PM8841

Single channel low-side gate driver

Data brief

SOT23-5
PM8841D

Features

- Low-side MOSFET driver
- 1 A sink and 0.8 A source capability
- External reference for input threshold
- Wide supply voltage range (10 V ÷ 18 V)
- Input and output pull-down resistors
- Short propagation delays
- Input and output UVLO
- Wide operating temperature range: -40 °C to 125 °C
- SOT23-5 package

Applications

- SMPS
- Digital lighting
- Wireless battery chargers
- Digitally controlled MOSFETs

Description

The PM8841 is a high frequency single channel low-side MOSFET driver specifically designed to work with digital power conversion microcontrollers, such as the STMicroelectronics STLUX™ family of products.

The PM8841 output can sink 1 A and source 0.8 A.

The input levels of the driver are derived by the voltage present at the IN_TH pin (between 2 V and 5.5 V). This pin is typically connected at the same voltage of the microcontroller supply voltage.

The PM8841 device includes both input and output pull-down resistors.

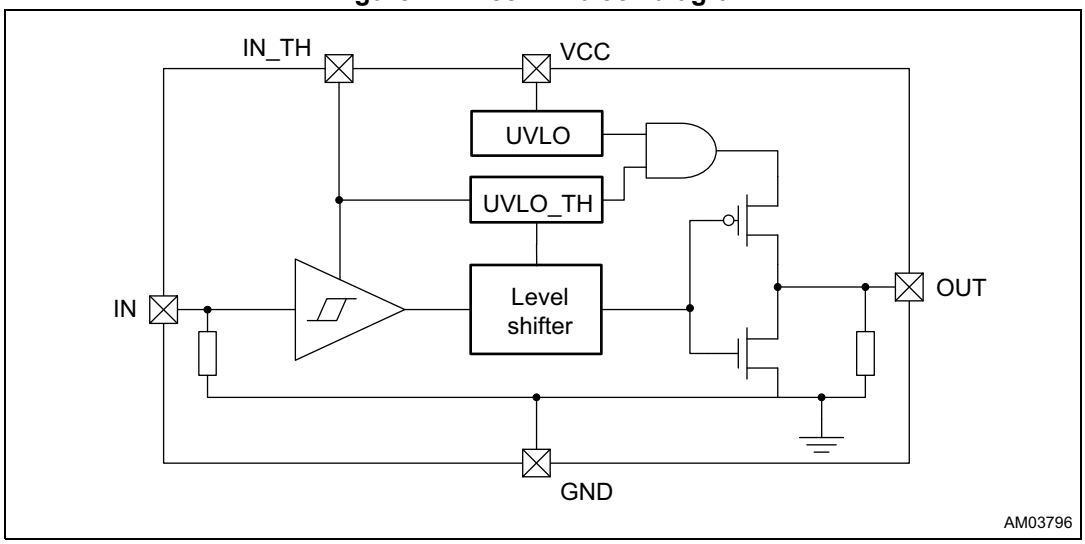
UVLO circuitry for input and output stages is present preventing the IC from driving the external MOSFET in unsafe condition.

