

LT6200 Rail-to-Rail SAR ADC Driver Amplifier

DESCRIPTION

Demonstration circuit 2403A features the **LT[®]6200** amplifier. The DC2403A includes two of these amplifiers and is designed to drive the inputs of the DC2290A demo board. The DC2290A features the **LTC[®]2387** 18-bit, 15MSPS high speed SAR ADC. The linearity and low noise of the

LT6200 make it an ideal candidate to drive the LTC2387 at frequencies up to 1MHz. See Table 1.

Design files for this circuit board are available at
<http://www.linear.com/demo/DC2403A>

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

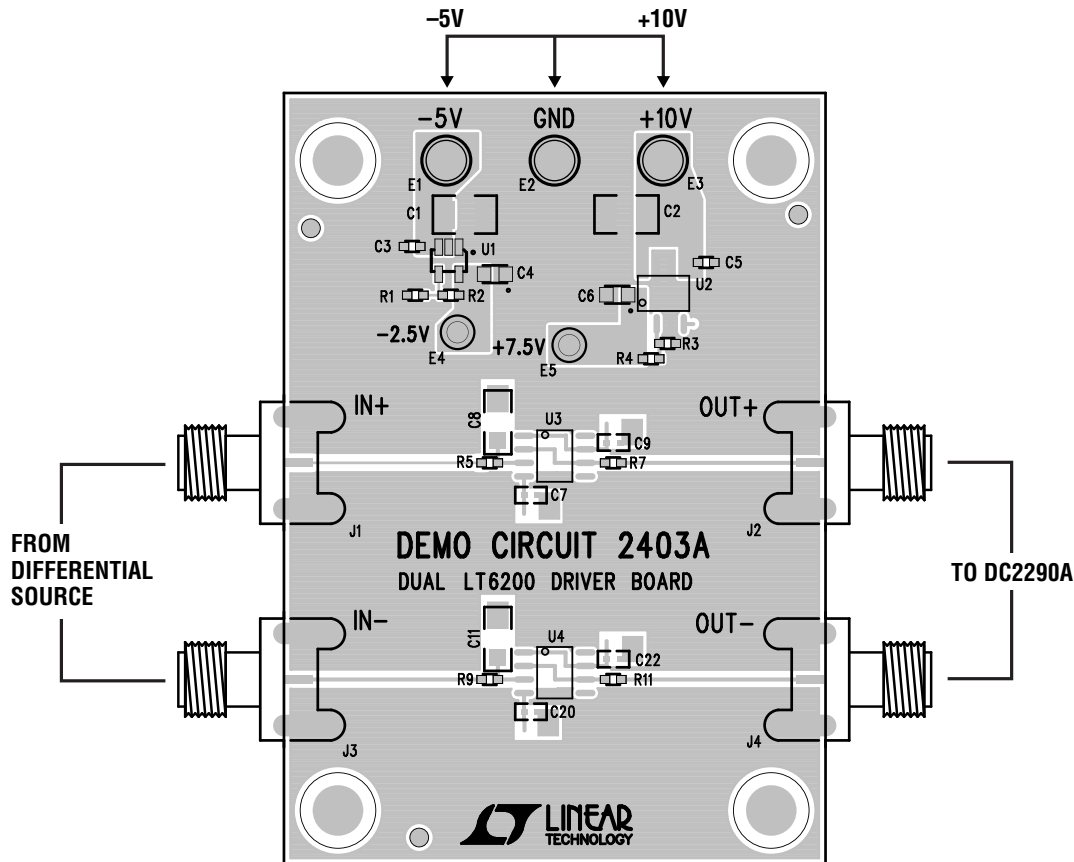


Figure 1. DC2403A Connection Diagram

Table 1. DC2290A (LTC2387 Family) Driver Board

INPUT FREQUENCY	DRIVE BOARD	AMPLIFIER
Up to 8kHz	DC2402	LT6237
Up to 1MHz	DC2403	LT6200
>1MHz	Contact Factory	Contact Factory

dc2403afa

DEMO MANUAL DC2403A

QUICK START PROCEDURE

Connect the DC2403A to a DC2290A using the two output SMA connectors J2, J4. Connect the +10V and –5V DC supplies to the turrets on the DC2403A.

HARDWARE SETUP

SIGNAL CONNECTIONS

J1 +IN. This is the positive signal input.

J3 –IN. This is the negative signal input.

