

Test Procedure for the NCP1605 Forward Evaluation Board

ON Semiconductor



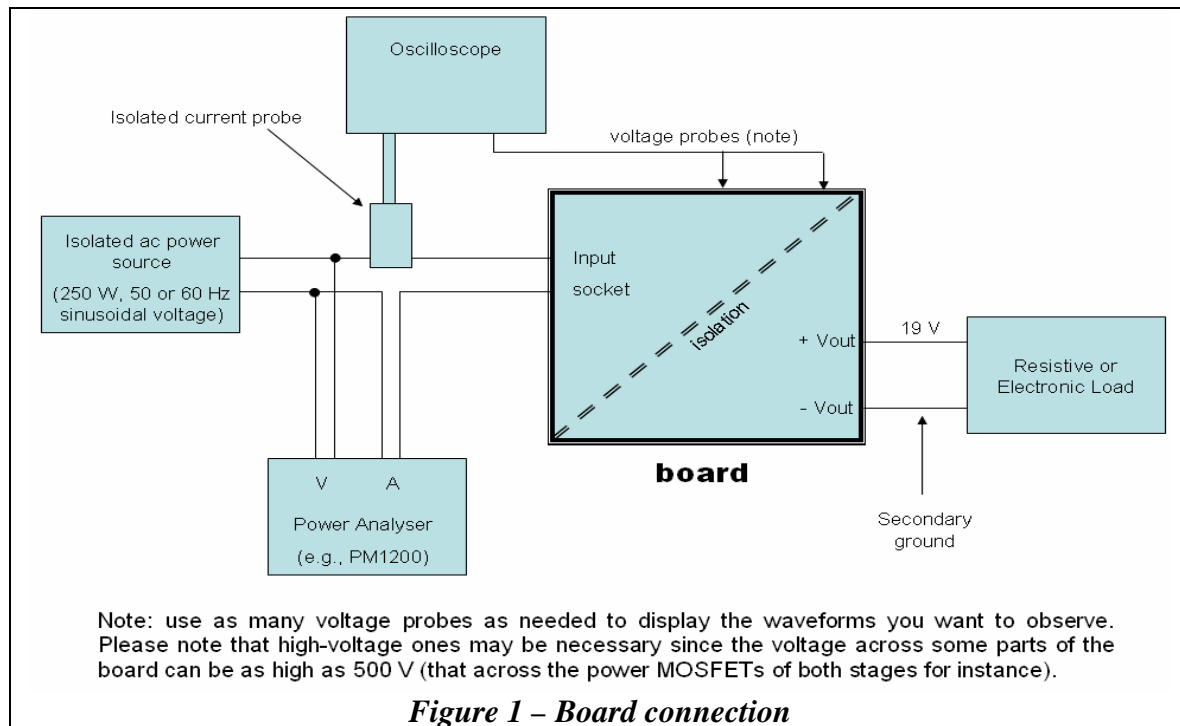
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Test Procedure

1. Apply a resistive or an active load across the output (between the “+V_{OUT}” and “-V_{OUT}” terminals of the board). This load must be able to draw 12 A from 19 V (use a 25 V or more voltage load for a safe headroom).
2. To evaluate the board performance, it is recommended to place a power analyzer able to measure:
 - The power delivered by the power source (“Pin”),
 - The power factor (“PF”) and the Total Harmonic Distortion (“THD”) of the current absorbed from the ac power source.

As portrayed by figure 1, this power-meter should be inserted between the power source and the board (the power source being defined in next point).

3. Plug the application to a 250 W or more, isolated ac power source. This source that is applied, is supposed to simulate the line utility. Hence, the power source voltage should be a 50 or 60 Hz sinusoid (without dc component). Its magnitude must remain below 265 V_{rms}.
4. You can then measure the board performance presented in ANDxxxx. Among them, we can list:
 - Apply 120 V_{rms} and load the output with 8 A
 - i. The output voltage should be between 18.5 and 19.5 V.
 - ii. The power factor should be higher than 0.990
 - iii. The input power should be less than 190 W
 - Decrease the load current. When I_{OUT} is below 0.25 A, the PFC stage should have entered skip mode. You can check it by observing the line current that must be bursting.
 - Increase the load current until 19 V output voltage drops. The load current should be less than 12 A and the power supply should be hiccupping. Again, you can check this by observing the line current. This test must be very short to avoid any excessive heating of the board (designed for I_{OUT} = 8 A). Immediately stop the test if the power supply does not enter hiccup mode while I_{OUT} is 12 A.



