

TB270

Frequency=88-108MHz

Pout=450W

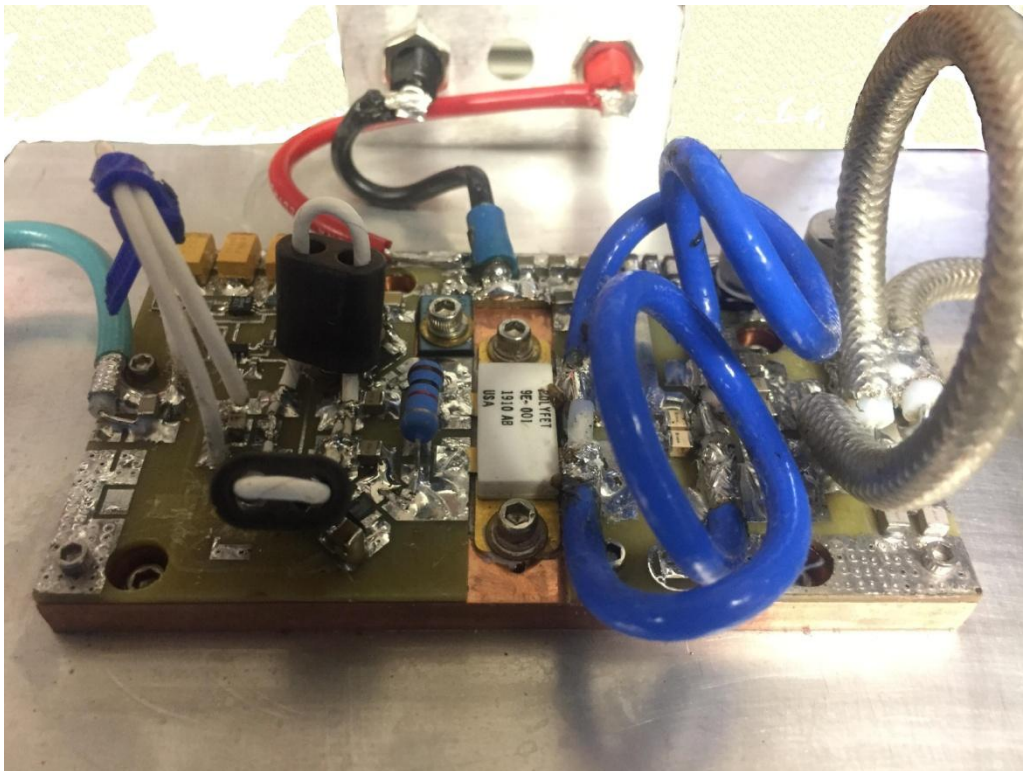
Gain=21dB

Vds=50Vdc

Idq=800mA

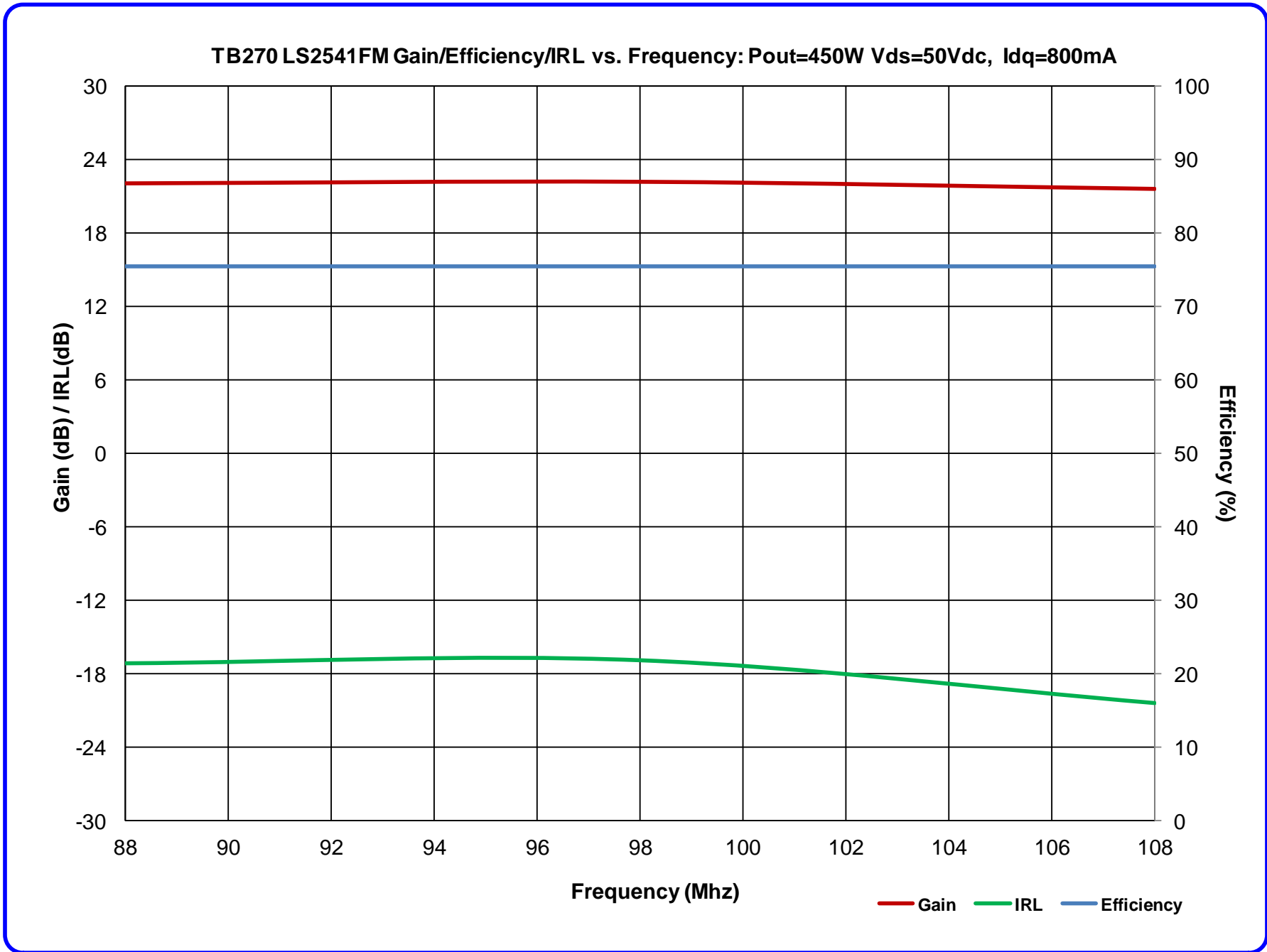
75.5 % Efficiency

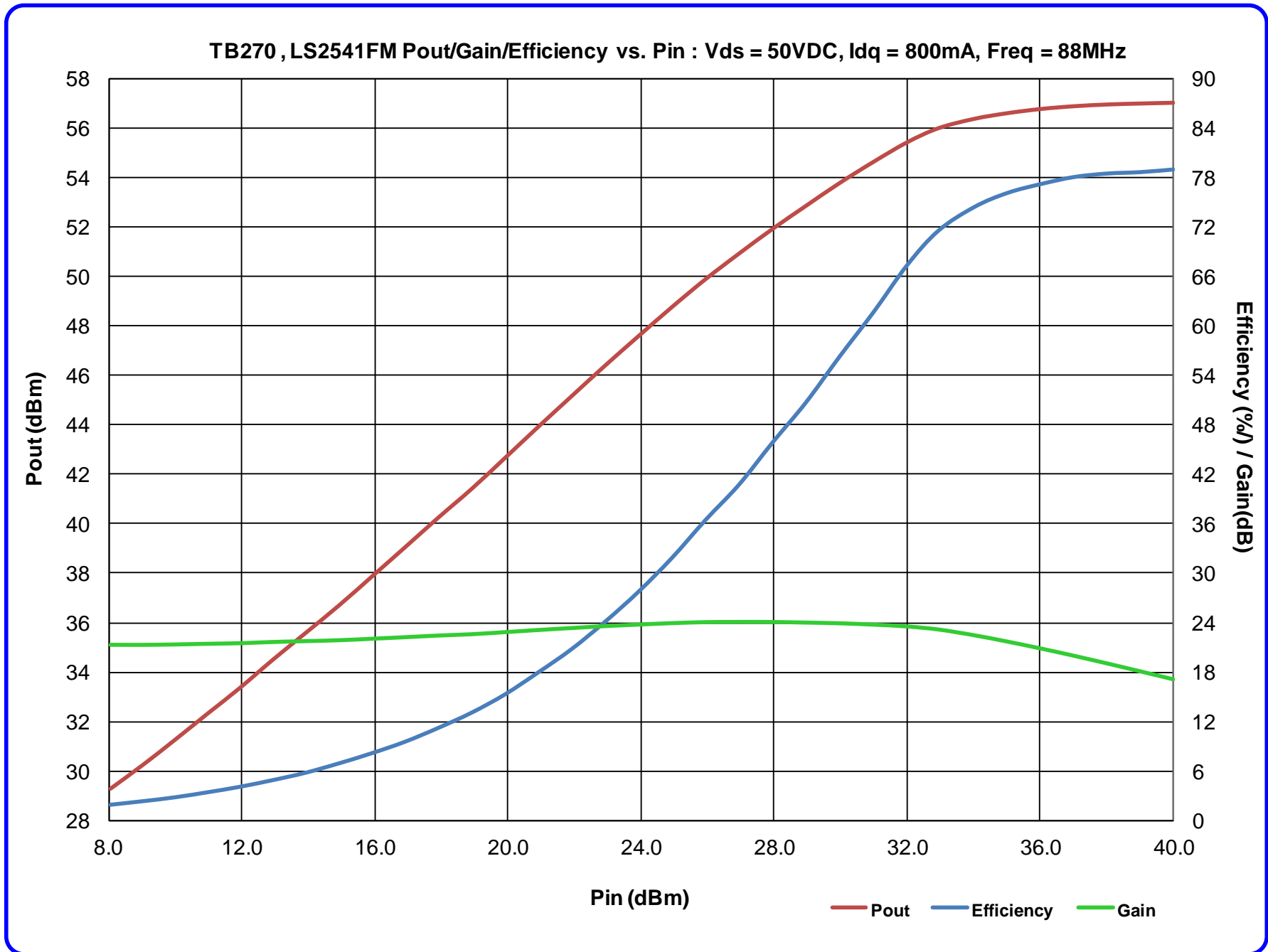
