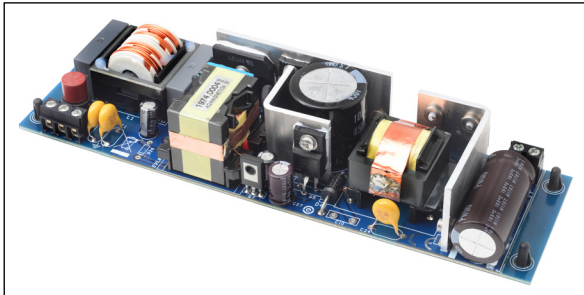


80W-1A primary side current loop control LED driver with STCH03 for street lighting applications

Data brief



Features

- Input voltage: V_{in} : 90 - 265 Vrms, f: 45-66 Hz
- LED string range: [40 -80] V / 1A
- Output current ripple < 50 mA
- Fast startup: <300 ms
- High power factor, low THD (<5%)
- No-load: < 0.5 W @ 230 V_{in}
- Average Full load efficiency: >90%
- Short-circuit protection with auto-restart
- LED string open with auto-restart
- Acc.to EN61000-3-2 Class-C or JEITA-MITI Class-C
- EMI: Acc. To EN55022 class B - conducted emissions
- Safety: Acc. to EN60065C

Description

The EVL80WLED-STCH03 demonstration board implements a wide range 80 W - LED driver for street lighting applications with a primary current sensing control loop.

The LED driver is a fixed current source with a very fast start-up time, protections to short-circuit and to open load. The board is optimized to supply an LED string load in the range from 40 V to 80V with a fixed 1 A current source with a very low current ripple.

Due to current primary side STCH03 control loop, the output stage is composed of a simple diode rectification and the output capacitor.

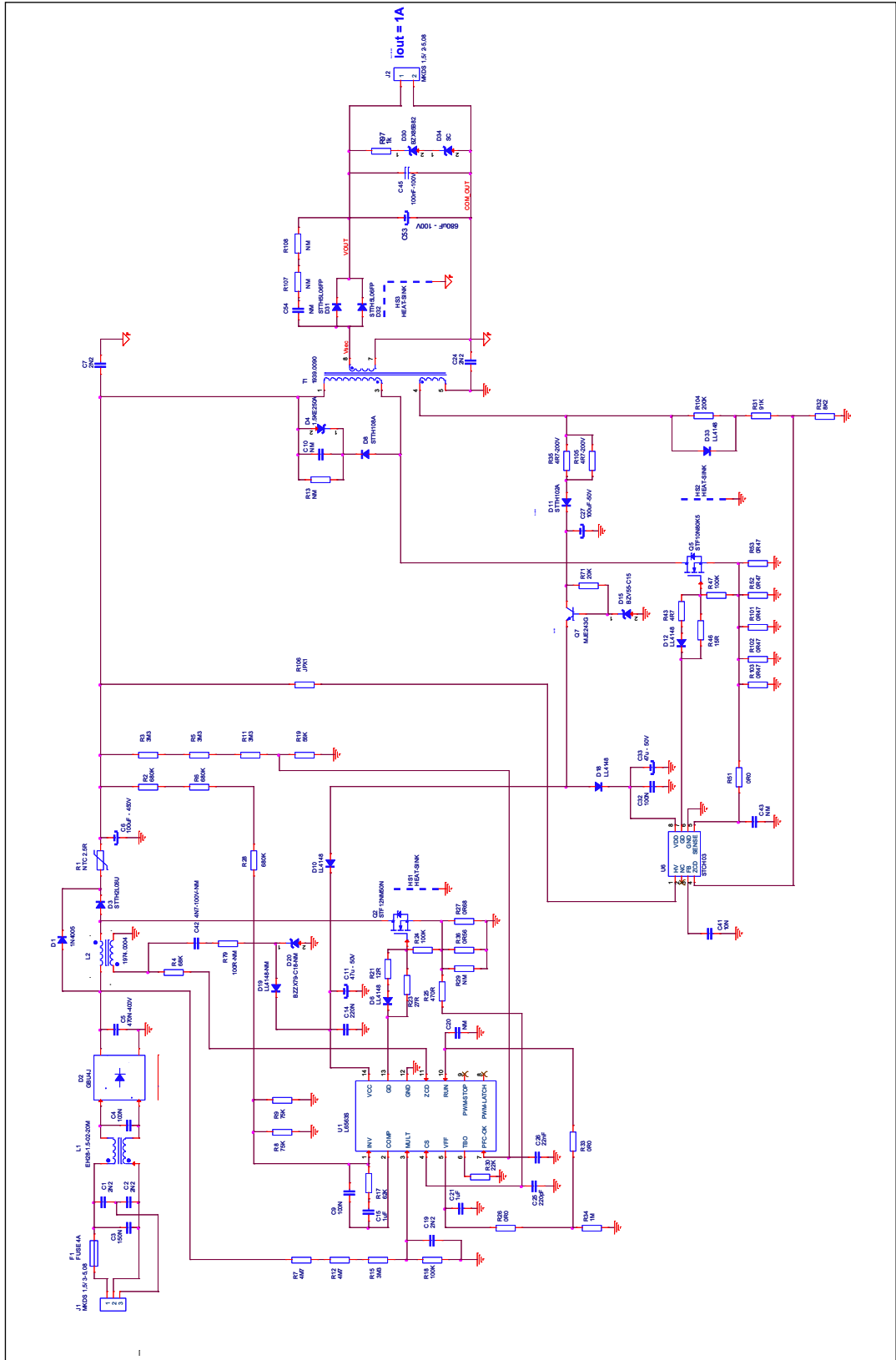
Form factor is compatible with street lighting application.