Table 1. Device summary

Order code	Package
PM8841D	SOT23-5

1 Block diagram

Figure 1. PM8841D block diagram



2 Pin connection

Figure 2. Pin connection

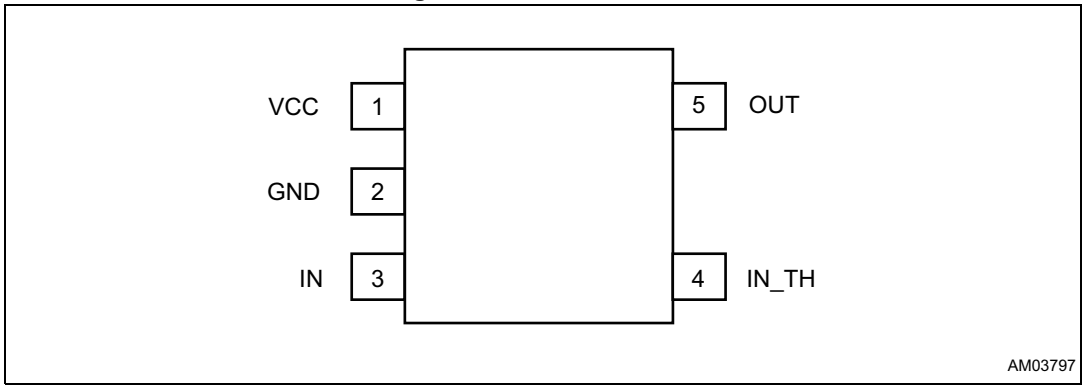


Table 2. Pin description

Symbol	Pin	Description
VCC	1	IC power supply. A voltage comprised between 10 V and 18 V can be connected between this pin and GND to supply the IC.
GND	2	Reference voltage connection.
IN	3	Digital input signal for driver. It is internally pulled down to GND with a 100 kΩ (typ.) equivalent resistor.
IN_TH	4	Input for the IN pin's threshold definition: a voltage can be applied obtaining the values for VIH and VIL.
OUT	5	MOSFET gate drive sourcing / sinking output controlled by the IN pin. A pull-down equivalent resistor [50 kΩ (typ.)] is present.

