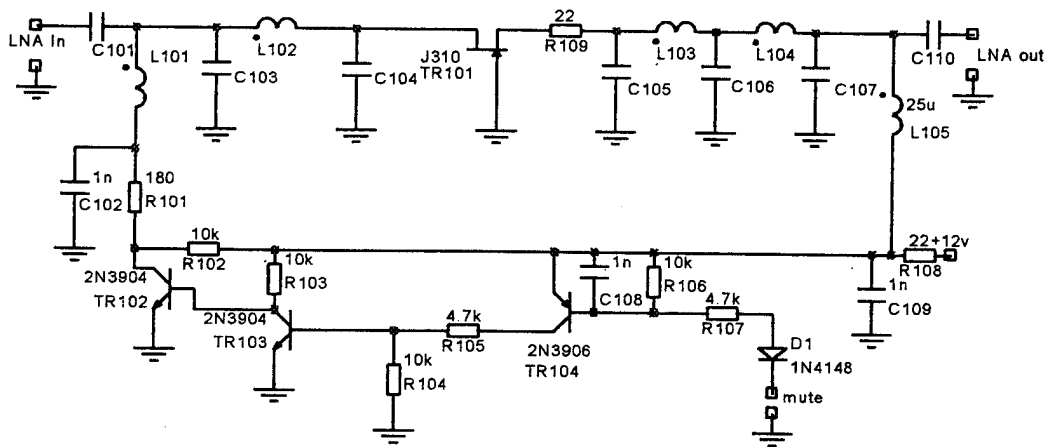
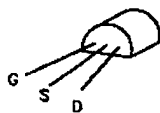
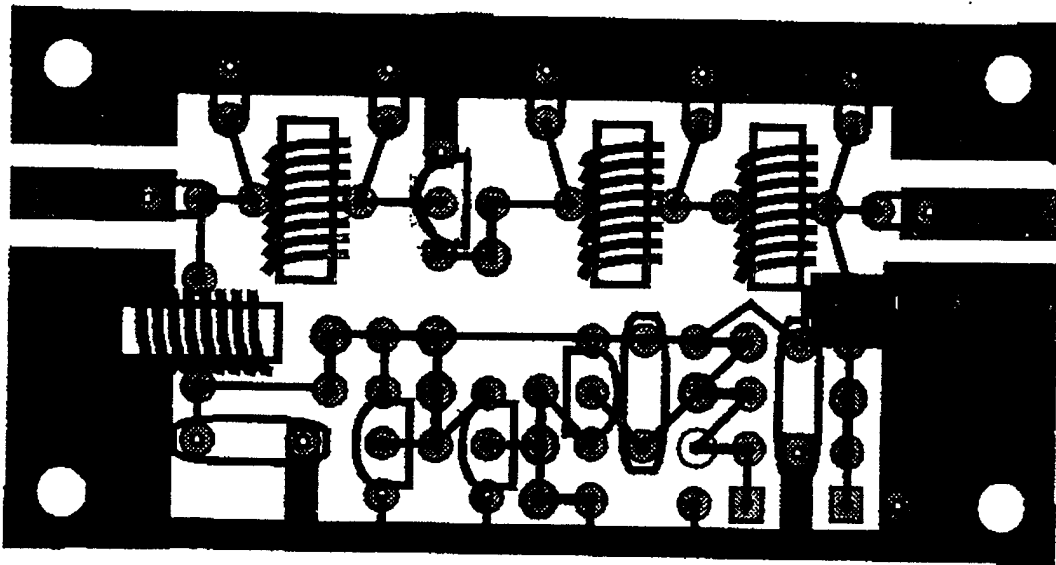


