

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 1388A

3 μ A QUIESCENT CURRENT, 20mA LINEAR REGULATOR

LT3008EDC

DESCRIPTION

Demonstration circuit 1388A is an ultralow quiescent current and low dropout voltage linear regulator featuring LT[®]3008, which comes in an 8-lead TSOT23 or 2mmX2mm DFN package. The DC1388A has an input voltage range from 2V to 45V, and is capable of delivering up to 20mA output current. With the 3 μ A quiescent current of the LT3008, the DC1388A is ideal for supplying power to low current battery-powered systems, keep-alive power supply and remote monitoring utility meters and hotel door locks.

The LT3008 datasheet gives a complete description of the part, operation and application information. The datasheet should be read in conjunction with this quick start guide for working on or modifying the demo circuit 1388A.

Design files for this circuit board are available. Call the LTC factory.

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Table 1. Performance Summary (T_A = 25°C)

PARAMETER	CONDITION	VALUE
Minimum Input Voltage		2V
Maximum Input Voltage		45V
Output Voltage	Vin=45V, Iout=20mA	1.2V $\pm$ 3%
	Vin=45V, Iout=20mA	1.5V $\pm$ 3%
	Vin=45V, Iout=20mA	1.8V $\pm$ 3%
	Vin=45V, Iout=20mA	2.0V $\pm$ 3%
	Vin=45V, Iout=20mA	2.5V $\pm$ 3%
	Vin=45V, Iout=20mA	3.3V $\pm$ 3%
	Vin=45V, Iout=20mA	5.0V $\pm$ 3%
Maximum Output Current		20mA
Quiescent Current		<3 μ A

QUICK START PROCEDURE

The DC1388A is easy to set up to evaluate the performance of the LT3008. Refer to Figure 1. for proper measurement equipment setup and following the procedures below:

1. Before proceeding to test, insert jumper JP1 into the OFF position, and use VOUT Select jumper J1 for the desired output voltage 1.2V, 1.8V, 2.0V, 2.5V, 3.3V or 5.0V. If the output

voltage is different from the above values, use the USER option and install a resistor R8. Select R8 according to the following equation:

$$R_8 = \left(\frac{V_{OUT}}{0.6V} - 1 \right) \cdot 619\Omega$$

Assume 1.2V is the desired output for the following evaluations.

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2. Apply 2V across Vin (to Gnd). Insert jumper JP1 into the ON position. Draw 20mA of load current. The measured Vout should be 1.2V $\pm$ 3% (1.164V to 1.236V).
3. Vary the input voltage from 2V to 45V and the load current from no load to 20mA. Vout should measure 1.2V $\pm$ 3% (1.164V to 1.236V).

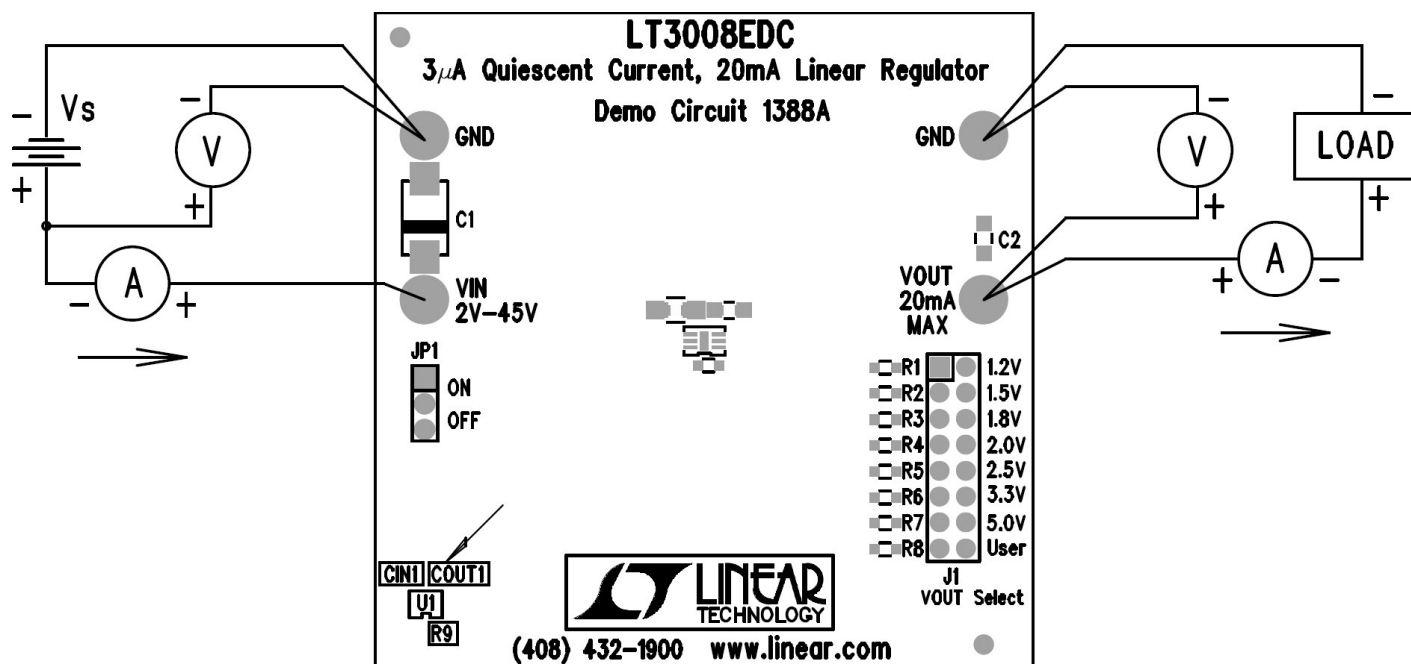


Figure 1. Proper Measurement Equipment Setup

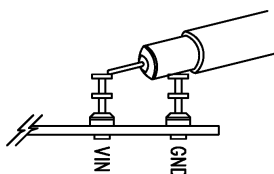


Figure 2. Measuring Input or Output Ripple



Customer Notice

Linear Technology Has Made A Best Effort To Design A Circuit That Meets Customer-Supplied Specifications; However, It Remains The Customer's Responsibility To Verify Proper And Reliable Operation In The Actual Application. Component Substitution And Printed Circuit Board Layout May Significantly Affect Circuit Performance Or Reliability. Contact Linear Technology Applications Engineering For Assistance.

This Circuit Is Proprietary To Linear Technology And Supplied For Use With Linear Technology Parts.

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 9

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Document Number: LT3008EDC, Demo Circuit 1388A

Date: Wednesday, December 10, 2008 Sheet 1 of 1