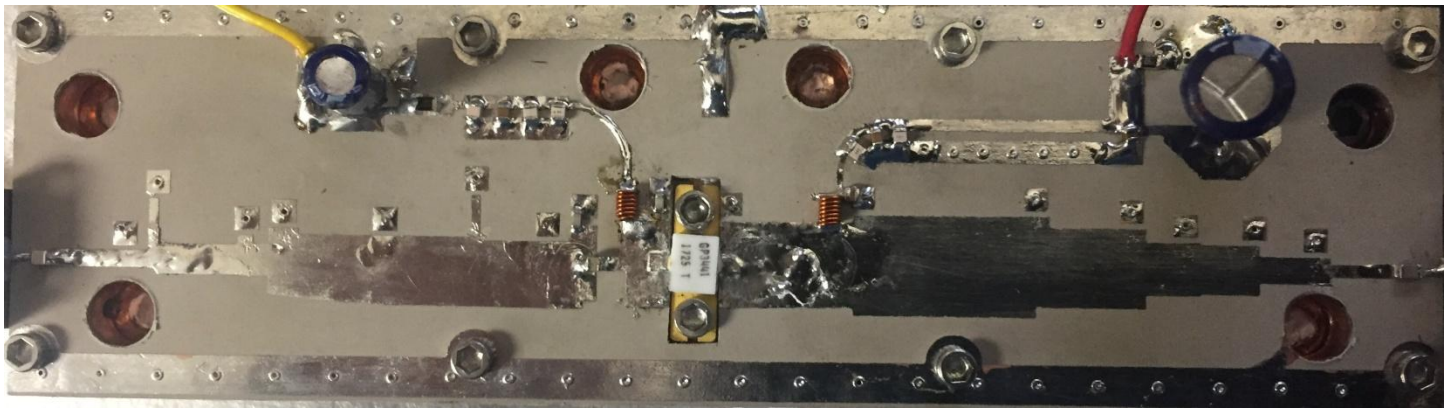
polyfet rf devices

TB262

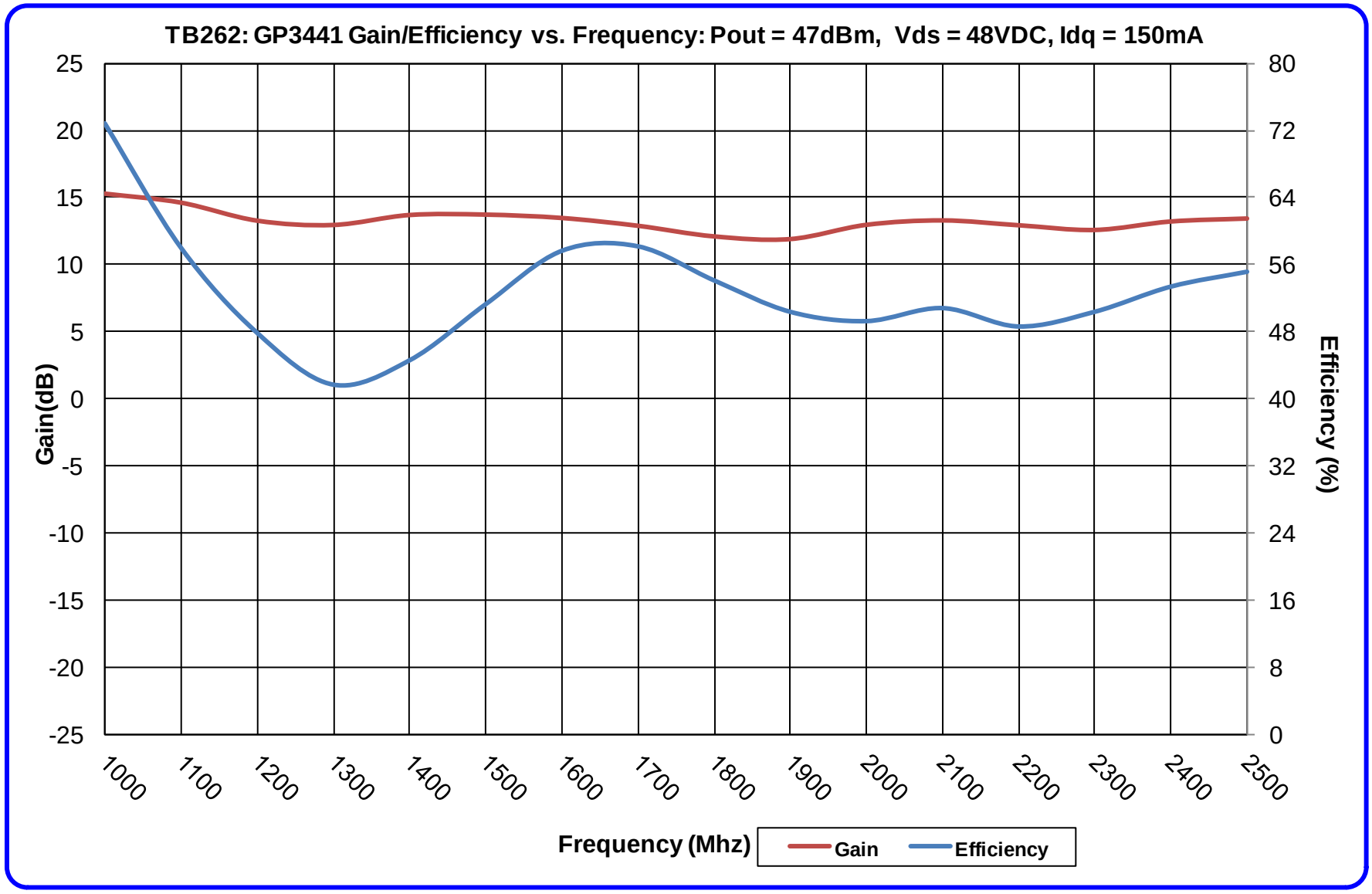
GP3441

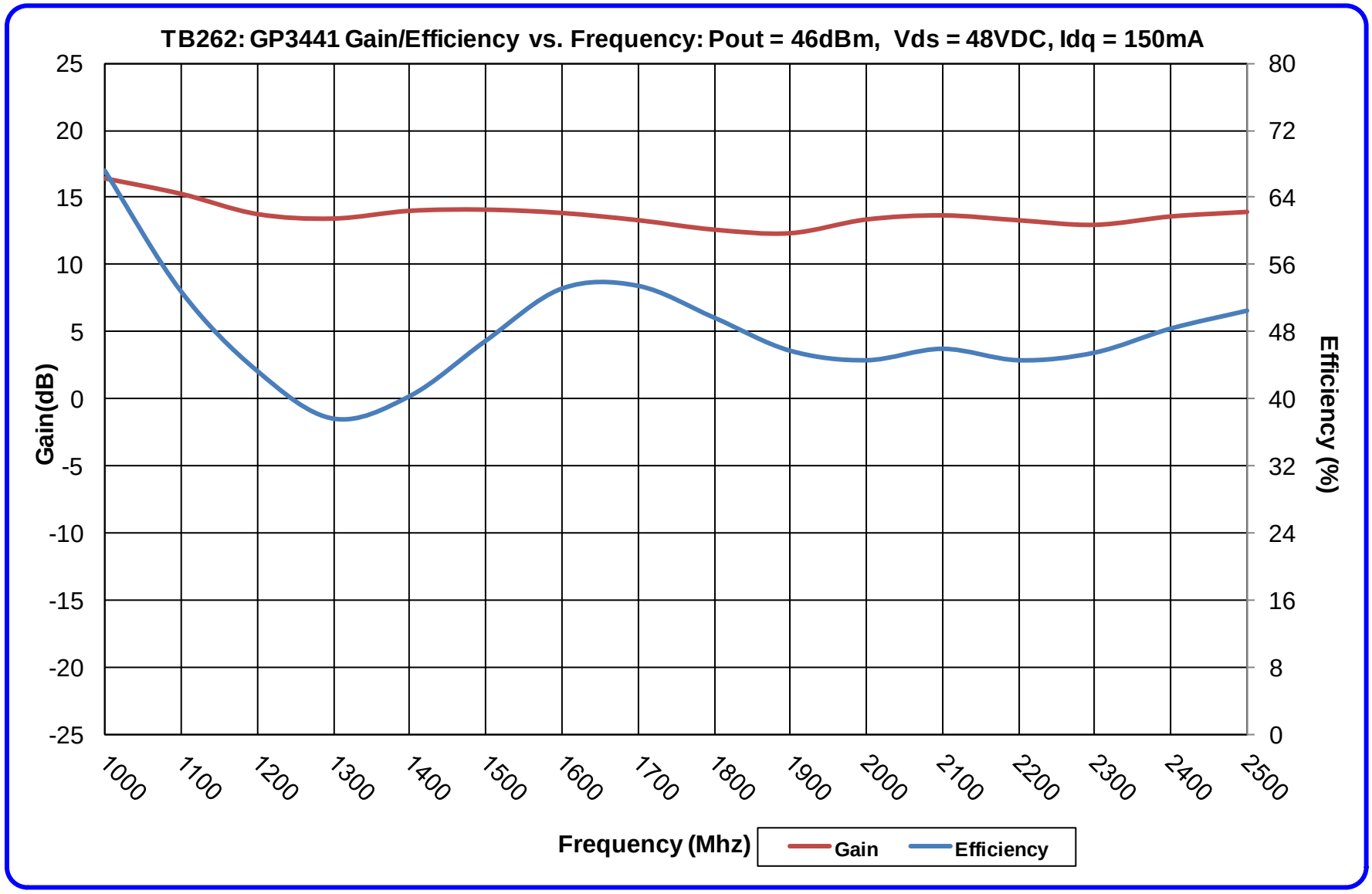
Frequency: 1000 - 2500 MHz
Pout = 50W
Gain = 13.5 dB +/- 1.7 dB
Vds = 48 VDC
Vgs = -2.4 VDC
Idq = 150mA
Efficiency = 52.8% (avg)

