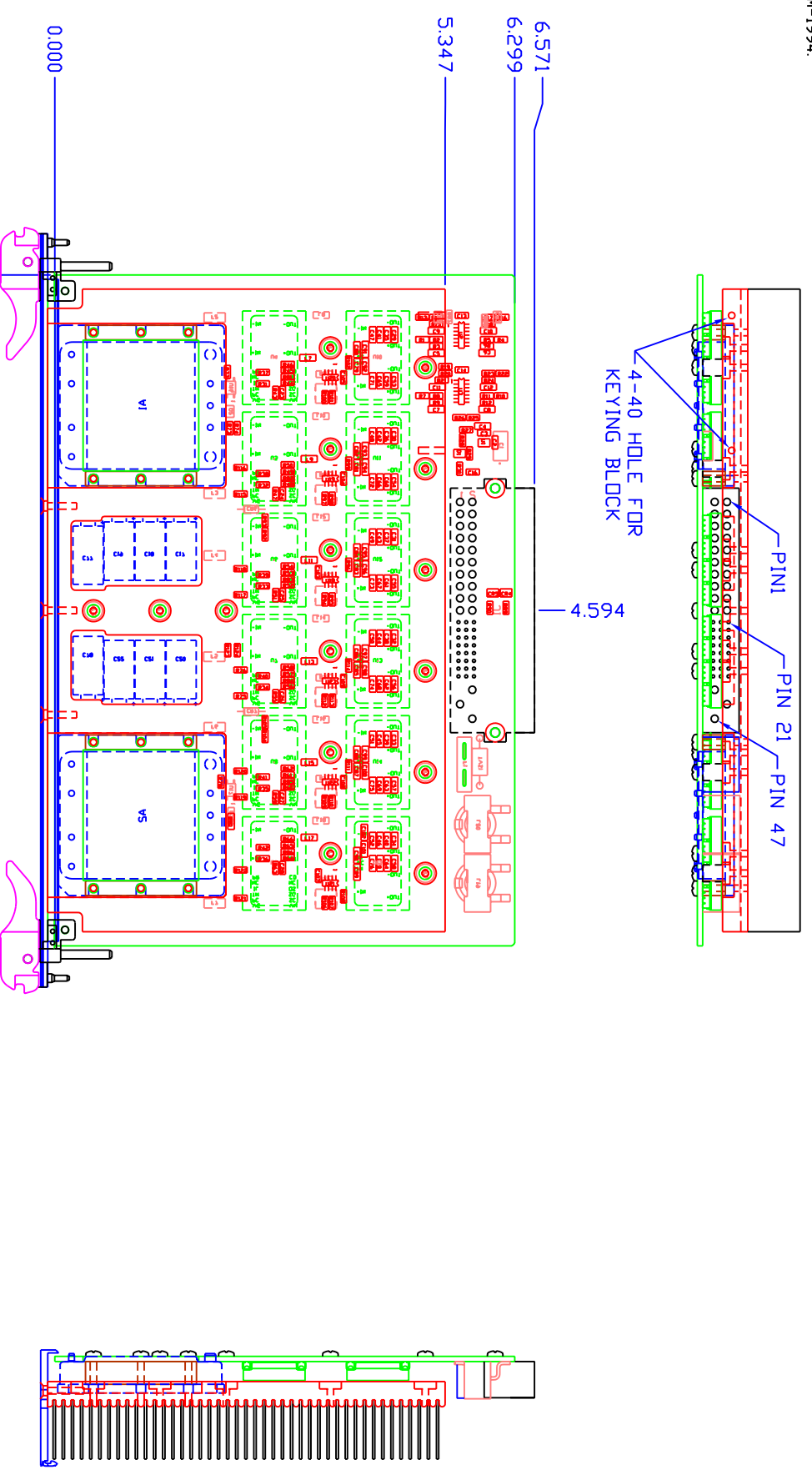
| ZONE | REV             | DESCRIPTION | DATE | APPROVED |
|------|-----------------|-------------|------|----------|
| A01  | INITIAL RELEASE | XX/XX/XX    | JFS  |          |
| XXX  | XXXX            | XX/XX/XX    | XXX  |          |

REVISED

| SH | REV | DATE | APPROVED |
|----|-----|------|----------|
|    |     |      |          |

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

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY



CONNECTOR POSITIONIC P/N PCIH47M400A1, DR EQ.

- PINS 1, 2, 3, 4 - +5VDC
- PINS 5, 6, 7, 8 - +5V RTN (COMMON)
- PINS 9, 10, 11, 12 - +3.3V RTN (COMMON)
- PINS 13, 14, 15, 16 - +3.3 VDC
- PIN 17 - +12VDC
- PIN 18 - +12V RTN (COMMON)
- PIN 19 - -12VDC
- PIN 20 - -12V RTN (COMMON)
- PIN 21 - NC
- PIN 22 - SIGNAL RTN (COMMON)
- PINS 23, 24, 25, 26, 27, 28, 29 - NC
- PIN 30 - NC
- PIN 31 - NC
- PIN 32 - NC
- PIN 33, 34, 35, 36, 37, 38 - NC
- PIN 39 - INHIBIT (CONNECTED TO NEG INPUT = DISABLED)
- PINS 40, 41 - NC
- PIN 42 - POWER OK, (OPEN COLLECTOR = FAIL)
- PINS 43, 44 - NC
- PIN 45 - CHASSIS GND
- PIN 46 - POSITIVE INPUT
- PIN 47 - NEGATIVE INPUT

8 7 6 5 4 3 2 1

CONTRACT NO. AEGIS POWER SYSTEMS, INC. PROPRIETARY INFORMATION. NO DISCLOSURE, REPRODUCTION, OR USE OF ANY PART HEREOF MAY BE MADE EXCEPT BY EXPRESS WRITTEN PERMISSION OF AEGIS POWER SYSTEMS, INC.

TITLE: VME 450A MECH LAYOUT  
 AEGIS P/N: VME450A  
 MURPHY, NDRTH CAROLINA

APPROVALS: JFS 08/20/07  
 DATE: 08/20/07

SIZE: FSCM NO. D 06ES8  
 DWG NO. VME 450A-M00  
 SCALE: 1/1 SHEET 1 OF 1

| DATE | REVISION | DESCRIPTION |
|------|----------|-------------|
|      |          |             |

APPLICATION: USED ON: DO NOT SCALE DRAWING

FINISH: SEE NOTE 3  
 MATERIAL: SEE NOTE 2  
 DIMENSIONS ARE IN INCHES  
 TOLERANCES ARE: DECIMALS: .005  
 FRACTIONS: XX & 02 & 5  
 N/A: XXX & .005