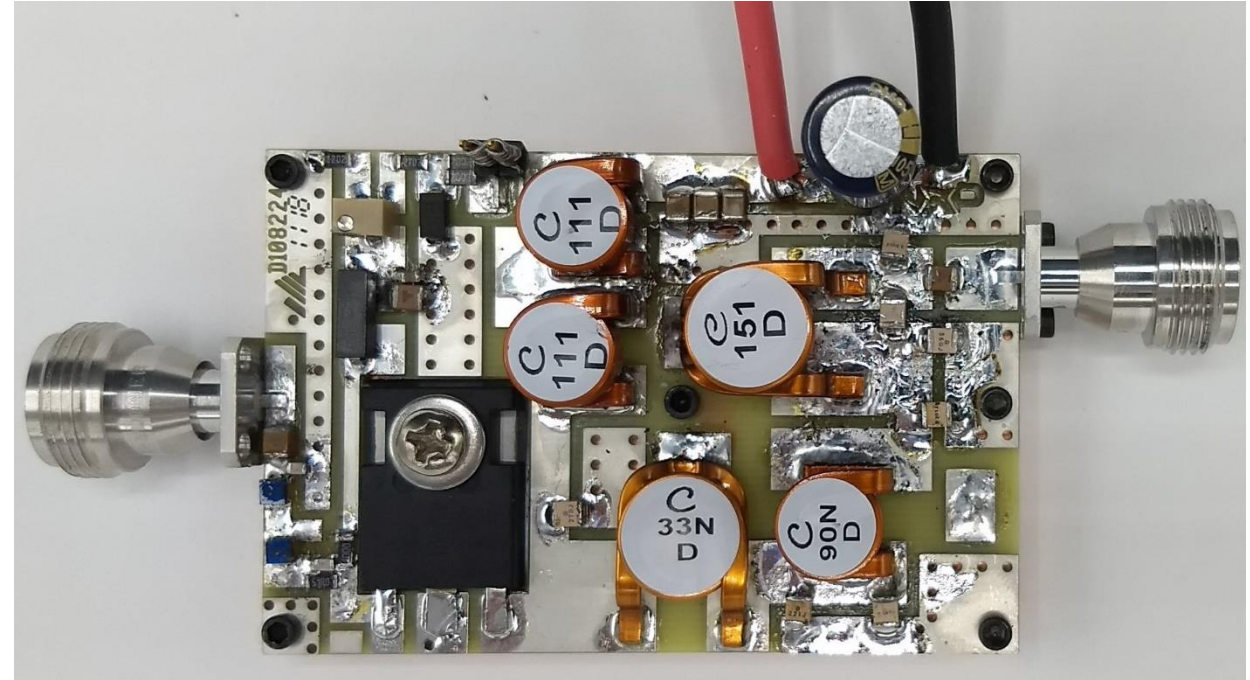
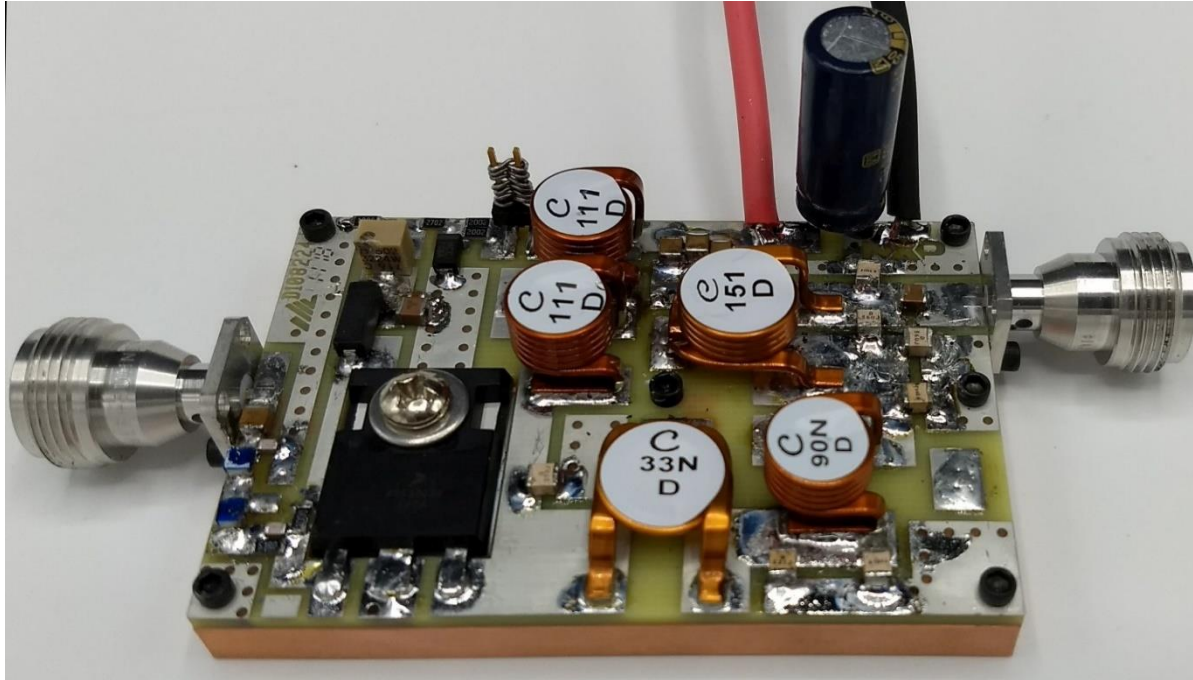


