

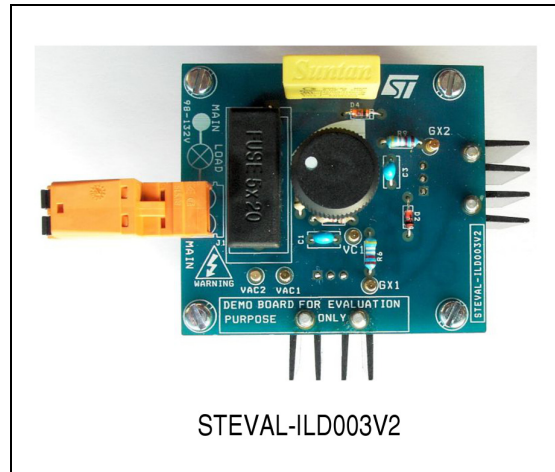


## Analog wall dimmer for CFL/LED lamps based on the TS820 (USA version 110 V)

Data brief

### Features

- Line voltage: 98-132 V 60 Hz
- Maximum operating ambient temperature: 60 °C
- Incandescent 120 V lamp power:
  - Minimum power: 20 W
  - Maximum power: 350 W (with 27 °C/W heatsinks mounted on SCRs<sup>(a)</sup> <sup>(b)</sup>)
- Dimmable lamps that can be used:
  - CFL lamp (typically 14 W)
  - LED lamp (typically 8 W)
- RoHS compliant



### Description

The purpose of the STEVAL-ILD003V2 demonstration board is to evaluate ST's SCR dimming solution for low-consumption lamps, particularly CFL and LED lamps, eliminating flicker and to be able to directly test most of the dimmable loads currently on the market.

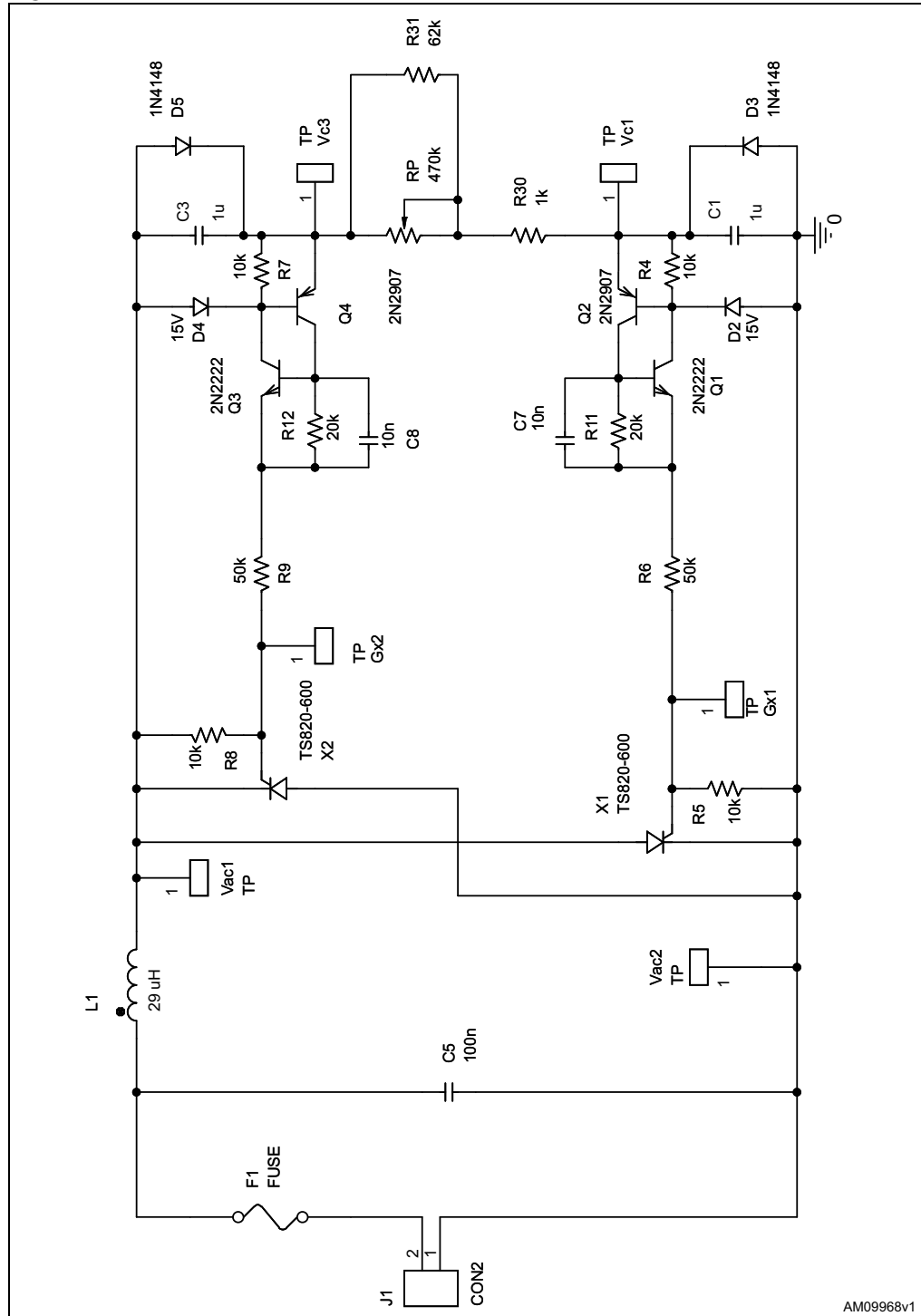
Through-hole technology is used for the most important components such as the LC filter, gate resistor, turn-on delay capacitor, etc., in order to allow board modification, if needed.

