

# TB263

**Frequency=30-512MHz**

**Pout=180W**

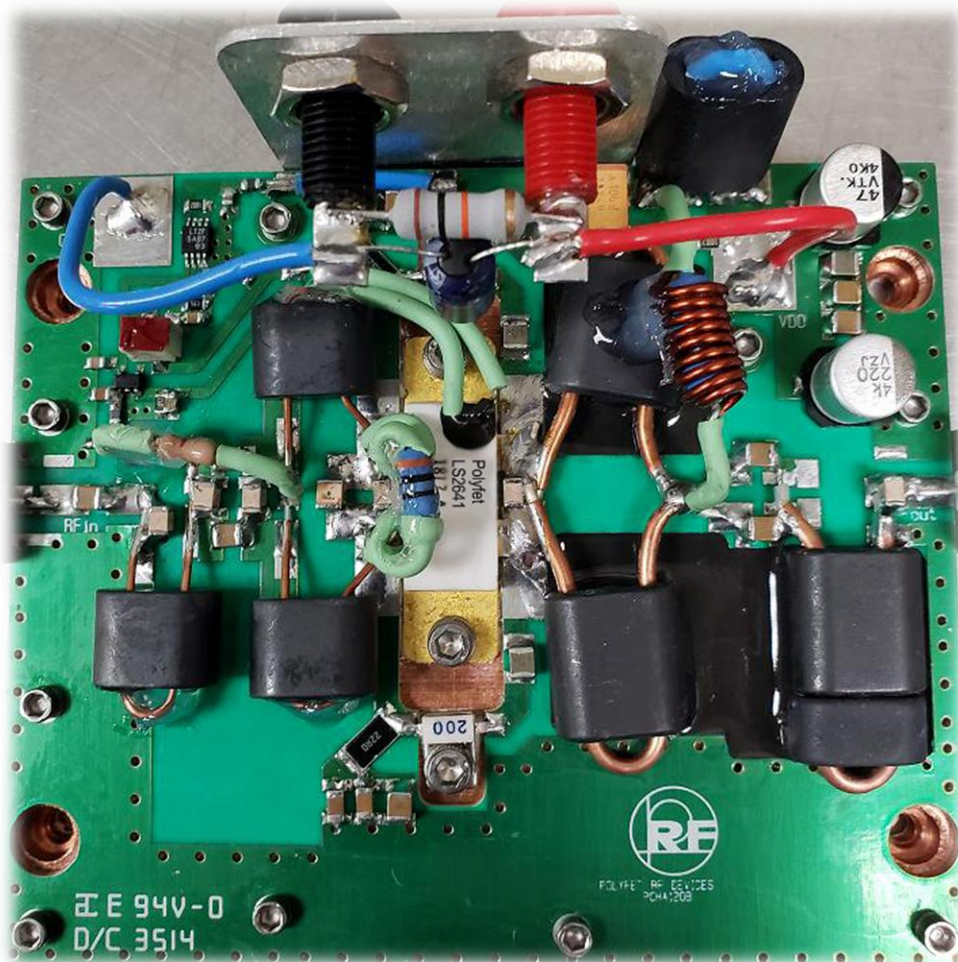
**Gain=16.87-20.51dB**

**Vds=28Vdc**

**Idq=0.5A**

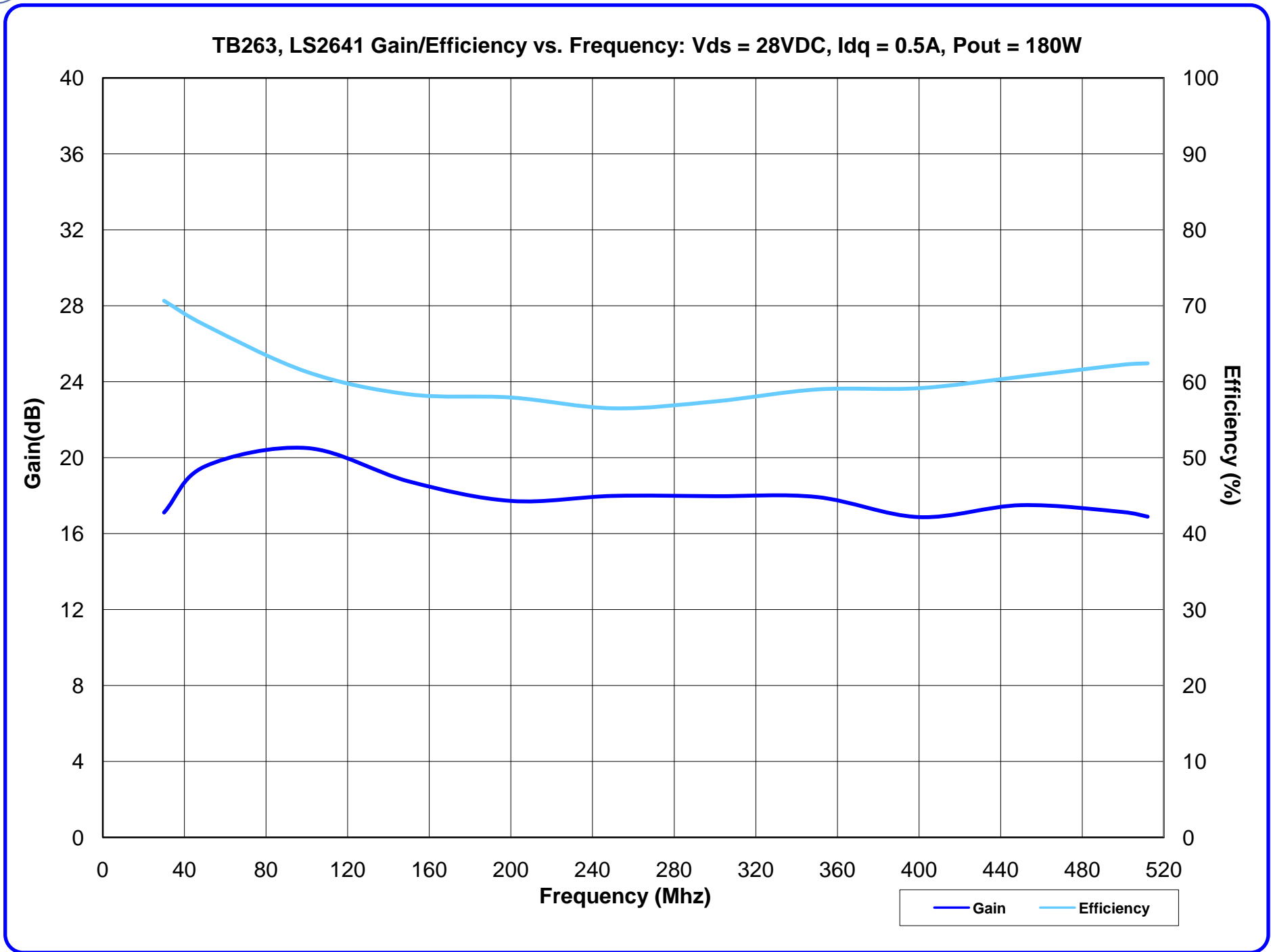
