



ON Semiconductor

## Test Procedure for the NCP1622GEVB Evaluation Board

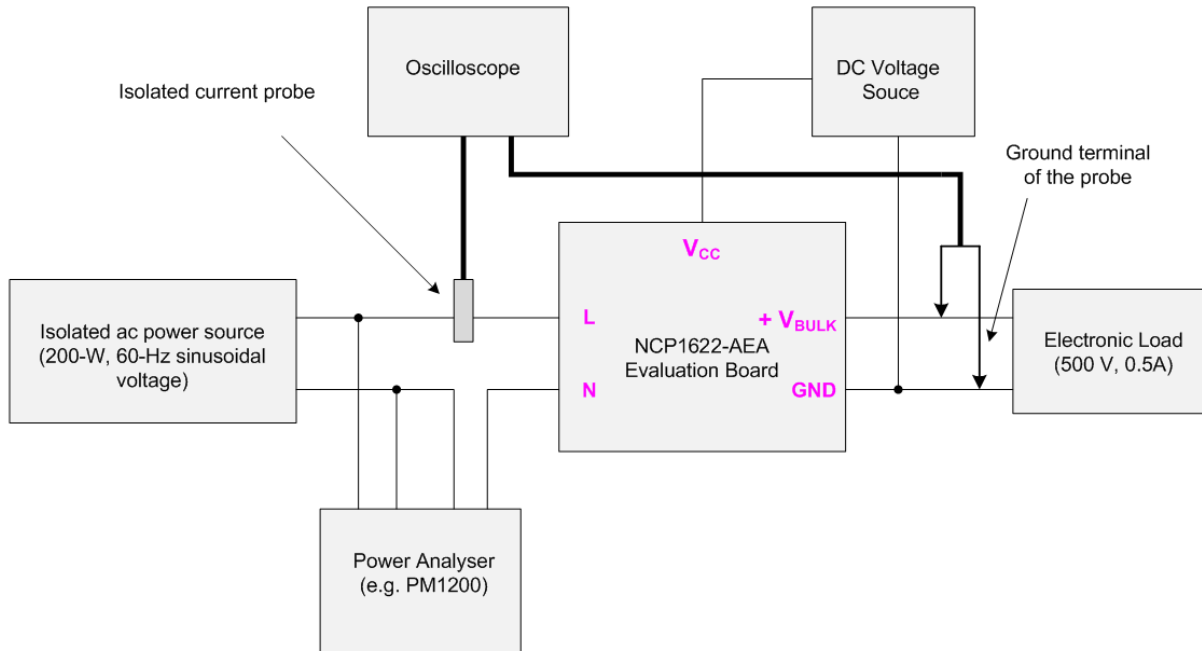


Figure 1. Set-up for board testing

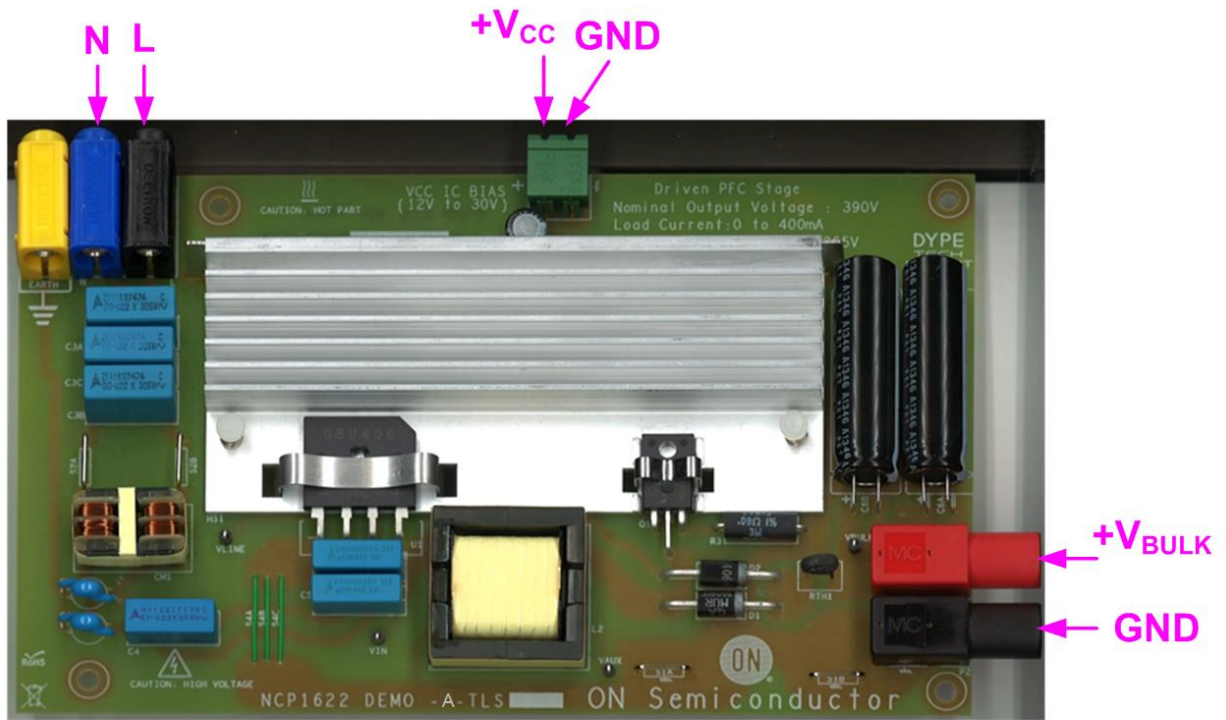


Figure 2. Tested Evaluation Board

## Equipments for measurement

The board testing set-up is shown in Figure 1 and the tested board in Figure 2.

- Apply an electronic load across the output (between the “V<sub>BULK</sub>” and “GND” terminals of the board). This equipment will adjust the current I<sub>LOAD</sub> that loads the evaluation board.
- Apply a 200-W or more, 60-Hz, isolated ac power source to the “L” and “N” inputs of the evaluation board. This source will adjust the sinusoidal input voltage, V<sub>in</sub>, that is applied to the evaluation board. The rms value of V<sub>in</sub> must stay below 265 V.
- Apply a 20-V dc source with a 50-mA clamp current between the V<sub>CC</sub> and GND terminals of the evaluation board.
- Place a power analyzer able to measure the power factor (“PF”) and the Total Harmonic Distortion (“THD”) of the current absorbed from the ac power source.
- Place an oscilloscope current probe on the wire connected to the “L” input of the evaluation board to monitor the input current waveform.

## Measurements

- VBULK,PF and THD measurements

