

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

Data brief



STEVAL-ILL042V2

Features

- Mains voltage range: $V_{AC(min)} = 185$, $V_{AC(max)} = 265$
- Minimum mains frequency: $f_L = 47$ Hz
- DC output voltage: $V_{OUT} = 130$ V
- Maximum output current: $I_{OUT} = 0.462$ A
- Minimum switching frequency: $f_{SW(min)} = 57$ Hz
- Reflected voltage: $V_R = 195$ V
- Leakage inductance spike: $V_{SPIKE} = 100$ V
- Expected efficiency: 92%
- RoHS compliant

Description

The STEVAL-ILL042V2 demonstration board is an LED power supply in high PF flyback configuration designed 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 for constant current control.

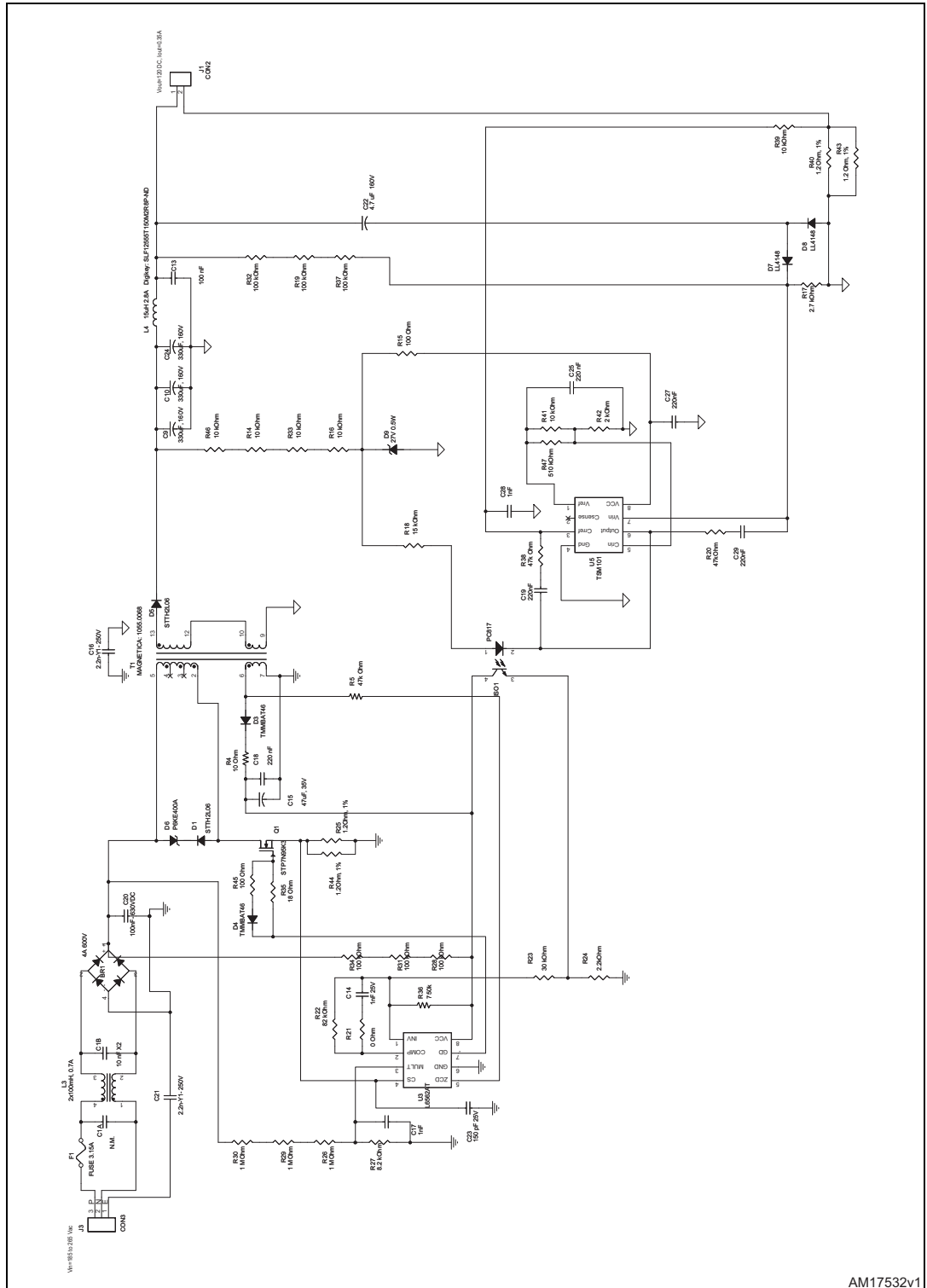
The L6562AT is a PFC controller which operates in transition mode. The highly linear multiplier includes a special circuit which is able to reduce AC input current distortion, allowing wide-range mains operation with an extremely low THD, even over a large load range.

Efficiency is high at heavy load - more than 90% can be achieved.

Designed using the L6562A and the TSM101 controllers, this system offers several advantages in terms of output current and voltage stability.

1 Schematic diagram

Figure 1. STEVAL-ILL042V2 circuit schematic



AM17532v1

2 Revision history

Table 1. Document revision history

Date	Revision	Changes
30-Sep-2013	1	Initial release.

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