**Efficiency=56-70%**

**LS2641**

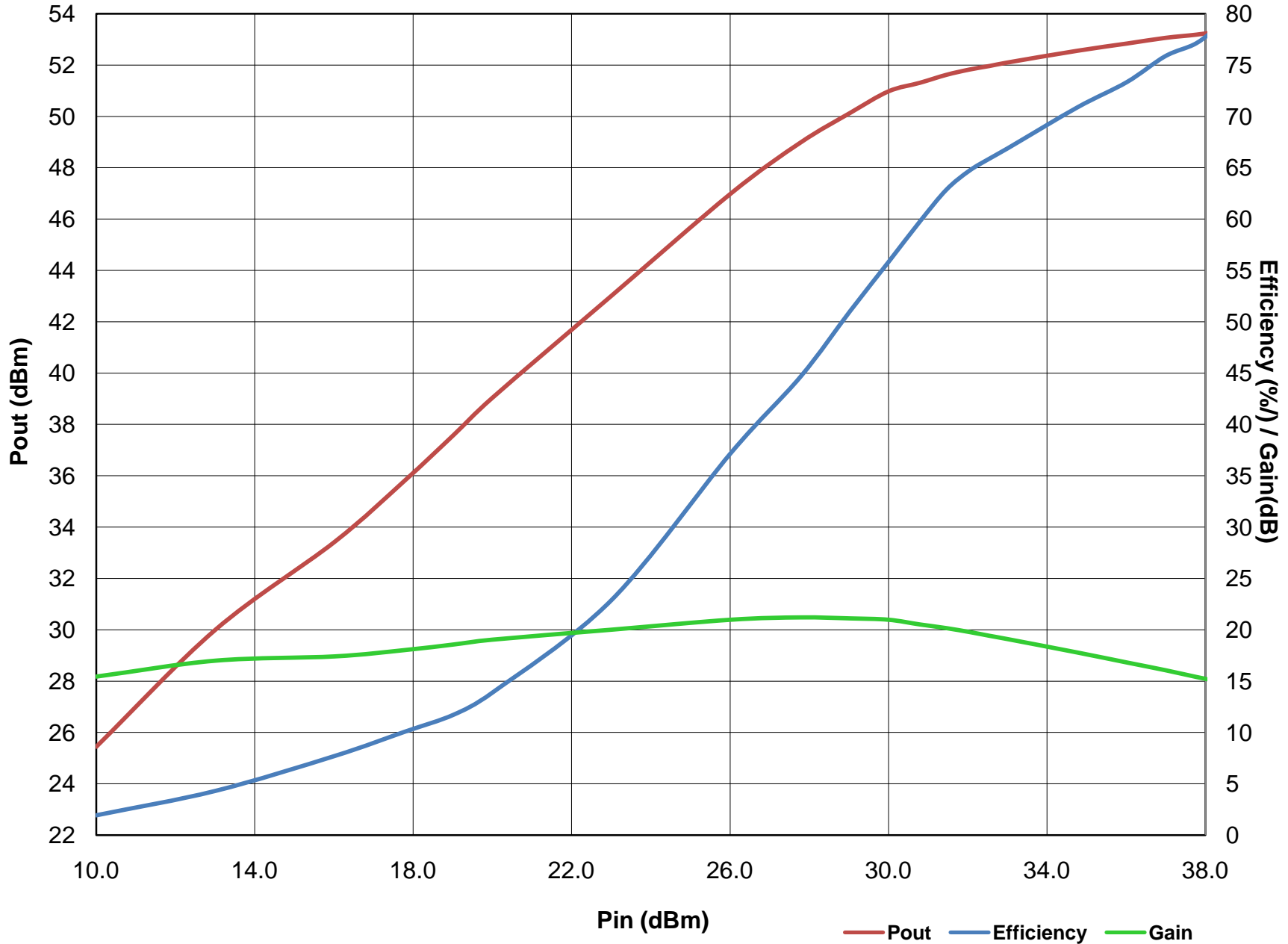


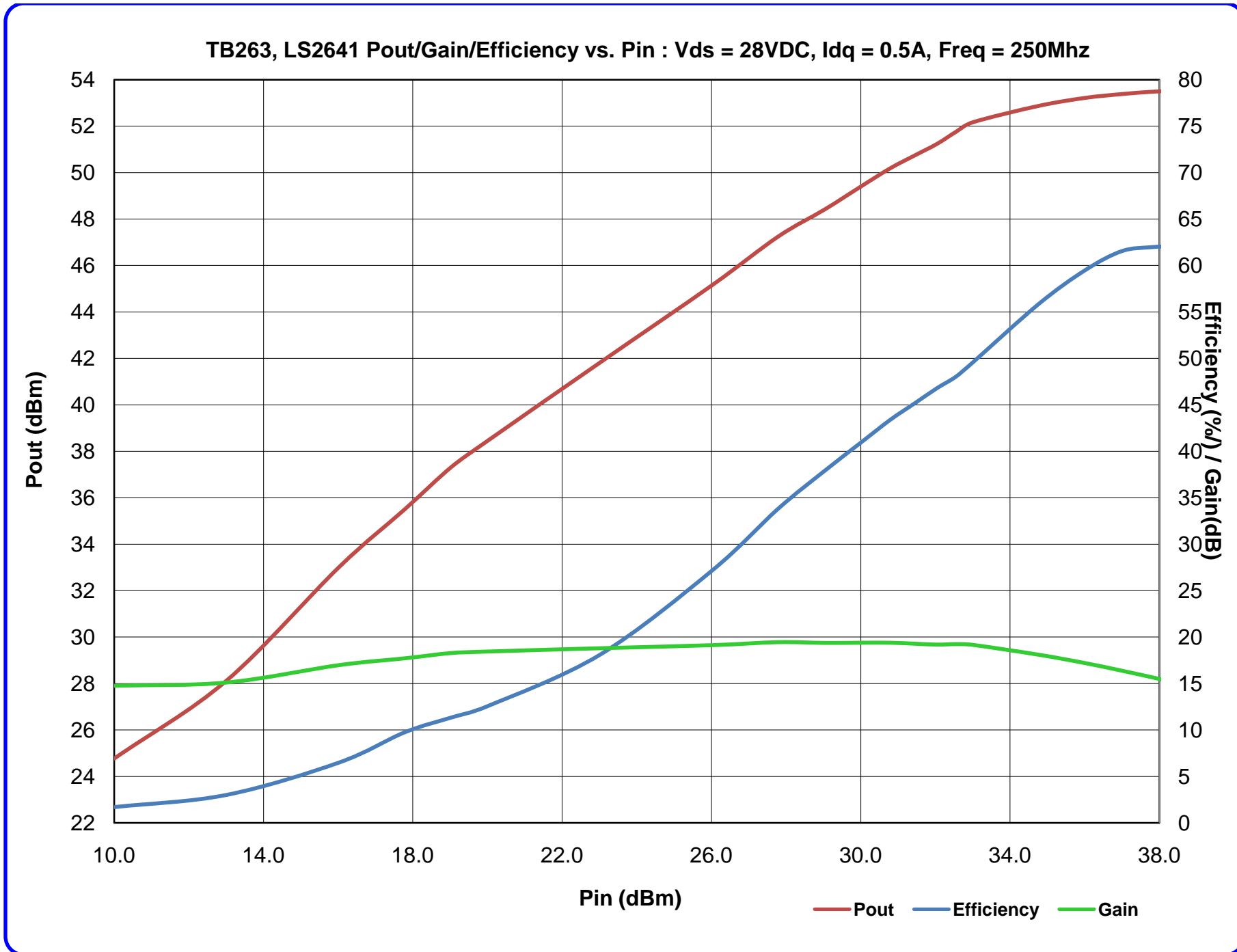
## Order of Operations:

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 power supply to DC power supply.
4. Apply 28Vdc to Vds voltage.
5. Verify Idq= 0.5A (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 (aluminum heat sink and min 22CFM fan).

