ON Semiconductor

Test Procedure for the NCV8872SEPGEVB Evaluation Board

Test Procedure

Operational Guidelines

1. Connect a DC input voltage, within the 6 V to 40 V range, between VIN and GND.

2. Connect a DC enable voltage, within the 2.0 V to 5.0 V range, between EN/SYNC and GND.

3. The demo board feedback components were selected to for continuous operation at rated 12 V/1.5 A output power at a minimum input voltage of 6 V. The NCV887200 V_{IN} has its operational voltage diode-ored between the converter output (12 V) and input voltages. The converter turns-on typically at 6.7 V. Once energized, the output voltage supplies power to the IC when the battery voltage is below (approximately) 11.5 V. The decreasing V_{IN} UVLO voltage depends on load current as well as V_{IN}, and will be less than 6 V when operating below rated output current.

4. Optionally for external clock synchronization, connect a pulse source between EN/SYNC and GND. The high state level should be within the 2 to 5 V range, and the low state level within the -0.3 V to 0.8 V range, with a minimum pulse width of 40 ns and a frequency within the 675 and 1100 KHz range. **NOTE**: The converter was designed for 675 KHz 12 V/1.5 A continuous mode operation. Operation beyond 675 KHz or at a different output voltage may require modifications of feedback loop component values.

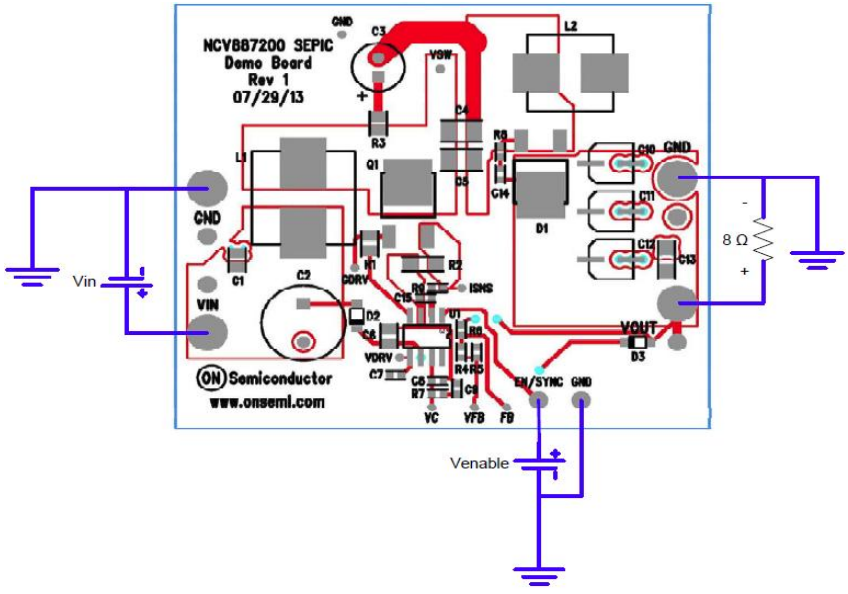

Figure 1. Demo Board Connections

Typical Performance

Start-up

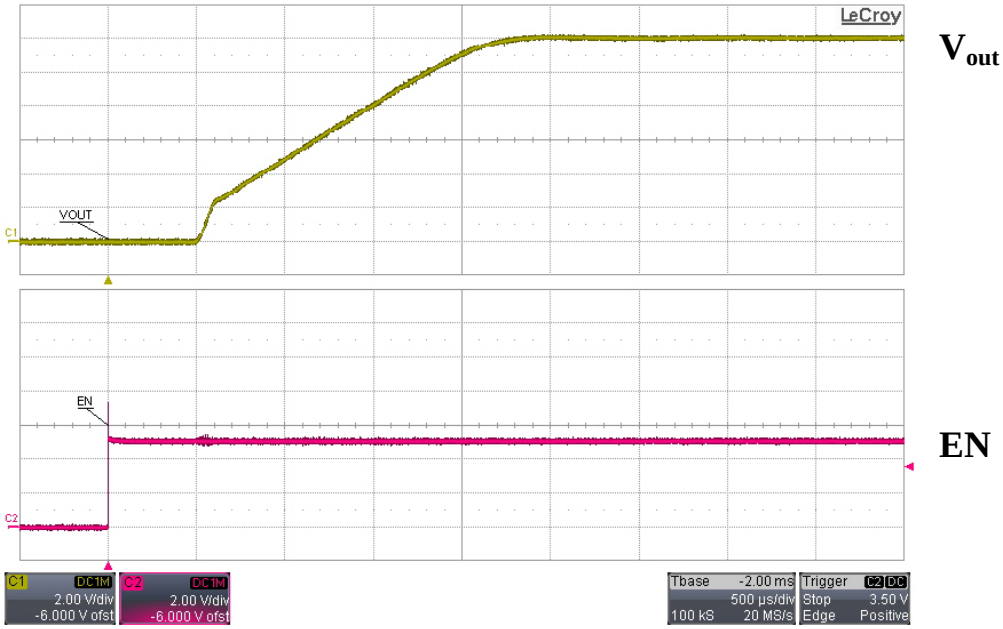

Figure 2 Typical start-up with V_{IN} = 12 V, I_{out} = 1A

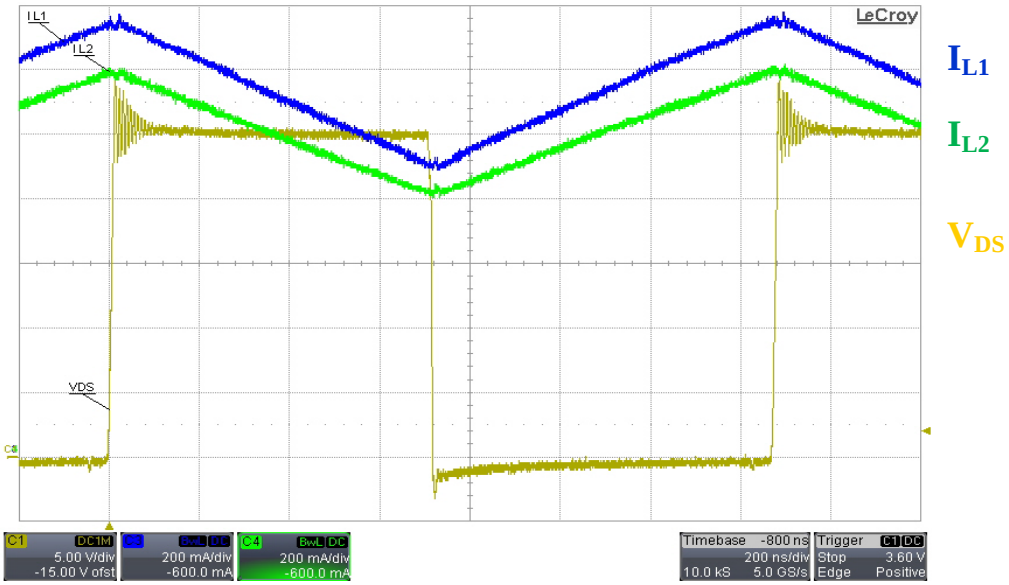

Figure 3 Operational waveforms, V_{IN} = 12 V, I_{out} = 1A