AC light dimmers based on SCR dimming technology eliminate flickering as a continuous current is applied through the gate. An SCR dimmer can easily replace a standard low-cost analog Triac light dimmer using a Diac-controlled circuit.

- a. Higher power can be reached with a different filter inductor and a bigger SCR heatsink
- b. 200 W is the maximum allowed power without an SCR heatsink

# 1 Circuit schematic

Figure 1. STEVAL-ILD003V2 schematic



AM09968v1

## 2 Revision history

**Table 1. Document revision history**

<b>Date</b>	<b>Revision</b>	<b>Changes</b>
11-Nov-2011	1	Initial release.
26-Mar-2012	2	Changed board image on cover page

**Please Read Carefully:**

Information in this document is provided solely in connection with ST products. STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All ST products are sold pursuant to ST's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the ST products and services described herein, and ST assumes no liability whatsoever relating to the choice, selection or use of the ST products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by ST for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

**UNLESS OTHERWISE SET FORTH IN ST'S TERMS AND CONDITIONS OF SALE ST DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF ST PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.**

**UNLESS EXPRESSLY APPROVED IN WRITING BY TWO AUTHORIZED ST REPRESENTATIVES, ST PRODUCTS ARE NOT RECOMMENDED, AUTHORIZED OR WARRANTED FOR USE IN MILITARY, AIR CRAFT, SPACE, LIFE SAVING, OR LIFE SUSTAINING APPLICATIONS, NOR IN PRODUCTS OR SYSTEMS WHERE FAILURE OR MALFUNCTION MAY RESULT IN PERSONAL INJURY, DEATH, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE. ST PRODUCTS WHICH ARE NOT SPECIFIED AS "AUTOMOTIVE GRADE" MAY ONLY BE USED IN AUTOMOTIVE APPLICATIONS AT USER'S OWN RISK.**

Resale of ST products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by ST for the ST product or service described herein and shall not create or extend in any manner whatsoever, any liability of ST.

ST and the ST logo are trademarks or registered trademarks of ST in various countries.

Information in this document supersedes and replaces all information previously supplied.

The ST logo is a registered trademark of STMicroelectronics. All other names are the property of their respective owners.

© 2012 STMicroelectronics - All rights reserved

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

[www.st.com](http://www.st.com)