



EVLALTAIR05T-5W

ALTAIR05T-800 5 W wide range CV-CC optoless adapter demonstration board

Data brief

Features

- Universal input mains range: 90 - 264 Vac, frequency 45 - 65 Hz
- Output voltage: 5 V@1 A continuous operation
- Optoless constant voltage - constant current output regulation
- Standby mains consumption: < 100 mW @ 230 Vac
- Average efficiency: > 70%
- EMI: According to EN55022-Class-B

Description

This board implements a 5 W (5 V / 1 A) wide range mains battery charger with constant voltage-constant current, tailored for AC-DC chargers for mobile phones and adapters and other hand-held equipment.

The core of the application is the ALTAIR05T-800, the first “All-primary sensing switching regulator” of the new ALTAIR family.

The IC combines a high-performance low-voltage PWM controller chip and an 800 V, avalanche-rugged Power MOSFET in the same package.

The PWM chip is a quasi-resonant (QR) current-mode controller IC specifically designed for QR ZVS (zero voltage switching at switch turn-on) flyback converters.

The device is capable of providing constant output voltage (CV) and constant output current (CC) regulation using primary-sensing feedback. This eliminates the need for the optocoupler, the secondary voltage reference, as well as the current sensor, while still maintaining quite accurate regulation.

In addition, it is possible to compensate the voltage drop on the output cable, so as to improve CV regulation on the externally accessible terminals.



Extremely low consumption under no load conditions is ensured thanks to a controlled burst-mode operation that, along with the built-in high-voltage startup circuit and the low operating current of the device, helps minimize the residual input consumption. Although an auxiliary winding is required in the transformer to correctly perform CV/CC regulation, the chip is able to power itself directly from the rectified mains. This is useful especially during CC regulation, where the flyback voltage is generated by the winding drops.

