



HE104 - 50 Watt High Efficiency PC/104 Power Supply

FEATURES

- 50 Watt output
- +5V & +12V standard, -5V & -12V optional
- 6V to 40V Dc input range
- "Load Dump" transient protection
- Clean and filtered power for the PC/104 bus
- Size (W x L X H): 3.55" x 3.75" x 0.06"
- AC Bus Termination: Recommended when the PC/104 bus exceeds four PC/104 cards, or the PC/104 bus is physically long such as when a development back-plane (such as the DEV104) is used.



FUNCTIONAL DESCRIPTION

The HE104 is a high efficiency 50 watt DC-DC converter that can supply 5V and 12V DC outputs only or can include features such as, Power Management, Universal Battery Charger, AC bus termination, or -5V and -12V DC output. The HE104 is designed for low noise embedded PC/104 computer systems, has a wide input range of 6V to 40V DC(>6:1) and is ideal for battery or unregulated input applications. The HE104 is specifically designed for vehicular applications and has heavy-duty transient suppressors (5000W) that clamp the input voltage to safe levels. Further, it is able to maintain normal power supply operation.

The HE104 is a state-of-the-art MOSFET based design that provides outstanding line and load regulation with efficiencies up to 95 percent. Organic Semiconductor Capacitors provide filtering, which reduces ripple noises below 20mV. The low noise design makes the HE104 ideal for use aboard aircraft, military applications or wherever EMI or RFI must be minimized. The 5V and 12V DC outputs are controlled by a constant off-time current mode architecture regulator, which provides excellent line and load transient response. The 12V boost regulator uses the 5V as input power, so it can operate without dropout from 6V to 40V DC input and supply 2A. The 5V output is protected from output shorts by a high-speed pulse-by-pulse current limit circuit. Furthermore, the 12V output is protected from shorts by the current limiting of the +5V DC controller.

The optional Power Management controller (PM104) allows for timed on/off control of the HE104, bus interrupts on impending power failure, current limit setting and intelligent charge termination for the optional battery charger. The HE104 is provided in a PC/104 form factor compliant size, which includes the 8-bit and 16-bit PC/104 expansion bus header. All generated voltages are provided to their related power supply pins on the PC/104 expansion bus and are available for off-board use through a screw terminal block. The optional PC/104 AC bus termination feature provides the cleanest possible signals on the PC/104 bus. The HE104 can be configured to meet almost any power supply need for embedded PC/104 applications. This could be a simple +5V application, which provides for back lighted LCD panels or a full UPS (un-interruptible power supply configuration). The HE104 is now RoHS compliant.



Specifications

Electrical Specifications

- 5V output* 10.0A
- 12V output 2.0A
- -5V output 0.4A
- -12V output 0.5A

Input Voltage

- 6 to 40VDC

Mechanical/Environmental

- Size (W x L x H)**** 3.55" x 3.75" x 0.60"
- Weight 6.08 oz/172.37 grams
- Temperature Range -40 to +85°C

Performance Characteristics

- Peak to Peak ripple* <20mV
- Load Regulation** <60mV
- Line Regulation** 40mV
- Output Temp. Drift** <40mV
- Output Ripple** 20mV
- Quiescent Current*** 2mA
- Efficiency up to 95%

* Current rating includes current supplied to 12V and -12V regulators

** Measured on the 5V output

*** LEDs disabled and power supply is in shutdown mode

**** Not including pass through pins

Ordering Information

HE104-512-16 +5V and +12V outputs

Options

OPT-5H	-5V outputs
OPT-12H	-12V outputs
OPT-512H	-5V and -12V outputs
OPT-T	AC Bus Termination installed onto the power supply
RPD	Reverse Polarity Diode for reverse input protection