LS2541FM

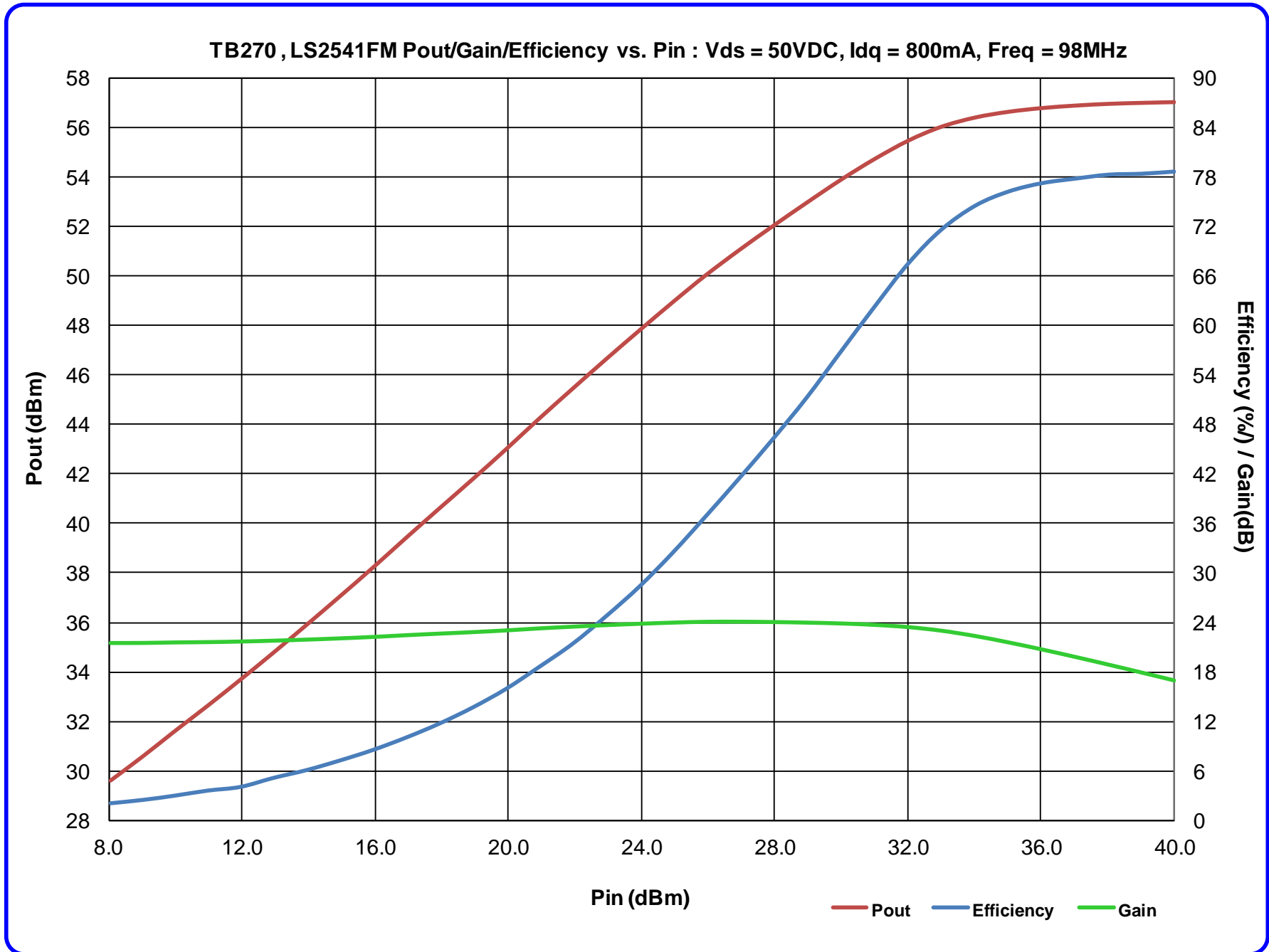


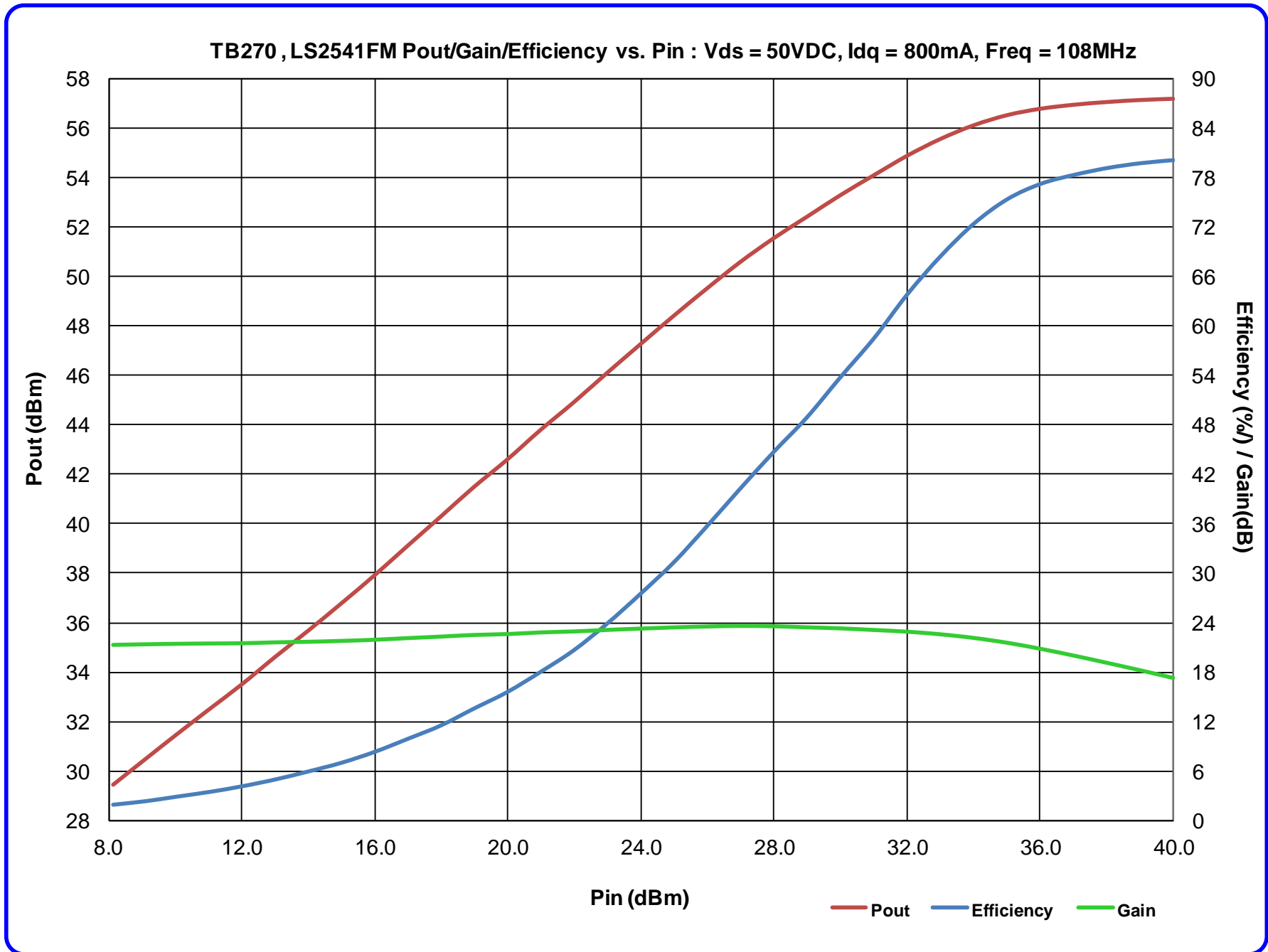
Order of Operations:

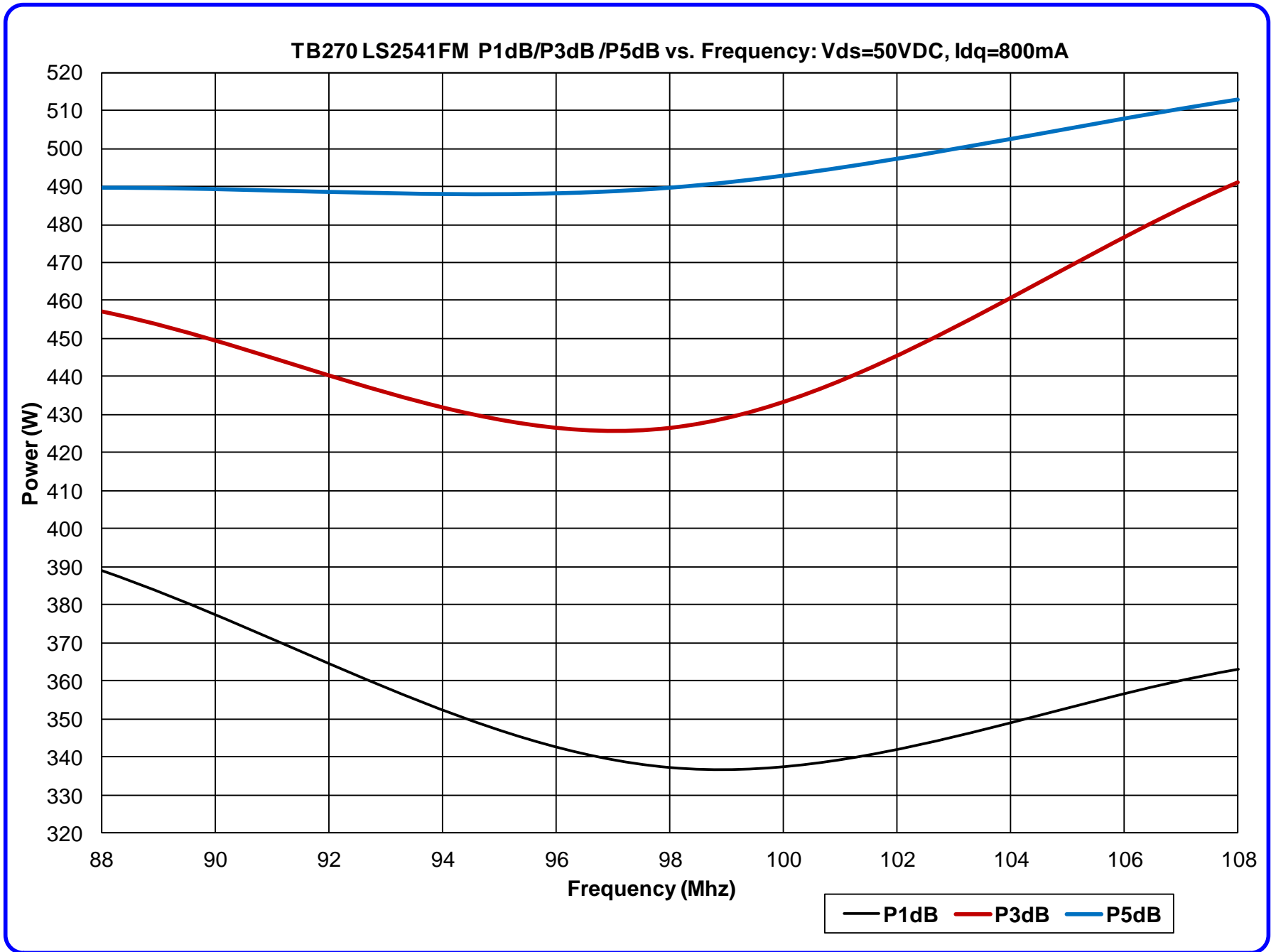
1. Review amplifier's performance curves in the data package to learn its RF power limitations.
2. Terminate the RF In/Out connectors to 50 ohm source and load impedance.
3. Connect Ground and Vds banana jacks to DC power supply.
4. Apply 50VDC to Vds voltage banana jack.
5. Verify Idq= 800mA (amps)
6. Apply RF drive signal (refer to curves in data package to avoid overdrive).
7. Avoid allowing the base plate to reach 85 deg C by using proper cooling techniques.



