

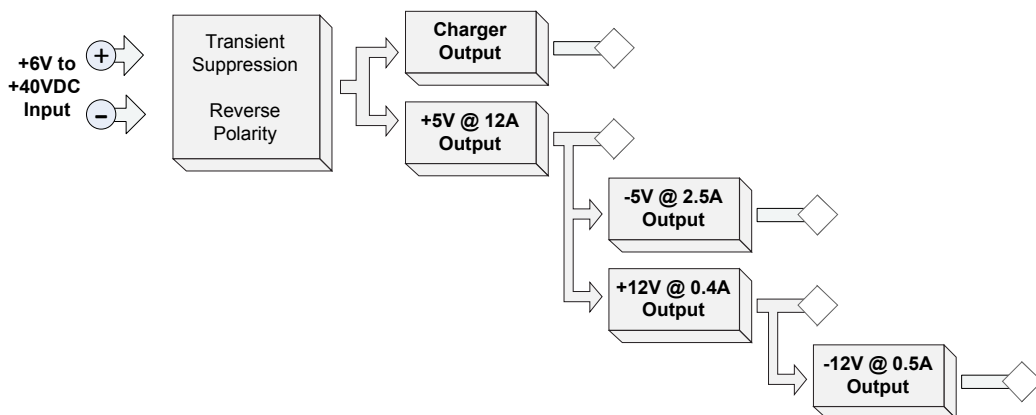
Overview

Tri-M's HESC104 is a 60W DC-DC converter that includes a flash based microcontroller and 4 amp charger for advanced power management and smart battery charging. Combined with a Tri-M standard battery pack or ultracapacitor module, the HESC104 can be used as an Uninterruptible Power Supply (UPS) for a PC/104 system.



Designed for low noise embedded computer systems, the HESC104 has a wide input range of 6-40V (>6:1) and is ideal for battery or unregulated input applications. Heavy-duty transient suppressors (5000W) clamp the input voltage to safe levels while maintaining normal power supply operation, making the HESC104 ideal for mobile applications. A constant off-time current-mode architecture regulator provides excellent line and load transient response.

The HESC104 provides up to four stages of smart battery charging for a wide range of compatible batteries. Advanced power management functions allow timed on/off control of the HESC104, notification of changes to main power and changes in the battery status. Digital I²C digital temp sensors allow monitoring of up to 16 different temperatures. The HESC104 is available as RoHS, is PC/104 compliant and -40°C to +85°C is standard.



Key Specifications

- **Smart Charging**
Up to four stages of charging and can charge Ultracapacitors, SLA, NiCd, and NiMh batteries and level two and three SMBus compatible batteries
- **Wide Input Voltages**
Ranges from +6V to +40V DC
- **Standard Outputs**
+5V@12A Max. & +12V@2.5A Max.
-5V@0.4A Max. & -12V@0.5A Max.
- **High Performance**
Maximum 95% Efficiency
- **Extended Temperature**
-40°C to +85°C / -40°F to +185°F

Applications

- ✓ Military & Civil Vehicles
- ✓ Aerospace & Defence
- ✓ Industrial Automation
- ✓ Telecommunications
- ✓ Undersea & Marine

Advantages

- **Rugged Design**
Designed to Meet MIL Standards
- **Input Voltage Protection**
Heavy-Duty Transient Suppression
- **UPS Operation**
With Optional Battery Pack
- **Space-Efficient Solution**
High Density PC/104 Module

Specifications

Electrical Specifications

+5V output*	12.0A
+12V output	2.5A
-5V output	0.4A
-12V output	0.5A
Input Voltage	6 to 40VDC

Charger Rating

Charge Current	0A to 4.0 A
Charging Voltage*****	9.5V to 19.5V

Mechanical/Environmental

Size (W x L x H)****	3.55" x 3.75" x 0.55"
Weight	6.56oz / 185.92g
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
Soft Start	5V start up risetime = 10 msec
Efficiency	Up to 95%

Certifications



Manufactured in
ISO 9001:2008,
ISO 14001:2004 &
ANSI/ESD S20.20
 Environments

- * 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
- ***** Input voltage must exceed battery voltage

MODELS

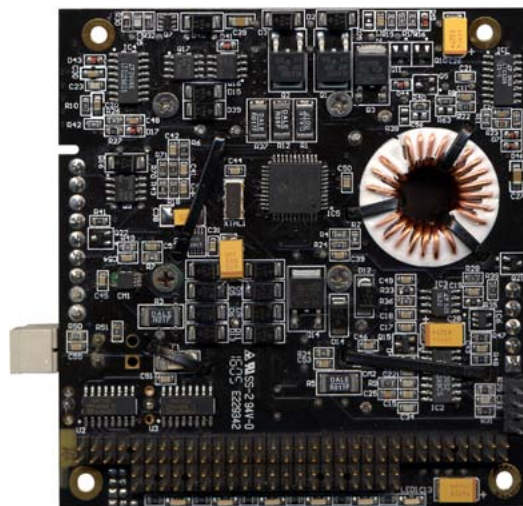
HESC104-18F-N-PBF	60 Watt, +5V@12A, +12V@2.5A, -5V@400mA, -12V@500mA, (-40 to +85°C), No Bus
HESC104-18F-PBF	60 Watt, +5V@12A, +12V@2.5A, -5V@400mA, -12V@500mA, (-40 to +85°C)

OPTIONS

CON-HESC104-KIT	Replacement Connector Kit for HESC104 power supplies
+NS	Non-Stack Through PC/104+ Bus, modifies +N
NS	Non-Stack Through Bus, modifies N



Top View



Bottom View