Test Procedure for the NCP1013ADAPGEVB Evaluation Board

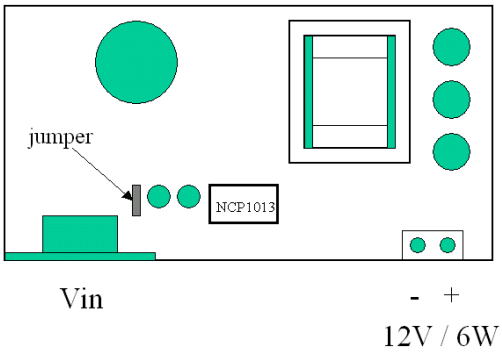

Figure 1 Top view of NCP1013 demo board, marked MIC1782

MIC1782 represents an application example for a 6W AC/DC adapter. Nominal voltages (at no load) are 12V. It is a universal mains AC/DC adapter.

The following steps detail the test procedure for all this board:

☠Be careful when manipulating the boards in operation, lethal voltages up to 700V are present on the primary side. An isolation transformer is also recommended for safer manipulations.

Necessary Equipment:

1 Current limited 230V_{rms} AC source (current limited to avoid board destruction in case of a defective part) or a 350V_{DC} source (also current limited ≈ 200mA)
1 DC volt-meter able to measure up to 20V DC. A hand-held device, e.g. a FLUKE
1 DC amp-meter able to measure up to 5A DC. Again, a hand-held device, e.g. a FLUKE
1 25Ω/10W resistor

The board is operated ***without*** the J1 jumper / shunt (jumper is removed for the test).

1. Make sure there is an insulated jumper wire along the silkscreen line labeled “strap” located near the output terminal block. If there is not, one must be added for the board to function properly.
2. Apply 230V AC over the board AC inlet. Output pins Vout (+) and Ground (-) are left floating.
3. Measure the output voltage between pins +V_{out} et Ground with a volt-meter on the 12V range (normally 12.2V ± 5%).
4. Connect the 25Ω/10W resistor between pin +V_{out} et Ground. Verify that the output voltage stays above 12V. Beware of the resistor that gets hot during the measurement (P = 6W).
5. Now decrease the input voltage down to 90VAC and check that bullet 3 is also ok.
6. Disconnect the resistor. Now connect the amp-meter (5A DC range) between pins +Vout et Ground. You actually create a short which shall trigger the protection circuitry. As a result, the output current you read shall be less than 1A DC. The reading is unstable by nature, this is normal and due to the burst operation.
7. Remove the mains and keep a few seconds bullet 5 (short-circuit) to discharge the bulk capacitor

If every step is going well, the board is considered to be ok.