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DC336 QUICK START GUIDE

Description

Demonstration circuit DC336 is a white LED driver using the LTC3200 low noise, constant frequency, inductorless DC/DC converter. The circuit is designed to drive five white LEDs from a single Li-Ion cell. The LTC3200's 2MHz constant switching frequency and internal switching control result in extremely low input and output ripple and small circuit size (23mm²). DC336 is specifically targeted for white LED backlight applications in cellular phones and small handheld devices, such as PDAs, where noise and circuit size are critical. The input ripple and output ripple performance can be improved by using 4.7μF, X7R ceramic capacitors at the input and output (refer to the LTC3200 data sheet). Gerber files for this circuit board are available. Call the LTC factory.

Quick Start

DC336 is easy to set up to evaluate the LTC3200 low noise, LED driver circuit. Refer to Figure 1 for equipment setup and follow the procedure outlined below:

1. Before turning on the power supply, connect a 3.3V, 500mA bench supply to the V_{IN} and GND terminals.
2. Turn on the input power supply and observe that the white LEDs light up. The output voltage should measure 5V (typical) with 3V–4.2V input voltage.
3. Connect the JP1 jumper to the “off” position to turn off the LTC3200. Returning the jumper to the “on” position will turn on the LTC3200.

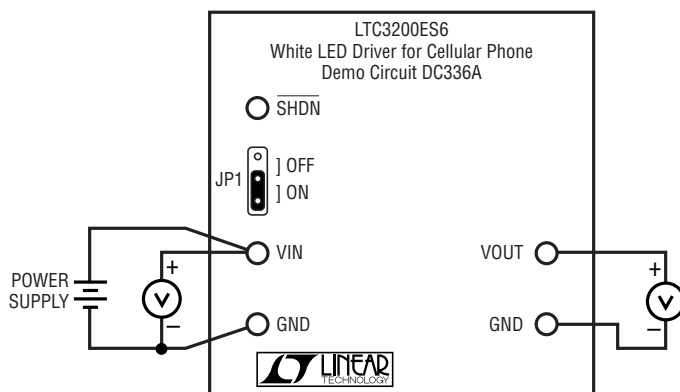


Figure 1. DC336A Test and Measurement Setup

4. When measuring the input / output voltage ripple, care must be taken to avoid a long ground return for the oscilloscope probe. After removing the grabber and outer plastic sleeve from the scope probe, measure the input voltage ripple by touching the probe between V_{IN} and GND and measure the output voltage ripple by touching the probe between V_{OUT} and GND as shown in Figure 2.

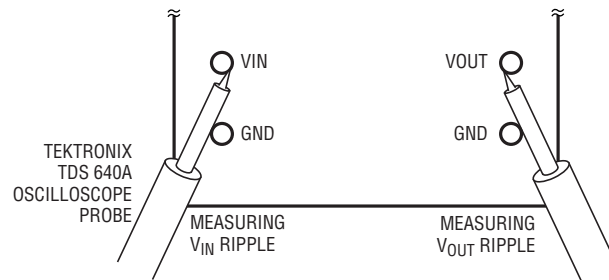


Figure 2. Proper Noise Measurement Technique