Test Procedure for the NCP1406V25GEVB Evaluation Board

ON Semiconductor®

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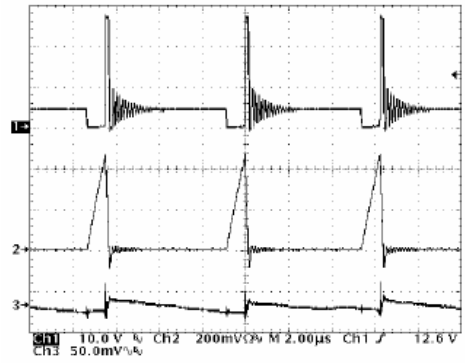
25V Output Version Test Procedure

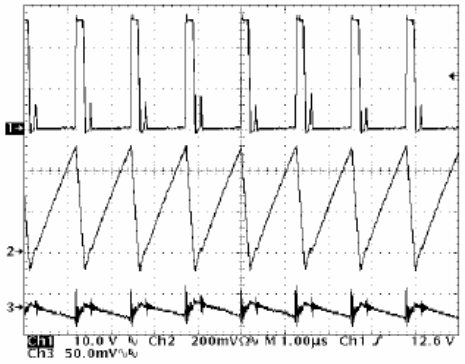
1. Connect a power supply with 4-wire sensing across TP1 and TP2, i.e. V_{IN}.
2. Connect an electronic load across TP3 and TP4, i.e. V_{OUT}.
3. Connect a multi-meter across TP3 and TP4 to monitor the output voltage.
4. Set the JP1 to the "ON" position.
5. Set the power supply voltage to 5V.
6. Set the electronic load to 25 mA.
7. Check V_{OUT}, I_{IN}, and output Vripple:

   V_{OUT} = 24.4 V to 25.6 V,
   I_{IN} = 140 mA to 160 mA,
   Vripple ~ 40 mVpp.
7. Check the switching waveform at scope to see whether it is a normal discontinuous conduction mode switching node voltage waveform. See Figures 1 and 2 for examples.
8. Set the JP1 to the "OFF" position. Check that there is no switching at the switching node and the V_{OUT} is equal to V_{IN} minus a Schottky diode forward voltage.
9. Set the JP1 back to the "ON" position and check that the V_{OUT} is normal as before.



L1 = 8.2 µH, C1 = 10 µF, C2 = 3.3 µF, V_{IN} = 4.2 V,
V_{OUT} = 25 V, I_{OUT} = 5.0 mA
1. V_{LX}, 10 V/div
2. I_L, 200 mA/div
3. V_{ripple}, 50 mV/div

Figure 1. Low Load Switching Waveforms Example



L1 = 8.2 µH, C1 = 10 µF, C2 = 3.3 µF, V_{IN} = 4.2 V,
V_{OUT} = 25 V, I_{OUT} = 30 mA
1. V_{LX}, 10 V/div
2. I_L, 200 mA/div
3. V_{ripple}, 50 mV/div

Figure 2. High Load Switching Waveforms Example