MRF300AN 27 MHZ REFERENCE CIRCUIT



SECURE CONNECTIONS
FOR A SMARTER WORLD

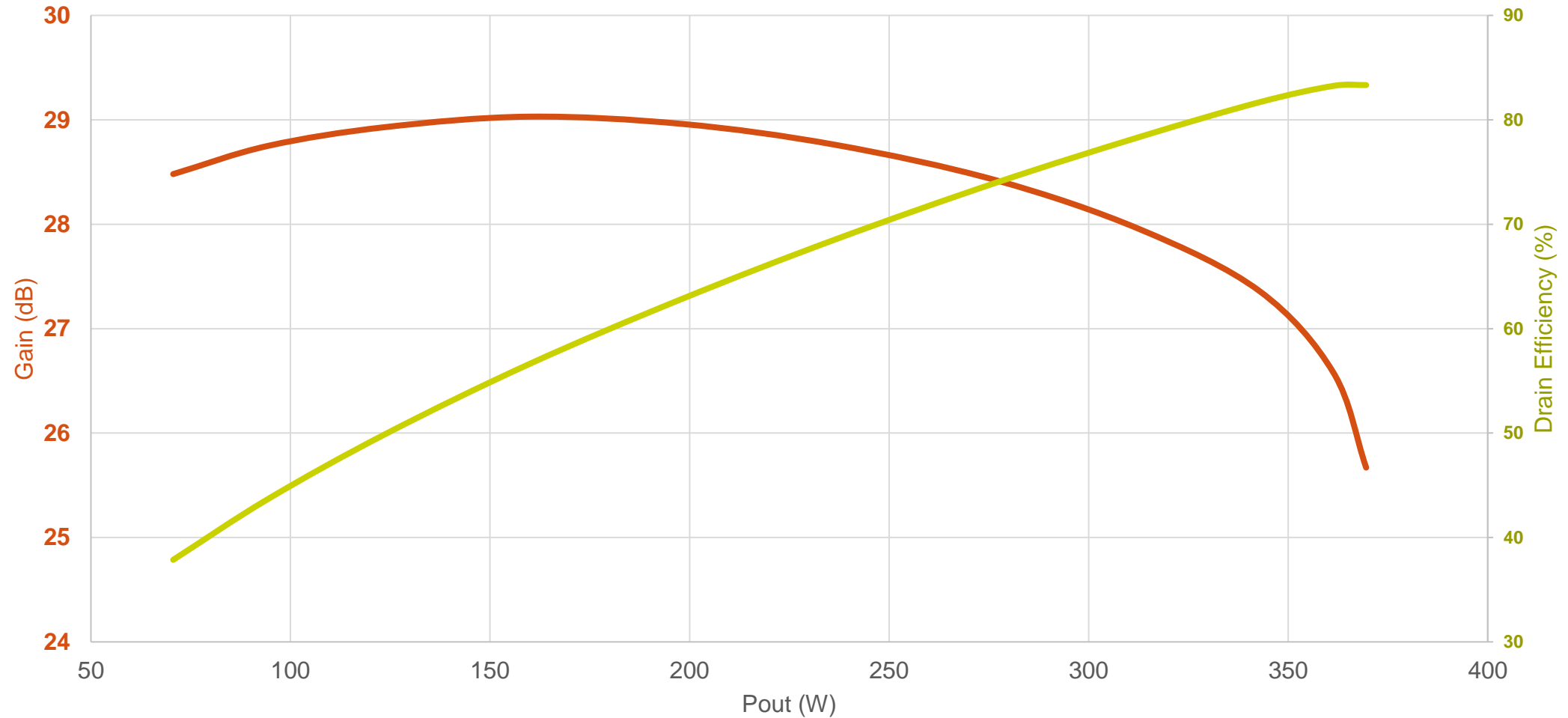
Assembly



Size 2" x 3" (5.1 cm x 7.6 cm)