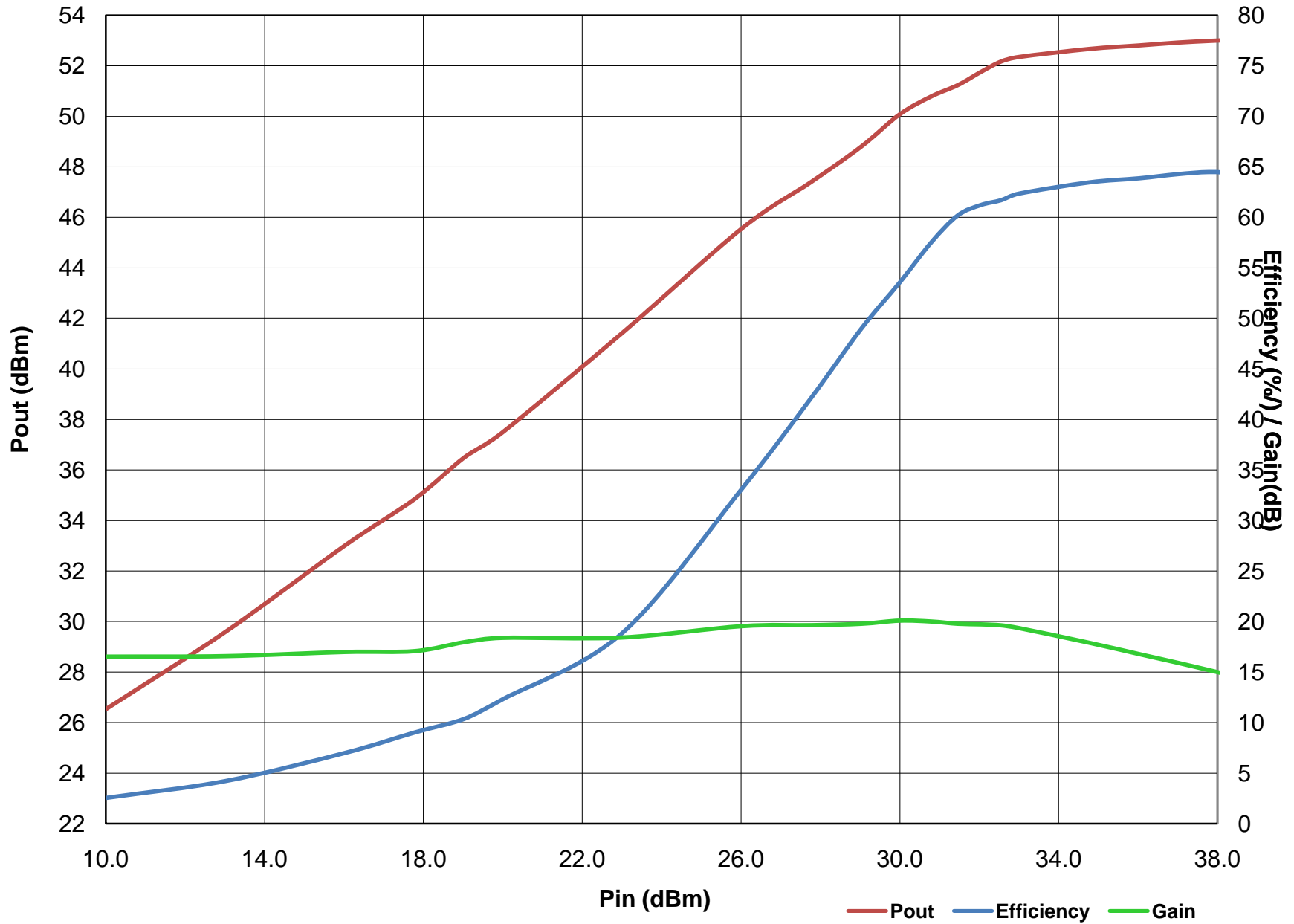


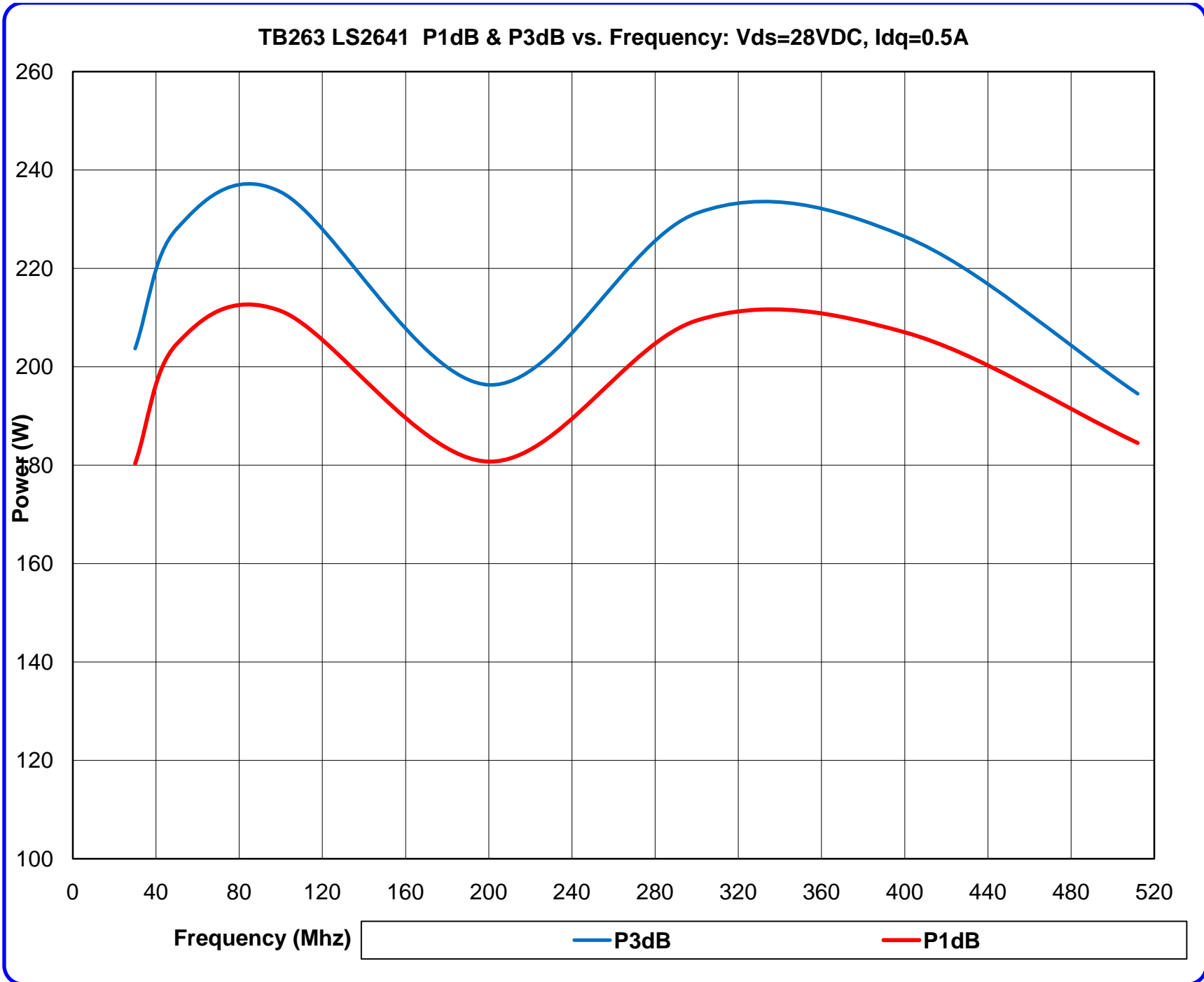
TB263, LS2641 Pout/Gain/Efficiency vs. Pin : Vds = 28VDC, Idq = 0.5A, Freq = 30Mhz

