



STEVAL-ILL013V1

80 W offline PFC and LED driver demonstration board with dimming based on the L6562A

Data Brief

Features

- 80 W LED driver
- 350 mA, 700 mA and 1 A LED current settings
- High efficiency (~90%)
- Wide input voltage range: 88 V to 265 VAC
- High power factor: 0.982 for 230 V/50 Hz AC
- Universal PWM input for dimming (external board required)
- Non-isolated SMPS
- Brightness regulation between 0 and 100%
- EMI filter implemented
- EN55015 and EN61000-3-2 compliant

Description

The use of high power LEDs in lighting applications is becoming increasingly popular due to rapid improvements in lighting efficiency, longer life, higher reliability and overall cost effectiveness. Dimming functions are more easily implemented in LEDs, and they are more robust and offer wider design flexibility compared to other light sources.

The STEVAL-ILL013V1 demonstration board is an 80 W offline dimmable LED driver with high power factor (PF) intended for 350 mA, 700 mA and 1 A LEDs.

The converter is designed as a constant current source to achieve the best lighting performance from the LEDs, and can be used for lighting applications from low power, low voltage to high power, high voltage. This allows designers to cover a wide range of different LED systems using a single topology.

Additionally, in lighting applications where the input active power is higher than 25 W and a high power factor is required, the high PF converter can be connected as the first stage, before the modified BUCK converter.



This demonstration board design is compliant with standard EN61000-3-2 (limits for harmonic current emissions).

1 Circuit schematic

Figure 1. Schematic diagram

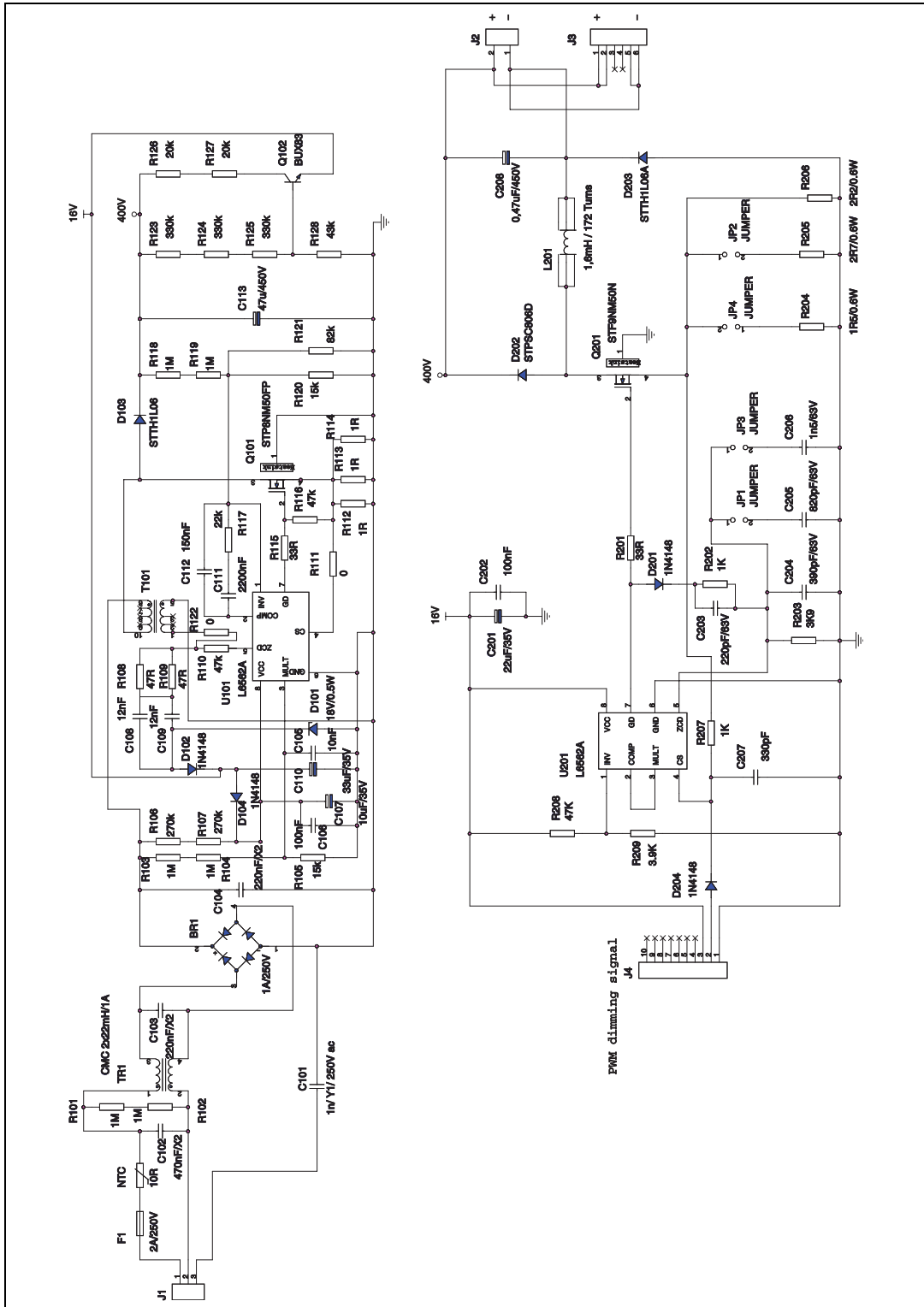


Table 1. Jumpers settings

| I_LED | JP1 | JP2 | JP3 | JP4 |
|--------|-----|-----|-----|-----|
| 350 mA | 0 | 0 | 0 | 0 |
| 700 mA | 1 | 1 | 0 | 0 |
| 1 A | 0 | 0 | 1 | 1 |

2 Revision history

Table 2. Document revision history

| Date | Revision | Changes |
|-------------|----------|------------------|
| 06-Mar-2009 | 1 | Initial release. |

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