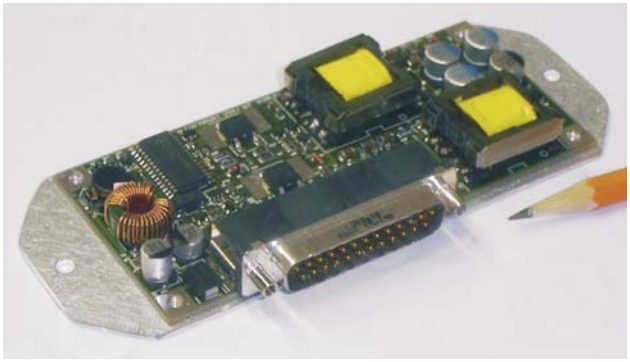
BB25 25W Battery Controller

Battery Charger and Regulator for Embedded Systems

Index Designs

Features

- Integrated Battery Charger and DC Converter for any chemistry or voltage.
- Includes both Linear Regulator for micro watts and Flyback Converter for 25 watts.
- Internal Real Time Clock and Watchdog Timer.
- Quiescent current of 20ua runs years on Li cells.
- "Freshness Seal" allows years of Battery Storage without battery discharge. (< 1ua)



General Description

The Battery Boss BB25 is a multi-function module designed to simplify the construction of battery powered embedded processor systems. The integration of linear regulator, battery charger, power switch, DC converter and internal software greatly simplifies target system design.

Low cost and flexibility are the cornerstones of the BB25. Integration of analog components and software logic result in a software driven design which is extremely adaptable to various applications. Software logic provides Watch Dog Timer, Real Time Clock, and Wake up Alarm. Operation is controlled though down load of EEPROM constants or reprogramming of FLASH based firmware.

A low profile design with 100% SMT construction allows the BB25 to mount directly against target or heat sink surfaces. This result is a minimal use of target volume and simplified target assembly. A single 25 pin D connector provides all the power, battery, control and output connections. Extensive use of common mode chokes simplifies meeting EMI requirements.

Regulated DC Outputs

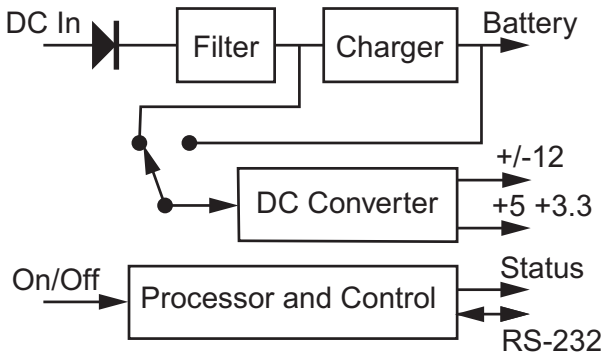
BB10A outputs include both both direct and "Flyback"regulated outputs. Either the +5 or +3.3 output can be selected as feedback for direct regulation. A tapped foil winding in the flyback inductor maintains a high degree of flyback regulation on the other voltage. This tight coupling allows unused outputs to remain open which reduces battery load current.

The BB25 also provides linear regulators for +/- 12V outputs. A 3.3V "Keep Alive" supply is provided directly from the battery. This supply provides the 20ua to maintain RTC and PIC operation. Application circuits are allowed 200ua from this supply.

Block Diagram

DC In charges the battery and provides operating power. Loss of power switches load to the battery. Status and control is provided though a RS-232 port.

BB25 Block Diagram



Specifications:

Input Voltage Range	6.0 - 20 Volts
Output Power	25 Watts (Configuration Dependent)
Max. Output Current (See Manual for Details)	+5 and +3.3 Outputs @ 2 Amp +12 and -12 Outputs @ 100milliamp
Size (Potted Module)	2.0 x 4.35 x 0.4 Inches 55 x 112 x 10 mm Mounting Hole: 5.00 Inch Centers
No Load Full Operation	< 50ma
Idle Load	20ua
Full Load at 8.2 Volts	Approx. 2.5 Amps
Line Regulation	< 2%
Load Regulation	< 2% on Primary Output < 5% on Flyback Outputs

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