Typical performance

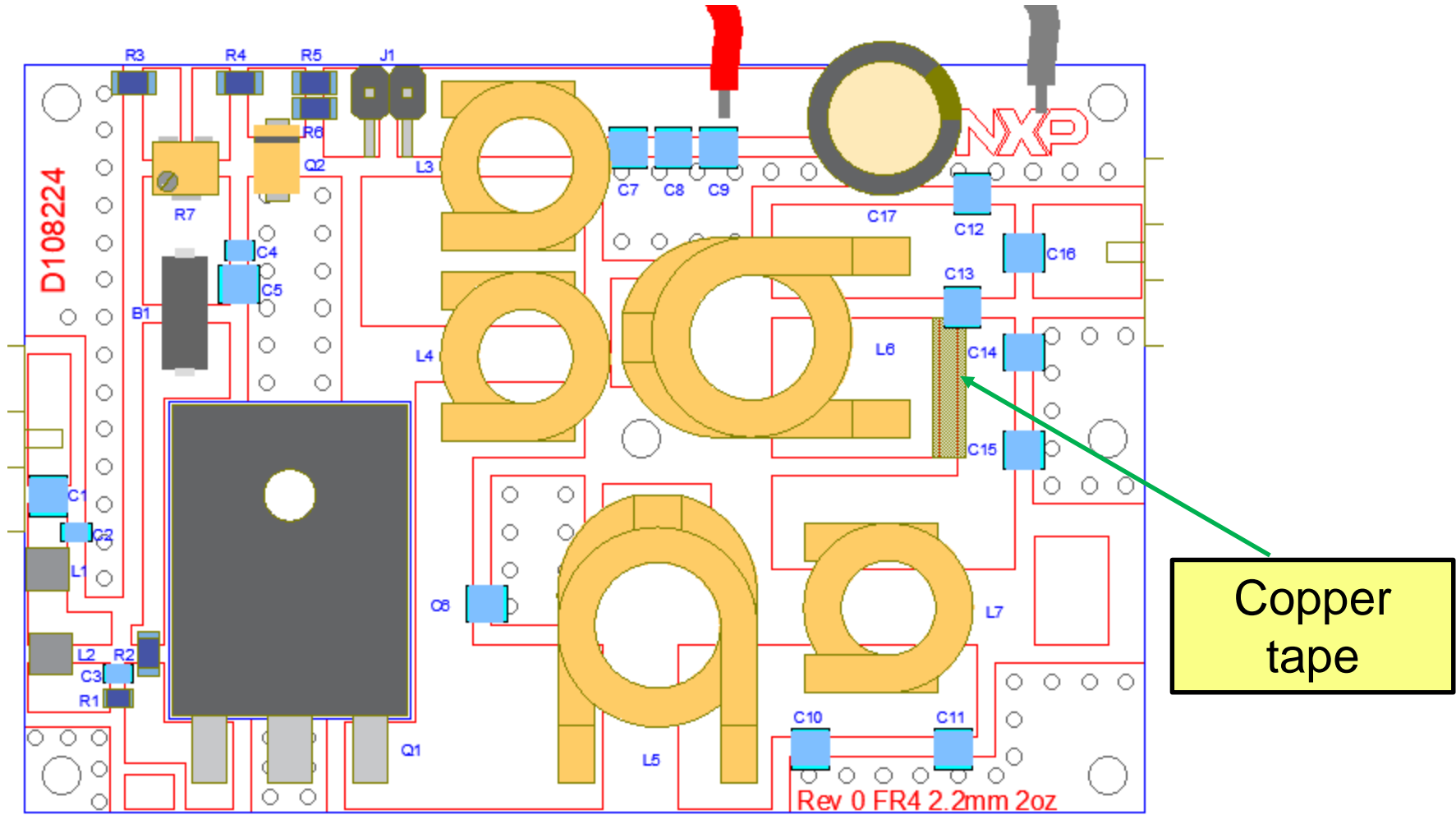
50 V, $I_{dq} = 100$ mA, CW



Board Frequency (MHz)	Power (W)	Gain (dB)	Drain Eff. (%)
27	340 CW	27.3	81



Assembly



Bill of Materials

Designator	Description	Part Number	Manufacturer
C1,C5,C7,C16	39,000 pF chip capacitors	200B393KT50XT	ATC
C2	120 pF chip capacitor	GQM2195C2E121GB12D	Murata
C3	200 pF chip capacitor	GQM2195C2A201GB12D	Murata
C4	1 uF chip capacitor	GRM31CR72A105KA01L	Murata
C6	27 pF chip capacitor	100B270JT500XT	ATC
C8	0.1 µf 100 V chip capacitor	GRM32NR72A104KA01B	Murata
C9	10 µf 50 V chip capacitor	GRM32ER61H106KA12L	Murata
C10	220 pF chip capacitor	100B221JT200XT	ATC
C11	120 pF chip capacitor	100B121JT300XT	ATC
C12	30 pF chip capacitor	100B300JT500XT	ATC
C13,C14	56 pF chip capacitors	100B560CT500XT	ATC
C15	200 pF chip capacitor	100B201JT300XT	ATC
C17	220 µf 63 V Electrolytic capacitor	EEU-FC1J221	Panasonic-ECG