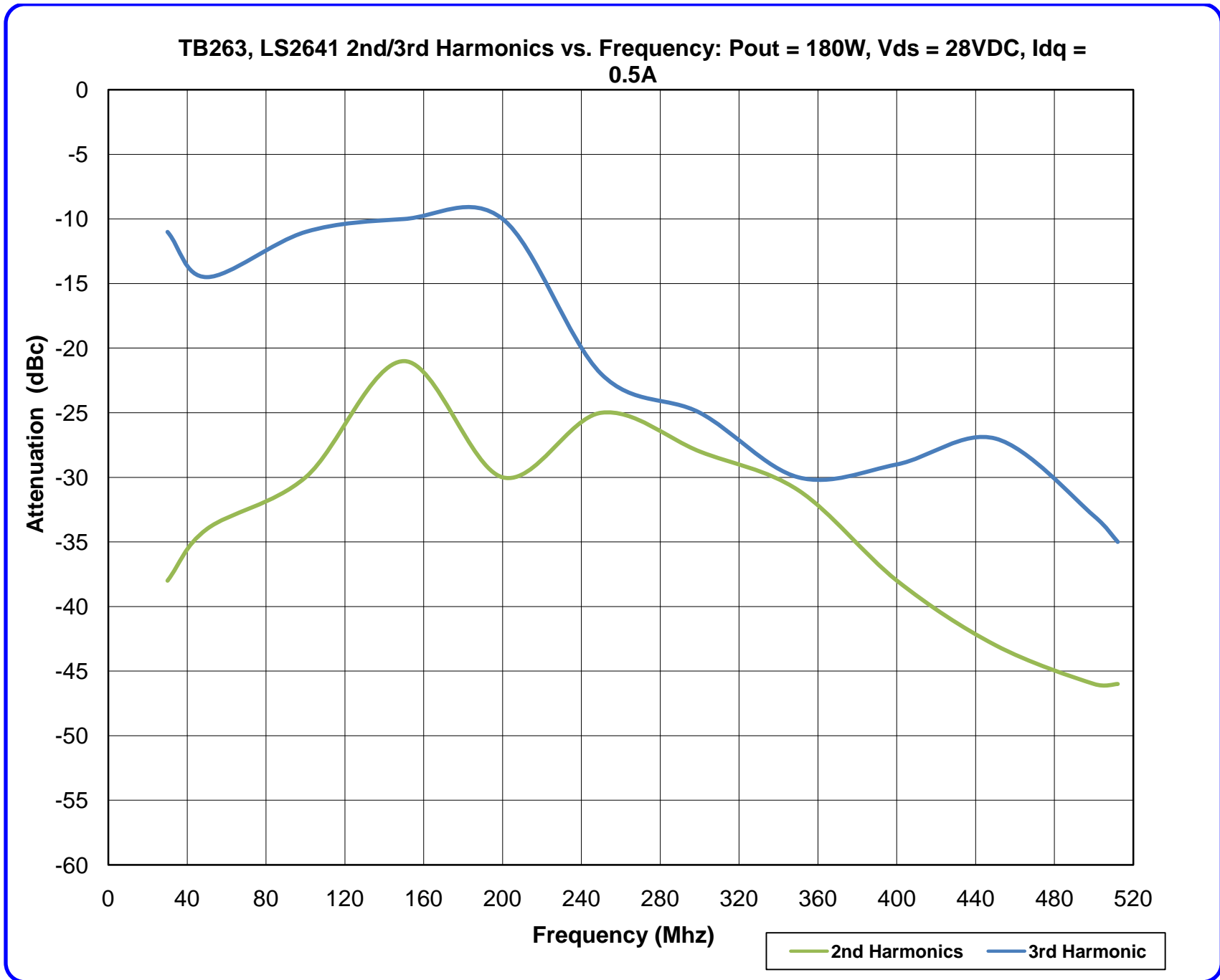


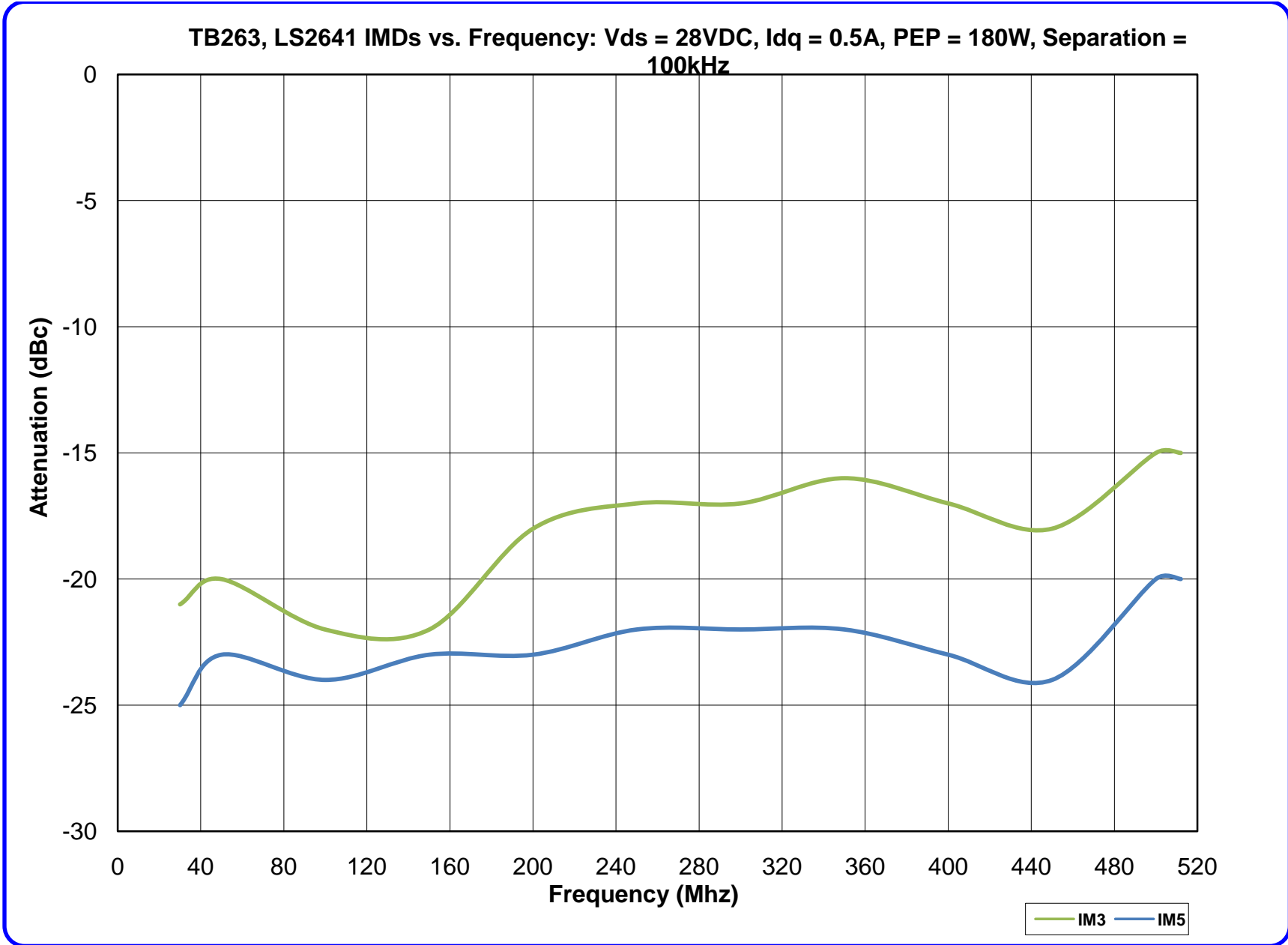


TB263, LS2641 Pout/Gain/Efficiency vs. Pin : Vds = 28VDC, Idq = 0.5A, Freq = 512Mhz

