

Prototype test results from Version 2:
 V_{in} from RF generator = 0.19Vp-p
 V_{out} from RF monitor = 192mVp-p
 Frequency corresponding to V_{out} max = 20.9 MHz
 Measured coupling ratio of RFout to RFmon at 18.5 MHz (with scope probe loading) = 155
 Extrapolated V_{out} at 20.5 MHz = $V_{mon} * 155 = 29.8Vp-p$
 Calculated voltage gain = $V_{out}/V_{in} = 29.8/0.19 = 130$ at 20.5MHz

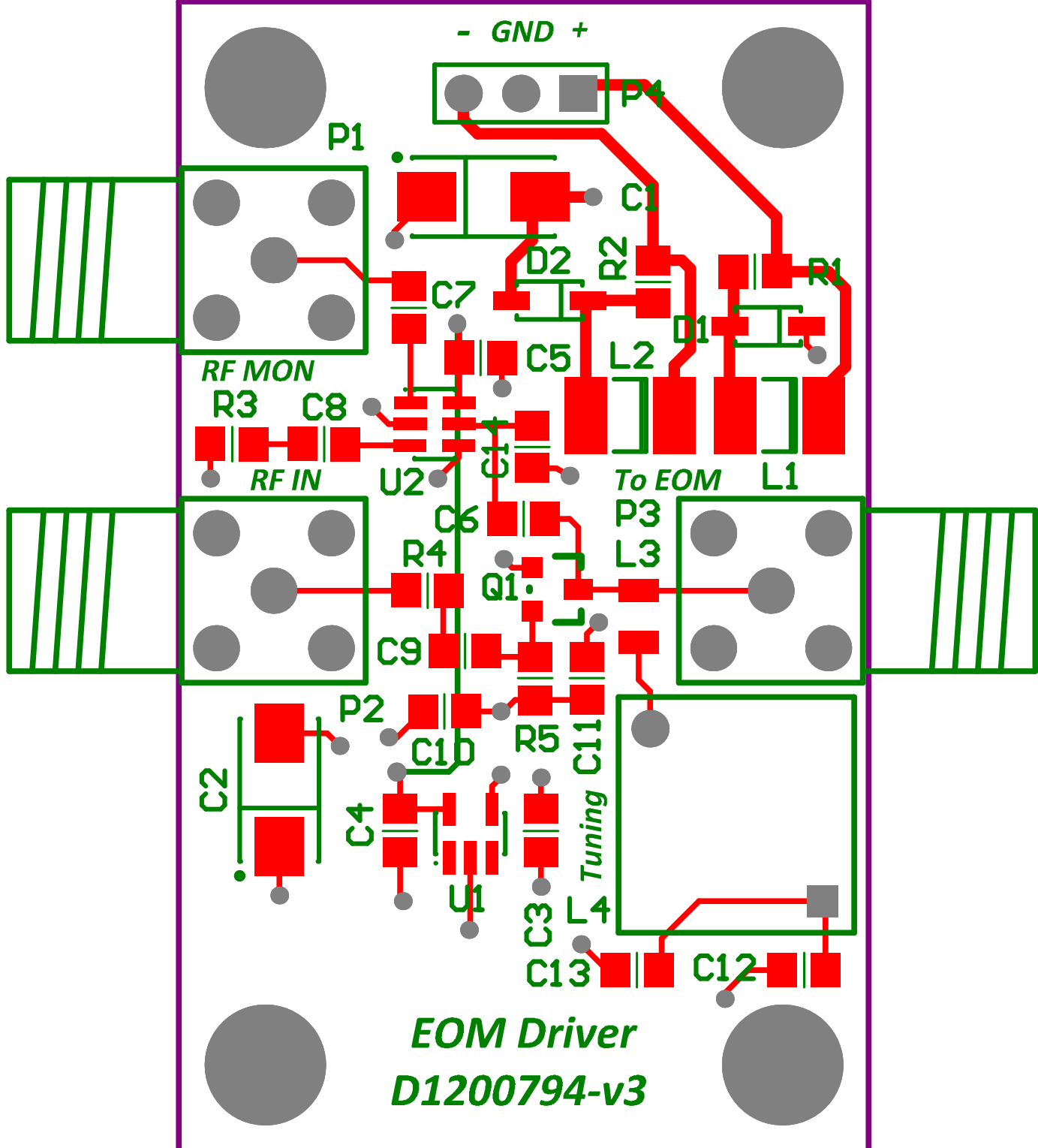
L3 should be adjusted in value to be within the tuning range of L4 at the desired operating frequency. The connection between P1 and the target EOM must be short and the reactance of this transmission line becomes part of the tuned circuit

Revision History:

- V1 - Initial Release
- V2 - Text and component value changes:
- U2 buffer is now labeled with a part number
- C6 changed from 1pF to 0.5pF
- Cadd was added to make a voltage divider to limit the input signal to the RF buffer
- The quiescent voltage shown on the emitter of Q1 has been changed to reflect actual in situ measurement
- The original version of PCB still corresponds to this schematic, but next time the the board is ordered: Add Cadd
- Do better on power connector
- V3 - Fixed the need for adding Cadd, which became C14. Added this to the layout.
- Looked at better power connector. Opted to increase hole and pad size and move connector

Title EOM Driver		LIGO Laboratory California Institute of Technology Massachusetts Institute of Technology	
Size: A	DCC Number: D1200794	Revision: v3	Engineer: R. Abbott
File: C:\Rich's Files\Mycadfiles\Misc\EOM_Driver\EOM_v2\EOM.SchDoc		Date: 8/22/2013	Time: 2:26:04 PM
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EOM Driver
D1200794-v3

Comment	Designator	Digikey Part Number	Footprint	Quantity	Supplier Part Number 1
10uF	C1, C2	478-1701-1-ND	TC6032-2412	2	
1uF	C3, C4, C11, C13	PCC102CGCT-ND	2012[0805]	4	
10nF	C5, C7, C8, C9, C10, C12	490-1664-1-ND	2012[0805]	6	
0.5pF	C6	311-1094-1-ND	2012[0805]	1	
180pF	C14	PCF1287CT-ND	2012[0805]	1	
60V, 1A Schottky	D1, D2	RB160M-60CT-ND	sod123	2	
10uH	L1, L2	495-1754-1-ND	1812	2	
270nH	L3		2520	1	1008CS-271XJ
1.4uH Coilcraft Tunable	L4		Coilcraft 10mm Tunable	1	143-20J12L
SMA RT Angle	P1, P2, P3	J569-ND	MY_SMA4	3	
3 Pin Molex RT Angle	P4	WM5236-ND	HDR1X3	1	
HF Transistor MMBT5551	Q1	MMBT5551-FDICT-ND	SOT-23	1	
49.9 ohms	R1, R2, R3, R4	311-49.9BCT-ND	2012[0805]	4	
2.87K	R5	P2.87KDACT-ND	2012[0805]	1	
5V Regulator	U1	296-18037-1-ND	SOT23-5	1	
MAX2470 RF Buffer	U2	MAX2470EUT+TCT-ND	SOT23-6	1	