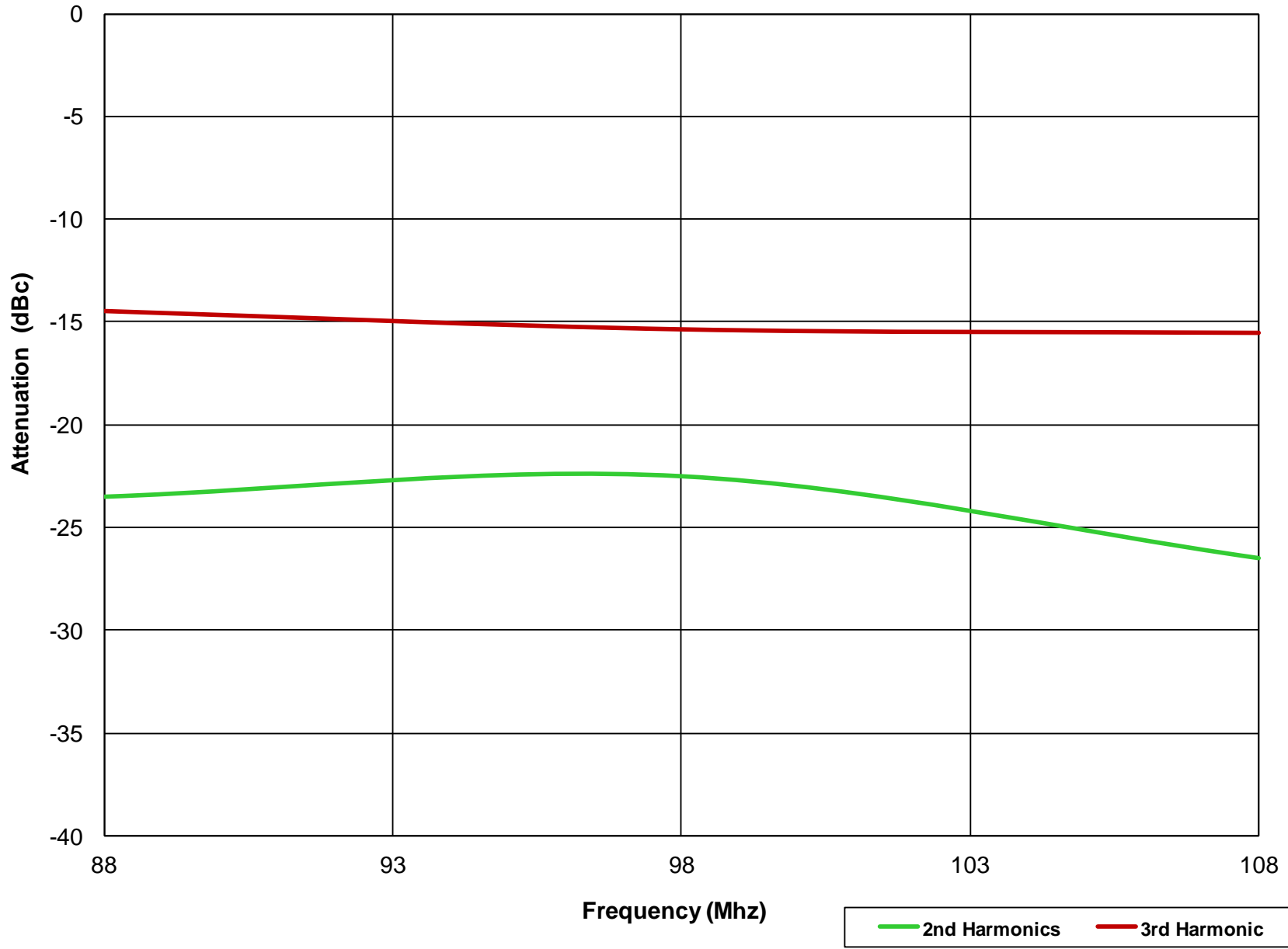


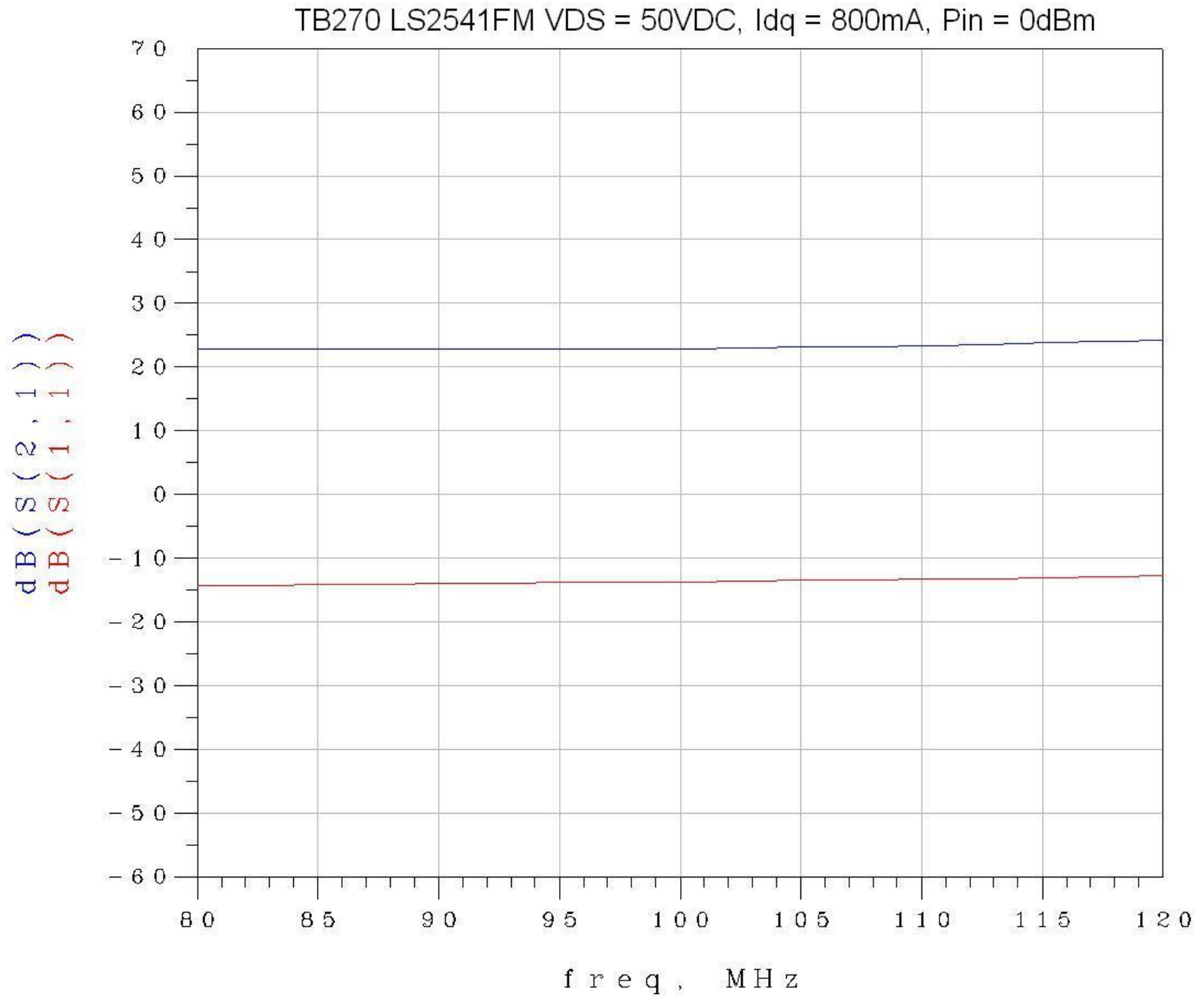


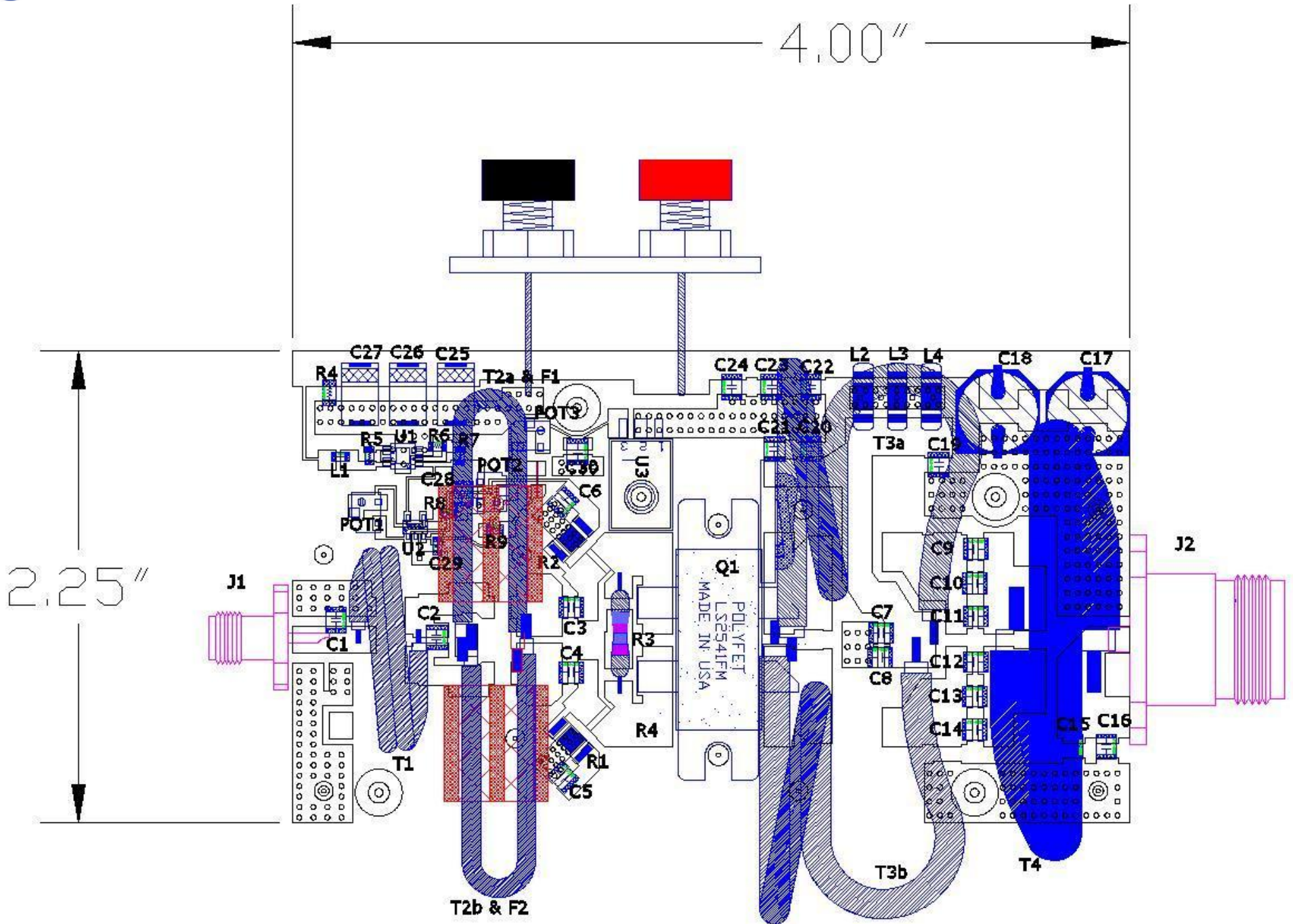


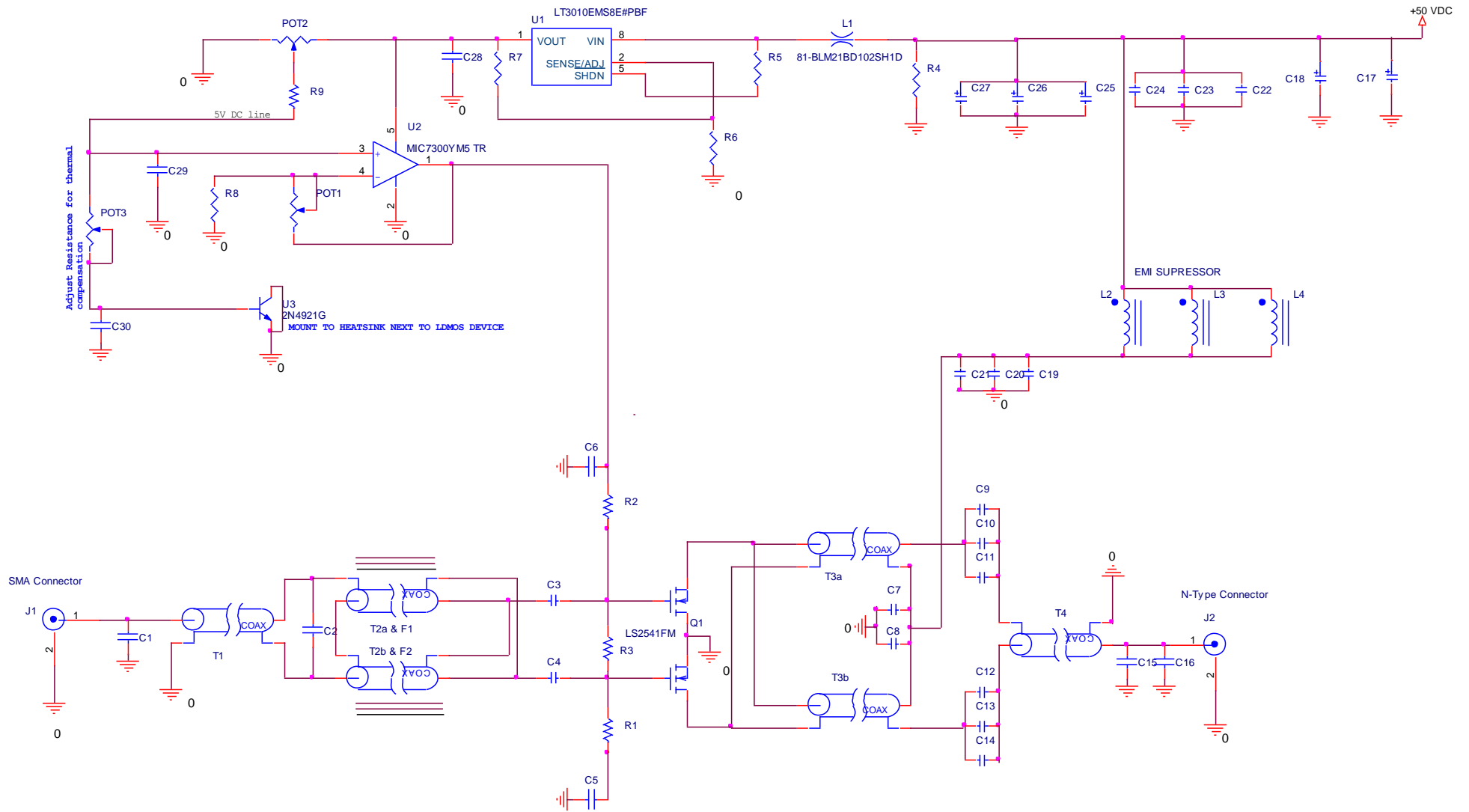


TB270, LS2541FM 2nd/3rd Harmonics vs. Frequency: Pout = 450W, Vds = 50VDC, Idq = 800mA









Title		
TB270 88-108MHz Vds = 50VDC, Idq = 800mA		
Size	Document Number	Rev
	LS2541FM 450W	A
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TB270			
NOMENCLATURE	DESCRIPTION	VENDER	VENDER PART #
C1	5.6pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N5R6BW501
C2	13pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N130BW501
C15	4.3pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N4R3BW501
C16	2.1pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N2R1BW501