Parameters	Comments	Limits
V <sub>in,rms</sub> = 115 V, I <sub>LOAD</sub> = 0.1 A		
V <sub>BULK</sub>	Voltage measured between “V <sub>BULK</sub> ” and “GND”	390 V < V <sub>BULK</sub> < 410 V
PF	Power Factor	> 0.930
THD	Total Harmonic Distortion	< 25%
V <sub>in,rms</sub> = 115 V, I <sub>LOAD</sub> = 0.4 A		
V <sub>BULK</sub>	Voltage measured between “V <sub>BULK</sub> ” and “GND”	390 V < V <sub>BULK</sub> < 410 V
PF	Power Factor	> 0.990
THD	Total Harmonic Distortion	< 15%
V <sub>in,rms</sub> = 230 V, I <sub>LOAD</sub> = 0.4 A		
V <sub>BULK</sub>	Voltage measured between “V <sub>BULK</sub> ” and “GND”	390 V < V <sub>BULK</sub> < 410 V
PF	Power Factor	> 0.950
THD	Total Harmonic Distortion	< 20%

## Static OVP

Observe that when the I<sub>LOAD</sub> is reduced to zero, the V<sub>BULK</sub> node is still regulating within the 390-410-V range

### \*\*\*WARNING\*\*\*

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**The board contains high-voltage and hot, live parts. It should only be handled by experienced power supply professionals. Be very cautious when manipulating or testing it. It is the responsibility of the boards users to take all the precautions to avoid electric hazards and any other pains.**

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