

50mA, High Voltage Low Dropout Linear Regulator with PWRGD


DESCRIPTION

Demonstration circuit 1407A is a high voltage low dropout micropower linear regulator featuring LT[®]3011, which comes in the thermally enhanced 12-lead MSOP and 10-lead 4mmX3mm DFN packages. The DC1407A has an input voltage range from 3 to 80V, and is capable of delivering up to 50mA output current. Operating quiescent current is 46 μ A, reducing to less than 1 μ A in shutdown. The LT3011 includes a PWRGD flag to indicate output regulation. The delay between regulated output level and flag indication is programmable with a single capacitor. The DC1407A is installed with ceramic capacitors, because of the LT3011 ability of maintaining stability

with ceramic output capacitors. Due to its high input voltage range, the DC1407 voltage regulator is ideally suited for automotive and industrial applications.

The LT3011 datasheet gives a complete description of the part, operation and application information. The datasheet must be read in conjunction with this quick start guide for demo circuit 1407A.

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

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Performance Summary ($T_A = 25^{\circ}\text{C}$)

PARAMETER FOR LINEAR REGULATOR	CONDITION	VALUE
Minimum Input Voltage		3V
Maximum Input Voltage		80V
Output Voltage V_{OUT}	$V_{IN}=5V, I_{OUT}=50mA$ $V_{IN}=6.5V, I_{OUT}=50mA$	3.3V +/- 4% 5V +/- 4%
Maximum Output Current		50mA

QUICK START PROCEDURE

Demonstration circuit 1407A is easy to set up to evaluate the performance of the LT3011. Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

1. Before proceeding to test, insert jumper JP1 into the OFF position, and use VOUT Select jumper J1 for the desired output voltage 5V and 3.3V. If the output voltage is different from the above values, use the USER select option and install a resistor R6.
2. Apply input voltage across Vin to Gnd. Insert jumper JP1 into the ON position. Check for the proper output voltage.
3. Once the proper output voltage is established, adjust the load within the operating range and observe the output voltage regulation.

