

Quick Start Guide for Demo Board DC230

Description

DC230 demonstrates the LT1533CS in a bipolar-output DC/DC converter. Four versions of the demo board are available, covering the most common output requirements. For example, version A generates +12V and –12V from a 5V input with a total output power of 1.8W.

DC230 contains additional circuitry allowing the user to modify the board to produce regulated or unregulated isolated outputs (modified by inserting and removing 0Ω resistors R9, R10, R27, R28, and R29). The circuit uses two potentiometers to set the slew rates of the power switches, allowing the user to observe the benefit of slew rate control, and to examine the tradeoff between noise performance and circuit efficiency.

The LT1533 Ultralow Noise 1A Switching Regulator implements the quietest DC/DC converters available. The LT1533 uses slew rate control of its internal power switches to eliminate high frequency noise and a push-pull topology to reduce low frequency ripple, generating outputs with less than 100μV_{p-p} ripple. This part is useful in generating power supplies in noise sensitive systems such as industrial sensing and control, data conversion, and wide band communications. The LT1533 can produce and regulate positive and negative voltages either greater than or less than the input voltage, and is well suited to generating isolated outputs.

Voltage and Power Specifications

| Version | Output | Input Range | Output Power |
|---------|--------|-------------|--------------|
| A | +/-12V | 4.5-8V | 1.8W |
| B | +/-5V | 10.8-14V | 3.5W |
| C | +/-15V | 4.5-8V | 1.8W |
| D | +/-5V | 4.5-8V | 1.8W |

Quick Start Procedure

Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

Version A

1. Apply loads (e.g. 50mA) across the GND, VOUT–, and GND, VOUT+ turrets.
or
Apply a load (e.g. 50mA) across the VOUT– and VOUT+ turrets.
2. Apply 5V across the VIN–, VIN+ turrets.
3. Measure voltage across the VOUT–, VOUT+ turrets.

Version B

1. Apply loads (e.g. 300mA) across the GND, VOUT–, and GND, VOUT+ turrets.
or
Apply a load (e.g. 300mA) across the VOUT– and VOUT+ turrets.
2. Apply 12V across the VIN–, VIN+ turrets.
3. Measure voltage across the VOUT–, VOUT+ turrets.

Version C

1. Apply loads (e.g. 50mA) across the GND, VOUT–, and GND, VOUT+ turrets.
or
Apply a load (e.g. 50mA) across the VOUT– and VOUT+ turrets.
2. Apply 5V across the VIN–, VIN+ turrets.
3. Measure voltage across the VOUT–, VOUT+ turrets.

Version D

4. Apply loads (e.g. 50mA) across the GND, VOUT–, and GND, VOUT+ turrets.
or
Apply a load (e.g. 50mA) across the VOUT– and VOUT+ turrets.
5. Apply 5V across the VIN–, VIN+ turrets.
6. Measure voltage across the VOUT–, VOUT+ turrets.

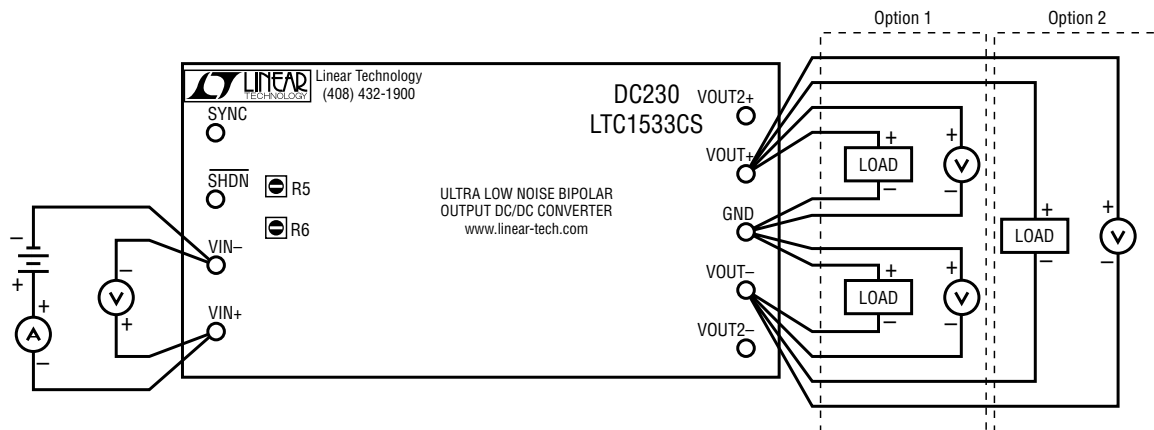


Figure 1. Proper Measurement Equipment Setup