LTC3412 DC456 Description

DC456 is a high efficiency, high frequency buck converter, incorporating the LTC3412 monolithic synchronous regulator. The DC456 has an input voltage range of 2.5V to 5.5V and an output voltage range from 0.8V to 5V. The operating frequency range of the DC456 is either set with an external resistor or synchronized to an external clock, with a range between 100 kHz and 1.5 MHz. Due to these features, the DC456 is ideal for Li-Ion battery voltage (2.7V to 4.2V) applications, such as PDAs, cellular phones, and digital cameras. The DC456 can deliver high(er) power – up to 2A of output current – in a relatively small circuit, because of the high current power switches (80 mΩ of on-state resistance) on the LTC3412. The LTC3412 also incorporates OPTI-LOOP compensation, so that the DC456 can be optimized to provide fast transient response over a wide range of line and load conditions. All these features make the DC456 perfectly suited for battery-powered, hand-held applications. **Design files for this circuit are available. Call the LTC Factory.**

LTC3412 DC456 Quick Start Guide

Demonstration circuit 456 is easy to set up to evaluate the performance of the LTC3412. Please follow the procedure outlined below for proper operation.

1. Select the desired output voltage using jumpers JP1 thru JP4. The fixed output voltages are 1.8V, 2.5V, and 3.3V (as shown). There is also an option to set the output voltage to a custom value by inserting a resistor into the R6 pads next to jumper JP4. Refer to figure 1 for the proper circuit setup.

2. Connect the input power supply to the Vin and GND terminals on the top right-side of the board. Do not hot-plug Vin or increase Vin over the rated maximum supply voltage of 5.5V, or the part may be damaged. Refer to figure 1 for the proper measurement equipment setup.

3. Connect the load between the Vout and GND terminals on the bottom right-side of the board.

4. Select the desired operating mode using J1. To select Force Continuous mode, tie the SYNC/Mode pin to Vin by inserting the jumper into the lower position. Inserting the jumper into the upper position selects Burst Mode™ operation.

5. To shut down the circuit, connect the Run pin to GND by inserting a jumper into the upper position of J2.