C5,C6,C19,C22,C28,C30	100,000pF +/-10% RF By-Pass Capacitors,1111X	Passive Plus, Inc	111X104KW500
C17	Aluminum Electrolytic Capacitors - SMD 220UF 50V FK SMD	Panasonic	EEE-FK1H221P
C18	Aluminum Organic Polymer Capacitors 33uF 63 Volts 20%	Nichicon	PCV1J330MCL1GS
C3, C4,C7,C8,C24,C21	1000pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N102GW500
C23,C20,C9,C10,C11,C12,C13,C14	10,000pF +/-10% RF By-Pass Capacitors,1111X	Passive Plus, Inc	111X103KW500
C27	6.8uF 63V 20% ERS=100Ohms Tantalum Capacitors SMD	AVX	TCJE685M063R0100
C26	10uF 63V 20% ERS=100Ohms Tantalum Capacitors SMD	AVX	TCJE106M063R0100
C25	15uF 63V 20% ERS=150Ohms Tantalum Capacitors SMD	Kemet	T521X156M063ATE150
C29	10uF 10%TAMCERAM HIGH CAP. SMD 805	Johanson Dielectrics	100r15x106kV4e
R1,R2	10 Ohms Surface Mount Chip, Style CS1,±2%10Watts	ATC	CS12010T0010G