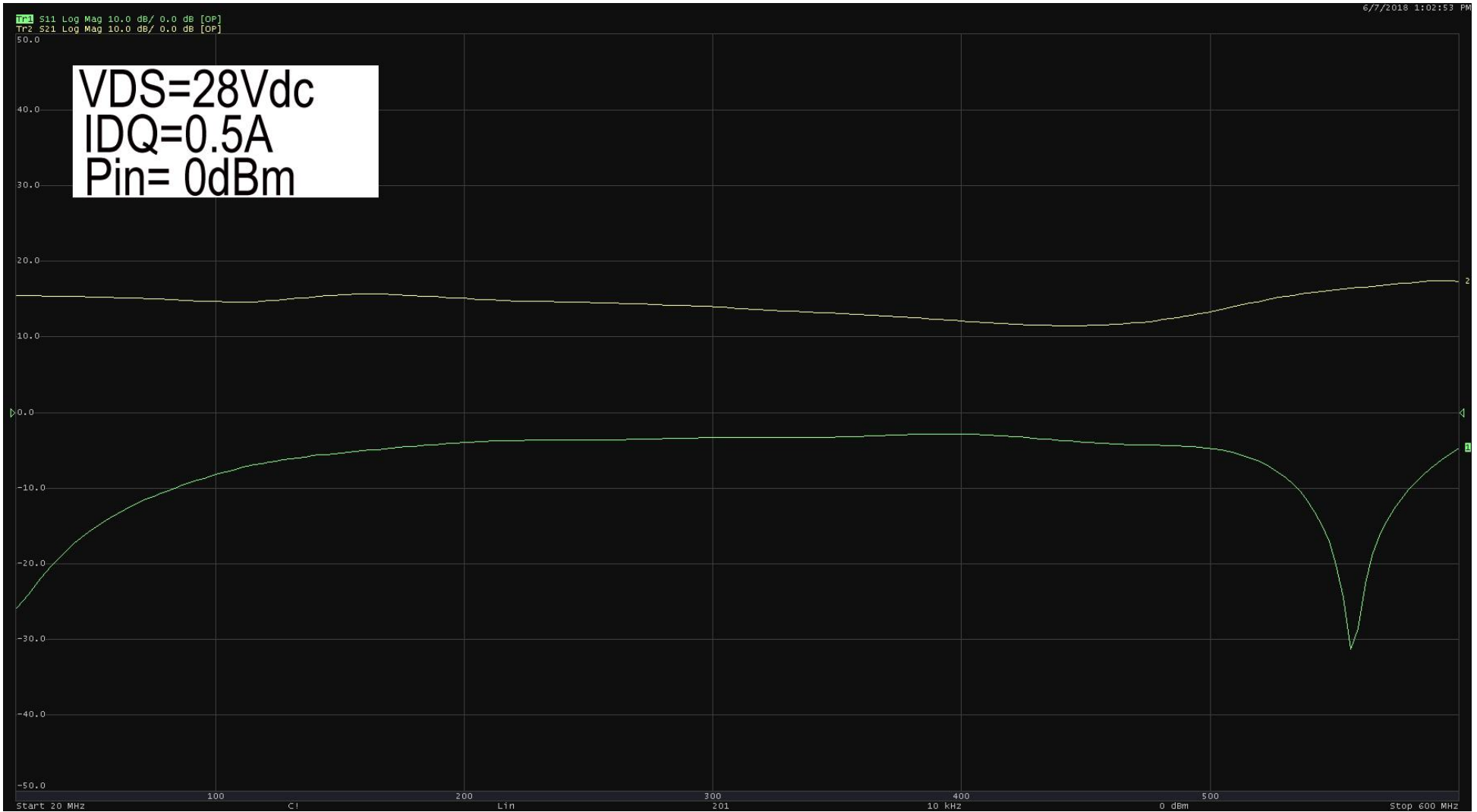


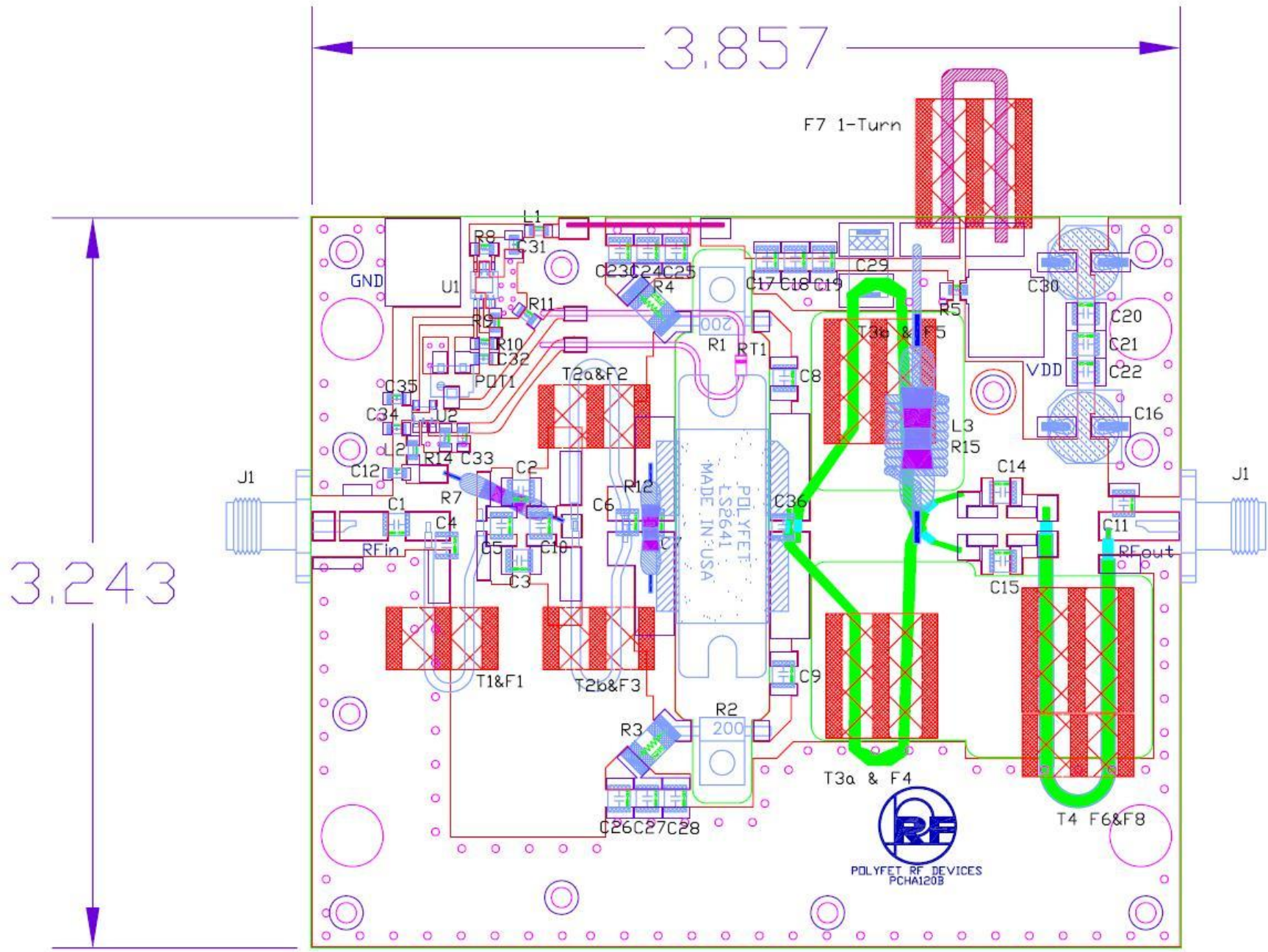




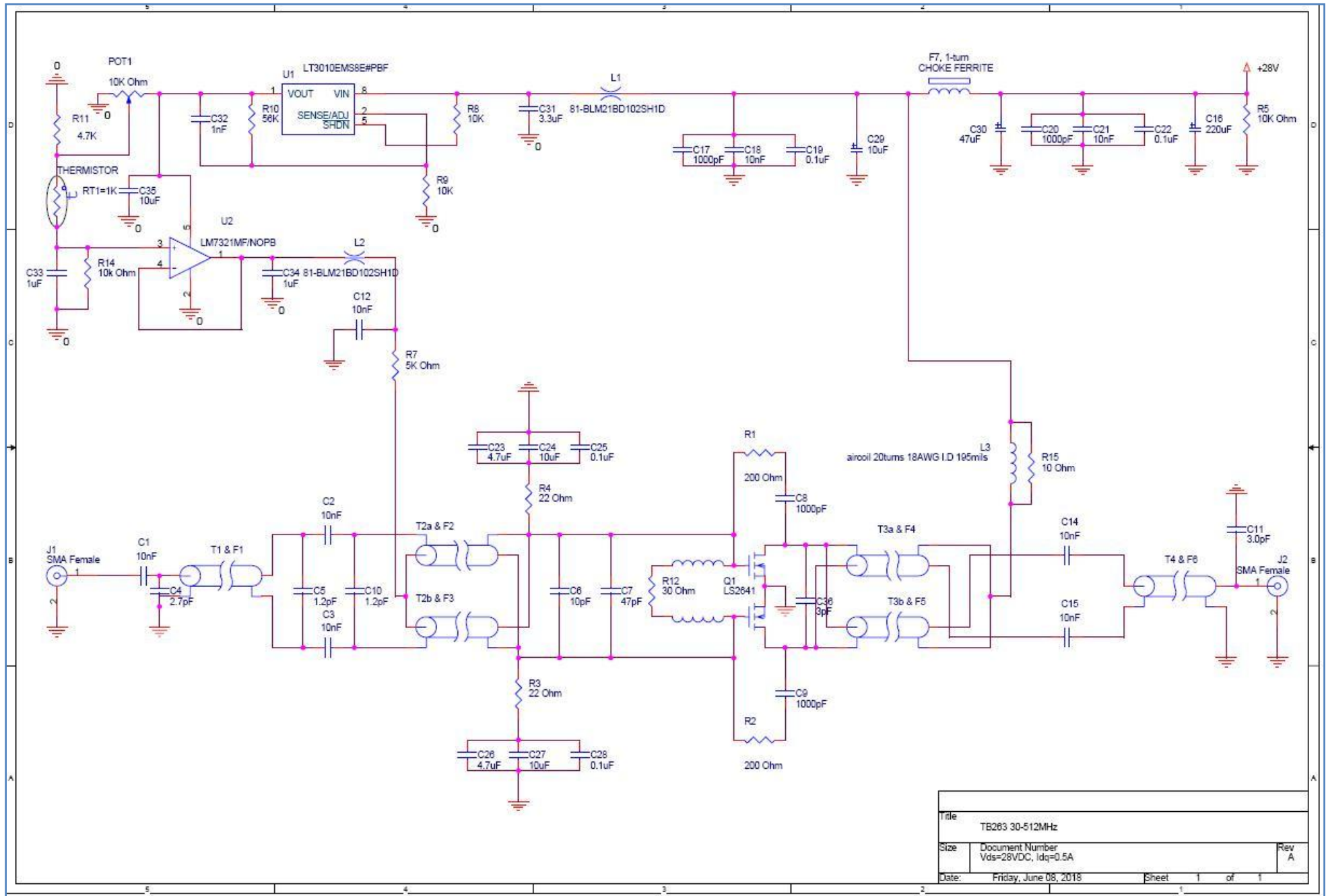








Units in Inches



Title		
TB263 30-512MHz		
Size	Document Number	Rev
	Vds=28VDC, Idq=0.5A	A
Date:	Friday, June 08, 2018	Sheet 1 of 1

NOMENCLATURE	DESCRIPTION	VENDER	VENDER PART #
C4	2.7pF+/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N1R0BW501
C5, C10	1.2pF+/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N3R0BW501
C6	10pF+/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N9R1BW501
C7	47pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N430BW501
C11, C36	3.0pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N3R3BW501
C16	Aluminum Electrolytic Capacitors - SMD 35Volts 220uF 20%	United Chemi-Con	EMZJ350ADA221MHA0G
C19,C22,C25,C28	0.1uF +/-10% RF By-Pass Capacitors,1111X	Passive Plus, Inc	1111X104KW500
C24,C27	10uF TANCERAM HIGH CAP. SMD 1206	Passive Plus, Inc	PPI-GMC31X5R106K10
C23,C26	4.7uF TANCERAM HIGH CAP. SMD 1206	Passive Plus, Inc	PPI-GMC31X7R475K25NT
C8,C9,C17,C20	1000pF +/-2% Ultra-low ESR, Microwave Cap., 1111N	Passive Plus, Inc	1111N102GW500
