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LT6237: Rail-to-Rail SAR ADC Driver Amplifier

DESCRIPTION

Demonstration circuit 2402A features the **LT[®]6237** amplifier. The DC2402A includes two of these amplifiers and is designed to drive the inputs of the DC2290A demo board. The DC2290A features the LTC2387 18-bit, 15Mpsps High Speed SAR ADC. The linearity and low noise of the

LT6237 make it an ideal candidate to drive the LTC2387 at frequencies up to 8kHz. See Table 1.

Design files for this circuit board are available at <http://www.linear.com/demo/DC2402A>

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BOARD PHOTO

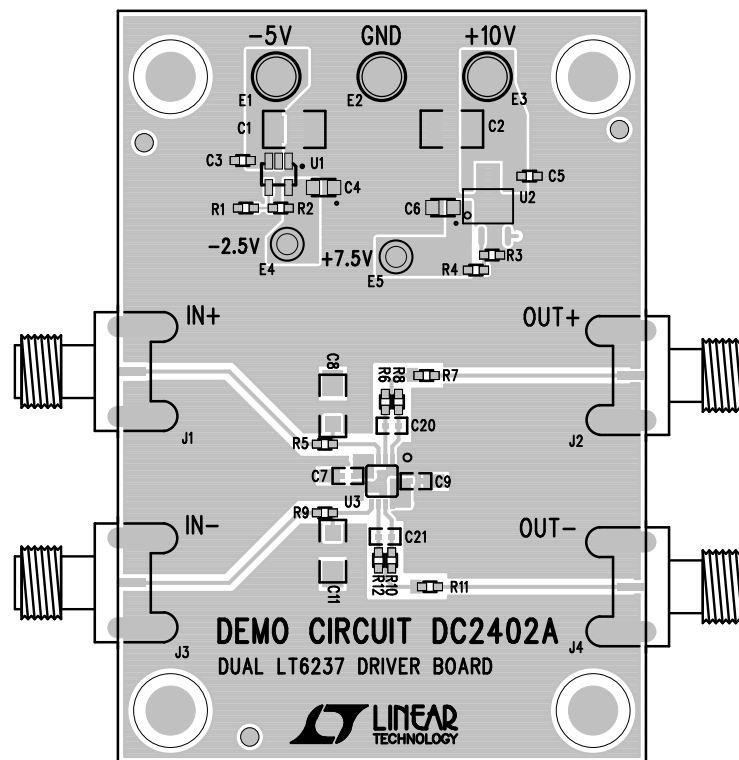


Figure 1. DC2402A Connection Diagram

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

DEMO MANUAL DC2402A

QUICK START PROCEDURE

Connect the DC2402A to a DC2290A using the two output SMA connectors J2 and J4. Connect +10V and -5V DC supplies to the turrets on the DC2402A.

HARDWARE SETUP

SIGNAL CONNECTIONS

J1 +IN. This is the positive signal input.

J3 -IN. This is the negative signal input.

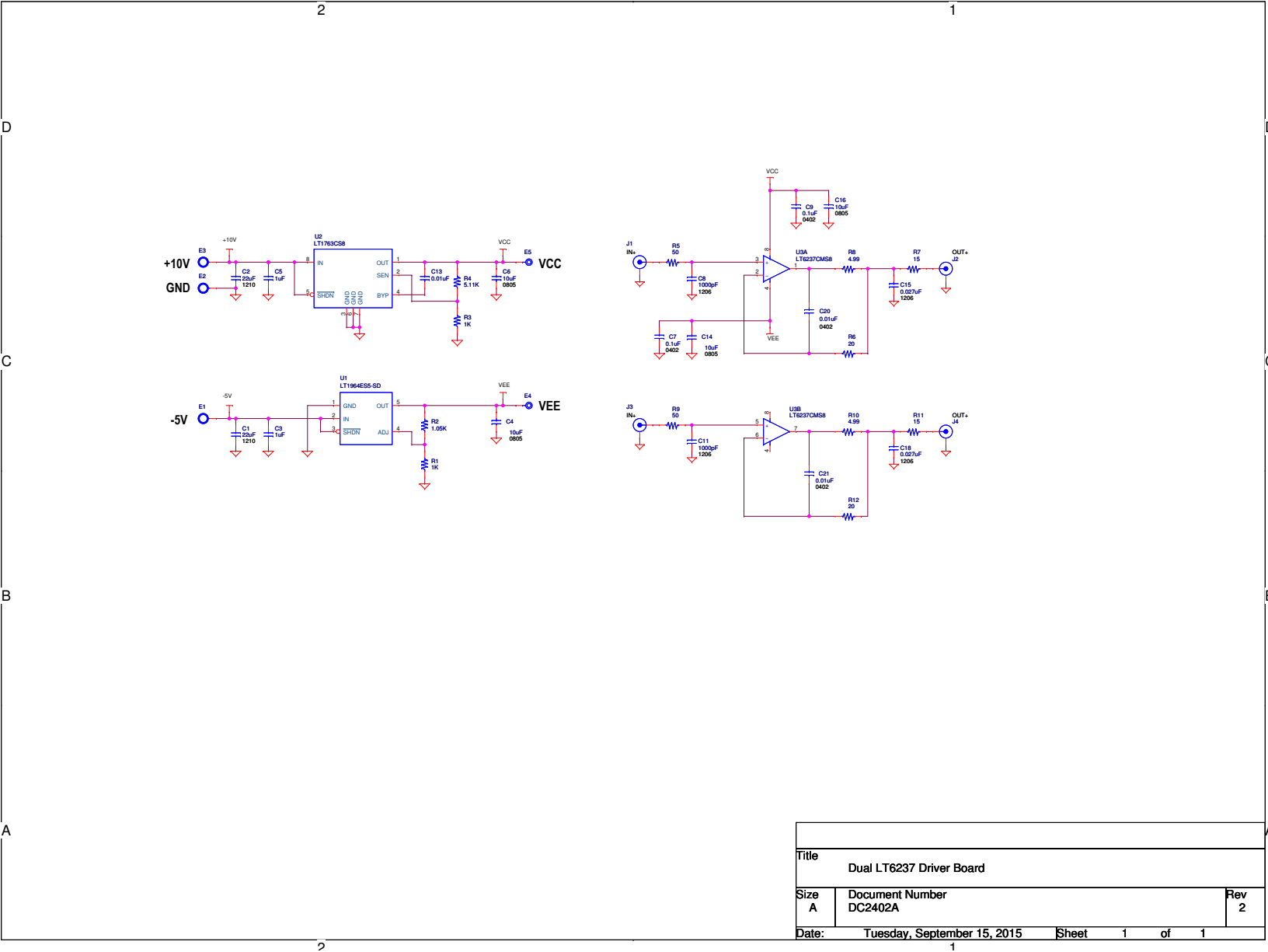
J4 -OUT. This is the negative signal output.