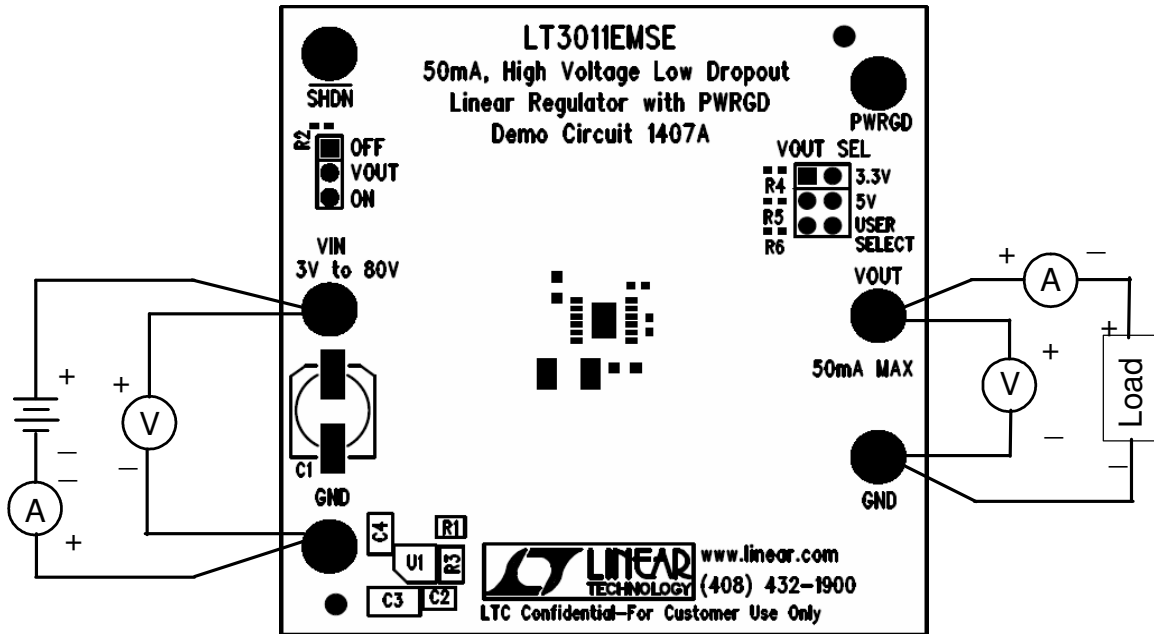


Figure 1. Proper Measurement Equipment Setup

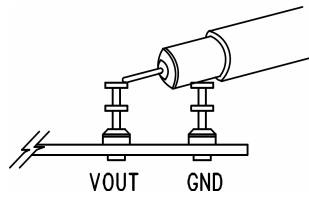
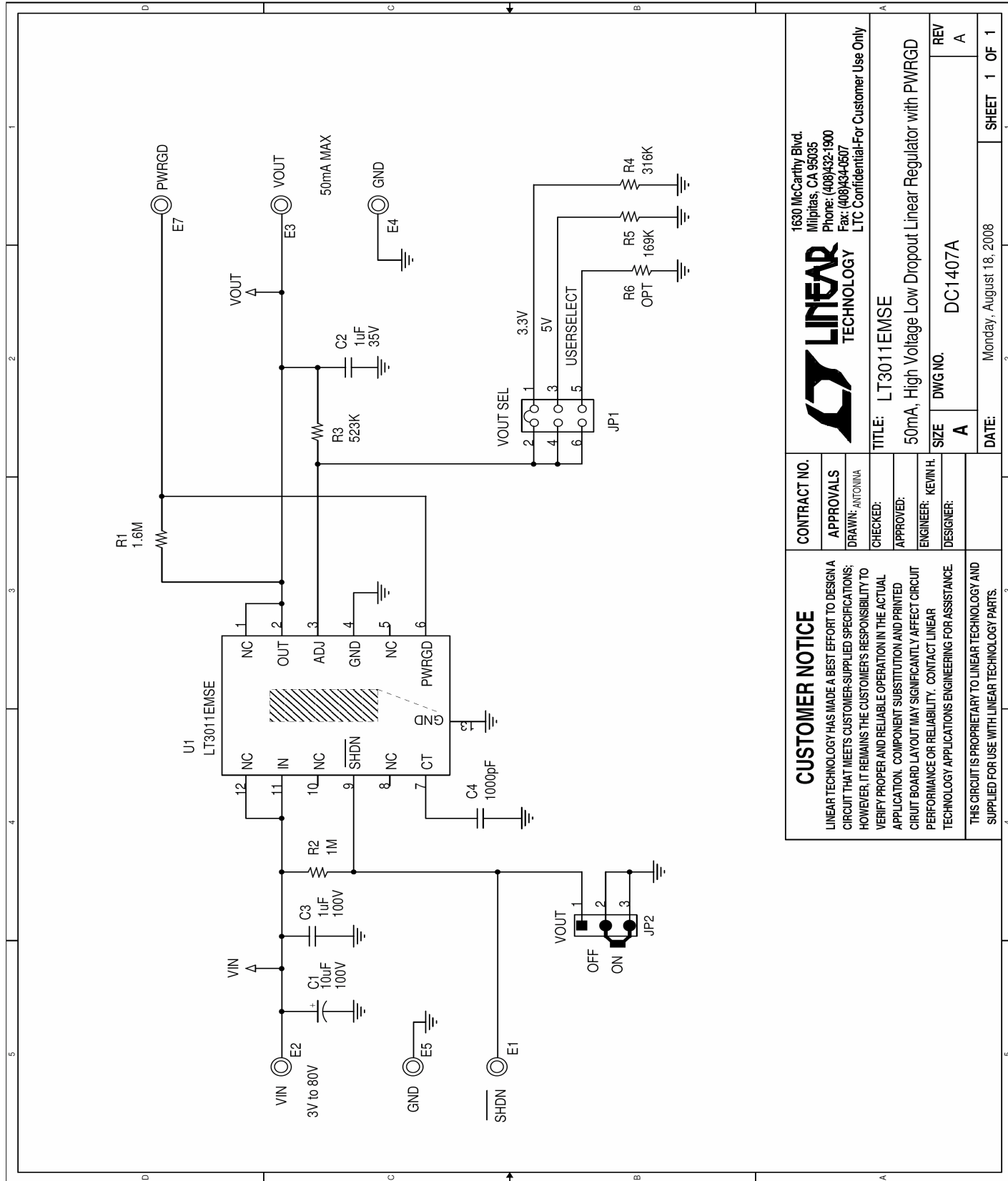


Figure 2. Measuring Input or Output Ripple



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THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		APPROVALS DRAWN: ANTONINA CHECKED: APPROVED: ENGINEER: KEVIN H. DESIGNER:	
1630 McCarthy Blvd. Milpitas, CA 95035 Phone: (408)432-1900 Fax: (408)434-0507 LTC Confidential-For Customer Use Only		LINEAR TECHNOLOGY	
TITLE: LT3011EMSE		SIZE A	
50mA, High Voltage Low Dropout Linear Regulator with PWRGD		DWG NO. DC1407A	
DATE: Monday, August 18, 2008		REV A	
		SHEET 1 OF 1	