

Analog wall dimmer for CFL/LED lamps based on the TS820 (EU version 220 V)

Data brief

Features

- Operation for 2-wire wall dimmer
- Leading-edge control (compatible with all lamps commonly found on the market)
- Operation on 230 V line rms voltage (198 to 264 V) and 50 Hz or 60 Hz line frequency
- Dimmable power range with halogen, CFL and LED lamps (without heatsinks mounted on SCRs^(a)):
 - 3 to 350 W for 230 V rms line
- Maximum operating ambient temperature: 60 °C
- Power efficiency @ 350 W / 230 V > 99%
- Standby losses @ 230 V < 0.5 W (could be reduced to 0 if potentiometer features a mechanical switch to open the circuit at minimum setting)
- RoHS compliant

Compliance with EMC standards

- IEC 61000-4-4: criteria A for more than 2 kV
- Compliant with EN55015 with 350 W / 230 V halogen lamp

Description

The STEVAL-ILD003V1 demonstration board is designed to propose a low-cost analog dimmer topology using a sensitive SCR TS820-600FP. The dimmer can drive typical low-consumption lamps, particularly CFL and LED dimmable lamps.

Through-hole technology is used for the most important components such as LC filter, gate



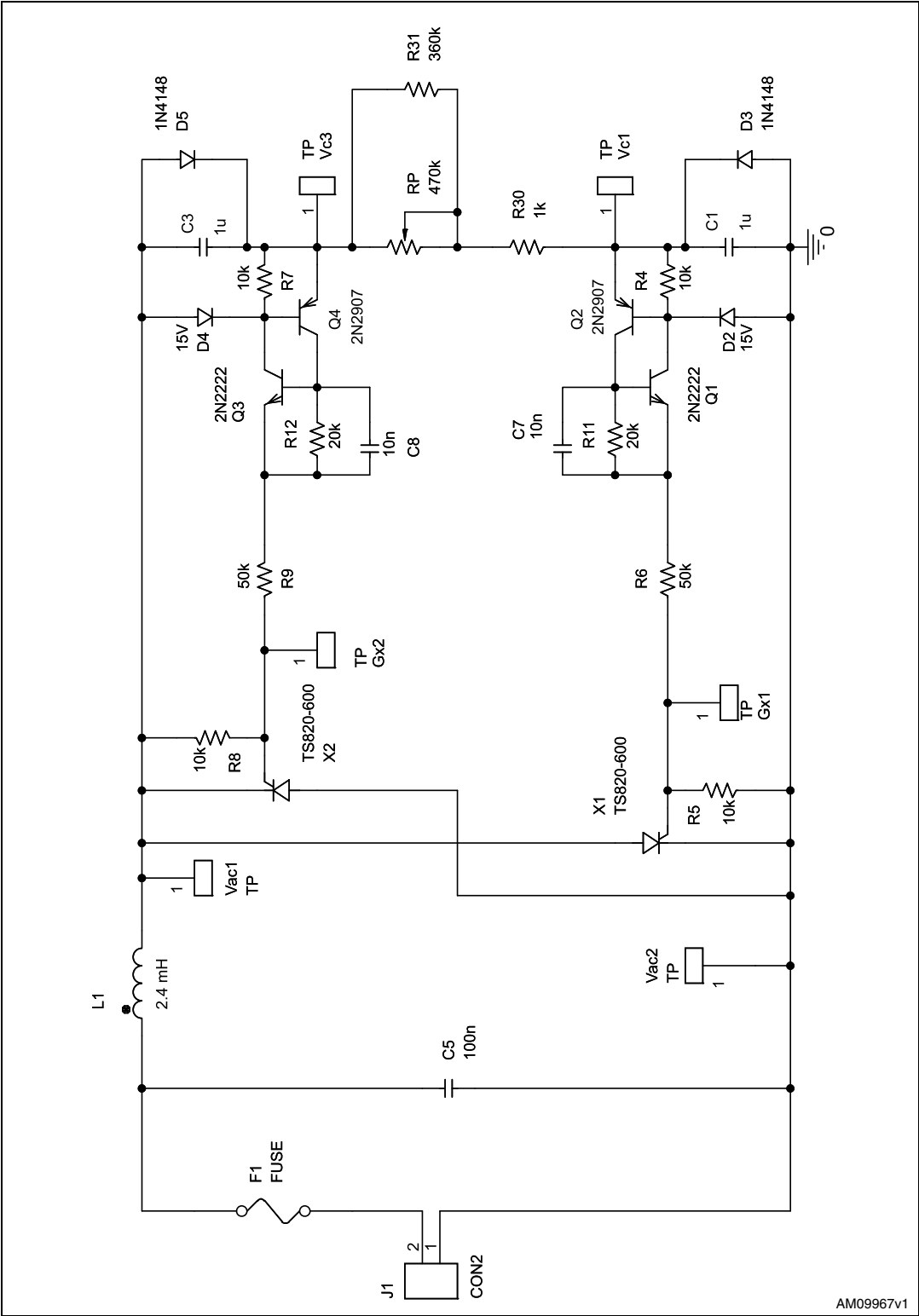
resistor, turn-on delay capacitor, etc., in order to allow board modification, if needed.

The STEVAL-ILD003V1 eliminates flickering thanks to its continuous current applied through the sensitive SCR gate. This dimmer could easily replace a standard low-cost analog Triac light dimmer using a Diac-controlled circuit.

a. Higher power could be reached with a different filter inductor and SCR heatsink.

1 Circuit schematic

Figure 1. STEVAL-ILD003V1 schematic



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
26-Oct-2011	1	Initial release.
16-Mar-2012	2	Changed board image on cover page
15-Feb-2013	3	Updated features on cover page

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