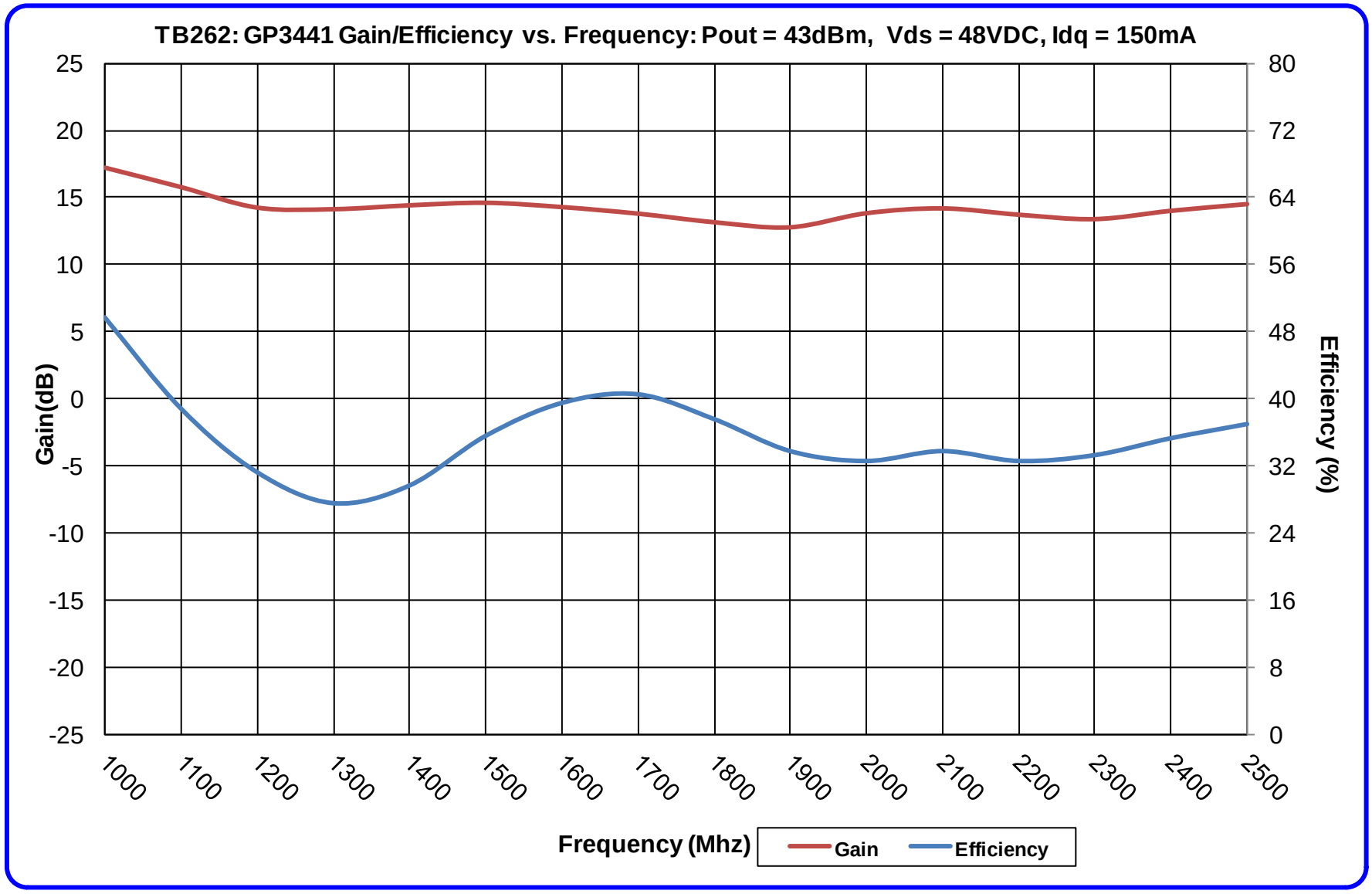


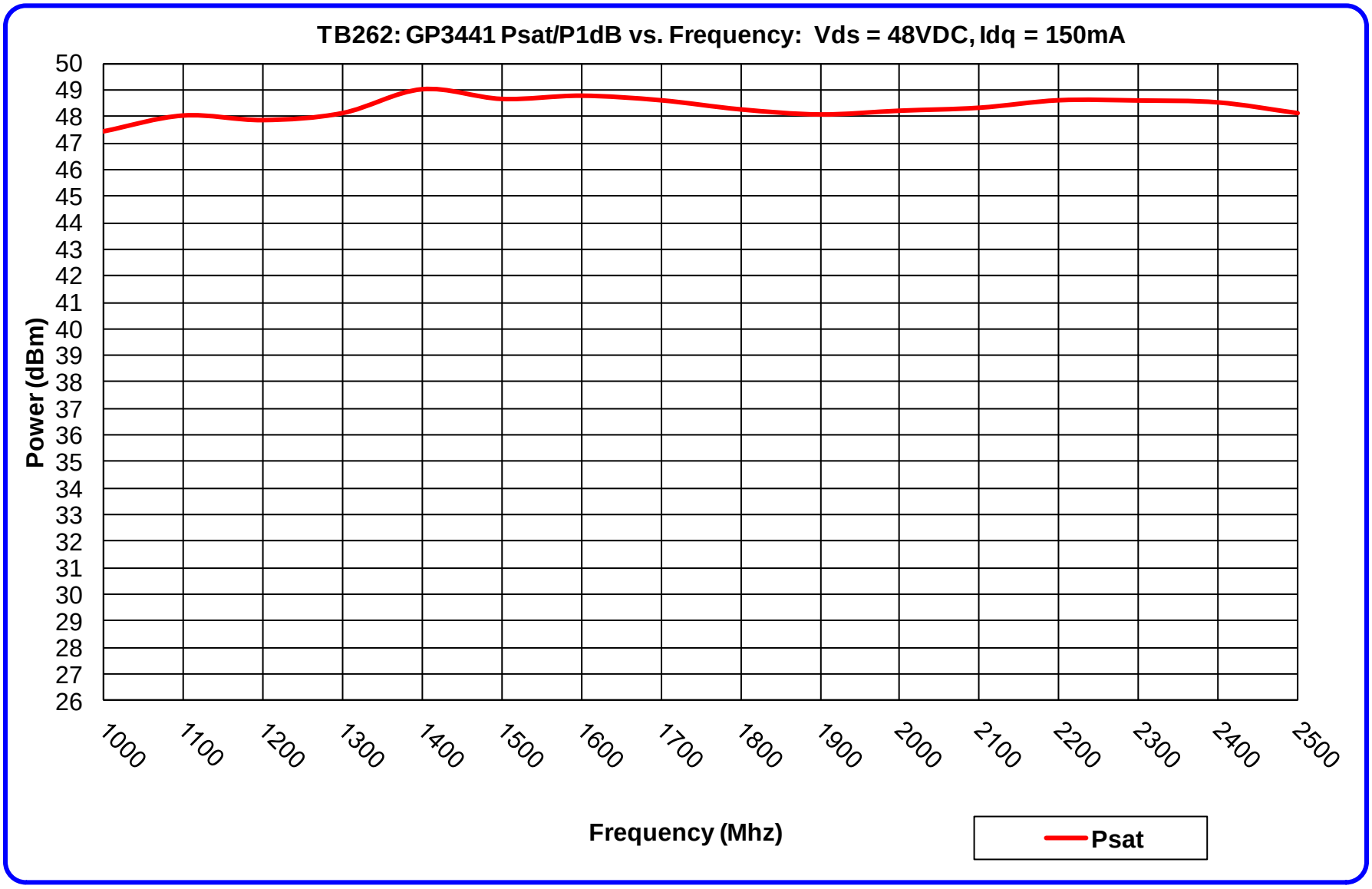
Bias instructions for TB262. Terminal ID found on page 24

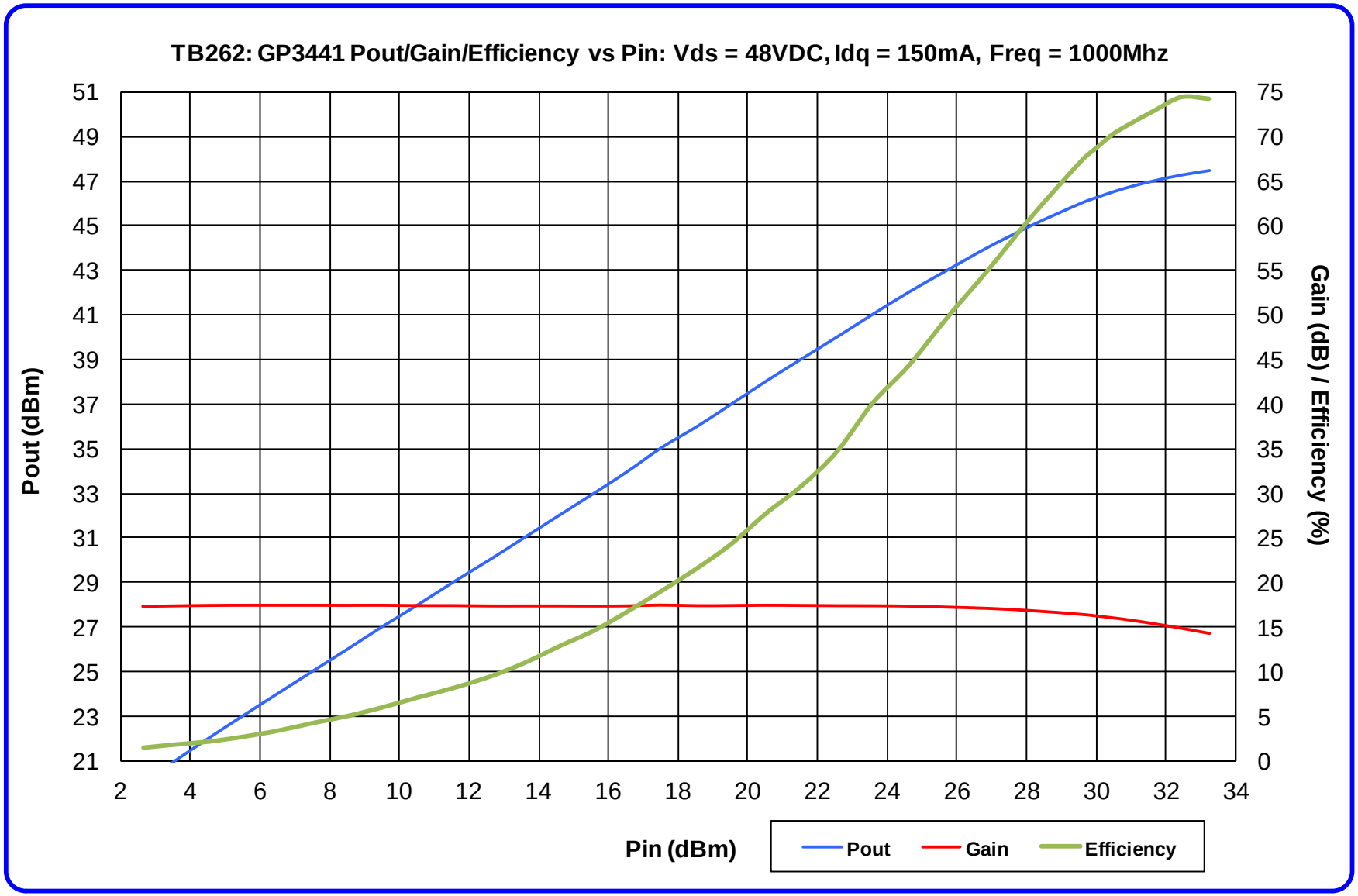
1. Apply -5.00V to Vgs terminal.
2. Apply 48VDC to Vds terminal.
3. Increase Vgs until drain current reaches 150mA bias current. This will happen at approximately -2.4VDC.
4. Apply RF input power.
5. After RF test is completed, remove RF input power.
6. Remove 48V Vds supply voltage.
7. Remove -5.00VDC Vgs supply voltage.

