

SOT89 RF AMPLIFIER (CHIRP SPECIFIC)

INPUT MATCHING NETWORK

INPUT	C3	L2	C5	MMIC AMP 50 OHM
20 Ohm		27nH	27PF	50+0.0j Ohm
40 Ohm		22nH	11PF	50+0.0j Ohm
50 Ohm		SHORT		50+0.0j Ohm
75 Ohm	10PF	39nH		50+0.0j Ohm
86 Ohm	10PF	47nH		50+0.0j Ohm
101 Ohm	11PF	56nH		50+0.0j Ohm
126 Ohm	11PF	68nH		50+0.0j Ohm
215 Ohm	9PF	100nH		50+0.0j Ohm
285 Ohm	8.5PF	120nH		50+0.0j Ohm
420 Ohm	7.2PF	150nH		50+0.0j Ohm

ATTENUATOR VALUES 50 OHM

dB	R1	R2
0	0	N/A
5	30.1	178.
10	71.5	59.3
15	137	71.5
20	249.	60.4
25	442.	56.2
30	487.	53.6

INPUT MATCHING NETWORK

INPUT	C3	L2	C5	MMIC AMP 50 OHM
20 Ohm				75+0.0j Ohm
40 Ohm				75+0.0j Ohm
50 Ohm		39nH	10PF	75+0.0j Ohm
75 Ohm		SHORT		75+0.0j Ohm

OUTPUT MATCHING NETWORK

MMIC AMP	C22	L3	C24	ANTENNA
20 Ohm				50+0.0j Ohm
40 Ohm				50+0.0j Ohm
50 Ohm		SHORT		50+0.0j Ohm
75 Ohm	10PF	39nH		50+0.0j Ohm

CATV (75 OHM) DEVICES:
BGA3015 BGA3018
8V SUPPLY
(HIGHER OUTPUT ???)



THIS BOARD CONTAINS
STATIC SENSITIVE
DEVICES. HANDLE
ONLY IN STATIC SAFE
ENVIRONMENT

<https://www.analog.com/en/design-center/interactive-design-tools/rf-impedance-matching-calculator.html>

TOP_FULL	BOT_COMPACT	BOARD-ID			
DRAWING FRAME SHOWN ON CIRCUIT BOARD					
Drawn	Date				
KC0JFQ	2019-05-13				
Designed	Date		TITLE: SOT89 RF AMP (TX_ENA)		
KC0JFQ	2019-05-13		A102_73181_28		
CAGE	Series	FOX TRANSMITTER	Number	2 Layers	Rev
2D354	102		A 73181		28
Date: 5/22/24 11:32 AM		5/22/24 11:32 AM		Sheet: 1/2	

The University of Iowa
Department of Physics & Astronomy
Iowa City, IA, USA

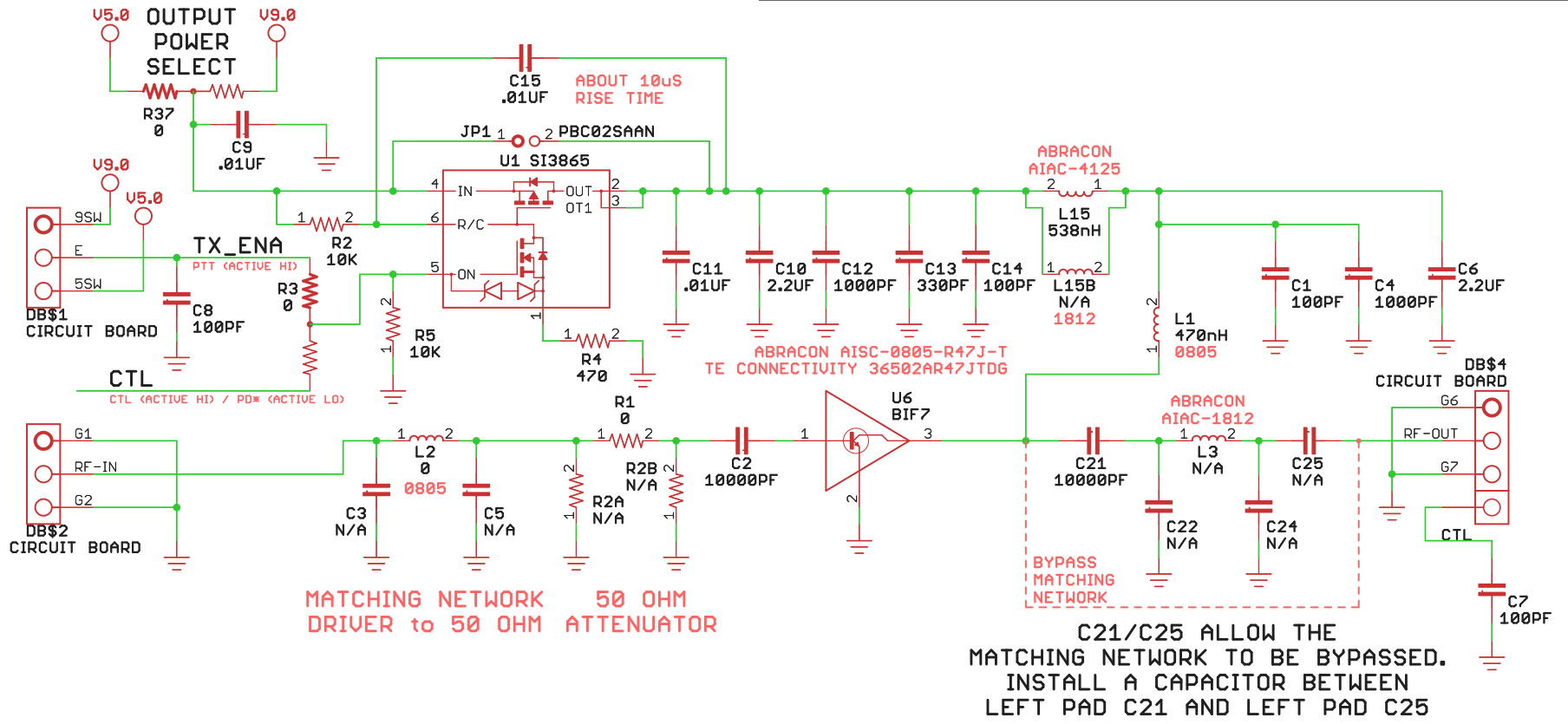
SOT89 RF AMPLIFIER (CHIRP SPECIFIC)

75 OHM

50 OHM

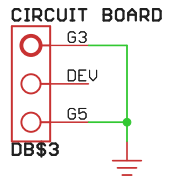
BGA3015	24
2.43	
BGA3018	25
2.38	

ADL5545	24.1	ADL5536	19.4	HMC636	13	BIF7	27.1	BG11C	20.8
4.75		6.14		8.61		4.03	100mW	1.83	
ADL5611	22.2	SBF-5089	19.5	HMC480	19	BIG8	27	→BG15A	19
6.99		NLA		3.56		4.03		2.27	40mW
ADL5602	19.5	SKY65017	20			BT05CU	21.5	BG18C	20.9
6.15		3.03				4.16		1.89	



MATCHING NETWORK DRIVER to 50 OHM ATTENUATOR

C21/C25 ALLOW THE MATCHING NETWORK TO BE BYPASSED. INSTALL A CAPACITOR BETWEEN LEFT PAD C21 AND LEFT PAD C25



ALTERNATE INDUCTOR 0805 (M2012)
 TDK MLZ2012N
 EATON MCQ1U3216
 MURATA LQM21FN

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