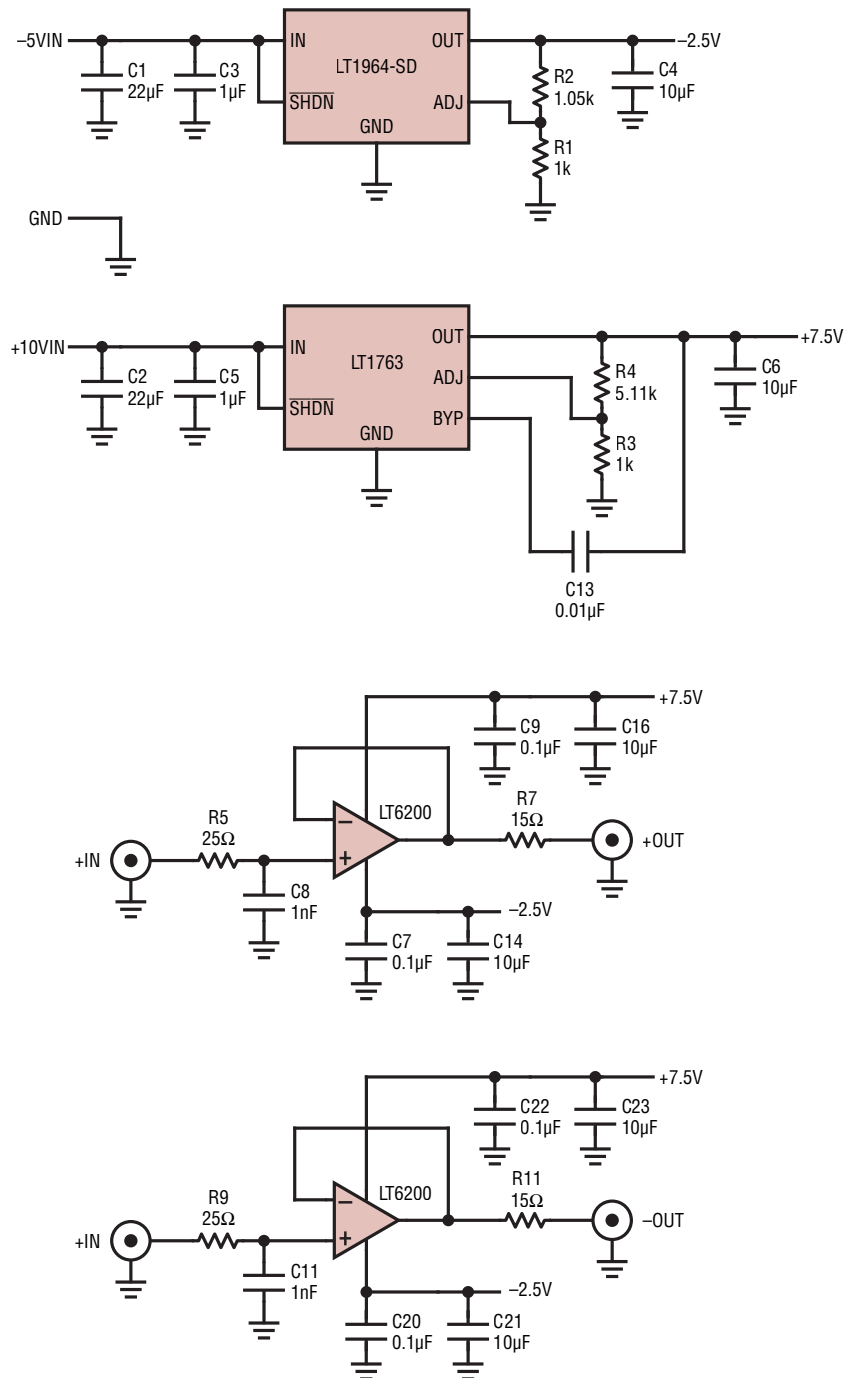
J4 –OUT. This is the negative signal output.

J2 +OUT. This is the positive signal output.

PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
1	6	C4, C6, C14, C16, C21, C23	CAP., TANT, 10 μ F, 16V, 20%, 0805	VISHAY, 298D106X0016R2T
2	2	C3, C5	CAP., X5R, 1 μ F, 16V, 10%, 0603	AVX, 0603YD105KAT2A
3	2	C1, C2	CAP., X5R, 22 μ F, 16V 10%, 1210	AVX, 1210YD226KAT2A
4	4	C7, C9, C20, C22	CAP., X5R, 0.1 μ F, 16V 10% 0402	AVX, 0402YD104KAT2A
5	1	C13	CAP., X7R, 0.01 μ F, 6.3V 10%, 0603	MURATA, GRM188R70J103KA01D
6	2	C8, C11	CAP., NPO, 1000pF, 16V, 5%, 1206	AVX, 1206YA102JAT2A
7	2	E4, E5	TEST POINT, TURRET, .064"	MILL MAX, 2308-2-00-80-00-00-07-0
8	3	E1, E2, E3	TEST POINT, TURRET, .094"	MILL-MAX, 2501-2-00-80-00-00-07-0
9	2	J1, J3	CONN, SMA, 50 Ω , EDGE-LAUNCH, FEMALE	E.F. JOHNSON, 142-0701-851
10	2	J2, J4	CONN, SMA, 50 Ω , EDGE-LAUNCH, MALE	E.F. JOHNSON, 142-0801-811
11	2	R5, R9	RES., 24.9 Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF24R9V
12	2	R7, R11	RES., 15.0 Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF15R0V
13	1	R4	RES., 5.11k Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF5111V
14	2	R1, R3	RES., 1.00k Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF1001V
15	1	R2	RES., 1.05k Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF1051V
16	1	U2	IC, MICROPOWER REGULATOR, S08	LINEAR TECH., LT1763CS8#PBF
17	2	U3, U4	IC, 400MHz AMPLIFIER, MS8	LINEAR TECH., LT6200CS8#PBF
18	1	U1	IC, MICROPOWER NEG. REGULATOR, SOT-23	LINEAR TECH., LT1964ES5-SD#PBF

SCHEMATIC DIAGRAM



DEMO MANUAL DC2403A

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

dc2403afa