

LTM8026

36V, 5A, CVCC Step-Down μ Module Regulator

DESCRIPTION

Demonstration circuit 1696 is a 36V, 5A, CVCC step-down μ Module regulator featuring the LTM8026. The demo circuit is designed for a 3.3V output from an input voltage range of 6V to 36V. The output can source 5A. The circuit can be operated in either constant voltage mode or constant current mode.

The LTM8026 data sheet gives a complete description of the part, operation and application information. The data sheet must be read in conjunction with this quick start guide prior to working on or modifying demo circuit 1696.

Design files for this circuit board are available at <http://www.linear.com/demo>

LT, LT, LTC, LTM, μ Module, Linear Technology and the Linear logo are registered trademarks of Linear Technology Corporation. All other trademarks are the property of their respective owners.

PERFORMANCE SUMMARY (T_A = 25°C)

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Input Supply Voltage Range		6		36	V
Output Voltage	I _{OUT} = 5A	3.135	3.3	3.465	V
Switching Frequency			550		kHz
Maximum Output Current		5			A
Efficiency	V _{IN} = 12V, I _{OUT} = 5A		86		%

BOARD PHOTO



QUICK START PROCEDURE

Demonstration circuit 1696 is an easy way to evaluate the performance of the LTM8026. Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

NOTE. When measuring the input or output voltage ripple, care must be taken to avoid a long ground lead on the oscilloscope probe. Measure the input or output voltage ripple by touching the probe tip directly across the V_{IN} and GND or V_{OUT} and GND terminals.

1. With power off, connect the input power supply to V_{IN} and GND.

2. Connect a load to V_{OUT} and GND.

3. Turn on the power at the input.

4. Check for the proper output voltage and current.

NOTE. If there is no output, temporarily disconnect the load to make sure that the load is not set too high.

5. Once the proper output voltage is established, adjust the load and input within the operating ranges and observe the output voltage regulation, output current regulation, ripple voltage, efficiency and other parameters.

