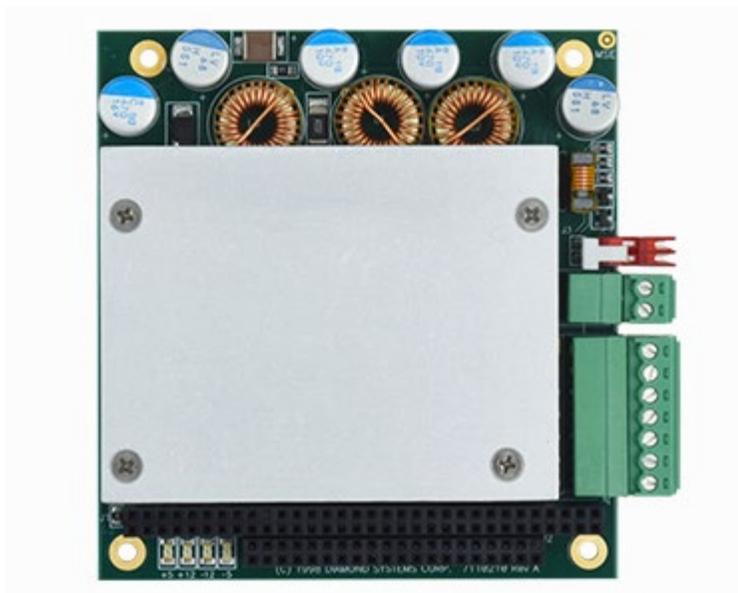


JUPITER-MM 50 Watt PC/104 DC/DC Power Supply for Vehicle Applications



PC104



FEATURES

- 50 Watts max output power
- +5V @ 10A max
- +12V @ 2.0A max
- 5V @ 150mA max optional
- 12V @ 800mA max optional
- Output power provided on PC/104 connectors and screw terminals for increased connection flexibility
- Output indicator LEDs
- PC/104 form factor
- Low profile top heat spreader provides sufficient cooling at full power
- 40 to +85C operating temperature

Description

This rugged, extended-temperature DC/DC power supply is designed specifically for air and ground vehicle applications. It consists of a PC/104 form factor module with complete DC-DC voltage regulator circuitry, heat sink, input and output connectors, power-good indicator lamps, and both 8-bit and 16-bit PC/104 bus headers. Input voltage range is 7 to 34VDC, making it suitable for use with both 12V and 24V systems.

Output power is provided directly onto the PC/104 bus connectors, as well as on an auxiliary connector for external tapping. Both dual output (+5, +12) and quad output (+5, +12, -5, -12) versions are available. Up to 10 amps can be provided on the +5 output, or the 50 watts of total power can be distributed across the 4 outputs.

Model	Output Voltage	Output Current
JMM-512	+5V +12V	10A max 2.0A max
JMM-512-V512	+5V -5V +12V -12V	10A max 150mA max 2.0A max 800mA max

The low-profile SMT design guarantees that you can add other PC/104 modules on top of this board without any worries of mechanical interference. Simply stack your CPU and other cards on top or below the power supply module to provide power to your PC/104

system.

Surface Mount Components

To the maximum extent possible, surface mount components have been used in the design, to lower the profile and improve ruggedness. An additional benefit to SMT technology is the improved ability to use the PCB planes as a heat sink.

High Efficiency, High-Frequency Design

Efficiency is as high as 92 percent, lowering input power requirements as well as heat generation. The 200KHz switching circuit allows the use of smaller inductors, reducing size and weight and allowing the board to fully fit within the PC/104 height requirements.

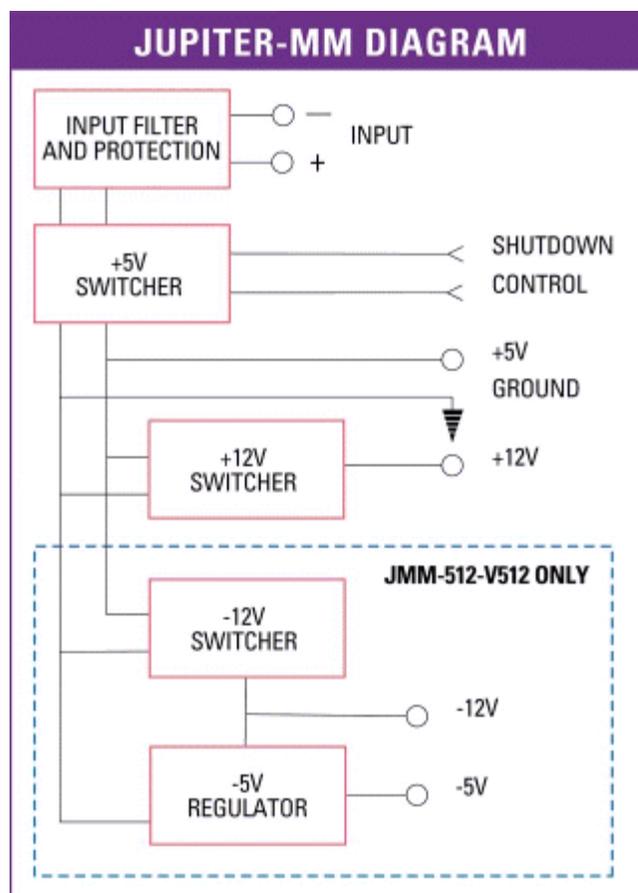
Advanced Heat Sink Technology

A new compressible thermally-conductive material mounted under the aluminum heat sink makes it possible to wick heat away effectively from varying height components. Also, the use of surface mount components and careful PCB design enhance the dissipation of heat through the PCB planes.

Remote On/Off Control

The supply can be turned on and off with an external contact closure through an auxiliary connector.

◆ Block Diagram



◆ Specifications

Input

Input voltage	7-34VDC
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Input ripple	<100mV RMS
Transient protection	1500W transient voltage suppressor
Transient cutoff	31V nominal
Output	
Output voltage/current	JMM-512: +5V at 10A max, +12V at 2.0A max JMM-512-V512: +5V at 10A max, -5V at 0.15A max, +12V at 2.0A max, -12V at 0.8A max
Output protection	Current limit/short circuit protection
Output ripple	<50mV RMS (+5V output, 50% load)
Load regulation	±3%
Efficiency	80% to 92%, varies with load and input voltage
Mechanical/Environmental	
Size	3.55" x 3.775"
PC/104 bus	J1 (64 pins) and J2 (40 pins) stackthrough connectors installed
Operating temperature	-40°C to +85°C
Operating humidity	5 to 95% non-condensing
Weight	5.0 oz/142g
MTBF	JMM-512: 107,941 hours JMM-512-V512: 87,569 hours

◆ Models and Accessories

Jupiter-MM		
available models:		
JMM-512	Jupiter-MM 50 Watt DC/DC power supply, +5V/+12V, Extended Temperature	Available
JMM-512-V512	Jupiter-MM 50 Watt DC/DC power supply, +5V/+12V/-5V/-12V, Extended Temperature	Available

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