Test Procedure for the NCP114MXTCGEVB Evaluation Board

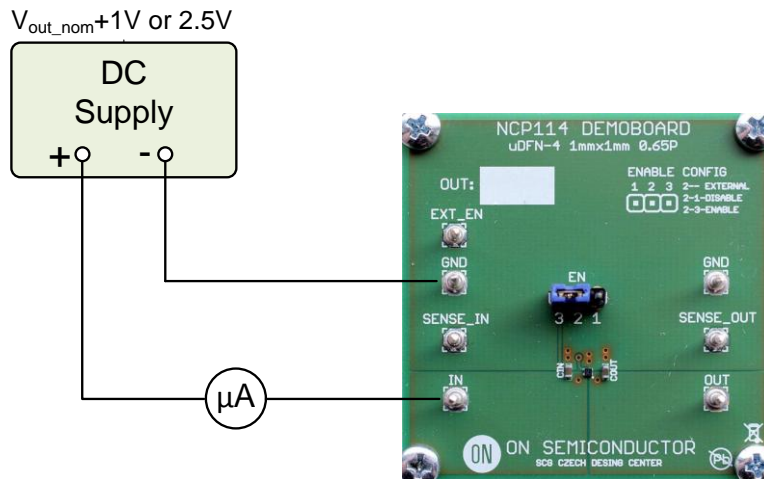## 1. QUIESCENT CURRENT

V_{out_nom}+1V or 2.5V

Figure 1: Test configuration for measurement I_Q, Quiescent Current

1. Connect circuit as shown figure on 1
2. Apply voltage at $V_{Input.}$ Default test V_{input} is V_{out_nom}+1 V or 2.5 V whichever is greater
3. Value shown µA meter is measured quiescent current.
4. Measurement is finished. Disconnect supply voltage.

Note – Be carefully if any device is connected on output, because leakage current can affect measurement accuracy.
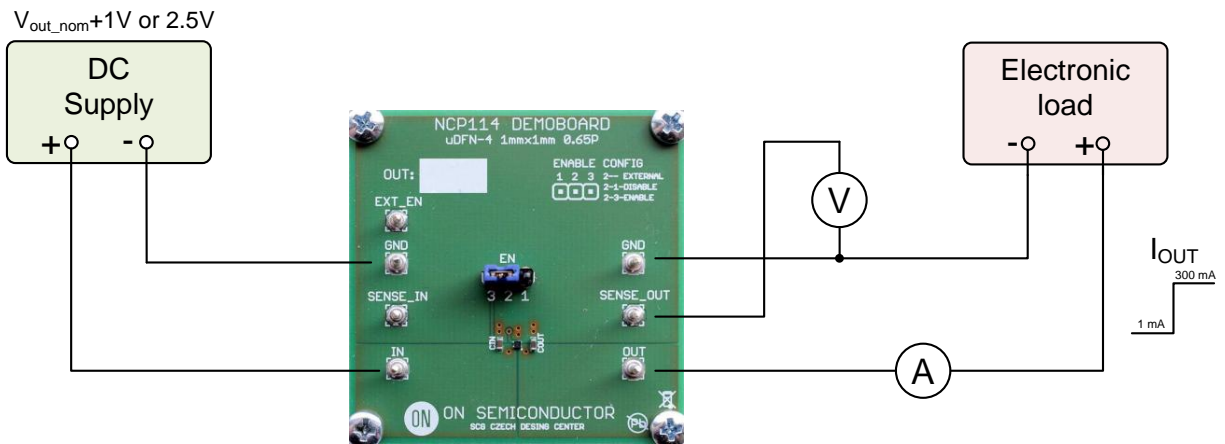
2. LOAD REGULATION