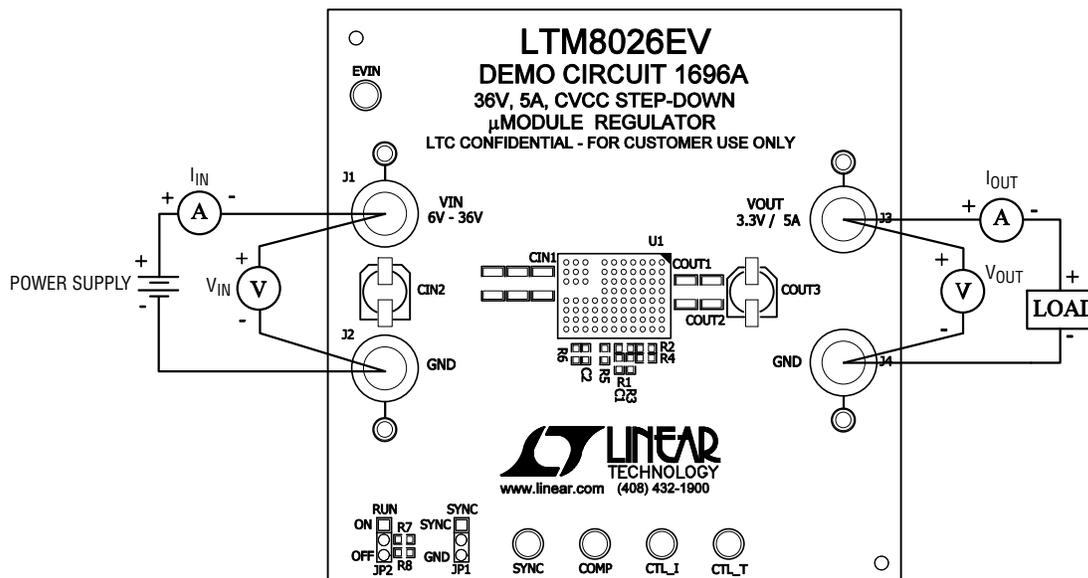


Figure 1. Proper Measurement Equipment Setup

QUICK START PROCEDURE

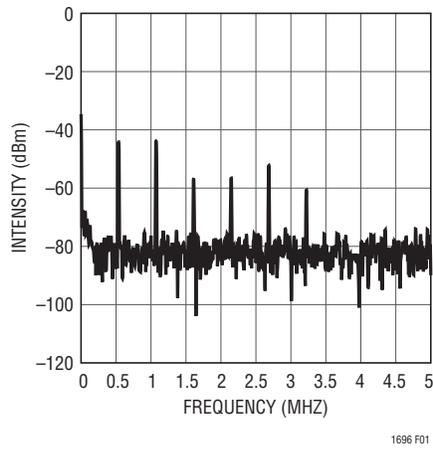


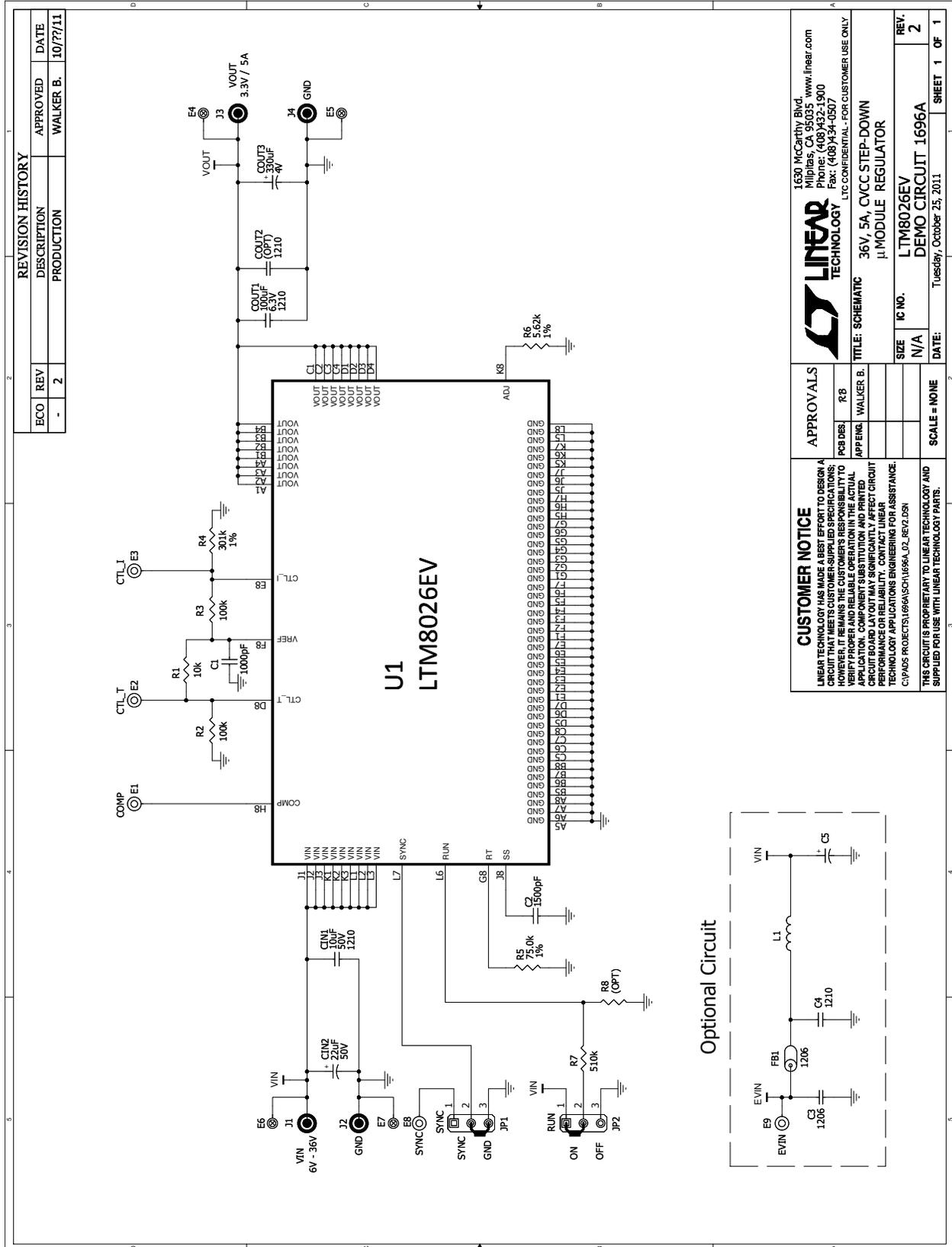
Figure 2. DC1696A Output Noise Spectrum. ($V_{IN} = 12V$, $V_{OUT} = 3.3V$, $I_{OUT} = 5A$)