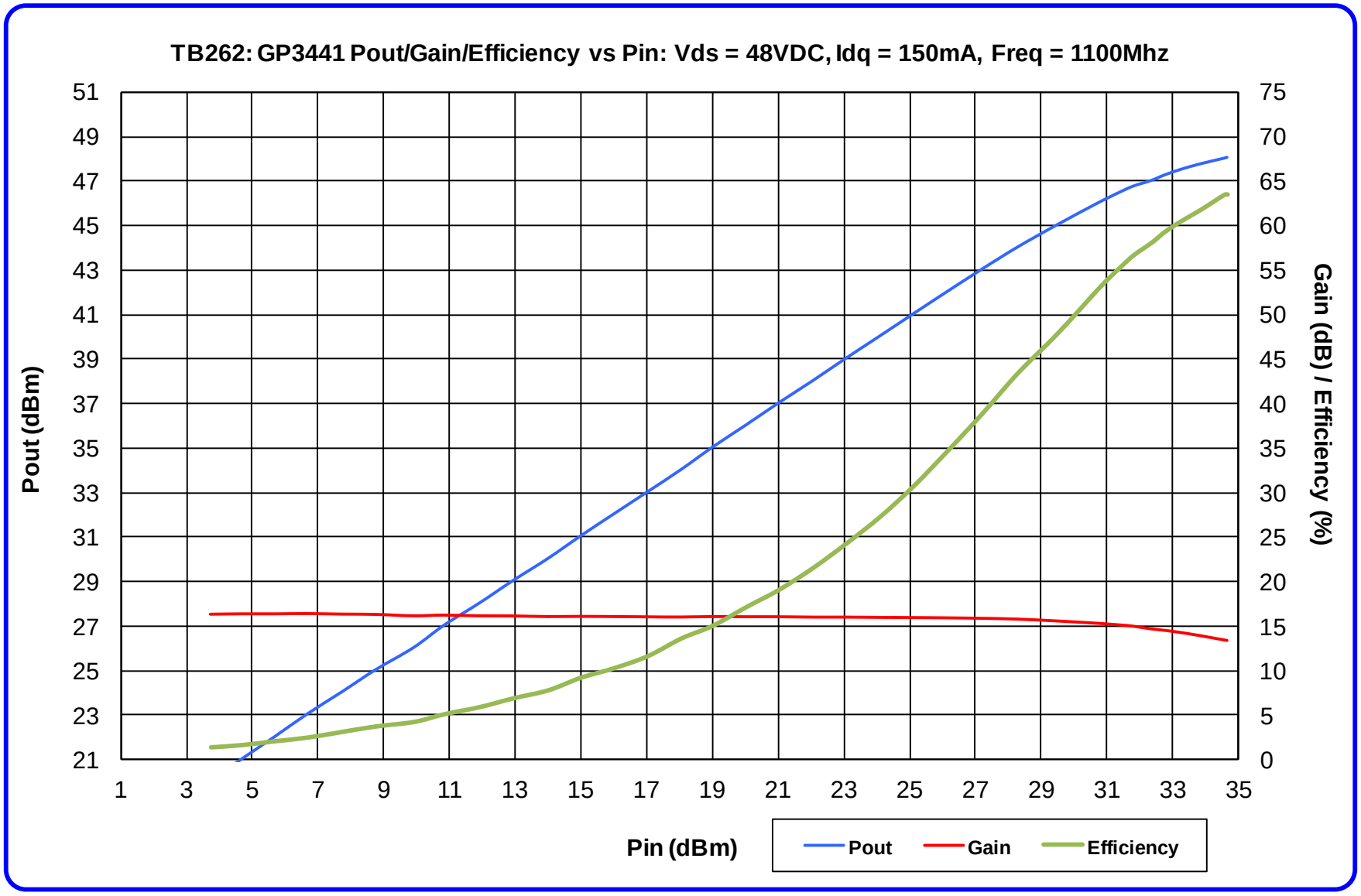

TB262: GP3441 Gain/Efficiency vs. Frequency: Pout = 47dBm, Vds = 48VDC, Idq = 150mA
Gain(dB)
25
20
15
10
5
0
-5
-10
-15
-20
-25
Efficiency (%)
80
72
64
56
48
40
32
24
16
8
0
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
Frequency (Mhz)
Gain
Efficiency

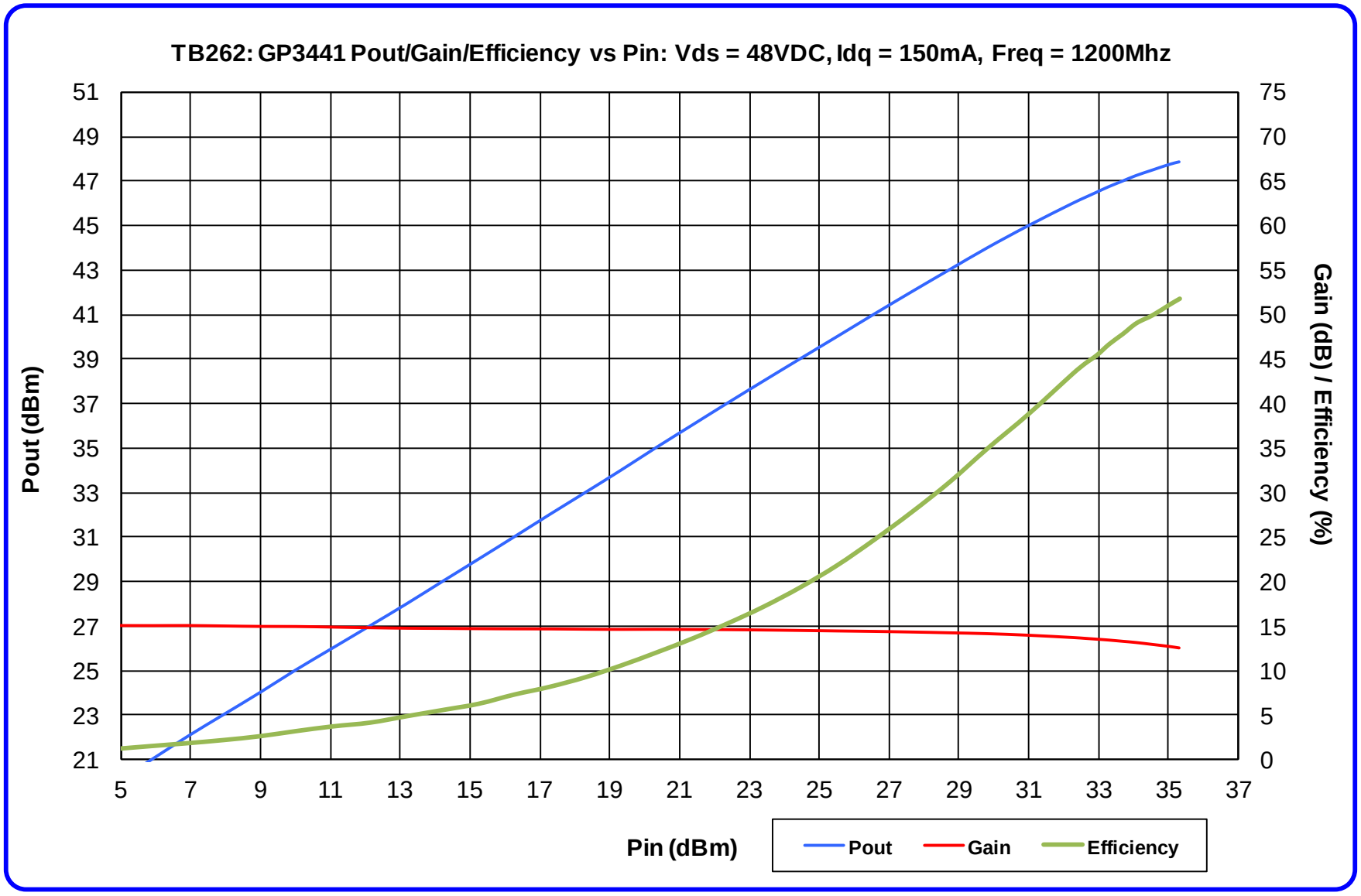

TB262: GP3441 Gain/Efficiency vs. Frequency: Pout = 46dBm, Vds = 48VDC, Idq = 150mA
Gain(dB)
25
20
15
10
5
0
-5
-10
-15
-20
-25
Efficiency (%)
80
72
64
56
48
40
32
24
16
8
0
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
Frequency (Mhz)
Gain
Efficiency

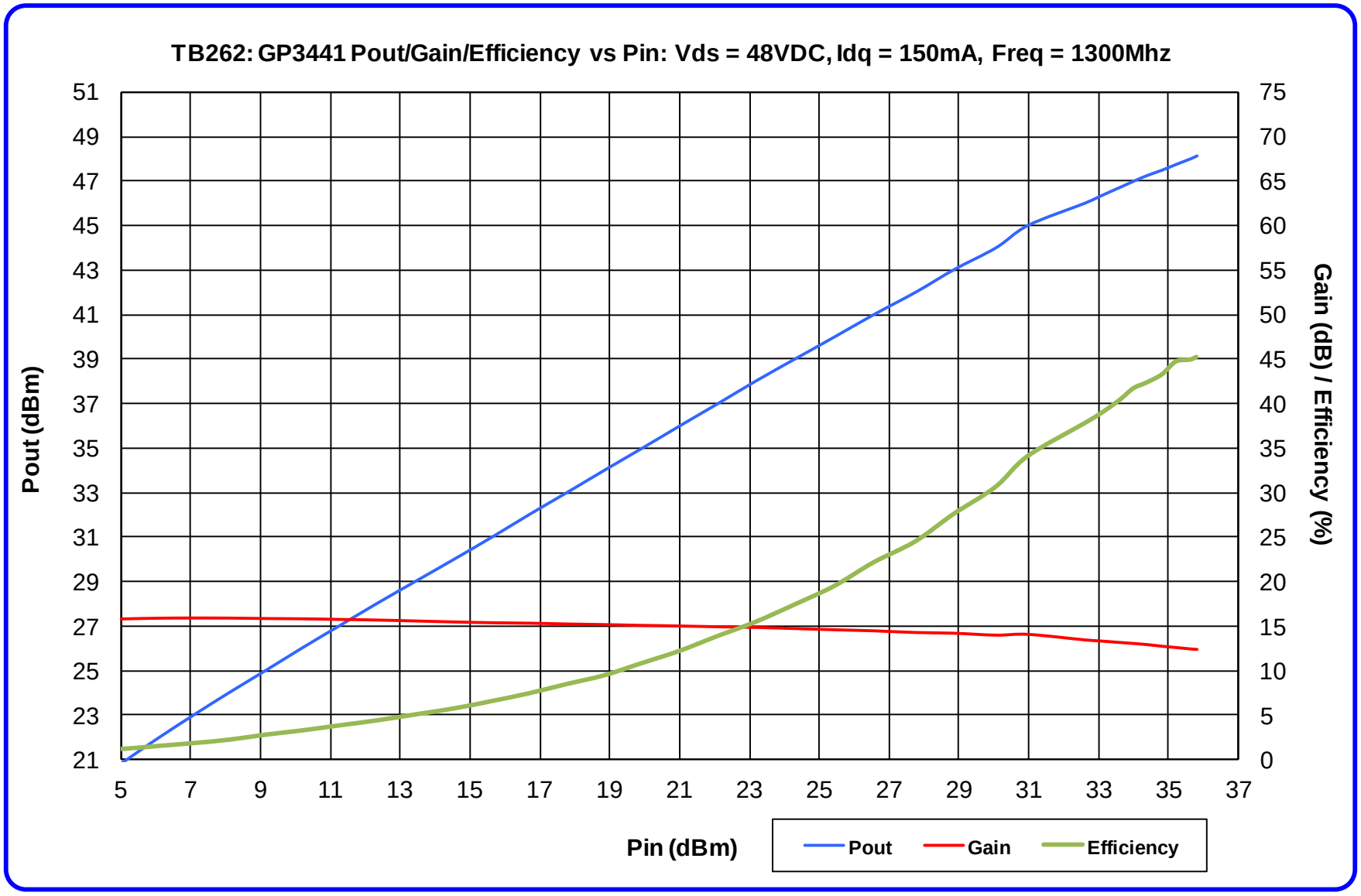

TB262: GP3441 Gain/Efficiency vs. Frequency: Pout = 43dBm, Vds = 48VDC, Idq = 150mA
Gain(dB)
25
20
15
10
5
0
-5
-10
-15
-20
-25
Efficiency (%)
80
72
64
56
48
40
32
24
16
8
0
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
Frequency (Mhz)
Gain
Efficiency