Figure 2: Test configuration for measurement REG_{LOAD}, Load Regulation

1. Connect circuit as shown figure on 2
2. Apply voltage at $V_{Input.}$ Default test V_{input} is V_{out_nom}+1 V or 2.5 V whichever is greater
3. Set minimal required current I_1, e.g. 1 mA, and switch load ON.
4. Note the value V1 from voltmeter Vo.
5. Switch load OFF and set maximal required current I2, e.g. 300 mA and switch load ON.
6. Note the value V2 from voltmeter Vo.
7. Load regulation is obtained via following formula: $REG_{LOAD}=(V_1-V_2)$, [V]
8. Measurement is finished. Disconnect supply voltage.
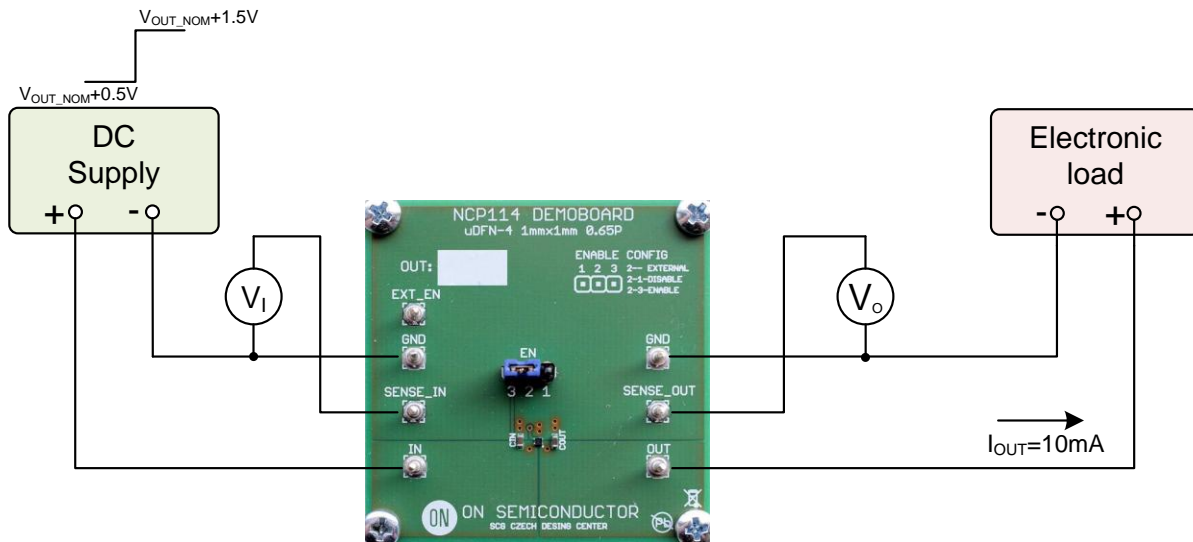
3.   LINE REGULATION

Figure 3: Test configuration for measurement REG$_{LINE}$, Line Regulation

1.   Connect circuit as shown on figure 3
2.   Set load to the required current e.g. 10 mA
3.   Set minimal input voltage V$_{I1}$, V$_{OUT\_NOM}$+1V or 2.5V whichever is greater
4.   Note the value V$_{I1}$ and V$_{O1}$.
5.   Set maximal input voltage V$_{I2}$ = 5.5 V
6.   Note the value V$_{I2}$ and V$_{O2}$.
7.   Load regulation is obtained via following formula: REG$_{LINE}$=(V$_{O1}$-V$_{O2}$)/(V$_{I1}$-V$_{I2}$), [V/V]
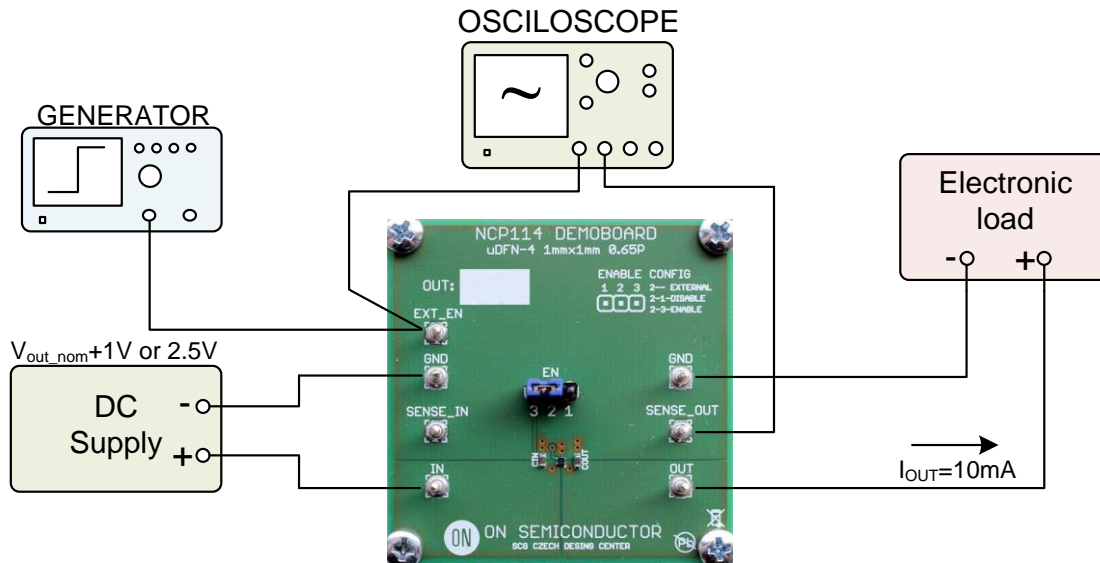8.   Measurement is finished. Disconnect supply voltage.

4. ENABLE START-UP

Figure 4: Test configuration for measurement enables response

1. Connect circuit as shown on figure 4
2. Set generator to SQUARE PULSE, $0.9 \leq$ AMPLITUDE $\leq V_{IN}$, FREQUENCY=10Hz, DUTY=10%
3. Apply voltage at V_{Input}. Default test V_{input} is V_{out_nom}+1 V or 2.5 V whichever is greater
4. Set required IOUT, e.g. 10 mA
5. Connect oscilloscope to EN signal and V_{OUTPUT}.
6. Watch enable response of the regulator after asserting EN pin.
7. Measurement is finished. Disconnect supply voltage.