R1	51Ω 1206 Chip Resistor	CRCW120651R0FKEA	Vishay
R2	100 Ω 1206 Chip Resistor	CRCW1206100RFKEA	Vishay
R3	12 KΩ 1206 Chip Resistor	CRCW120612K0JNEA	Vishay
R4	27 KΩ 1206 Chip Resistor	CRCW120627K0FKEA	Vishay
R5,R6	20 KΩ 1206 Chip Resistors	CRCW120620K0FKEA	Vishay
R7	SMT Trim Pot 5K, (12 turn)	3224W-1-502E	Bourns
B1	Long RF Bead	2743021447	Fair-Rite
L1,L2	180 nH inductors	1008CS-181XJLB	Coilcraft
L3,L4	110 nH Inductors	1212VS-111MEB	Coilcraft
L5	33 nH Inductor	2014VS-33NMEB	Coilcraft
L6	155 nH Inductor	2014VS-151MEB	Coilcraft
L7	90 nH Inductor	1212VS-90NME	Coilcraft
J1	2 Pin Header RA	9-146305-0	TE Connectivity
JS1	Shunt for J1	382811-8	TE Connectivity
Q1	LD MOS transistor	MRF300AN	NXP Semiconductors
Q2	8.2V Zener Diode	SMAJ4738A-TP	Micro Commercial Co
PCB	FR4 2.2mm 2 oz	D108224	MTL
Heatsink	Copper Heatsink	C071X229T250D00	Machine Shop