3 Typical applications

Figure 3. Test circuit

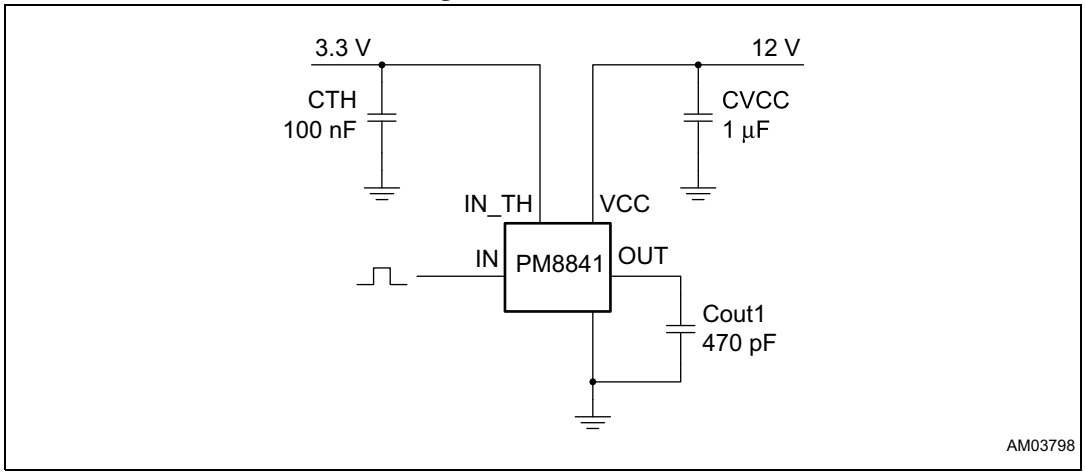


Figure 4. Digitally controlled PFC boost converter

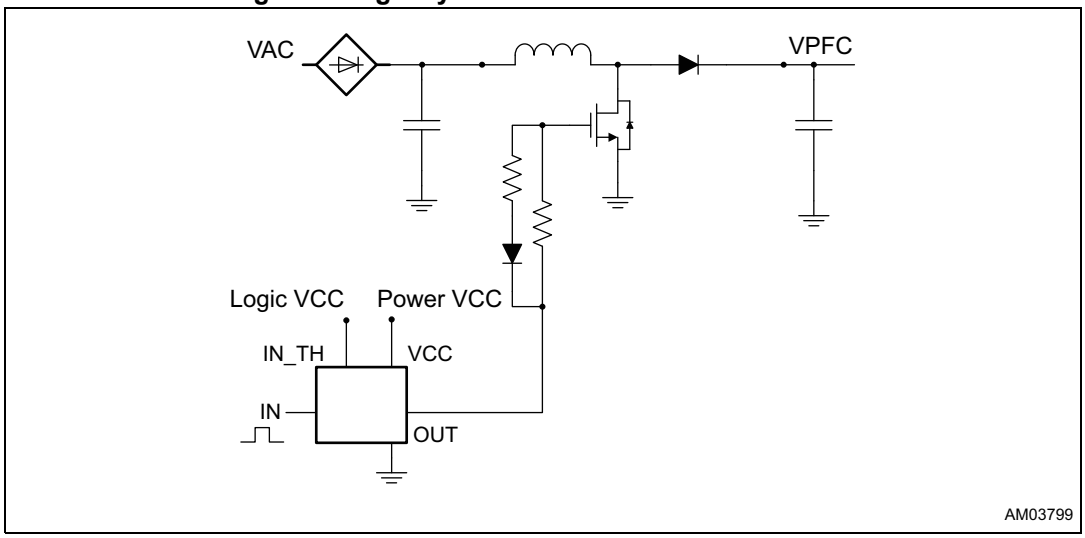


Figure 5. Digitally controlled flyback converter

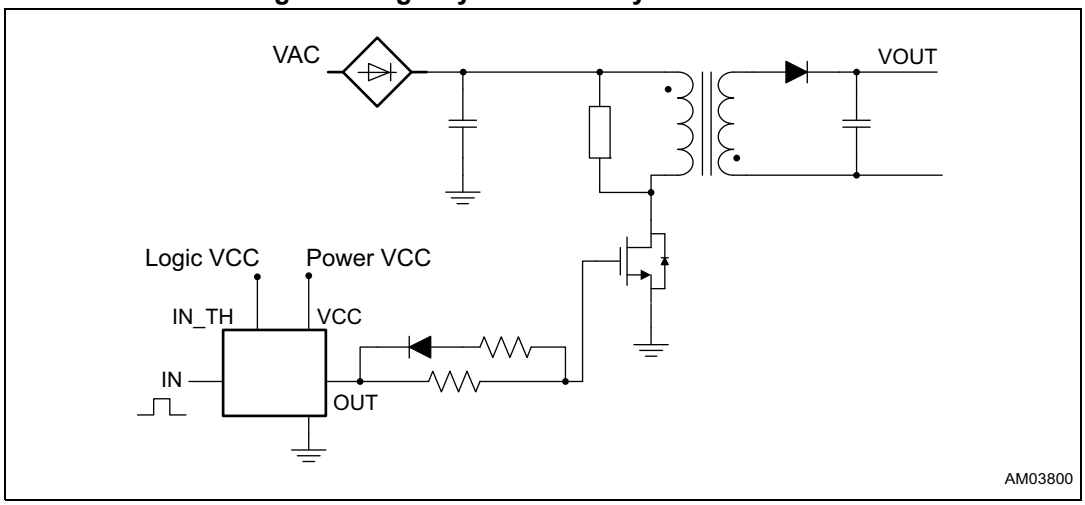
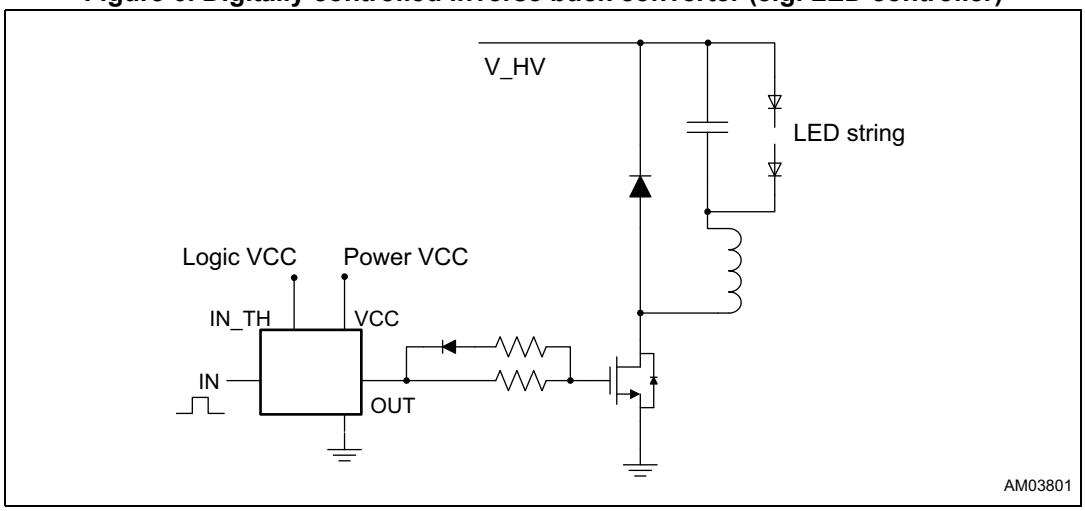


Figure 6. Digitally controlled inverse buck converter (e.g. LED controller)



4 Revision history

Table 3. Document revision history

Date	Revision	Changes
13-Jun-2014	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.

ST PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE ST PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER’S SOLE RISK, EVEN IF ST HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY ST AS BEING INTENDED FOR “AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL” INDUSTRY DOMAINS ACCORDING TO ST PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

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.

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