

## 60 W high power factor flyback LED driver based on the L6562AT and TSM101

Data brief

### Features

- Mains voltage range:  $V_{ACmin} = 185 V_{ac}$ ,  
 $V_{ACmax} = 265 V_{ac}$
- Minimum mains frequency:  $f_L = 47 \text{ Hz}$
- DC output voltage:  $V_{out} = 130 \text{ V}$
- Maximum output current:  $I_{out} = 0.462 \text{ A}$
- Minimum switching frequency:  $f_{SWmin} = 57 \text{ Hz}$
- Reflected voltage:  $V_R = 195 \text{ V}$
- Leakage inductance spike:  $V_{spike} = 100 \text{ V}$
- Expected efficiency: 92 %
- RoHS compliant

### Description

The STEVAL-ILL042V1 demonstration board is a LED power supply in high PF flyback configuration able to drive a 60 W LED array. The board is based on the L6562AT and the TSM101 controller.

This configuration uses an isolated feedback with an optocoupler and a secondary side reference/error amplifier, the TSM101, for voltage and current regulation.

The TSM101 includes two op-amps. One op-amp is used for constant voltage control and the other one for constant current control.

The L6562AT is a PFC controller operating in transition mode. The highly linear multiplier includes a special circuit which is able to reduce AC input current distortion, allowing wide-range mains operation with an extremely low THD, even over a large load range.

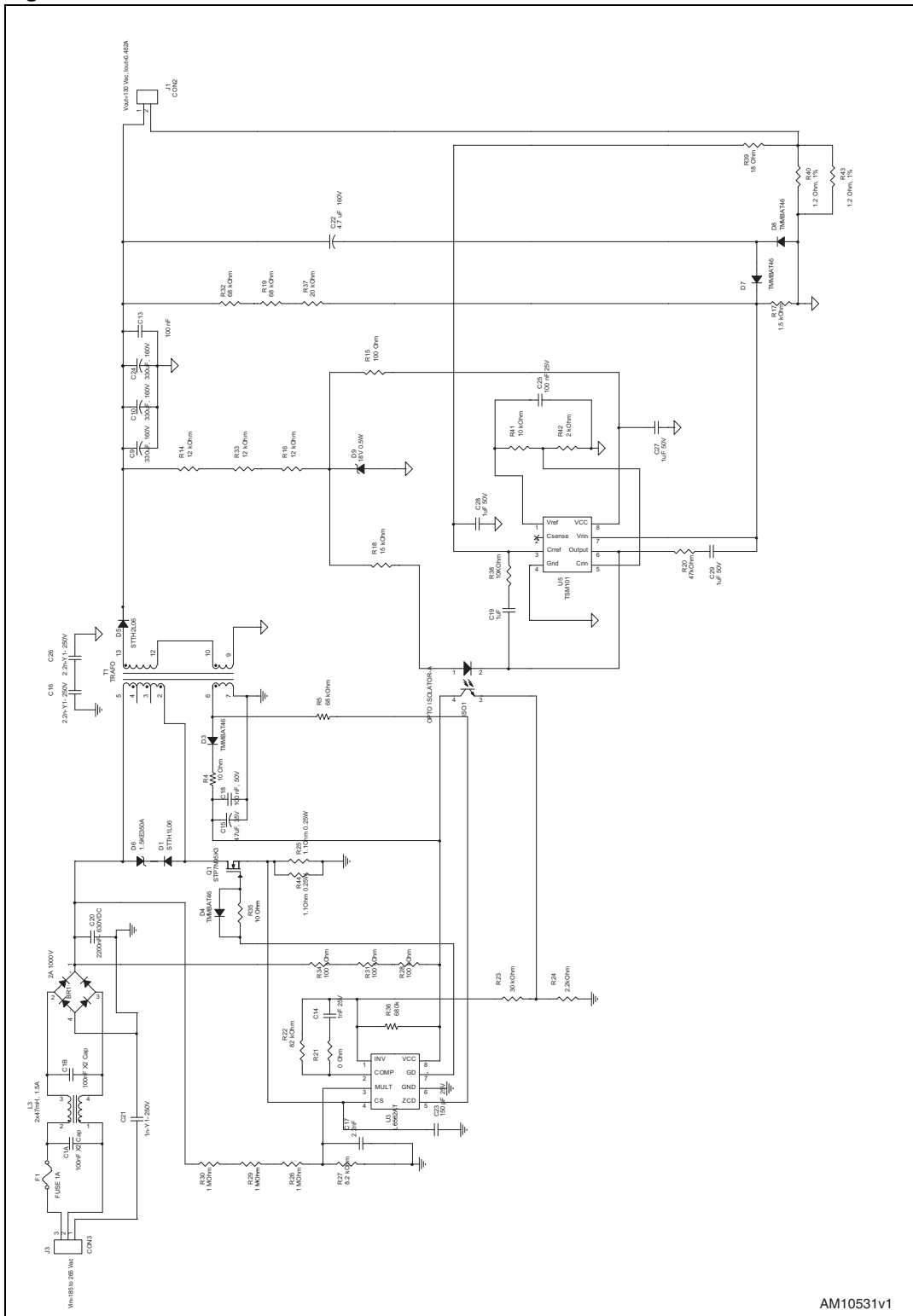
Efficiency is high at heavy load, more than 90% is achievable.

This system, designed using the L6562AT and the TSM101 controller, offers several advantages in terms of output current and voltage stability.



# 1 Schematic

Figure 1. Electrical schematic



## 2 Revision history

**Table 1. Document revision history**

<b>Date</b>	<b>Revision</b>	<b>Changes</b>
28-Sep-2011	1	Initial release.
20-Mar-2012	2	Modified: title of the document

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