



# STEVAL-ISA045V1

2 A / 1.2 V high-efficiency synchronous buck converter evaluation board based on the ST1S09

Data Brief

## Features

- Input voltage range: 2.7 V to 5.5 V
- Output voltage: 1.2 V
- Max  $I_{out}$ : 2 A
- High internal switching frequency: 1.5 MHz
- Short-circuit protection
- ST1S09 in the DFN6 3x3 package

## Description

This evaluation board, based on the ST1S09 family of synchronous step-down DC-DC converters, is optimized for powering all low-voltage applications and, generally, replaces high current linear solutions when power dissipation may cause high heating of the application environment.

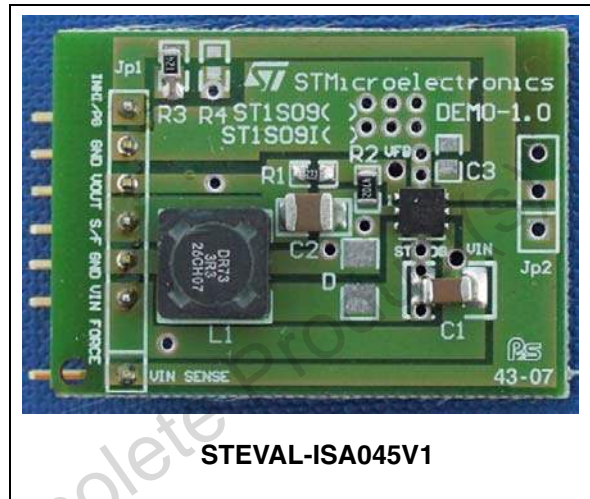
It provides up to 2 A over an input voltage range of 2.7 V to 5.5 V.

A high 1.5 MHz switching frequency allows the use of tiny surface-mount components and in addition to the resistor divider to set the output voltage value, an inductor and two capacitors are required.

A low output ripple is guaranteed by the current mode PWM topology and by the use of low ESR surface-mount ceramic capacitors.

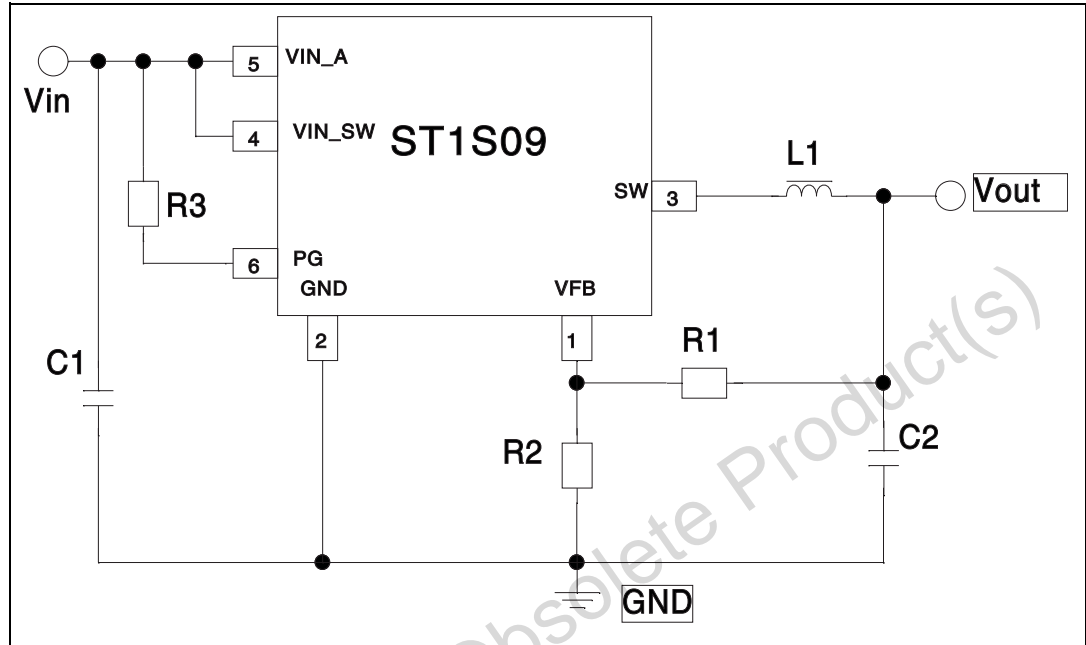
The device is thermally protected and current limited to prevent damage due to accidental short-circuit.

The ST1S09 family is available in the DFN6 3x3 package.



# 1 Circuit schematic

Figure 1. Schematic



## 2 Revision history

Table 1. Document revision history

Date	Revision	Changes
03-Mar-2008	1	Initial release.

Obsolete Product(s) - Obsolete Product(s)

**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 AN AUTHORIZED ST REPRESENTATIVE, 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.

© 2008 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 - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

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