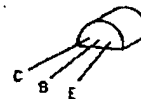
R2Pro - LNA



R2Pro LNA Schematic



J310



2N3904 / 2N3906

100-MHz LNA

The schematic diagram illustrates a 100-MHz Low Noise Amplifier (LNA) circuit. The input signal enters through a matching network consisting of capacitor C103, inductor L101, and capacitor C102 (1.1uF). The first amplifier stage is a common-emitter configuration using a 2N3904 transistor (TR102), biased by a 180-ohm resistor (R101) and a 4.7k resistor (R105). The output of the first stage is coupled to the second stage through a 10k resistor (R102). The second stage is also a common-emitter configuration using another 2N3904 transistor (TR103), biased by a 10k resistor (R103) and a 4.7k resistor (R105). The output of the second stage is coupled to the output matching network through a 10k resistor (R104). The output matching network consists of capacitor C104, inductor L102, capacitor C105, inductor L103, capacitor C106, inductor L104, and capacitor C107. The final output is taken from the circuit through a 10k resistor (R108) and a 51-ohm resistor (R109). The circuit is powered by a 10V supply (V10) and a 10k resistor (R106). The output is labeled 'OUT'.

MUTE +12V

LNA Parts List

Designator	Value	
R101	180	
R102	10K	
R103	10K	
R104	10K	
R105	4.7K	
R106	10K	
R107	4.7K	
R108	51	
R109	22	
C101	See Band Pack Table	
C102	.1 u	
C103	See Band Pack Table	
C104	See Band Pack Table	
C105	See Band Pack Table	
C106	See Band Pack Table	
C107	See Band Pack Table	
C108	.1 u	
C109	.1 u	
C110	See Band Pack Table	
TR101	J310	
TR102	2N3904	
TR103	2N3904	
TR104	2N3906	
D101	1N4148 or equiv	
L101	See Band Pack Table	
L102	See Band Pack Table	
L103	See Band Pack Table	
L104	See Band Pack Table	
L105	12T FT37-43 (50 uh)	

3 – 4 MHz values

Part	Pf
C101	820
C103	1800
C104	820
C105	100
C106	680
C107	470
C110	2200

Part	uh	Core	turns	Wire size
L101	1.3	T37-2	17	26
L102	4.0	T37-2	31	30
L103	20	T50-2	62	30
L104	3.8	T37-2	29	30

9 - 11 MHz values

Part	pf
C101	330
C103	680
C104	330
C105	39
C106	270
C107	180
C110	1000

Part	uh	Core	turns	Wire size
L101	.45	T37-6	11	22
L102	1.5	T37-6	21	26
L103	6.8	T50-6	41	26
L104	1.4	T37-6	20	26

6 - 8 MHz values

Part	Pf
C101	470
C103	820
C104	470
C105	56
C106	390
C107	220
C110	1000

Part	uh	Core	turns	Wire size
L101	.68	T37-6	14	22
L102	2.0	T37-6	25	28
L103	10	T50-2	42	30
L104	1.9	T37-6	24	26

13 – 15 MHz values

Part	pf
C101	220
C103	470
C104	220
C105	27
C106	180
C107	120
C110	1000

Part	uh	Core	turns	Wire size
L101	.33	T37-6	9	22
L102	1.0	T37-6	17	26
L103	4.7	T50-6	32	26
L104	1.0	T37-6	17	22

18 - 22 MHz values

Part	pf
C101	180
C103	270
C104	120
C105	18
C106	120
C107	100
C110	1000

Part	uh	Core	turns	Wire size
L101	.24	T37-6	8	22
L102	.76	T37-6	15	22
L103	3.5	T37-6	33	28
L104	.76	T37-6	15	22

6 Meter values

Part	Pf
C101	68
C103	120
C104	56
C105	2.2
C106	47
C107	33
C110	180

Part	Uh	Core	turns	Wire size
L101	.08	T30-12	5	26
L102	.25	T30-12	10	26
L103	1.1	T30-12	26	30
L104	.25	T30-12	11	26

24 - 30 MHz values

Part	pf
C101	150
C103	220
C104	100
C105	12
C106	82
C107	56
C110	680

Part	uh	Core	turns	Wire size
L101	.16	T37-6	6	22
L102	.56	T37-6	12	22
L103	2.7	T37-6	28	28
L104	.54	T37-6	12	22