J2 +OUT. This is the positive signal output.

PARTS LIST

ITEM	QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
Required Circuit Components				
1	1	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	3	C1, C2	CAP., X5R, 22 μ F, 16V 10%, 1210	AVX, 1210YD226KAT2A
4	4	C7, C9, C10, C12	CAP., X5R, 0.1 μ F, 16V 10% 0402	AVX, 0402YD104KAT2A
5	5	C13	CAP., X7R, 0.01 μ F, 6.3V 10%, 0603	MURATA, GRM188R70J103KA01D
6	2	C20, C21	CAP., X7R, 0.01 μ F, 16V, 10%, 0402	AVX, 0402YC103KAT2A
7	6	C8, C11	CAP., NPO, 1000pF, 50V, 5%, 1206	MURATA, GRM3195C1H102JA01D
8	7	C15, C18	CAP., NPO, 0.027 μ F, 50V, 5%, 1206	MURATA, GRM3195C1H273JA01D
9	8	E5, E4	TEST POINT, TURRET, .064"	MILL MAX, 2308-2-00-80-00-00-07-0
10	9	E1, E2, E3	TEST POINT, TURRET, .094"	MILL-MAX, 2501-2-00-80-00-00-07-0
11	2	J1, J3	CONN., SMA, 50-OHM, EDGE-LAUNCH, FEMALE	E.F. JOHNSON, 142-0701-851
12	2	J2, J4	CONN., SMA, 50-OHM, EDGE-LAUNCH, MALE	E.F. JOHNSON, 142-0801-811
13	2	R5, R9	RES., 49.9 Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF49R9V
14	2	R7, R11	RES., 15.0 Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF15R0V
15	2	R6, R10	RES., 4.99 Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF4R99V
16	2	R8, R12	RES., 20 Ω , 1/10W, 1% 0603	PANASONIC, ERJ-3EKF2000V
17	1	R4	RES., 5.11k, 1/10W, 1% 0603	PANASONIC, ERJ-3EKF5111V
18	2	R1, R3	RES., 1.00k, 1/10W, 1% 0603	PANASONIC, ERJ-3EKF1001V
19	1	R2	RES., 1.05k, 1/10W, 1% 0603	PANASONIC, ERJ-3EKF1051V
20	1	U2	IC, MICROPOWER REGULATOR, S08	LINEAR TECH., LT1763CS8#PBF
21	2	U3, U4	IC, 400MHz AMPLIFIER, MS8	LINEAR TECH., LT6237CMS8#PBF
22	1	U1	IC, MICROPOWER NEG. REGULATOR, SOT-23	LINEAR TECH., LT1964ES5-SD#PBF
23	4	MH1-MH4	STANDOFF, NYLON 0.25"	KEYSTONE, 8831 (SNAP ON)

SCHEMATIC DIAGRAM



Title		Dual LT6237 Driver Board	
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Figure 2. DC2402A Demo Circuit Schematic

DEMO MANUAL DC2402A

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