DEMO MANUAL DC1696

PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
Required Circuit Components				
1	1	CIN1	Cap., Ceramic 10µF, 50V, 10%, 1210	Murata GRM32ER71H106K
2	1	CIN2	Cap., Alum 22µF, 50V, 10%, OSCON-CE-6.3	SUNCON 50CE22BSS
3	1	COU1	Cap., X5R 100µF, 6.3V, 20%, 1210	TDK C3225X5R0J107M
4	1	COU3	Cap., OSCON 330µF, 4V, 20%, OSCON-C6	SANYO 4SVPC330M
5	1	C1	Cap., NPO 1000pF, 50V, 20%, 0603	AVX 06035A102MAT1A
6	1	C2	Cap., X7R 1500pF, 25V, 10%, 0603	AVX 06033C152KAT1A
7	1	R1	Res., Chip 10k, 0.06W, 5%, 0603	Vishay CRCW060310K0JNEA
8	2	R2, R3	Res., Chip 100k, 0.06W, 5%, 0603	Vishay CRCW0603100KJNEA
9	1	R4	Res., Chip 301k, 0.06W, 1%, 0603	Vishay CRCW0603301KFKEA
10	1	R5	Res., Chip 75.0k, 0.06W, 1%, 0603	Vishay CRCW060375K0FKEA
11	1	R6	Res., Chip 5.62k, 0.06W, 1%, 0603	Vishay CRCW060335K62FKEA
12	1	R7	Res., Chip 510k, 0.06W, 5%, 0603	Vishay CRCW0603510KJNEA
13	1	U1	I.C., Step-Down Converter. LGA(81)15mm × 11.25mm × 2.82mm	Linear Tech. Corp. LTM8026EV
Additional Demo Board Circuit Components				
1	0	COU2 (OPT)	Cap., 1210	
2	0	C3 (OPT)	Cap., 1206	
3	0	C4 (OPT)	Cap., 1210	
4	0	C5 (OPT)	Cap.	
5	0	FB1 (OPT)	Ferrite Bead, 1206	
6	0	L1 (OPT)	Inductor	
7	0	R8 (OPT)	Res., 0603	
Hardware For Demo Board Only				
1	5	E1, E2, E3, E8, E9	Turret, Testpoint	MILL-MAX 2501-2-00-80-00-00-07-0
2	4	E4, E5, E6, E7	Turret, Testpoint	MILL-MAX 2308-2-00-80-00-00-07-0
3	2	JP1, JP2	Headers, Single Row 3 Pins 2mm Ctrs.	SAMTEC TMM-103-02-L-S
4	4	J1, J2, J3, J4	Connector, Banana Jack	KEYSTONE 575-4
5	2	XJP1, XJP2	Shunt, 2mm Ctrs.	SAMTEC 2SN-BK-G

SCHEMATIC DIAGRAM



DEMO MANUAL DC1696

DEMONSTRATION BOARD IMPORTANT NOTICE

Linear Technology Corporation (LTC) provides the enclosed product(s) under the following **AS IS** conditions:

This demonstration board (DEMO BOARD) kit being sold or provided by Linear Technology is intended for use for **ENGINEERING DEVELOPMENT OR EVALUATION PURPOSES ONLY** and is not provided by LTC for commercial use. As such, the DEMO BOARD herein may not be complete in terms of required design-, marketing-, and/or manufacturing-related protective considerations, including but not limited to product safety measures typically found in finished commercial goods. As a prototype, this product does not fall within the scope of the European Union directive on electromagnetic compatibility and therefore may or may not meet the technical requirements of the directive, or other regulations.

If this evaluation kit does not meet the specifications recited in the DEMO BOARD manual the kit may be returned within 30 days from the date of delivery for a full refund. **THE FOREGOING WARRANTY IS THE EXCLUSIVE WARRANTY MADE BY THE SELLER TO BUYER AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. EXCEPT TO THE EXTENT OF THIS INDEMNITY, NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.**

The user assumes all responsibility and liability for proper and safe handling of the goods. Further, the user releases LTC from all claims arising from the handling or use of the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge. Also be aware that the products herein may not be regulatory compliant or agency certified (FCC, UL, CE, etc.).

No License is granted under any patent right or other intellectual property whatsoever. **LTC assumes no liability for applications assistance, customer product design, software performance, or infringement of patents or any other intellectual property rights of any kind.**

LTC currently services a variety of customers for products around the world, and therefore this transaction **is not exclusive**.

Please read the DEMO BOARD manual prior to handling the product. Persons handling this product must have electronics training and observe good laboratory practice standards. **Common sense is encouraged.**

This notice contains important safety information about temperatures and voltages. For further safety concerns, please contact a LTC application engineer.

Mailing Address:

Linear Technology
1630 McCarthy Blvd.
Milpitas, CA 95035

Copyright © 2004, Linear Technology Corporation

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru