



### Test Procedure for the CS51411

02/7/2005

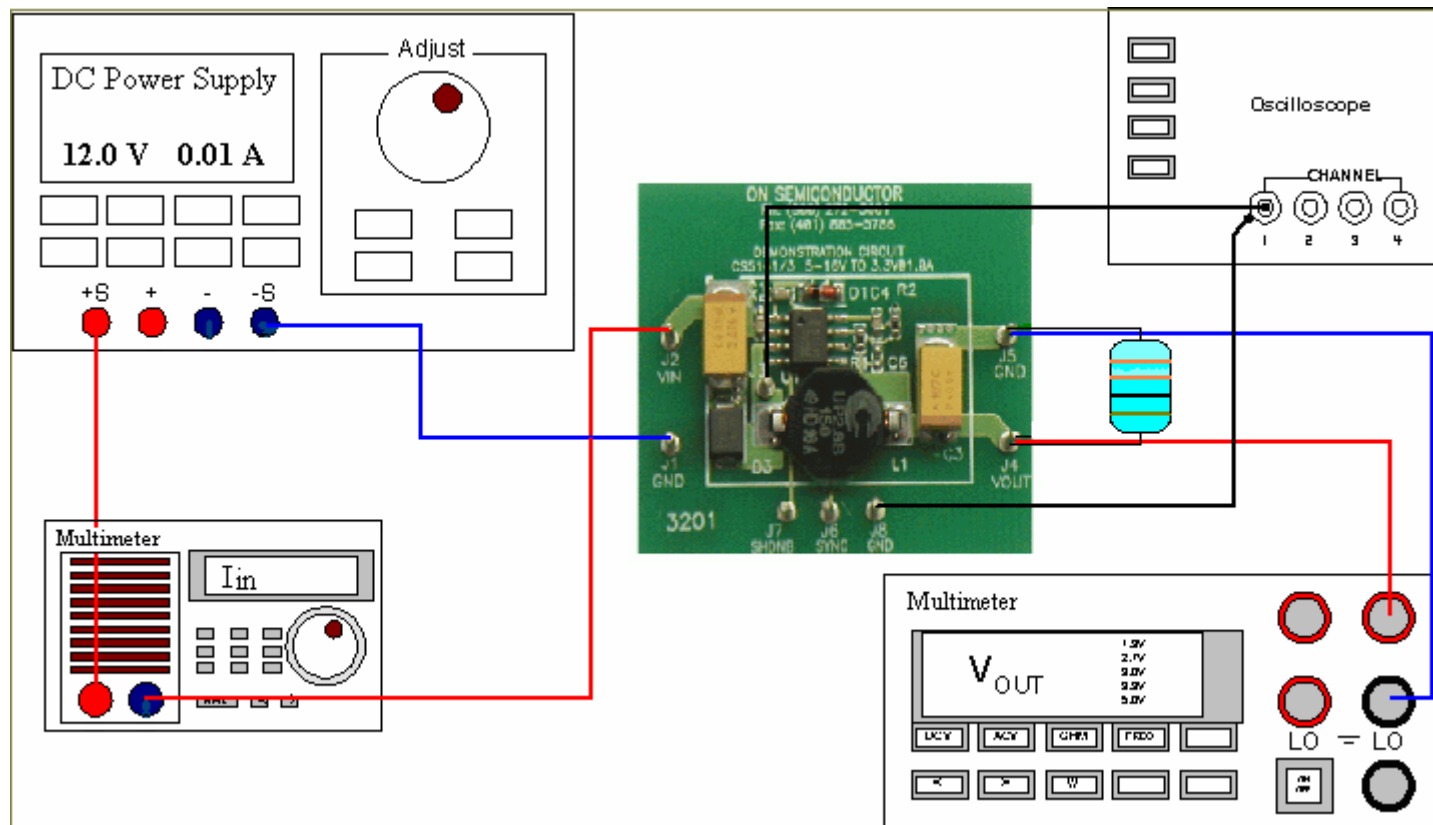


Figure 1: Test Setup

**Table 1: Required Equipment**

DC Power Supply	Two Multimeters	Oscilloscope
100 mA load (33 $\Omega$ resistor or electronic load)	1 A load (3.3 $\Omega$ resistor or electronic load)	CS51411 demo board

\*Note: Resistor loads heat up quickly at higher input voltages.