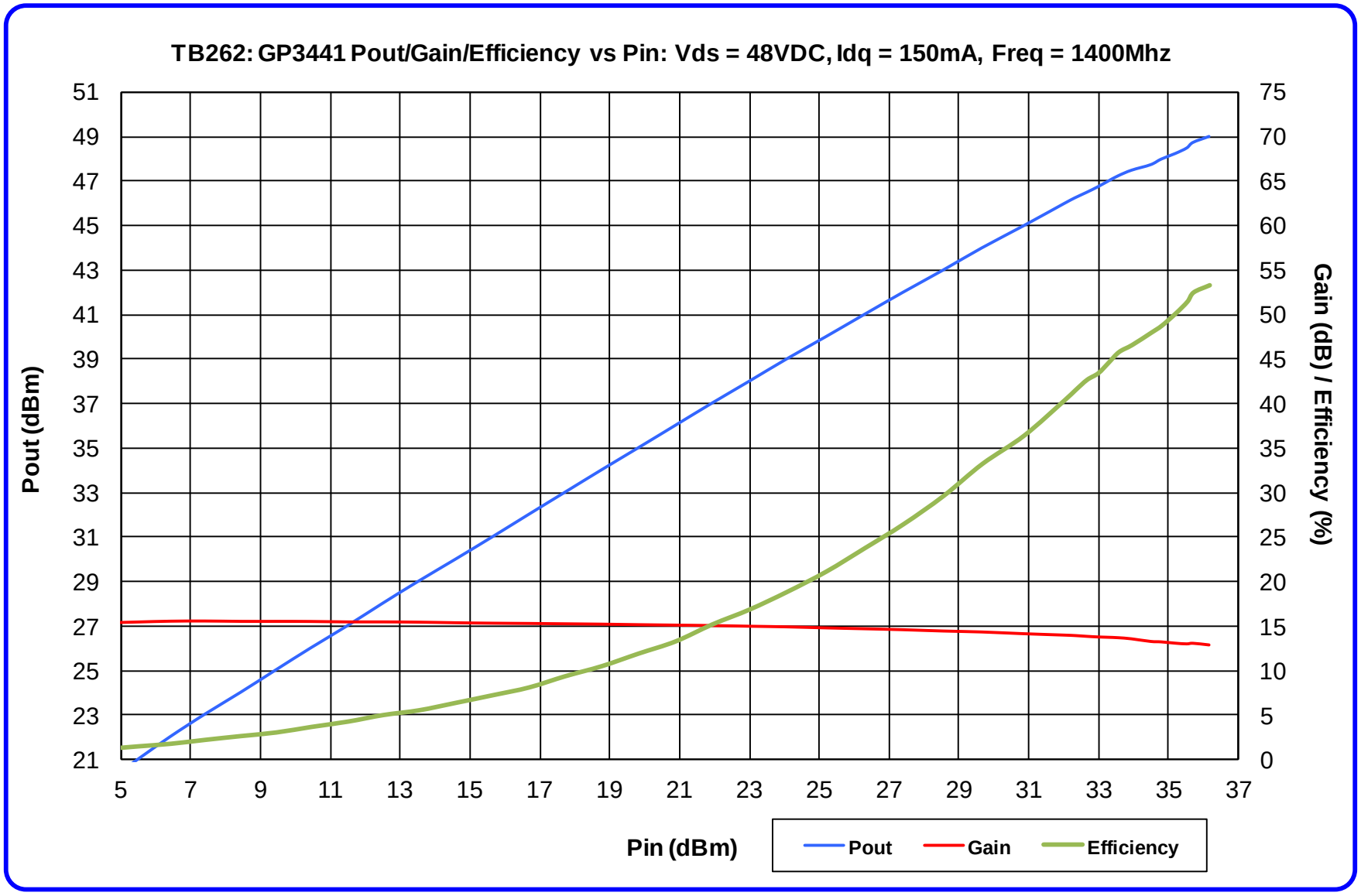

TB262: GP3441 Psat/P1dB vs. Frequency: Vds = 48VDC, Idq = 150mA
Power (dBm)
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
32
31
30
29
28
27
26
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
Frequency (Mhz)
Psat

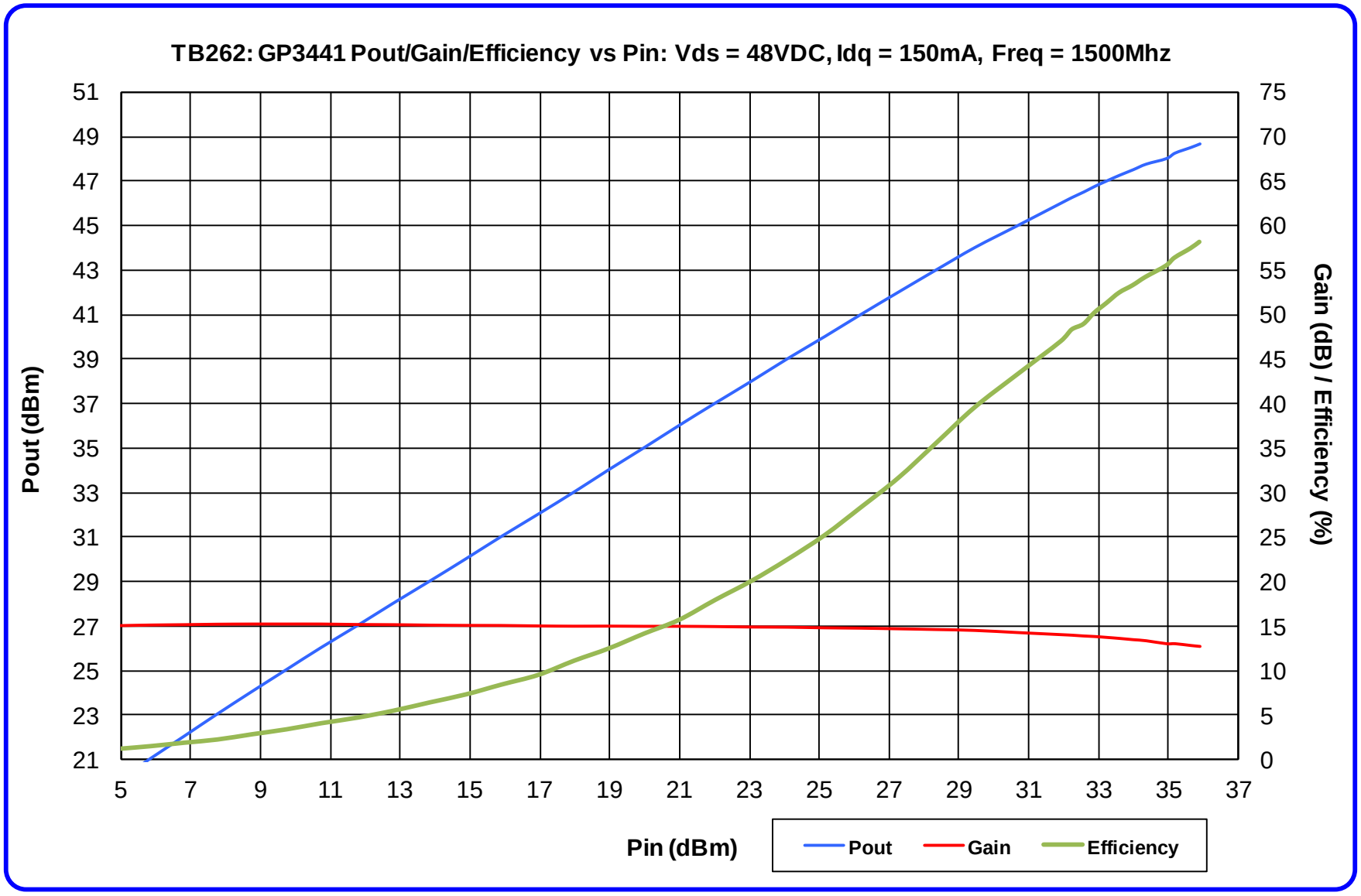

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1000Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34


TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1100Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35

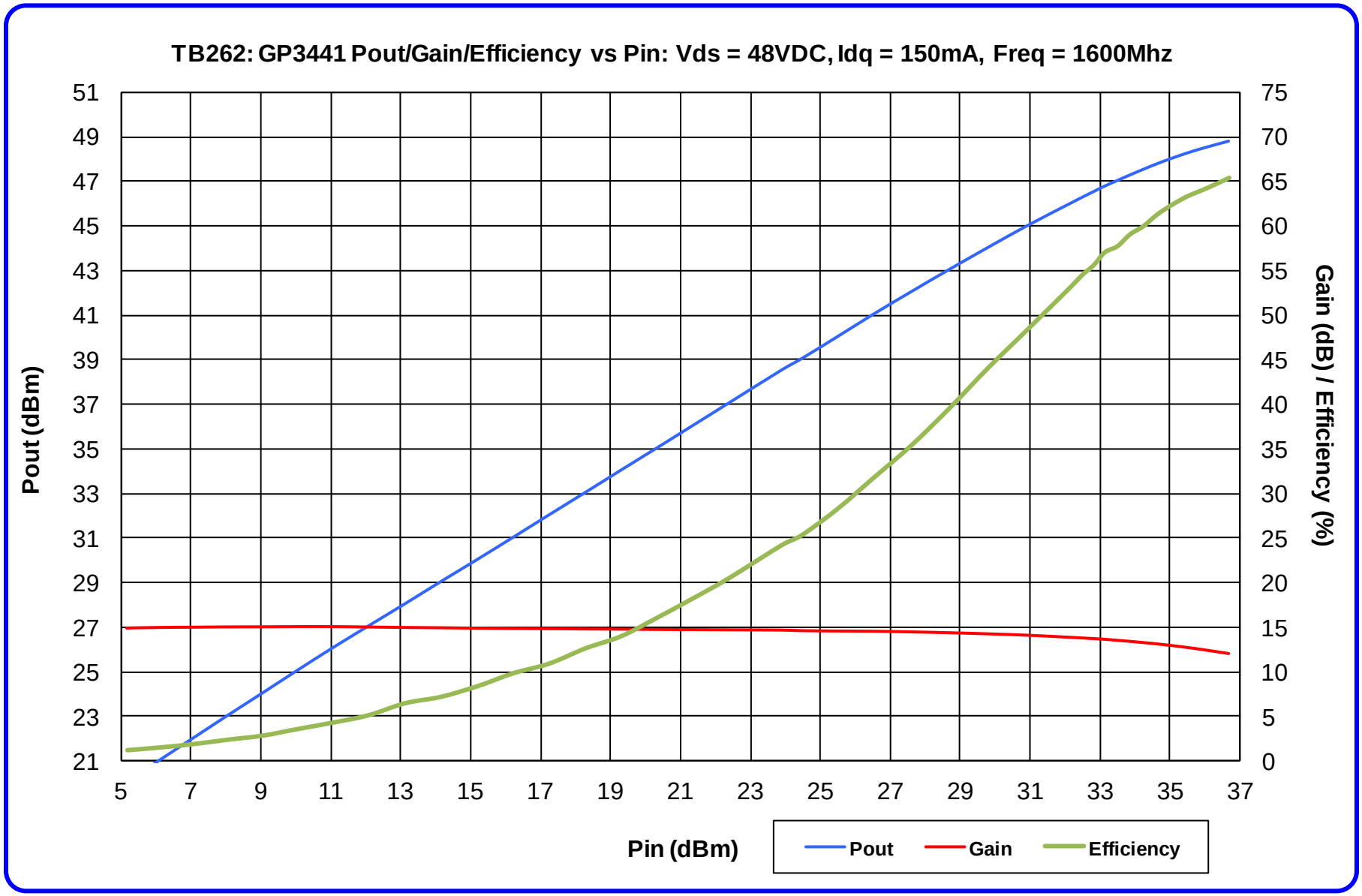

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1200Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