R3	RES 1 K 2W 5% METAL OXIDE	Xicon	282-1.0K-RC
R4	RES 10K OHM 1/4W 5% 1206 SMD	Rohm Semiconductor	MCR18EZPJ103
R5,R6	10K 1/8W 0805 SMD	Rohm Semiconductor	MCR10EZHJ103
R7	56K 1/8W 0805 SMD	Rohm Semiconductor	MCR10EZPJ563
R8	2.2K 1/8W 0805 SMD	Rohm Semiconductor	MCR10EZPJ222
R9	390 1/8W 0805 SMD	Rohm Semiconductor	MCR10EZPJ391
POT1,POT2	Trimmer Resistors - 10K OHM 0.25W SMD	Murata Electronics North America	PVG5A103C03R00
POT3	Trimmer Resistors - 100 OHM 0.25W SMD	Murata Electronics North America	PVG5A101C03R00
L1	0805 1kohms HiSpeed EMI Filter Beads,Chokes & Arrays	Murata Electronics North America	81-BLM21BD102SH1D
L2,L3,L4	EMI/RFI Suppressors & Ferrites 1000pF 100Volts@125C	Tusonix	4700-005LF
U1	IC REG LDO ADJ 50mA 8-MSOP	Linear Technology	LT3010EMS8E#PBF
U2	Operational Amplifiers - Op Amps SGL RRIO OP AMP	Texas Instruments	LM7321MF/NOPB
U3	Transistors Bipolar - BJT 3A 40V 30W NPN	ON Semiconductor	2N4921G
F1,F2	Binocular Ferrite material 61 125u	Fair-Rite	2861010002
T1	50 OHM Flexible RG178 Coax Cable Single Shielded,30AWG ,lenght 7.75 inch	Belden Wire & Cable	83265 009100
T2a,T2b	26.79 Ohms Type E extruded TFE teflon insulation, length 3.0 inch	RF Power Systems	TC-24
T3a, T3b	25? (±2) Flexible PTFE High Power Coaxial Cable, length 7.0 inch	Qaxial Quality Coaxial	RG141-25
T4	50 OHM SEMI-RIGID CABLES, length 5.75 inch	Amawave	UT-250C-FORM
Q1	LDMOS	Polyfet RF Devices	LS2541FM
J1	PE4000-SF SMA Female; 4 Hole Panel Mount	Pasternack	PE4000-SF
J2	PE4328 N Female; 4 Hole Panel Mount	Pasternack	PE4328
PCB	185HR 0.059", 1oz/1oz er+4.01	Isola	185HR