C1,C2,C3,C12,C14,C15, C18,C21	10,000pF +/-10% RF By-Pass Capacitors,1111X	Passive Plus, Inc	111X103KW500
C29	10uF 63V 20% AVX Tantalum Capacitors	AVX	TCJE106M063R0100
C30	Aluminum Electrolytic Capacitors - SMD 47UF 35V TK SMD	Panasonic	EE-TK1V470P
C31	3.3uF TANCERAM HIGH CAP. SMD 1206	Johanson Dielectrics	100r18x335KV4E
C32	1nF 10% Hi-Q/Low ESR	Passive Plus, Inc	0505x102KW500
C33,C34	1uF 10%TAMCERAM HIGH CAP. SMD 603	Johanson Dielectrics	250r14x105kv4t
C35	10uF 10%TAMCERAM HIGH CAP. SMD 805	Johanson Dielectrics	100r15x106kv4e
R1,R2	30W, 200OHM	Innovative Power Products-IPP	IPP-RB201-200
R3,R4	RES 22ohm 2W 1% 2512 SMD	Stackpole Electronics Inc	RHC2512FT22R0
R5	RES 10K OHM 1/4W 5% 1206 SMD	Rohm Semiconductor	MCR18EZPJ103
R7	RES 5K 1/2W 5% CARBON FILM	Stackpole Electronics Inc	CF12JT5K0
R8,R9,R14	10K 1/4W 0805 SMD	Rohm Semiconductor	MCR10EZHJ103
R10	56K 1/4W 0805 SMD	Rohm Semiconductor	MCR10EZPJ563
R11	4.7K 1/4W 0805 SMD	Rohm Semiconductor	MCR10EZPF4701
R12	RES 30 OHM 1W 5% METAL OXIDE	Xicon	281-30-RC
R15	RES 10 OHM 1W 5% METAL OXIDE	Xicon	281-10-RC
RT1	1000 OHM TEMP SENSOR AXIAL	NXP Semiconductors	KTY83/110,113