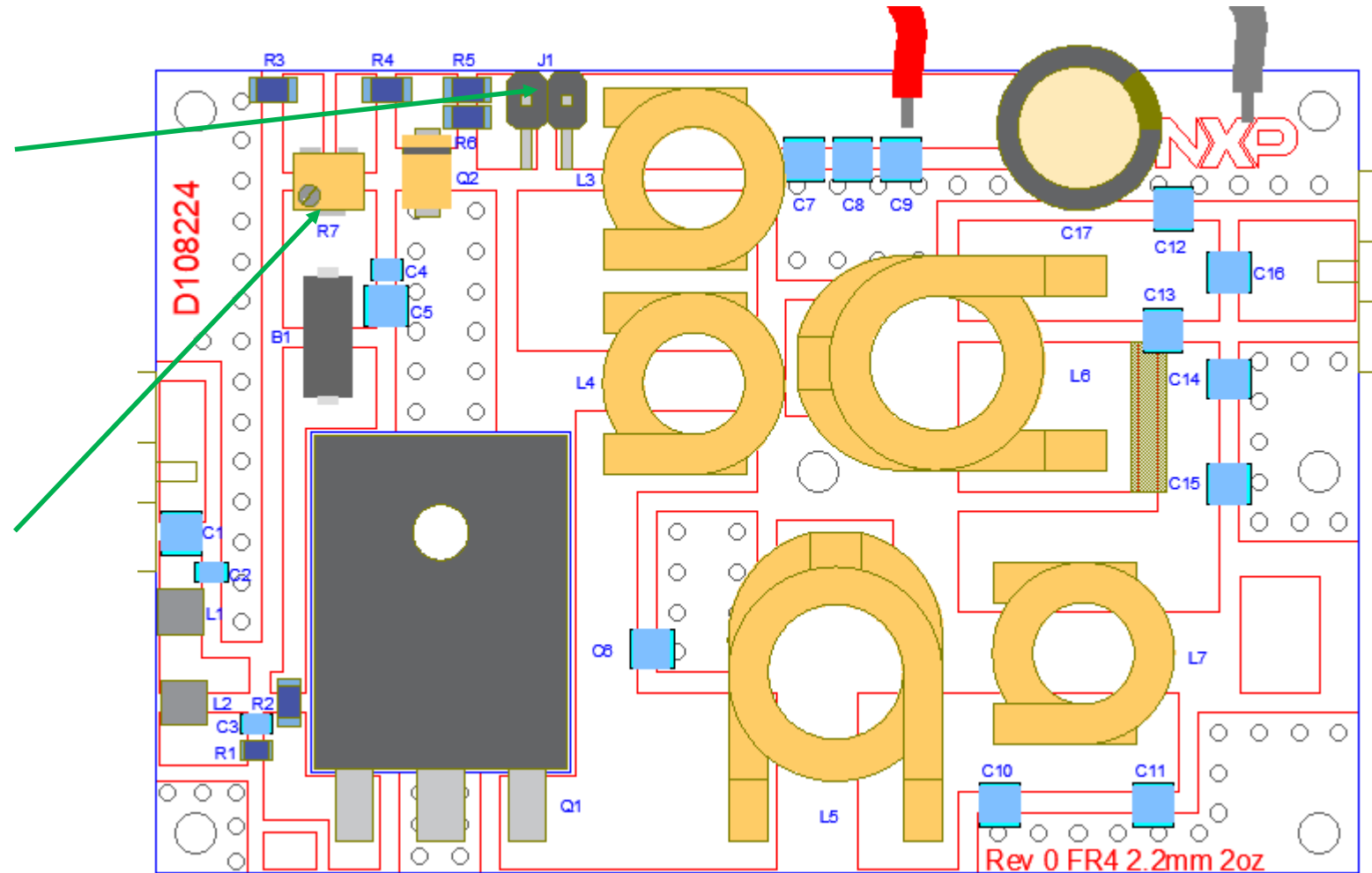


Tuning tips

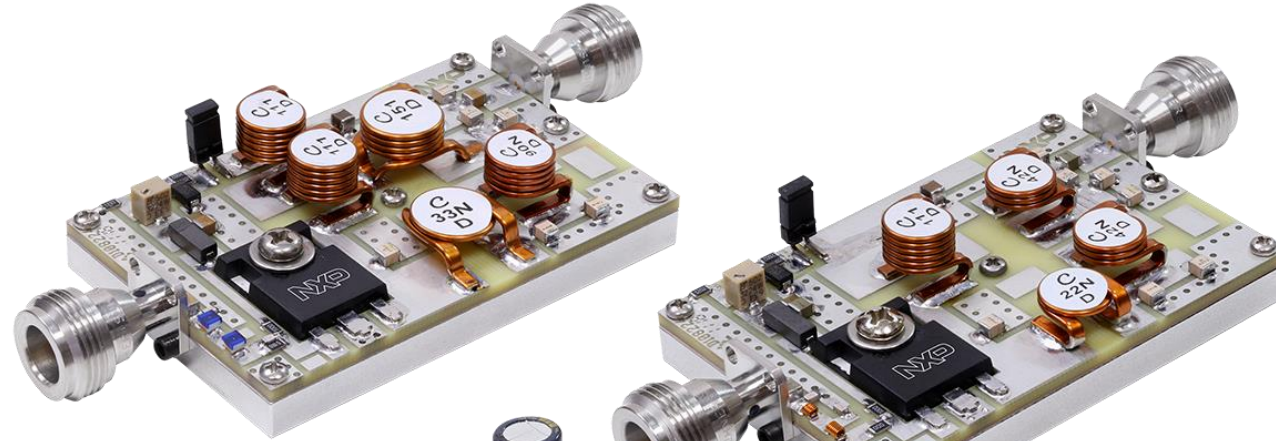
1. Put JS1 on/off to enable /disable Gate bias

2. Adjust R7 to set I_{dq} , clockwise to decrease

PCB is bolted down,
no need to solder



Same PCB as other narrowband MRF300AN reference circuits



27 MHz

81.36 MHz



40.68 MHz



SECURE CONNECTIONS
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