At full load the efficiency is above the 90% at nominal voltages and remains very close to this value till half the load.

Output short-circuit and no-load protections are auto-restart for a safe operation in lighting environment.

Low input power is there at no-load conditions.

Figure 1. EVL80WLED-STCH03 schematics



1 Efficiency and THD

Figure 2. Efficiency vs. Vin

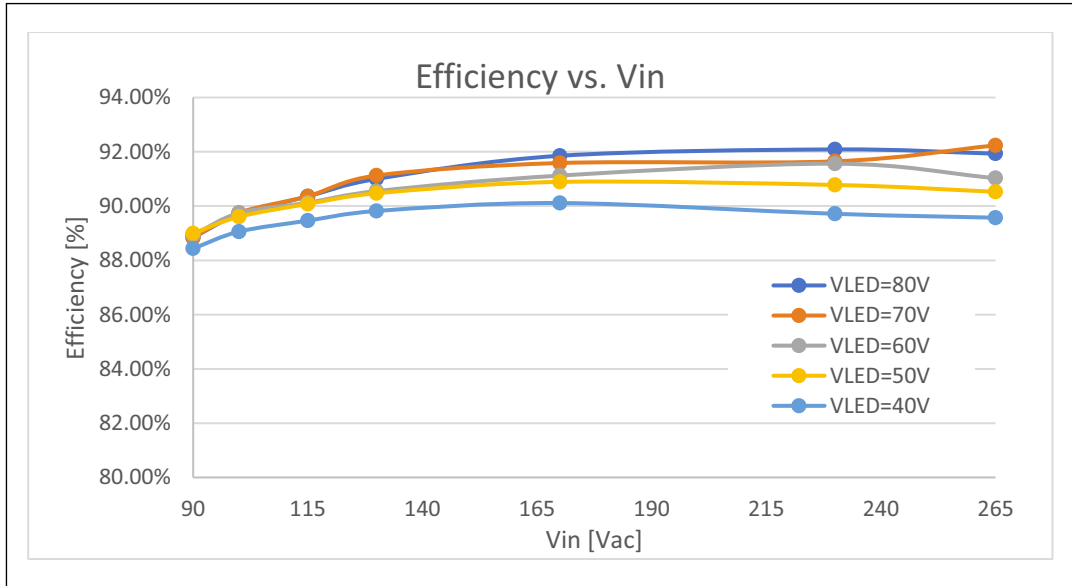
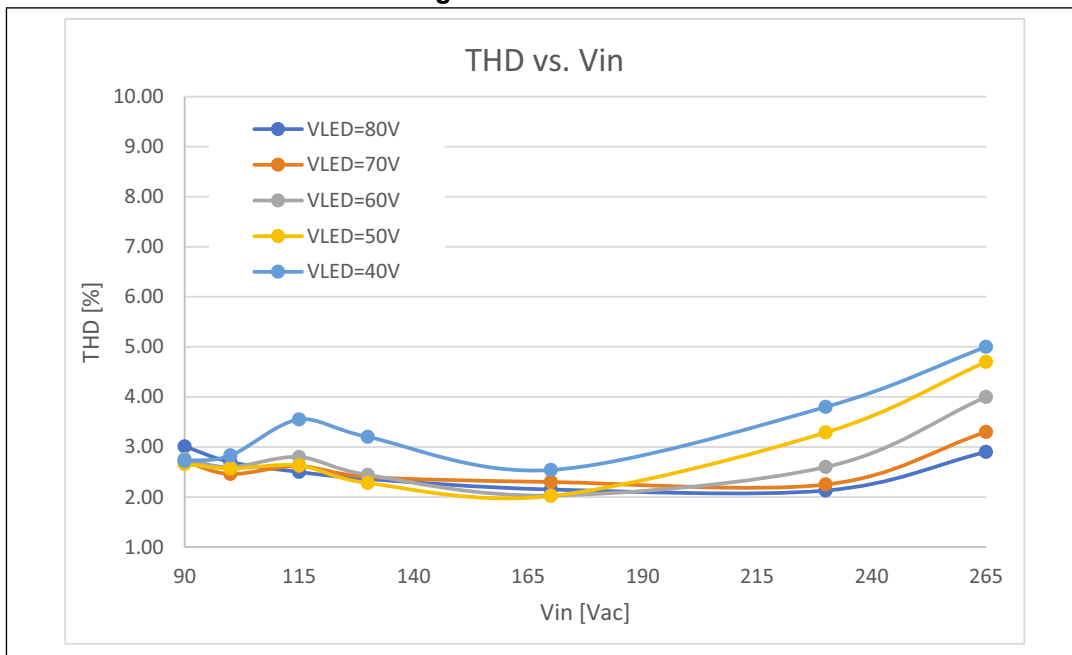
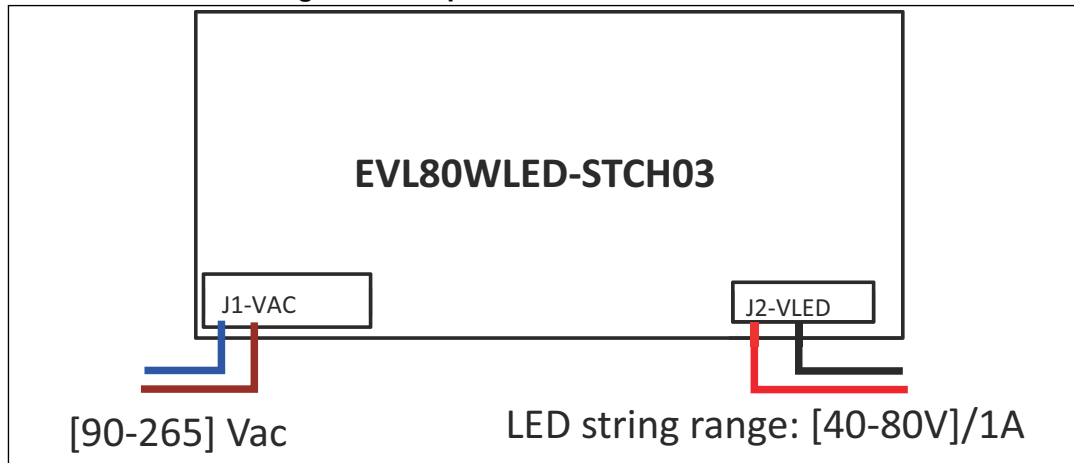


Figure 3. THD vs. Vin



2 Board description

Figure 4. Jumpers and connectors location



3 Waste and recycling

The evaluation board is not to be disposed of as urban waste. At the end of its life cycle, differentiated waste collection must be followed. Consult local authorities for more information on the proper disposal channels. It is mandatory to separately collect the evaluation board and make sure it is delivered to the appropriate waste management and recycling centers.

As of 15 August 2018, in all countries belonging to the European Union, the evaluation board is subject to the WEEE Directive 2012/19/EU requirements and therefore it is forbidden to dispose of the evaluation board as undifferentiated waste or with other domestic waste. Consult local authorities for more information on the proper recycling centers.

Disposing of the evaluation board incorrectly may cause damage to the environment and may be subject to fines based on the rules of specific countries.

4 Revision history

Table 1. Document revision history

Date	Revision	Changes
05-Aug-2019	1	Initial release