**Test Procedure:**

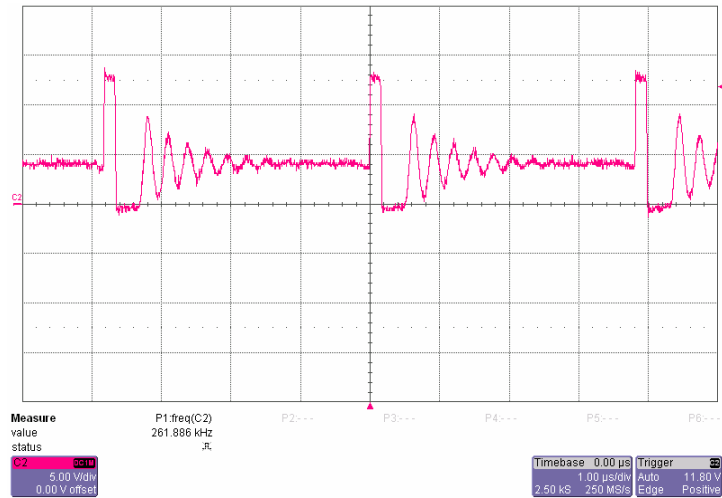
**Equipment set up (see Figure 1):**

- 1. Connect DC power supply to positive  $V_{in}$  (J2) and GND (J1).**
- 2. Connect multimeter to measure  $I_{in}$ .**
- 3. Connect another multimeter across J4 (+) and GND (J5) to measure  $V_{out}$ .**

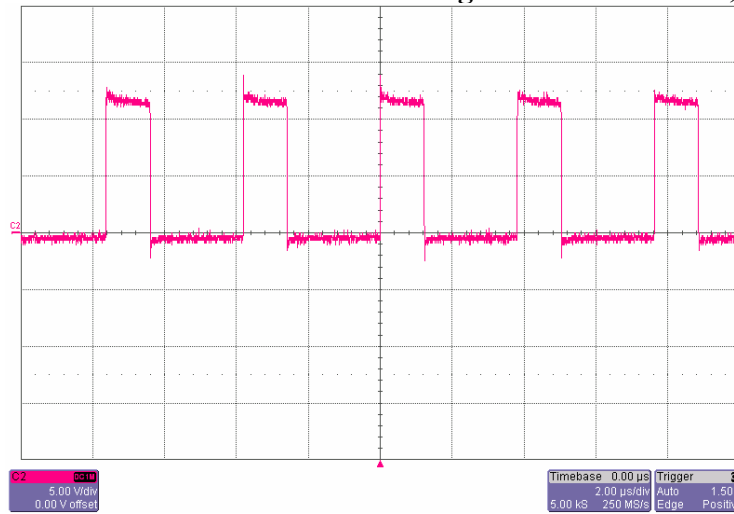
**Test procedure:**

- 4. Set current limit low on power supply and slowly increase  $V_{in}$  to 6 V.**
- 5. At this point the board should be switching. Check the switch node (J3) with the Oscilloscope.**
- 6. Check  $0 \text{ mA} \leq I_{IN} \leq 50 \text{ mA}$ .**
- 7. Increase  $V_{in} = 12 \text{ V}$ .  $V_{out}$  should be around 3.8 V.**

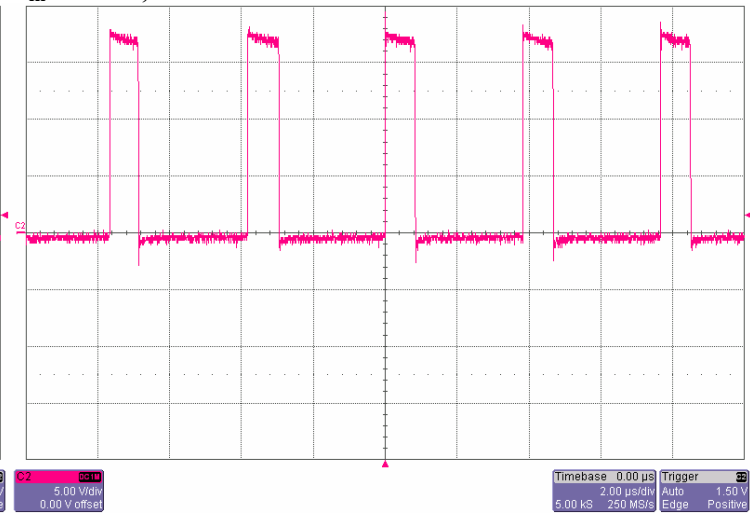
- 8. Connect a 100 mA load (33  $\Omega$  resistor) across J4 and J5.**
- 9. Check  $V_{\text{out}} = 3.3$  V. Check switch node (Figure 2). Frequency should be around 260 kHz.**
- 10. Connect a 1 A load (3.3  $\Omega$  resistor) across J4 and J5.**
- 11. Check  $V_{\text{out}} = 3.3$  V. Check switch node (Figure 3). Frequency should be around 260 kHz.**
- 12. Note  $I_{\text{in}}$ .**
- 13. Short the output.  $I_{\text{in}}$  should be between 0 and  $I_{\text{in}}$  with 1 A load.**
- 14. Increase  $V_{\text{in}} = 16$  V.**
- 15.  $V_{\text{out}} = 3.3$  V. Note improved switch node duty cycle (Figure 4). Frequency should remain around 260 kHz.**
- 16. Short the shut down pin, SHDNB (J7). Verify the board turns off (J3).**



**Figure 2: Switch node,  $V_{in} = 12$  V, 100 mA load**



**Figure 3: Switch node,  $V_{in} = 12$  V, 1 A load**



**Figure 4: Switch node,  $V_{in} = 16$  V, 1 A load**