

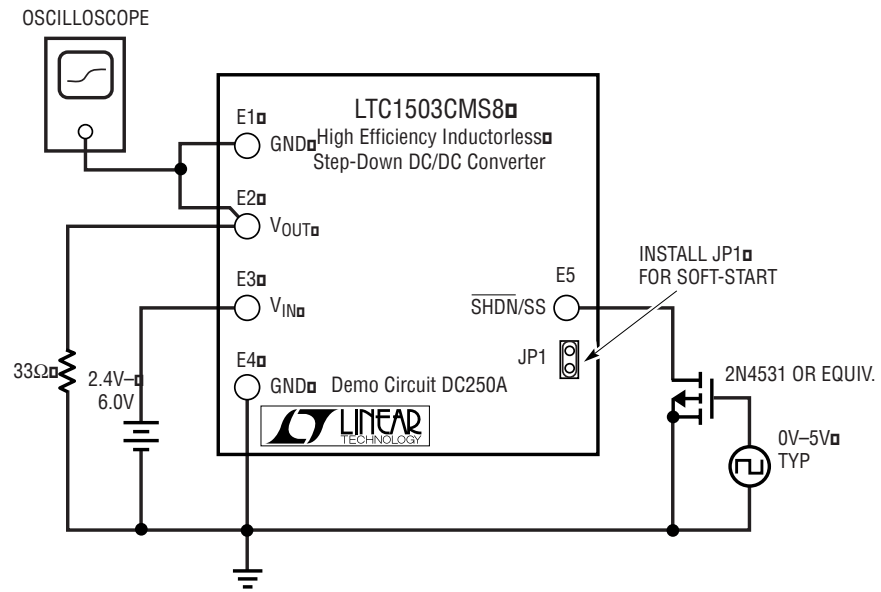
## **DC250A Quick Start Guide**

The DC250A demonstration board contains all of the circuitry needed for evaluation of the LTC1503CMS8-1.8/2 inductorless switching regulator IC. To begin, simply connect an input power supply to  $V_{IN}$  (E3) and GND (E4) (see Figure 1). Connect the load between  $V_{OUT}$  (E2) and GND (E4). Once power is applied, the LTC1503CMS8-1.8/2 will start up automatically and produce a regulated 1.8V/2V output voltage.

With an input supply of between 2.4V and 6V, the output will regulate correctly for any load current up to 100mA. Accidental short circuits from  $V_{OUT}$  to GND will not damage the LTC1503CMS8-1.8/2 or DC250A demonstration board.

To place the LTC1503CMS8-1.8/2 in shutdown, simply connect the  $\overline{SHDN/SS}$  pin (E5) to GND (E4). To re-start the LTC1503CMS8-1.8/2 remove the ground connection from  $\overline{SHDN/SS}$ . The IC will automatically pull up on the  $\overline{SHDN/SS}$  pin and regulate to the correct voltage at its output. Inrush current can be controlled by the use of jumper JP1. If JP1 is in place, soft-start capacitor C3 is connected to the  $\overline{SHDN/SS}$  pin. C3 limits the inrush current by limiting the  $dV/dt$  of the output voltage upon start-up. Without JP1, the LTC1503CMS8-1.8/2 will deliver current to  $C_{OUT}$ , the output capacitor, as quickly as possible until the regulation voltage is reached.

To evaluate the soft-start feature of the LTC1503CMS8-1.8/2 an open-drain output from a microcontroller or a discrete transistor can be connected to the  $\overline{SHDN/SS}$  pin (E5). For example, using a discrete transistor, connect the drain of the device to  $\overline{SHDN/SS}$  (E5) and the source to GND (E4). The gate can be manipulated to a suitable control voltage or pulsed waveform with a function generator. To see the soft start characteristics on an oscilloscope, a load resistor will be needed to discharge the output capacitor. A 33ohm resistor will discharge the 10 $\mu$ F output capacitor in about 1ms.



**Figure 1. DC250A Hook-Up Diagram**