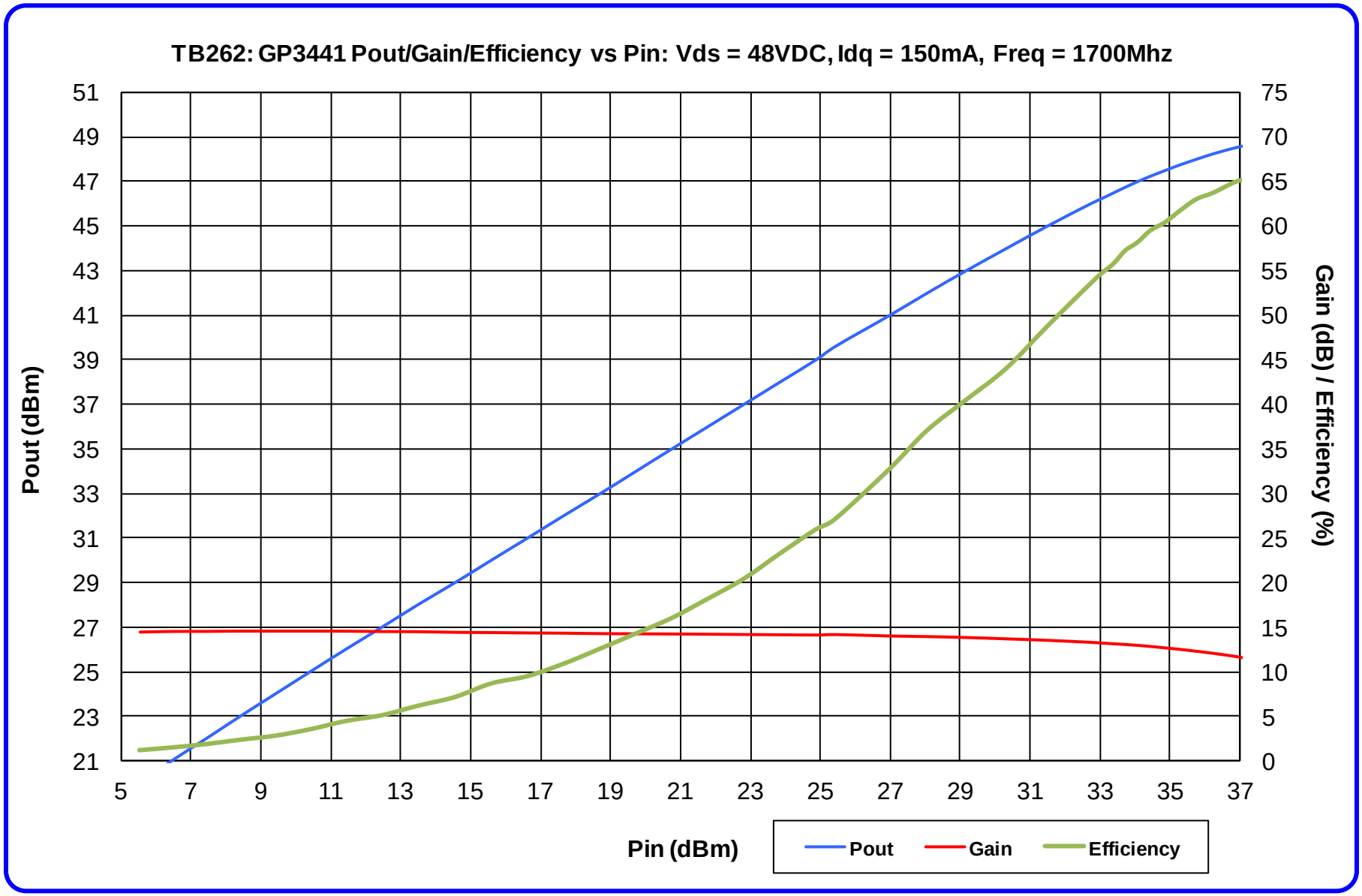

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1300Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

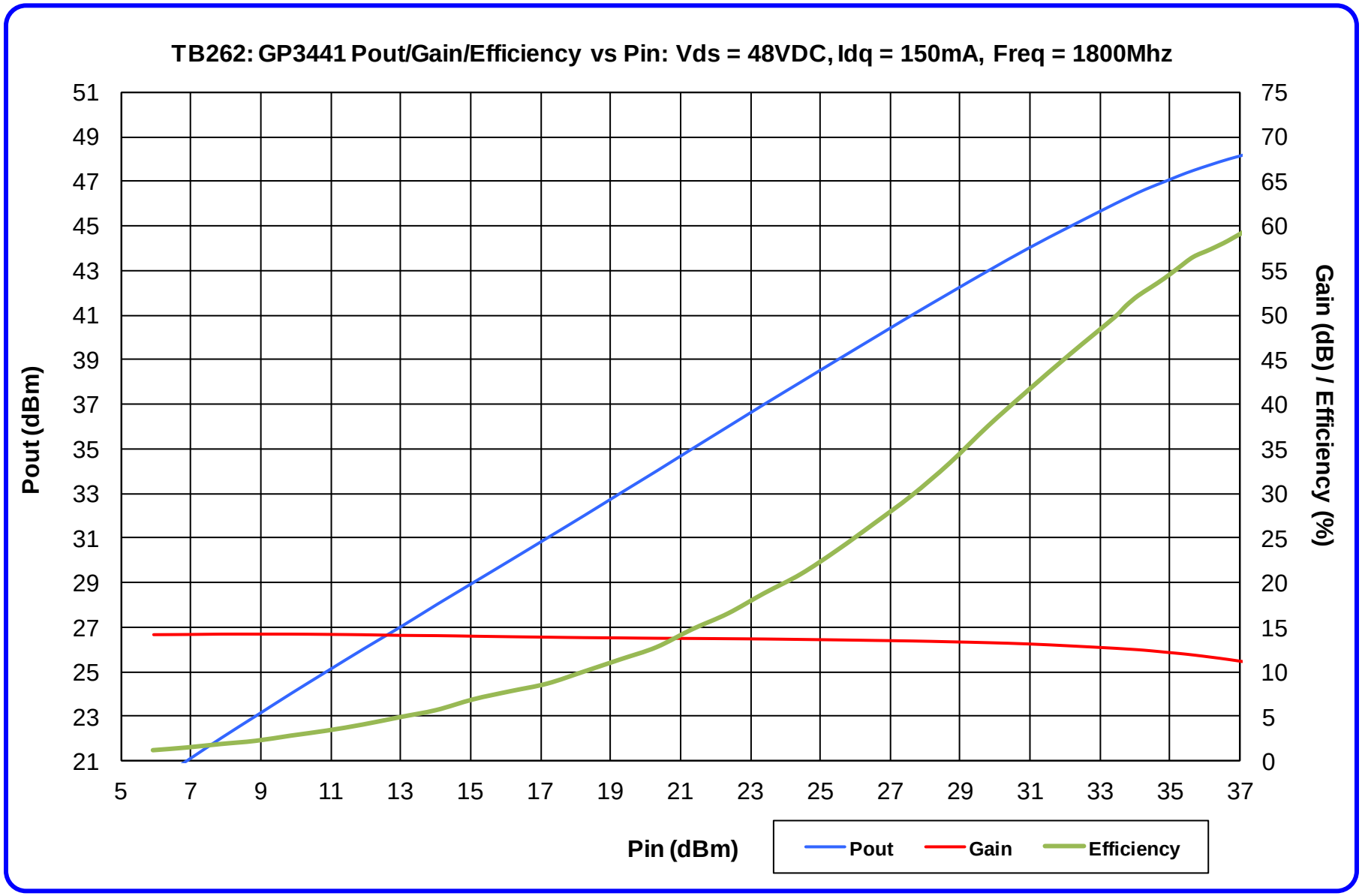

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1400Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

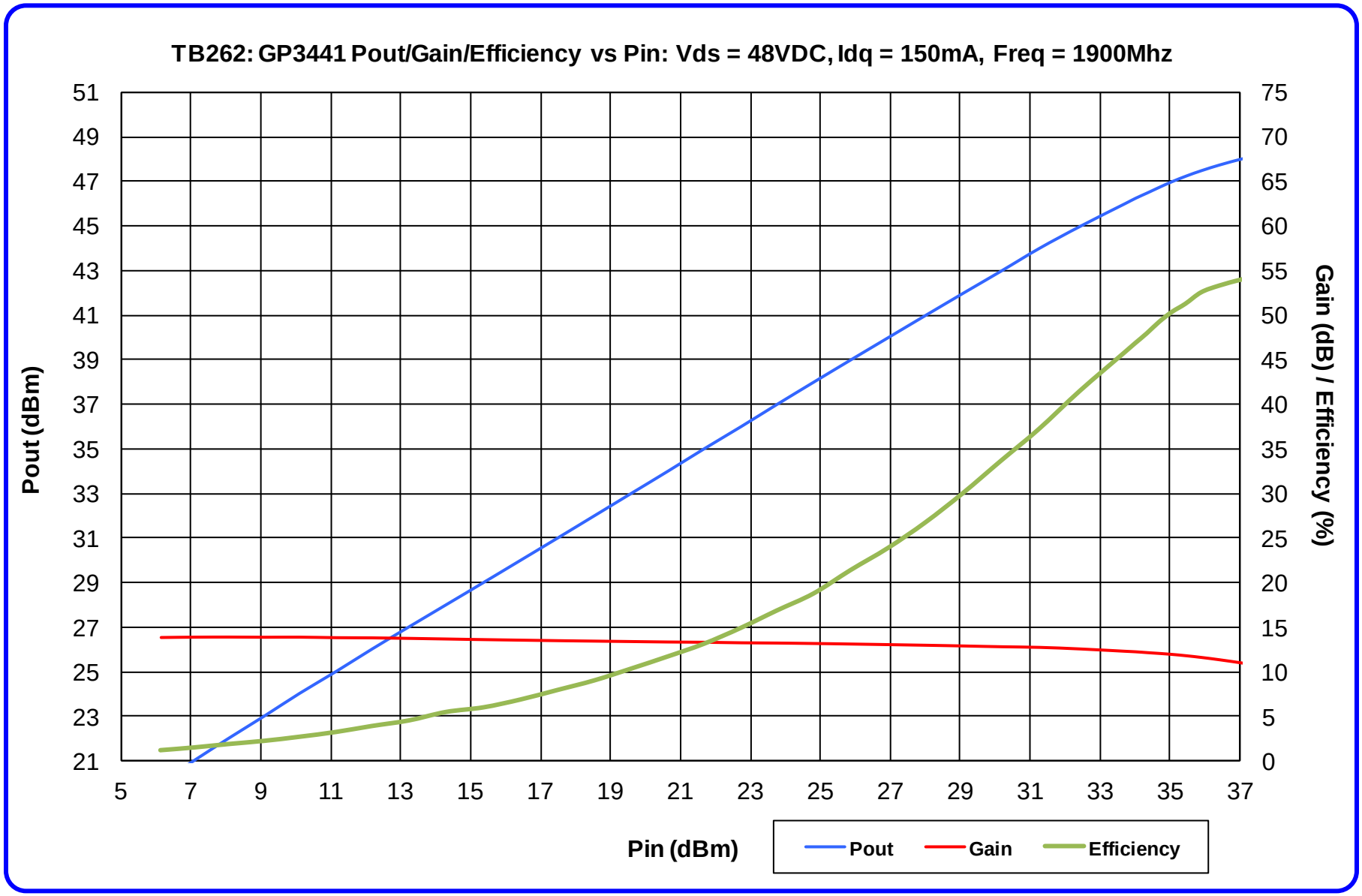

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1500Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

