DC297 QUICK START GUIDE

Description

Demo Board DC297A demonstrates the ease of producing the isolated, high voltage power supplies needed for telephone ring-signal generation (see the LT1684 and LT1166 data sheets for additional information). DC297 is specifically designed for power supply applications that require voltages in the range of ±100V at up to 200mA. The small size and high efficiency of this circuit make it ideal for battery-powered and portable applications.

DC297 features the LT1270, a monolithic high power switching regulator. The LT1270 and its associated circuitry implement an isolated flyback converter topology. The LT1270 provides the high current, high efficiency switch, as well as all oscillator, control and protection circuitry.

Setup

1. Connect a 5VDC input source capable of at least 7.5 amps to input terminals TP2 and TP5 (see Figure 1 for proper power supply and test equipment connection). If the power source is adjustable, be sure to set the output voltages correctly before connecting the supply to the demo board. At high output load currents, it may be necessary to increase the output of the 5 volt supply to maintain the 5V at the input terminals because voltage drops on input cables can be substantial. Input capacitor C9 is rated at 6VDC. If a 15VDC-rated cap is substituted, the input voltage may be raised to 12VDC.

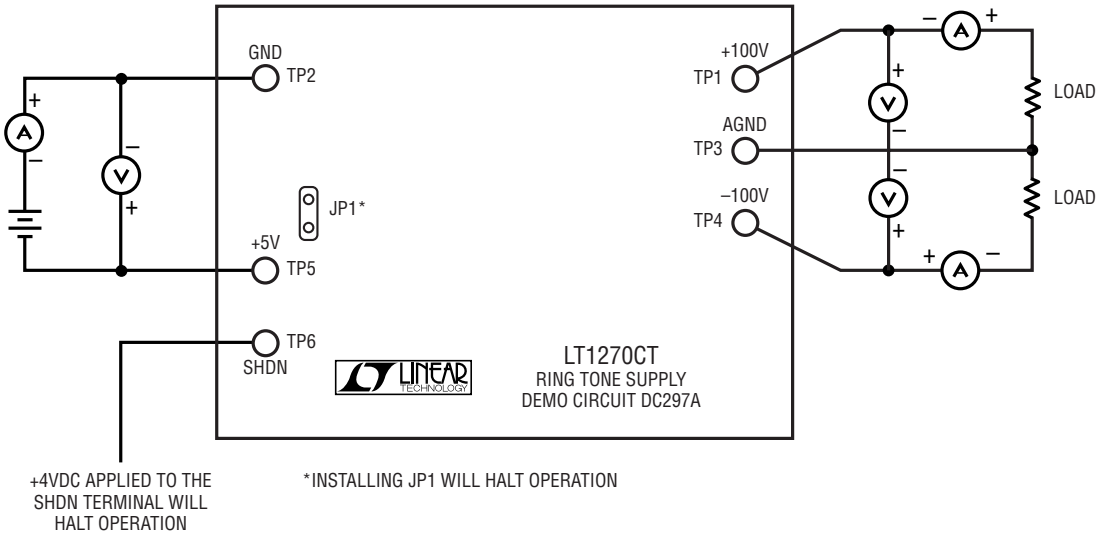

Figure 1. DC297A connection diagram

2. Connect the test load across output terminals TP1, TP3 and TP4. The test load may consist of power resistors or a suitable electronic load box. If resistors are used, be sure their power rating is adequate; this demo board can supply up to 45 watts. **Use caution when connecting a load to the output: these voltages are LETHAL.** Solder connections securely; clip leads for power connections are not recommended.

3. Once all connections are secure, turn on the input power source and verify the input and output voltages at the terminals.

4. The shutdown function (SHDN) is activated by applying a positive voltage of 4V–5V to the SHDN terminal (TP6).

5. JP1 is provided as a safety feature. When the jumper is installed, the circuit is disabled.

Note: There are no bleeder resistors on the output, so the board will remain charged for some time after power is removed.

The board will operate at input voltages as low as 3.6VDC, but care must be taken not to overload the output, causing the input voltage to sag. In systems that use a microprocessor, overloading the positive and negative outputs may cause the 5VDC supply to sag sufficiently to reset the processor.

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