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## Test Procedure for the NCP152MXTCGEVB Evaluation Board

There is a collection test procedures for NCP152 demoboards. This paper offers some helpful test configuration for first contact with ONSEMI NCP152 LDO.

### 1. QUIESCENT CURRENT

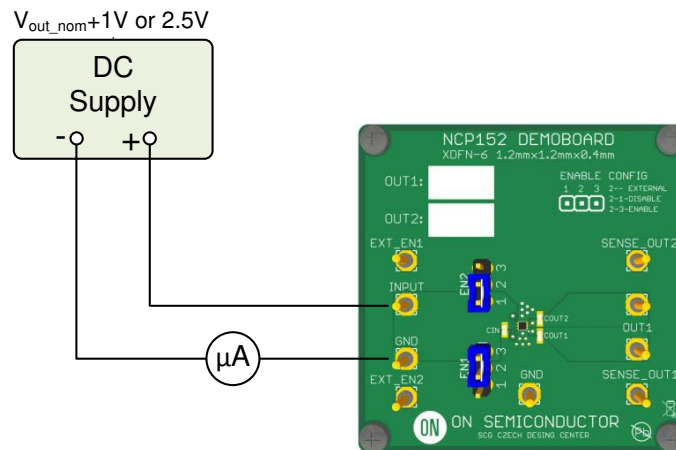


Figure 1: Test configuration for measurement  $I_Q$ , Quiescent Current

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  $\mu A$  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

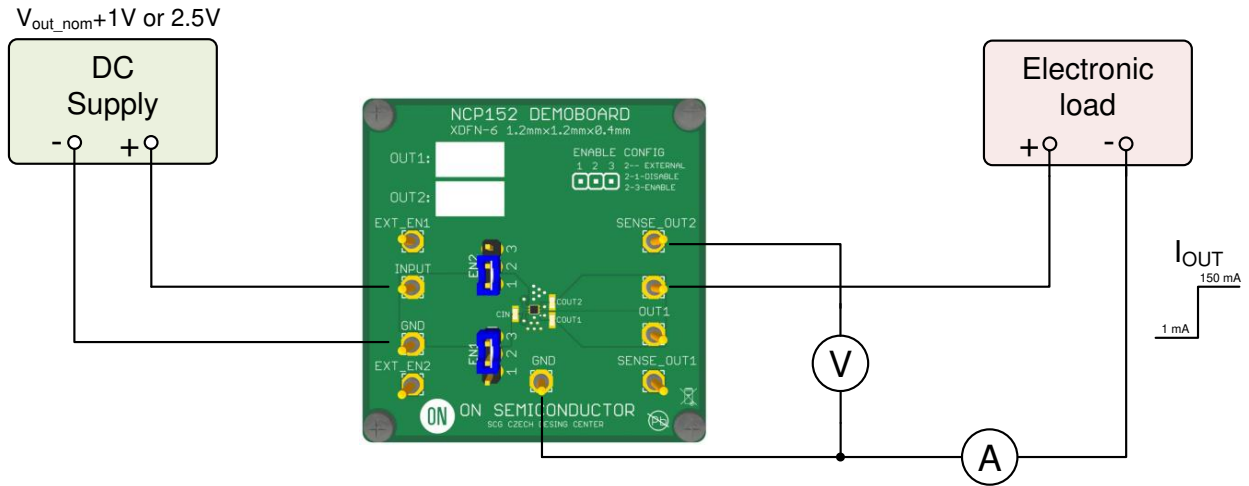


Figure 2: Test configuration for measurement  $REG_{LOAD}$ , Load Regulation

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  $V_1$  from voltmeter  $V_o$ .
5. Switch load OFF and set maximal required current  $I_2$ , e.g. 150 mA and switch load ON.
6. Note the value  $V_2$  from voltmeter  $V_o$ .
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