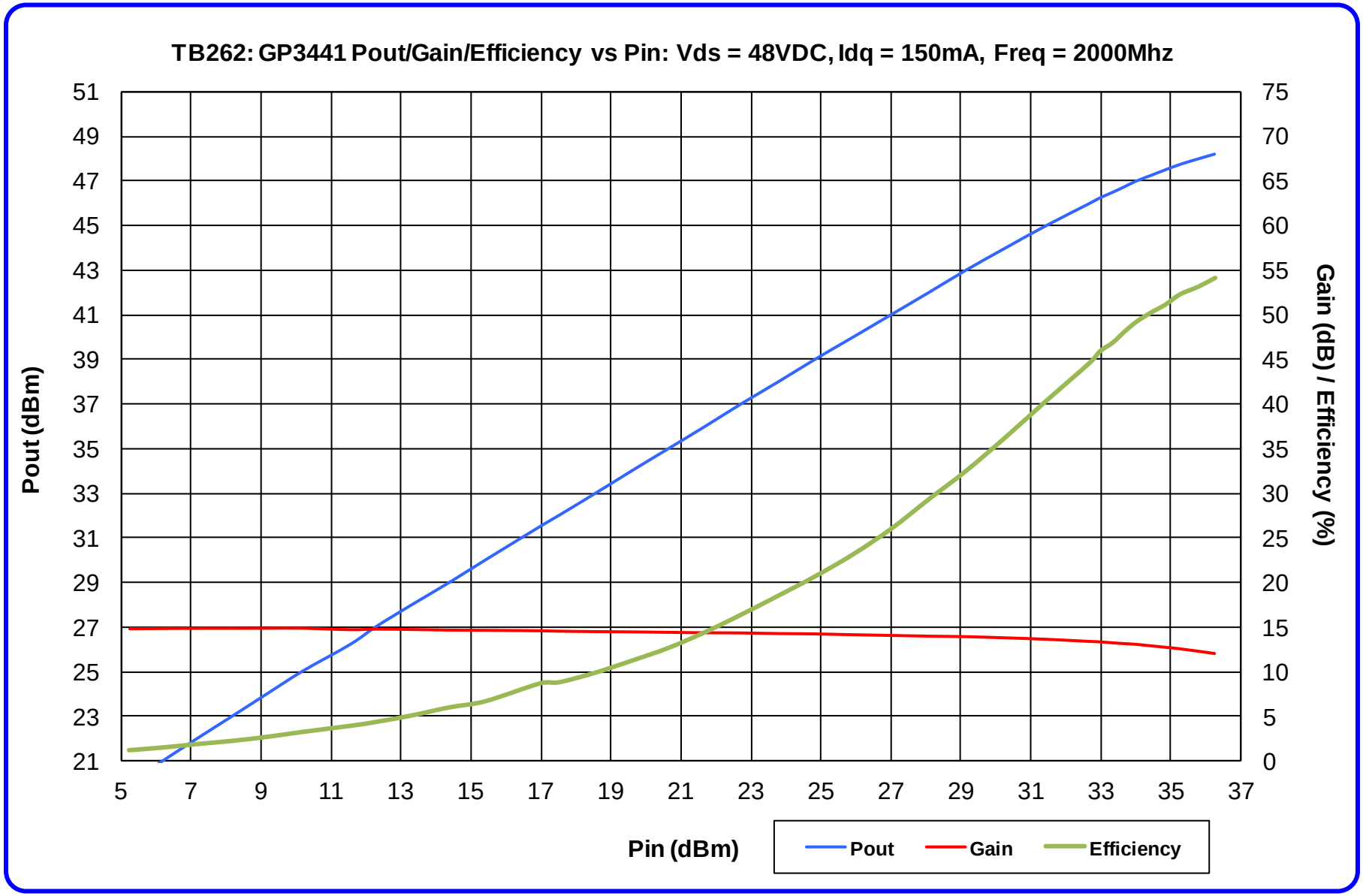
\

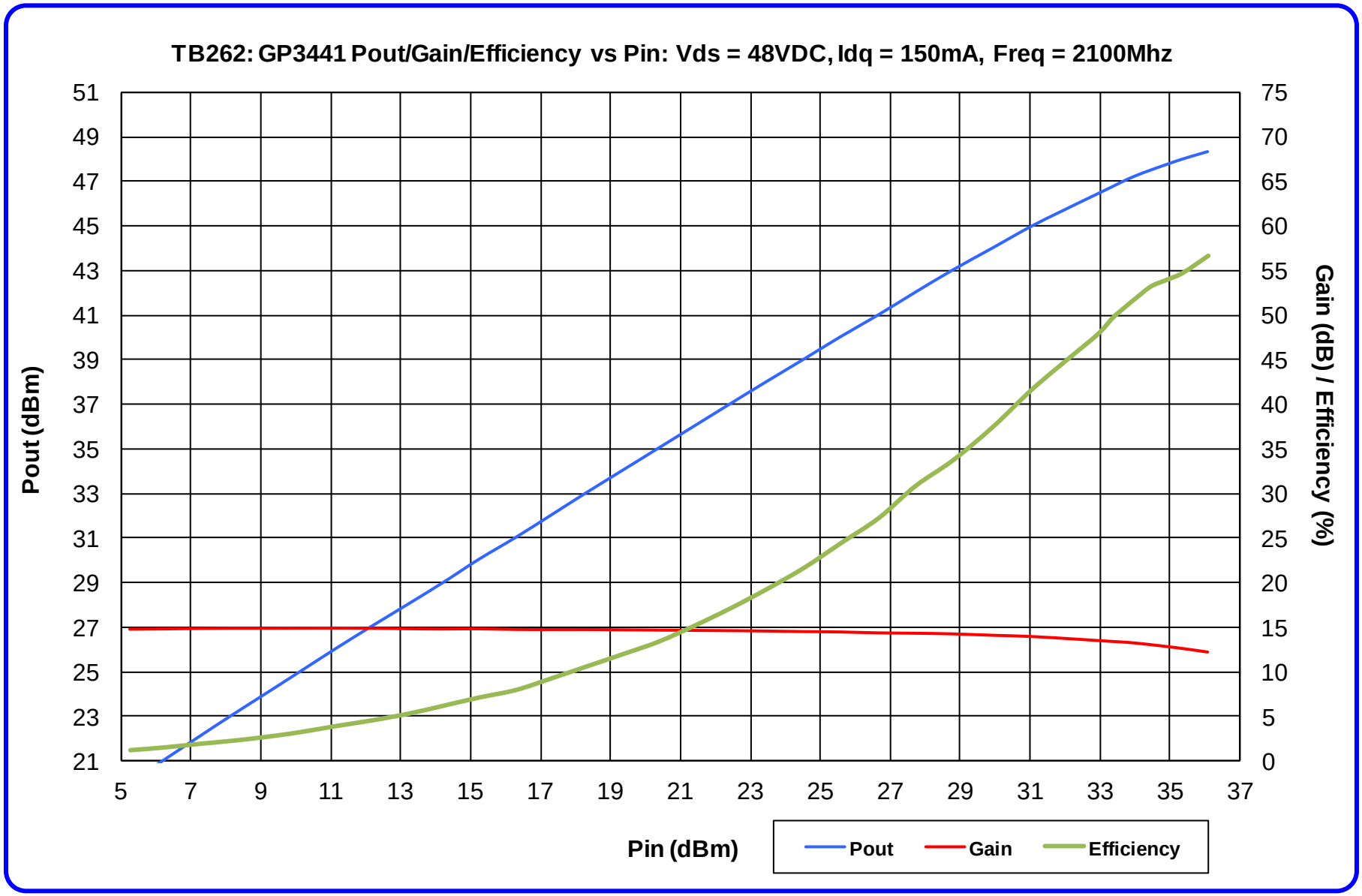

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1600Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

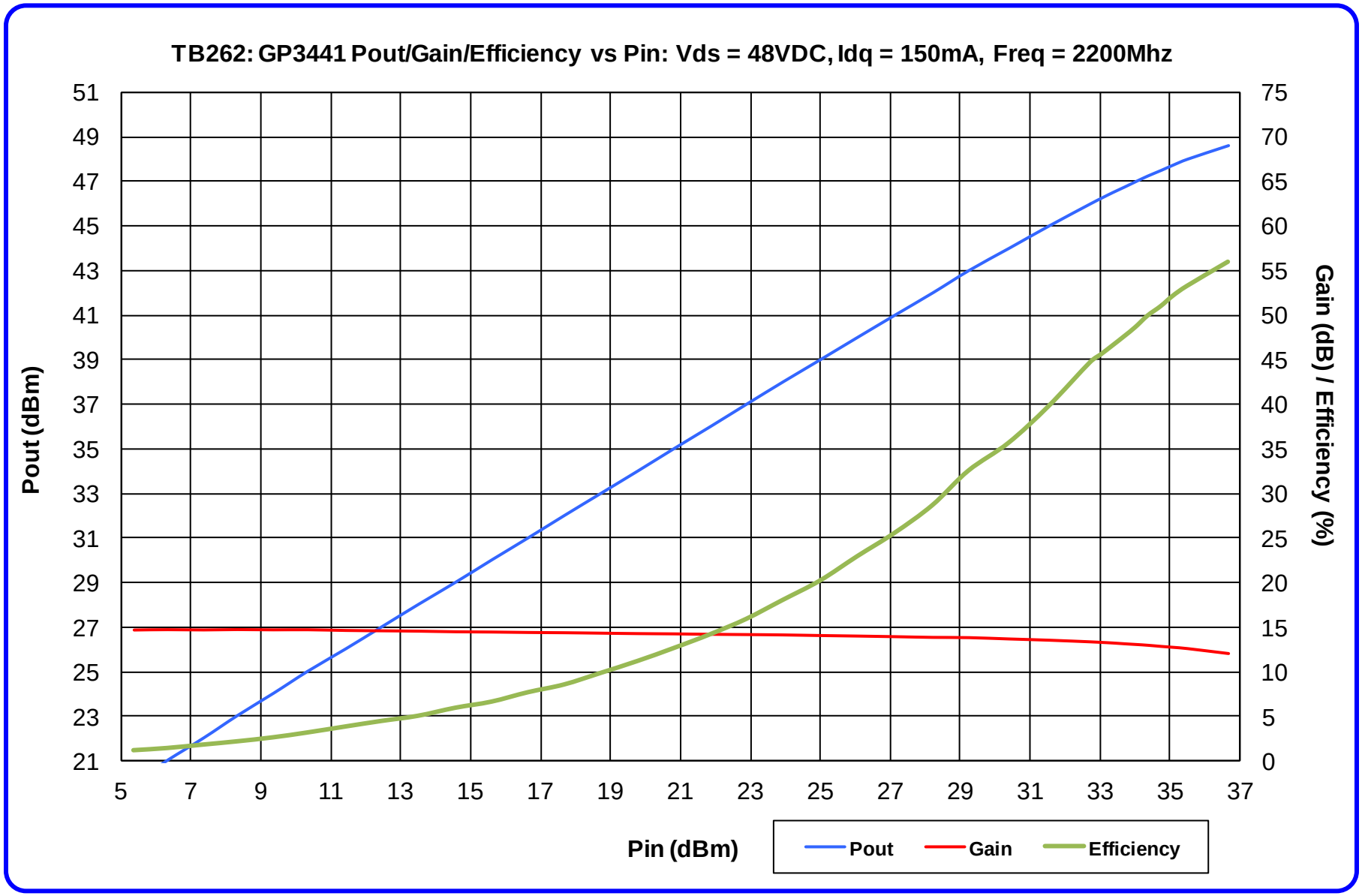

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1700Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