POT1	Trimmer Resistors - 10K OHM 0.25W SMD	Murata Electronics North America	PVG5A103C03R00
L1,L2	0805 1kohms HiSpeed EMI Filter Beads,Chokes & Arrays	Murata Electronics North America	81-BLM21BD102SH1D
L3	20turns 18AWG I.D 195mils	www.electromechaniconline.com	MW280SPNRD
WIRE	18 AWG Hook-up Wire UL	Belden	83029 0061000
U1	IC REG LDO ADJ 50mA 8-MSOP	Linear Technology	LT3010EMS8E#PBF
U2	IC OP AMP R-R I/O SOT23-5	National Semiconductor	LM7321MF/NOBP
T1	Semi-ridge Coax ,1.8 inch, 50ohm	MICROWAVE	UT-34-M17
T2a,T2b	Semi-ridge Coax ,1.8 inch, 25ohm	MICROWAVE	UT-34-25

T3a,T3b	Semi-ridge Coax ,2.5 inch, 10ohm	MICROWAVE	UT-70-10
T4	Semi-ridge Coax , 3 inch, 50ohm	MICROWAVE	UT-85-50
F1,F2,F3	950uF BINOCULAR FERRITE	Ceramic Magnetic, Inc	003212-02
F4,F5,F6/ F8 Half	125uF BINOCULAR FERRITE/ BINOCULAR HALF	Ferronic/ Amidon	12-365-K/ 2861001502
F7	Material 4B1 250ui,EMI Supressor	Ferroxcube	MHB2-14/8.5/14-4B1
J1,J2	PE4000-SF SMA Female; 4 Hole Panel Mount	Pasternack	PE4000-SF
PCB	material RO4350B 60mils(1.524mm) 2oz/2oz (70um/70um)	Rogers. Corp	RO4350B
Q1	LDMOS	Polyfet RF Devices	LS2641