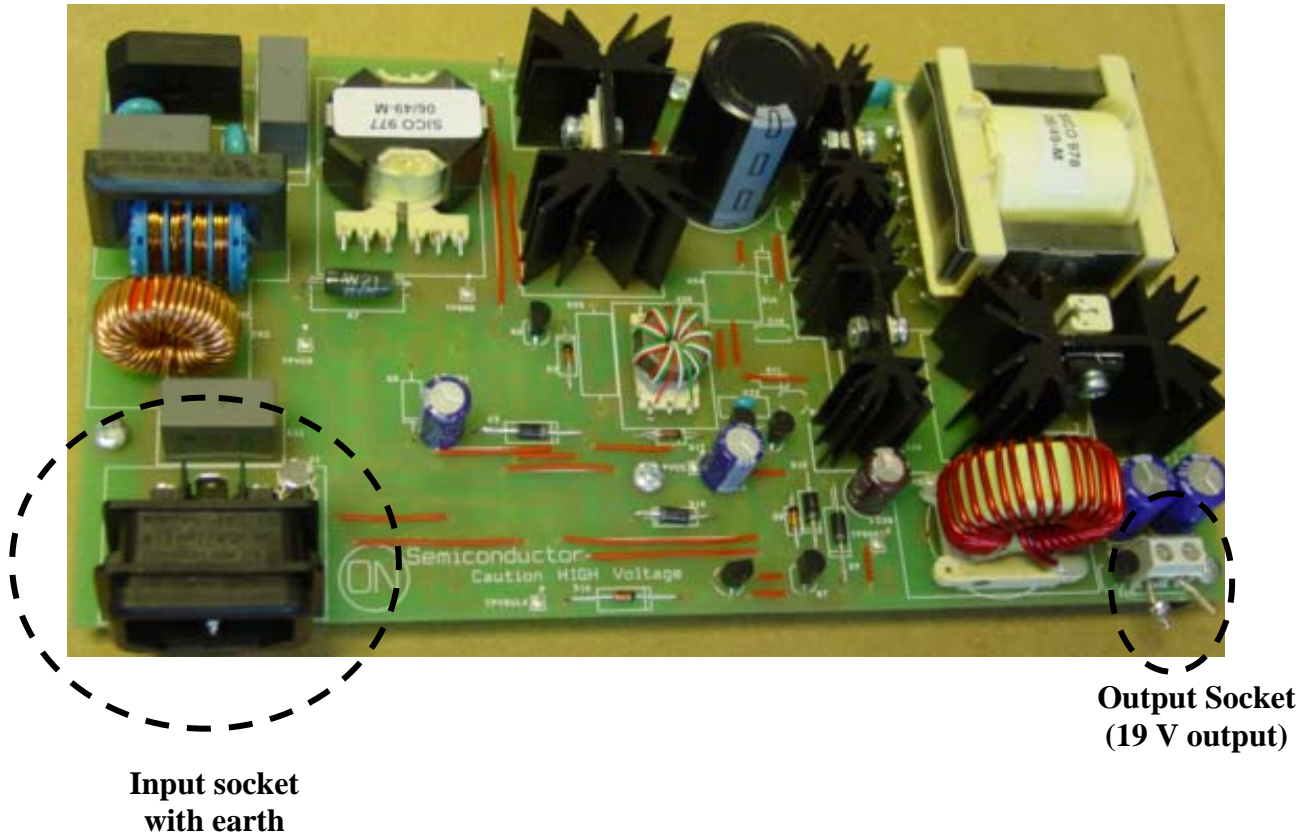


Figure 2 – Board

The board contains high voltage, hot, live parts. Only persons skilled in the art of power electronics should manipulate or test it. Be very cautious when doing so. It is the responsibility of those who receive the board to take all the precautions to avoid that themselves or other people are injured by electric hazards or are victim of any other pains caused by the board.