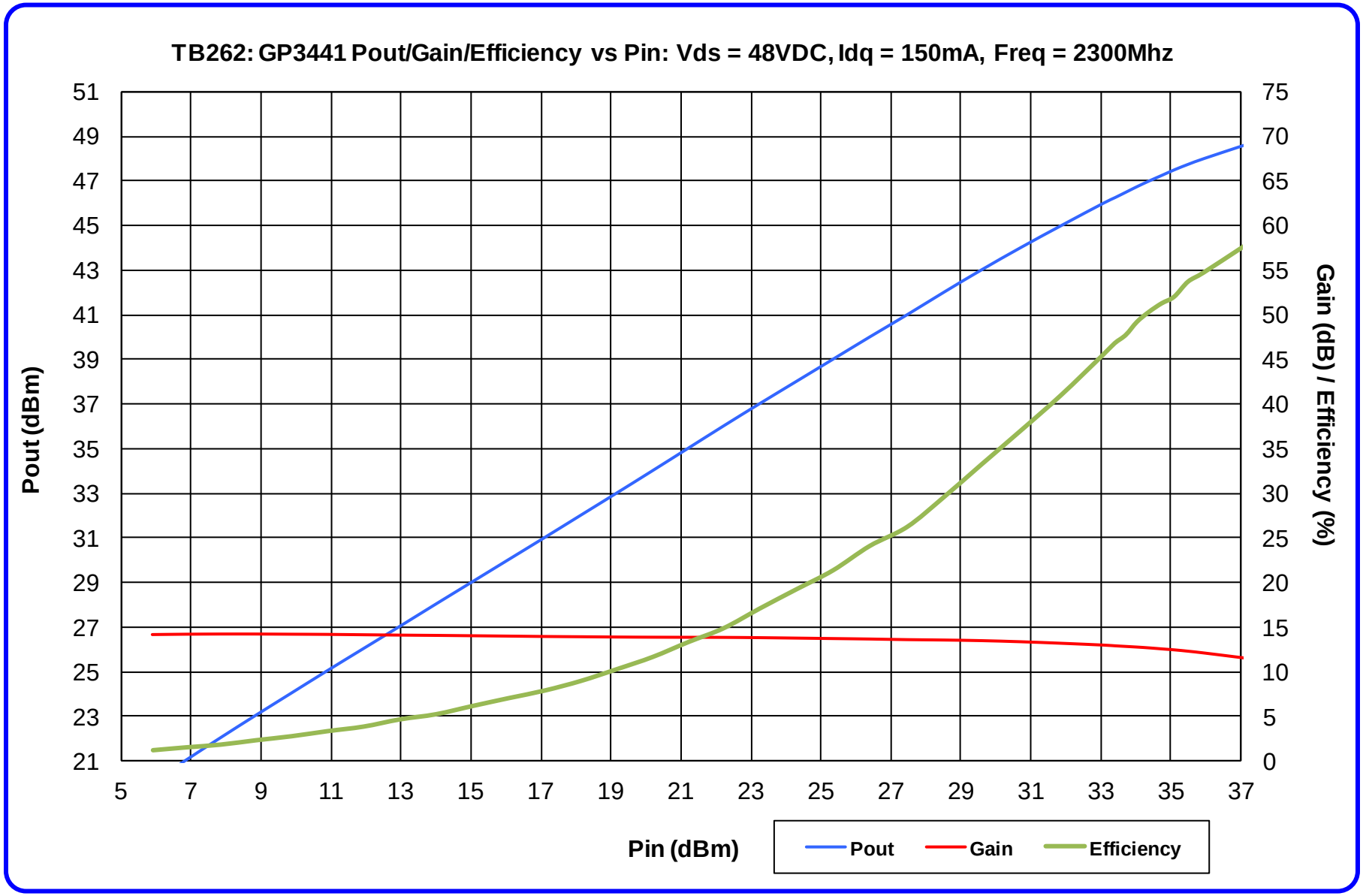

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1800Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

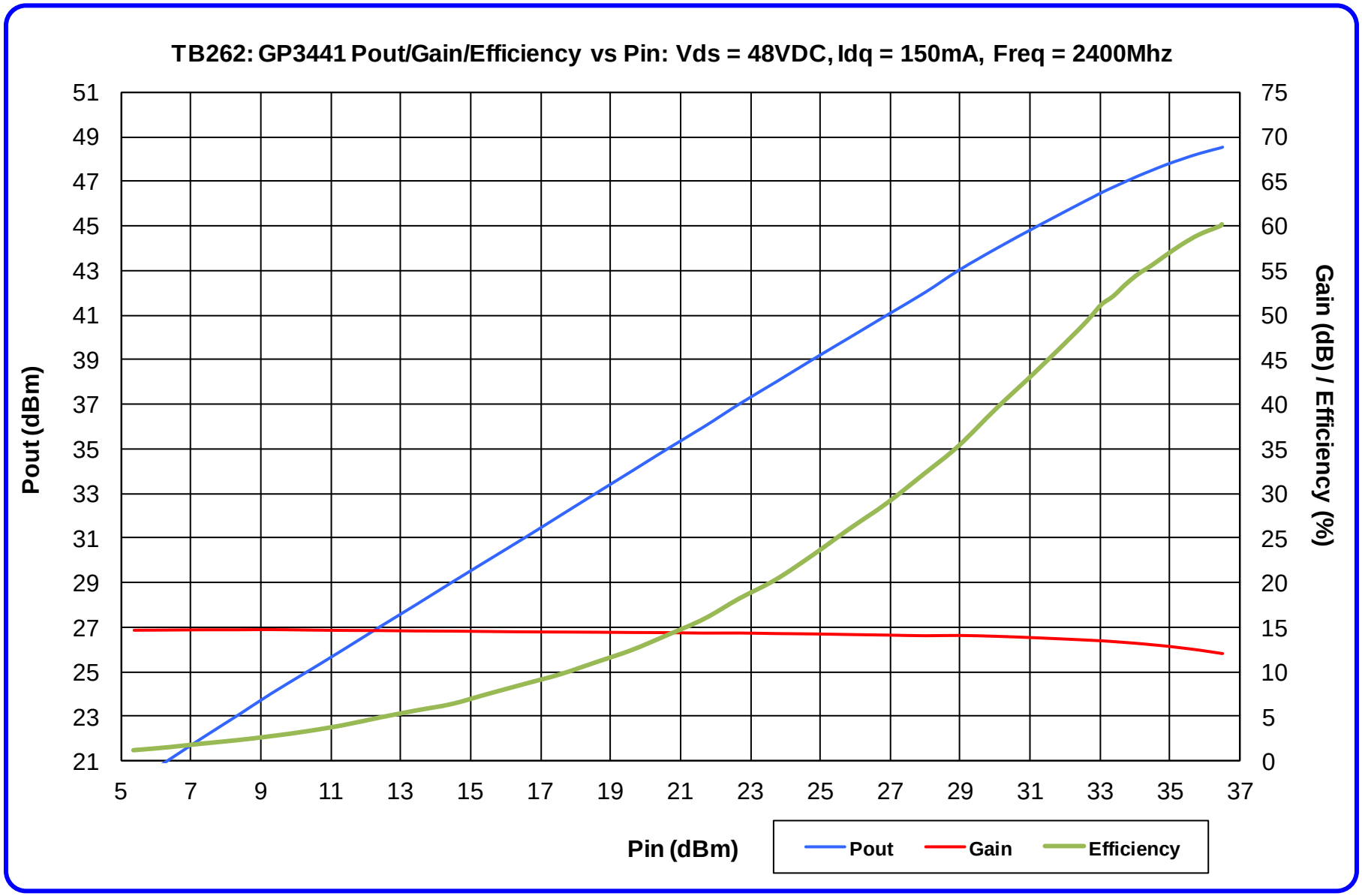

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 1900Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

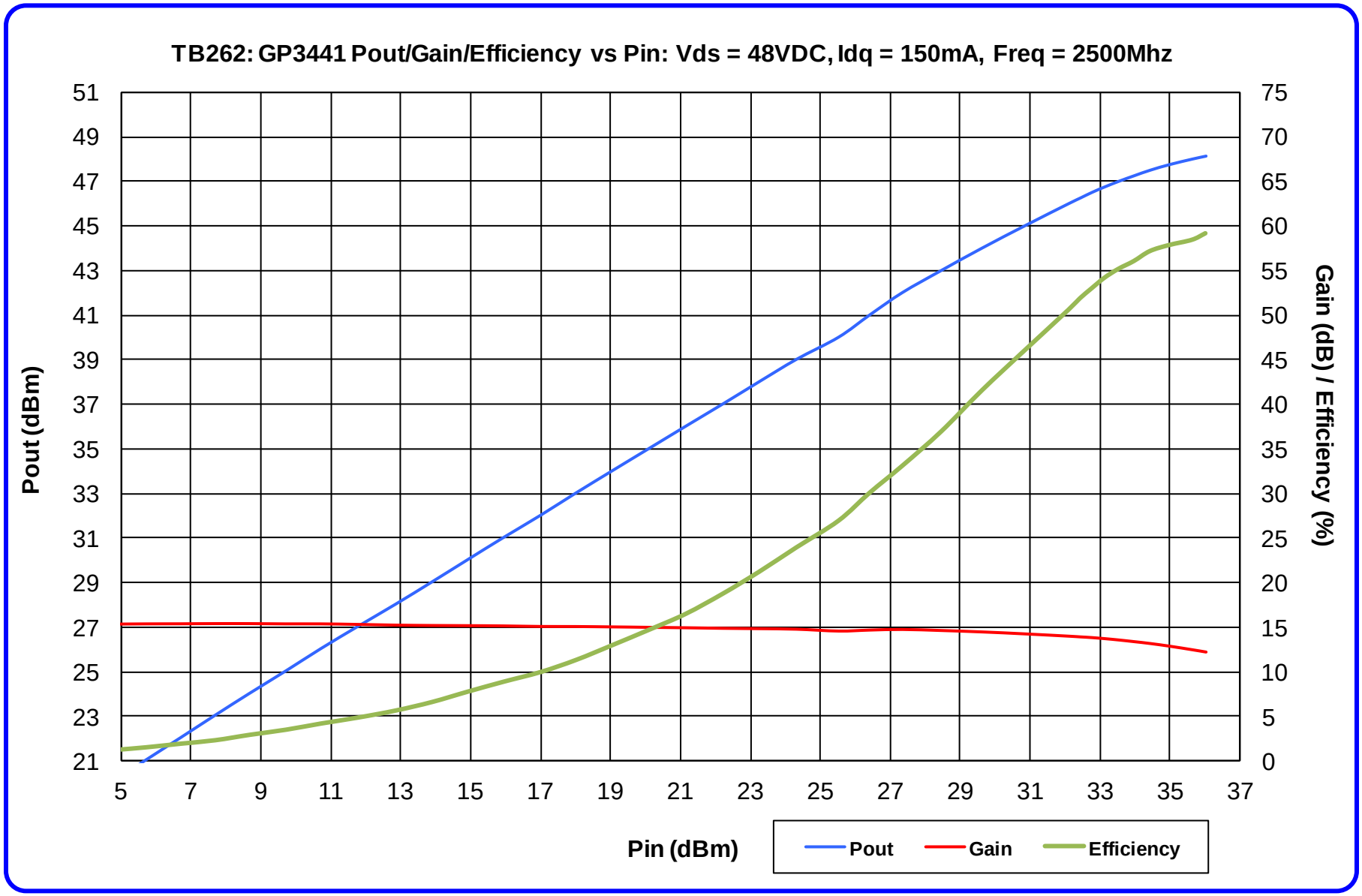

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 2000Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37


TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 2100Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37


TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 2200Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

