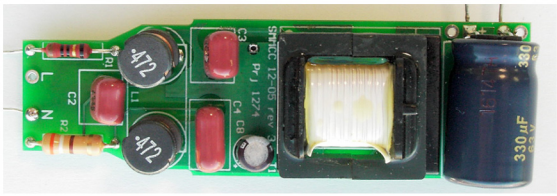
STEVAL-ILL044V1

9 W Triac dimmable, high power factor, isolated LED driver based on the HVLED815PF (for US market)

Databrief

Features

- +/- 5% primary-side current regulation, no optocoupler
- Fully isolated output
- Low component count
- Only 1 tight-tolerance component
- High efficiency, >86%
- High power factor >0.98
- Low THD, < 20% over 90 V to 132 V range
- Fits in 28 mm tubing
- 9 W output, for light equal to range from 40 W to 60 W incandescent
- Startup within 0.2 seconds
- Dimmable over 90 V to 132 V voltage range
- RoHS compliant



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Description

The STEVAL-ILL044V1 demonstration board showcases ST's new LED driver chip, HVLED815PF. It solves the problem of low-cost drive circuitry for LED replacements for 40 W incandescent or equivalent compact-fluorescent lamps.

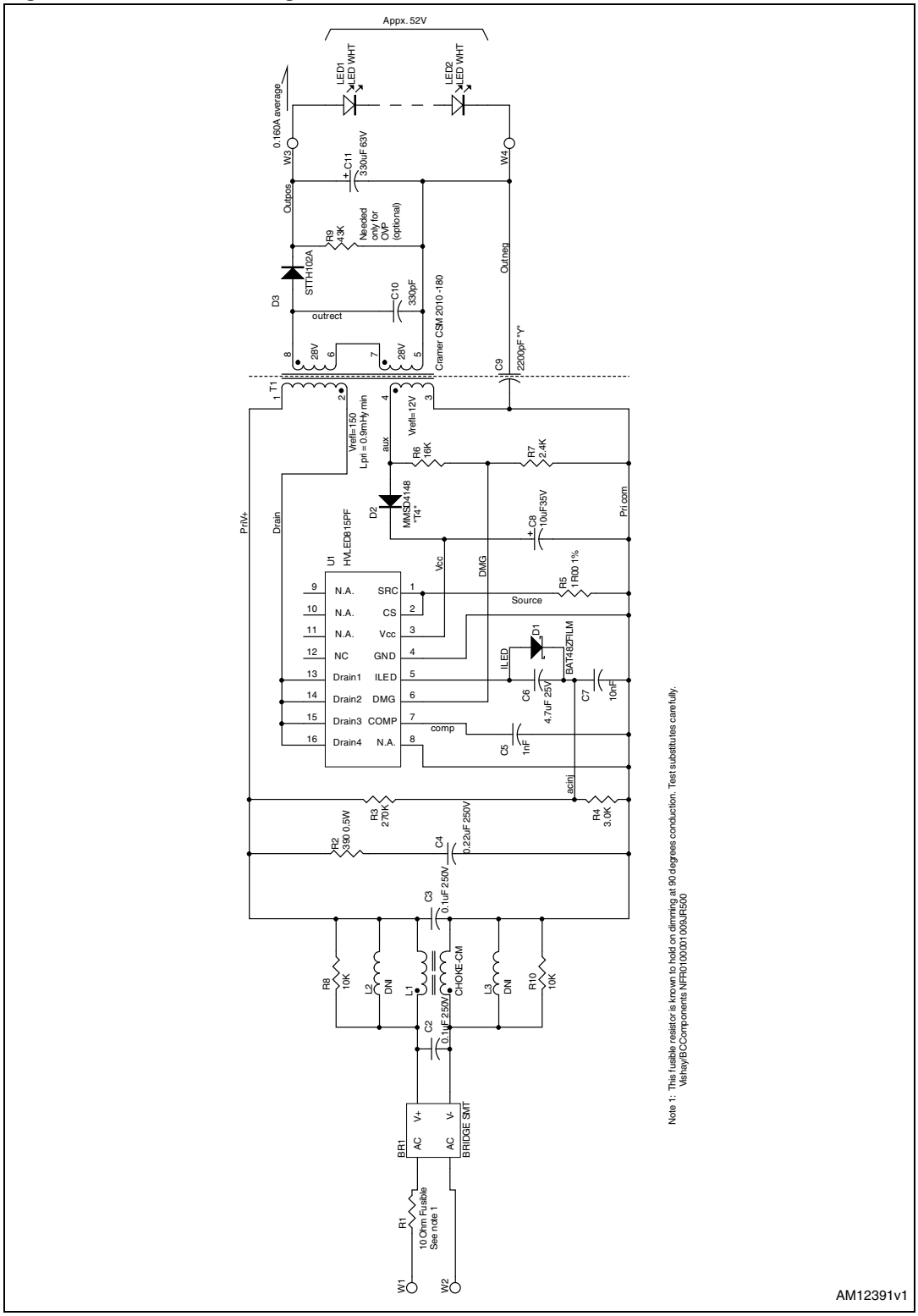
The HVLED815PF is a new integrated power controller using primary-side control to achieve LED current regulation within +/-5%. (It also has primary-side voltage regulation, used here for open load protection).

The device incorporates an 800 V avalanche-rated FET and fits in a standard SO-16 package. An internal startup circuit eliminates the need for external rapid-start circuitry.

The PFC-flyback power converter operates in transition mode for the highest efficiency and best use of components. With the addition of a few extra components the HVLED815PF is made to draw near-sinusoidal input current from the AC line. The circuit regulates LED current over a wide range of line voltage and LED string voltage, and is dimmable with standard Triac-based dimmers.

1 Schematic diagram

Figure 1. Schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
29-Jun-2012	1	Initial release.

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