Figure 1. Output characteristics

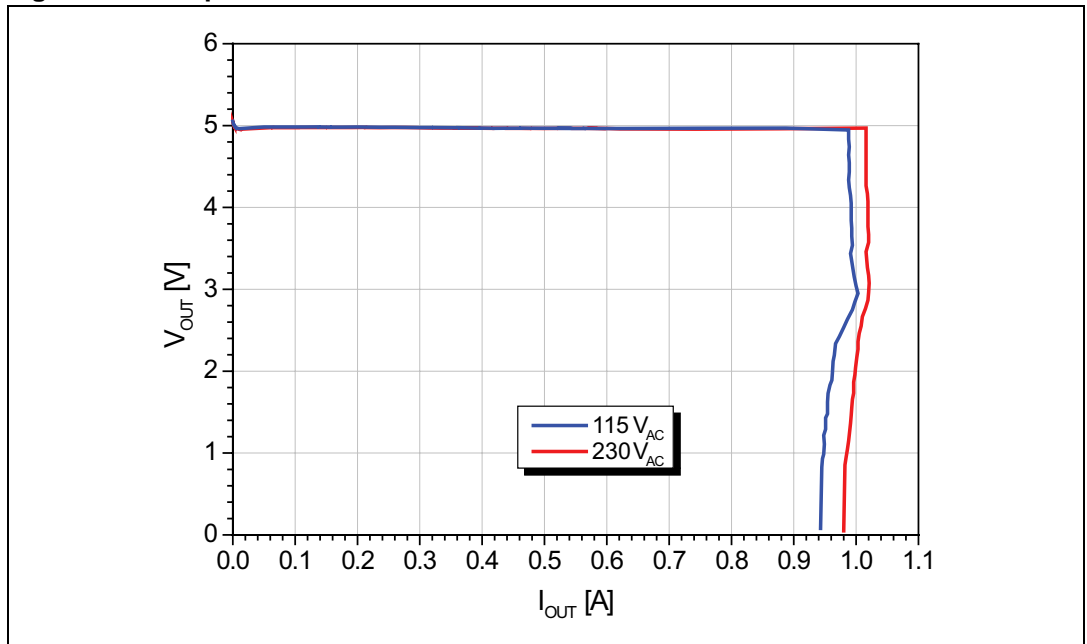
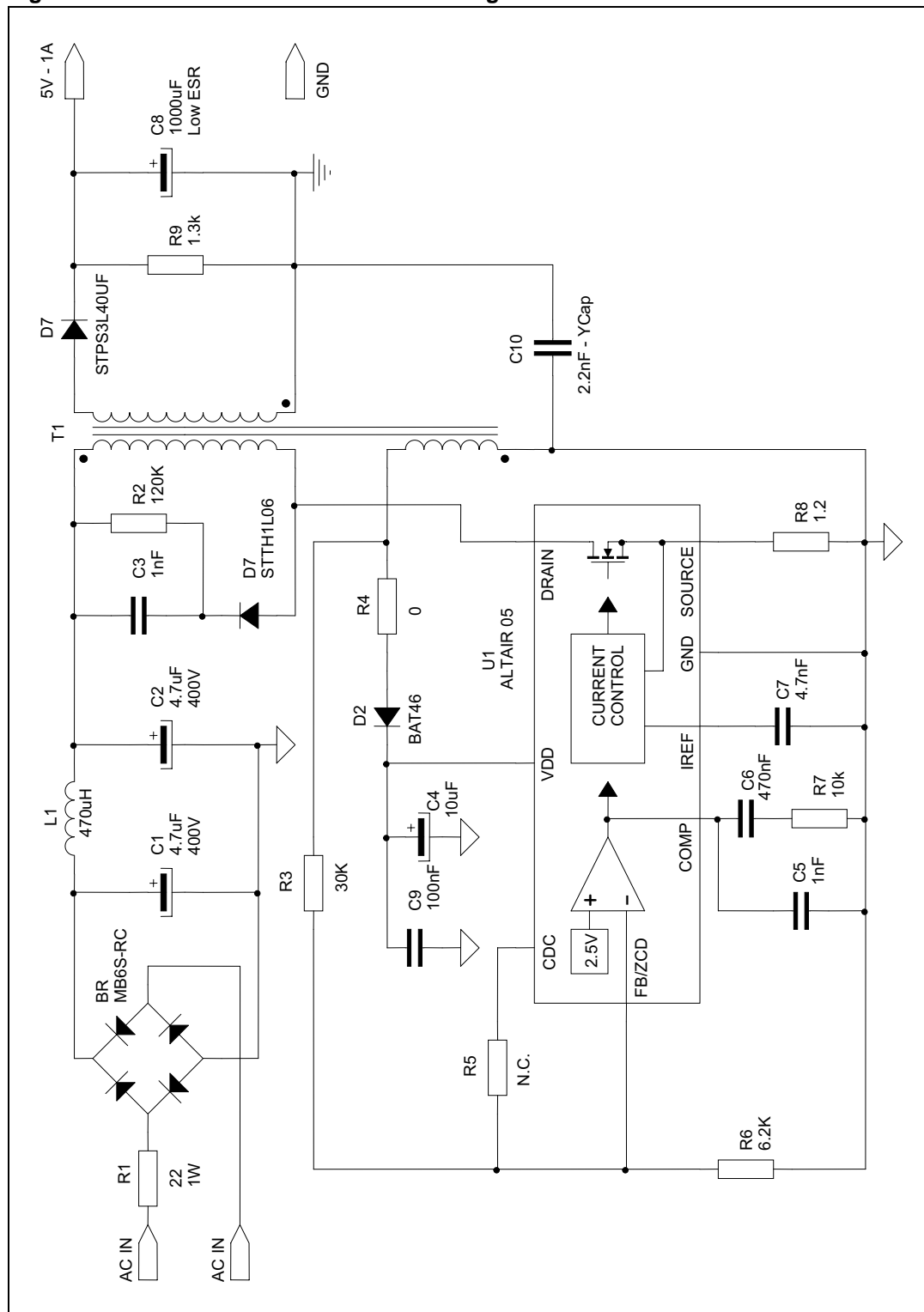


Figure 2. EVLALTAIR05T-5W electrical diagram



1 Revision history

Table 1. Document revision history

Date	Revision	Changes
26-Jan-2012	1	Initial release.

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