



STEVAL-ISA055V1

0.7 A / 1.2 V synchronous buck converter
with enable function based on the ST1S12XX

Data Brief

Features

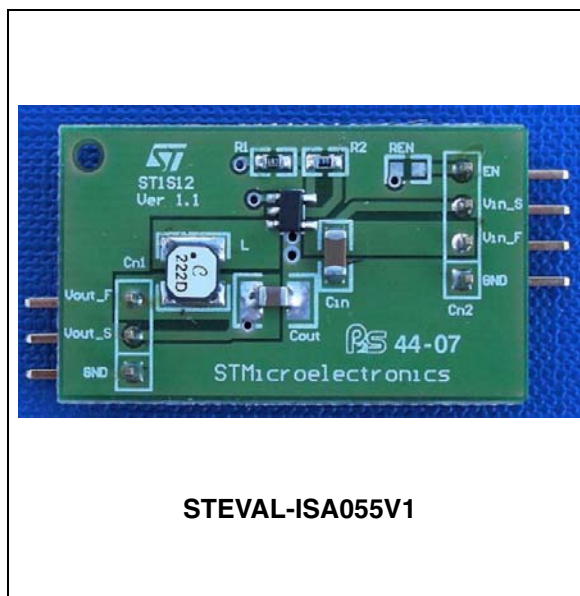
- Step-down current mode PWM (1.7 MHz) DC-DC converter
- Fixed output voltage of 1.2 V
- 0.7 A output current capability
- 3% DC output voltage tolerance
- Synchronous rectification
- Enable function
- Internal soft-start
- Typical efficiency: > 90%
- Not switching quiescent current: max 600 μ A over temperature range
- $R_{DS(on)}$ typ. 250 m Ω and 400 m Ω
- Uses tiny capacitors and inductors

Description

This demonstration board is based on the ST1S12 family of synchronous step-down DC-DC converters optimized for powering low-voltage digital cores in HDD (hard disk drive) applications and is generally used to replace high-current linear solutions when power dissipation may cause high heating of the application environment.

It provides up to 0.7 A over an input voltage range of 2.5 V to 5.5 V. A high switching frequency of 1.7 MHz allows the use of tiny surface-mount components. For the adjustable version, a resistor divider to set the output voltage value, an inductor, and two capacitors are required. Only an inductor and 2 capacitors are needed for the 1.2 V and 1.8 V fixed version. A low output ripple is guaranteed by the current mode PWM topology and by the use of low ESR surface-mount ceramic capacitors.

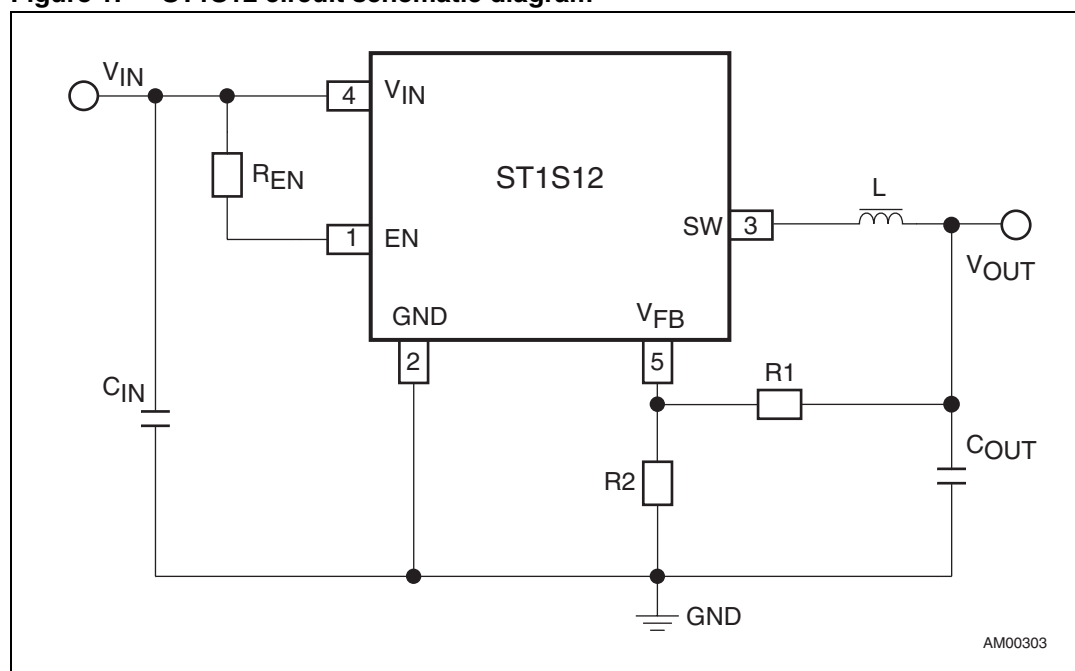
The ST1S12 device is thermal protected and current limited to prevent damage due to



accidental short-circuit. This family of products is available in the TSOT23-5L package.

1 Schematic diagram

Figure 1. ST1S12 circuit schematic diagram



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
18-Sep-2008	1	Initial release.

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

AMEYA360

Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit www.ameya360.com

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email amall@ameya360.com

QQ 800077892

Skype ameyasales1 ameyasales2

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333

Email mkt@ameya360.com