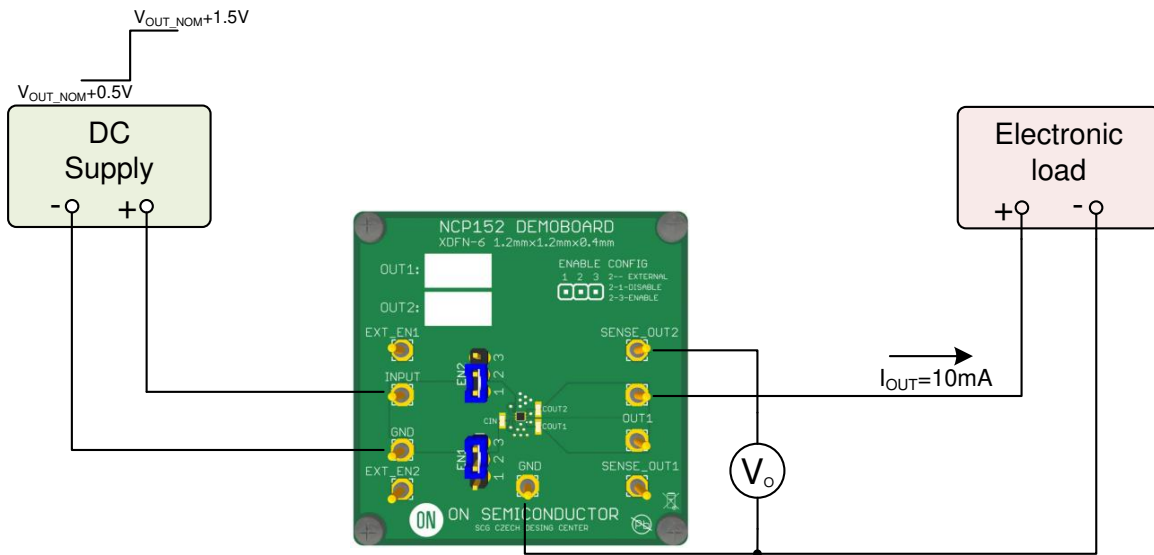


Figure 3: Test configuration for measurement REG<sub>LINE</sub>, Line Regulation

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<sub>I1</sub>, V<sub>OUT\_NOM</sub>+1V or 2.5V whichever is greater
4. Note the value V<sub>I1</sub> and V<sub>O1</sub>.
5. Set maximal input voltage V<sub>I2</sub> = 5.5 V
6. Note the value V<sub>I2</sub> and V<sub>O2</sub>.
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

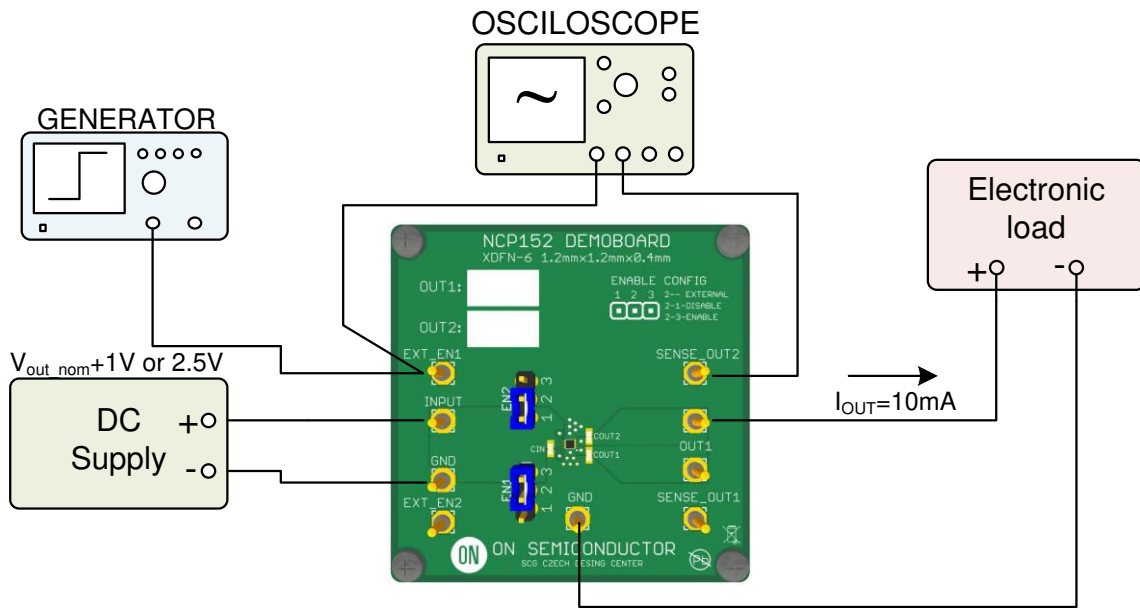


Figure 4: Test configuration for measurement enables response

1. Connect circuit as shown on figure 4
2. Set generator to SQUARE PULSE,  $0.9 \leq \text{AMPLITUDE} \leq V_{IN}$ , FREQUENCY=10Hz, DUTY=10%
3. Apply voltage at  $V_{Input}$ . Default test  $V_{Input}$  is  $V_{out\_nom} + 1\text{ V}$  or  $2.5\text{ V}$  whichever is greater
4. Set required  $I_{OUT}$ , 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.