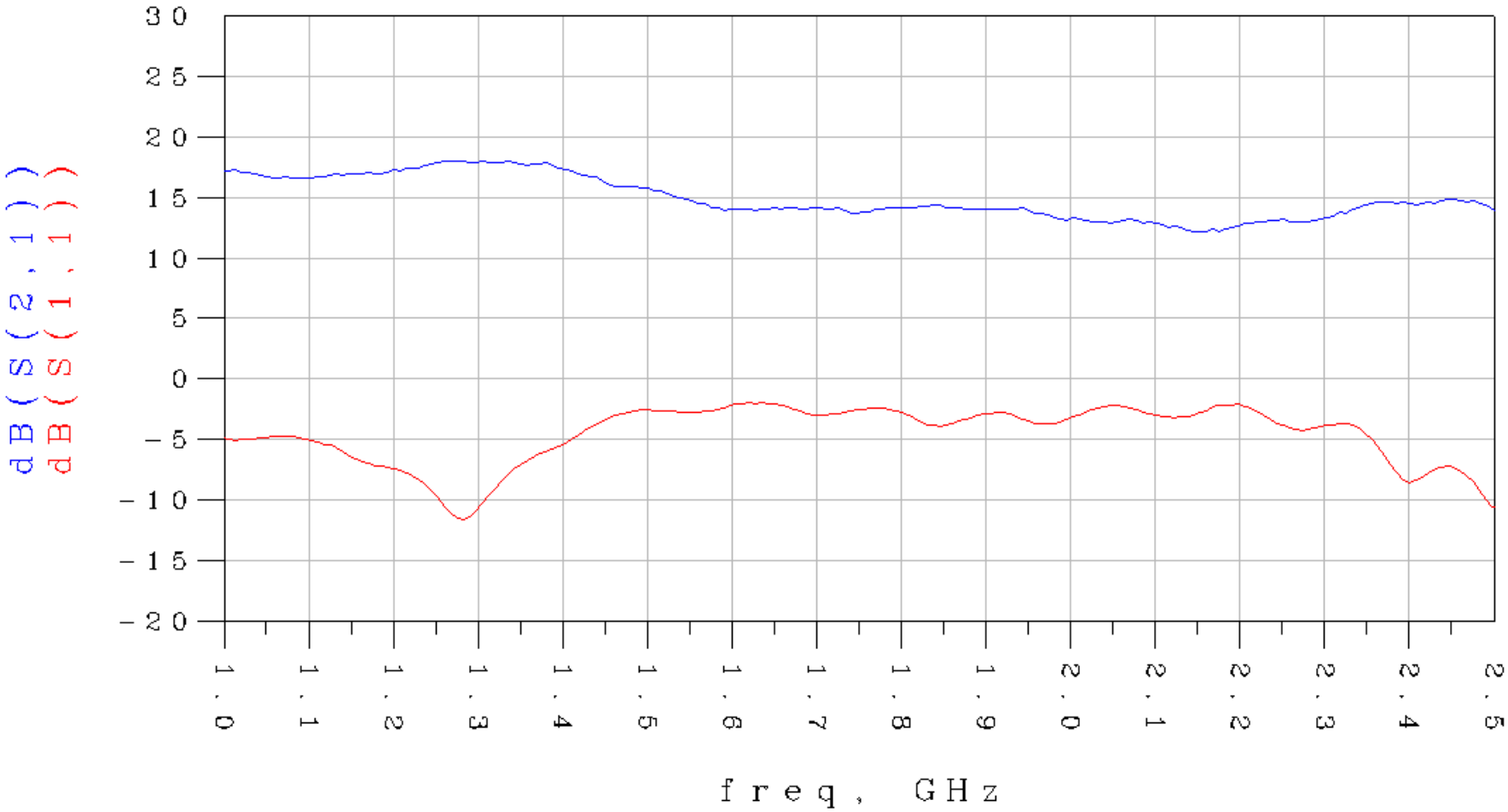

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 2300Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

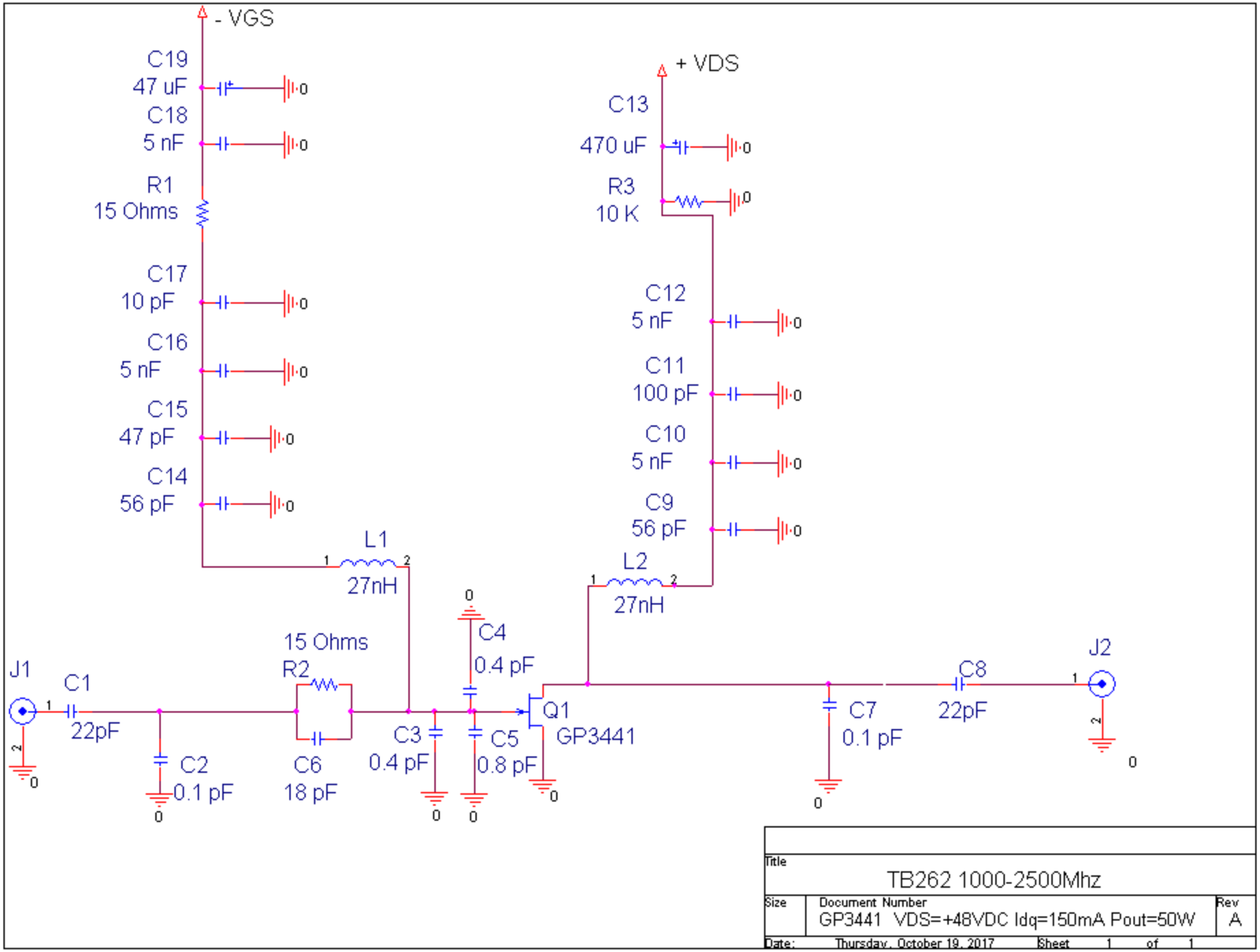

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 2400Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

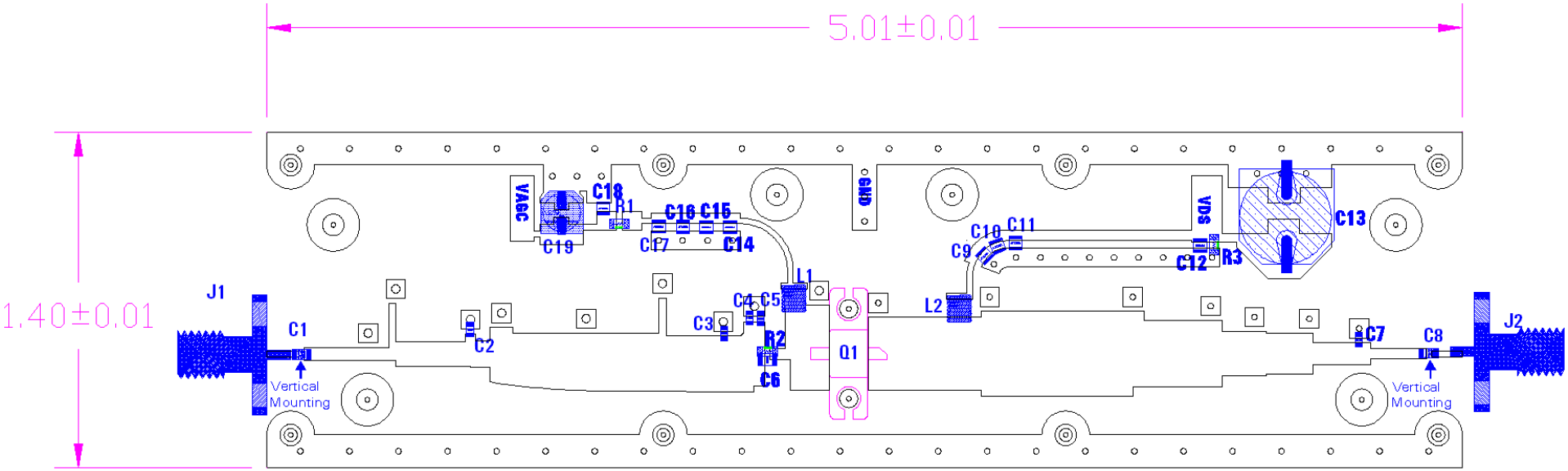

TB262: GP3441 Pout/Gain/Efficiency vs Pin: Vds = 48VDC, Idq = 150mA, Freq = 2500Mhz
Pout (dBm)
Gain (dB) / Efficiency (%)
Pin (dBm)
Pout
Gain
Efficiency
51
49
47
45
43
41
39
37
35
33
31
29
27
25
23
21
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37

TB262 GP3441 Pin=0dBm

Vgs=-2.4V, Vds=48V Idq=150mA




- VGS
+ VDS
C19
47 uF
C18
5 nF
R1
15 Ohms
C17
10 pF
C16
5 nF
C15
47 pF
C14
56 pF
C13
470 uF
R3
10 K
C12
5 nF
C11
100 pF
C10
5 nF
C9
56 pF
L1
27nH
L2
27nH
J1
C1
22pF
15 Ohms
R2
C4
0.4 pF
C2
0.1 pF
C6
18 pF
C3
0.4 pF
C5
0.8 pF
Q1
GP3441
C7
0.1 pF
C8
22pF
J2
Title
TB262 1000-2500Mhz
Size
Document Number
GP3441 VDS=+48VDC Idq=150mA Pout=50W
Rev
A
Date: Thursday, October 19, 2017
Sheet 1 of 1


5.01±0.01
1.40±0.01
J1
J2
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
C13
C14
C15
C16
C17
C18
C19
R1
R2
R3
L1
L2
Q1
VGG
GND
VDS
Vertical Mounting
Vertical Mounting

	TB262		
NOMENCLATURE	**DESCRIPTION**	**VENDER**	**VENDER PART #**
C1, C8	22pF EIA Low ESR 0805N Series	Passive Plus, Inc	0805N220JW251
C2, C7	0.1pF EIA Low ESR 0603N Series	Passive Plus, Inc	0603N0R1BW251
C3, C4	0.4pF EIA Low ESR 0603N Series	Passive Plus, Inc	0603N0R4BW251
C5	0.8pF EIA Low ESR 0603N Series	Passive Plus, Inc	0603N0R8BW251
C6	18pF EIA Low ESR 0805N Series	Passive Plus, Inc	0805N180JW251
C9	56pF Hi-Q Low ESR 0505C Series	Passive Plus, Inc	0505C560FW301
C14	68pF Hi-Q Low ESR 0505C Series	Passive Plus, Inc	0505C680FW301
C15	47pF Hi-Q Low ESR 0505C Series	Passive Plus, Inc	0505C470FW301
C17	10pF Hi-Q Low ESR 0505C Series	Passive Plus, Inc	0505C100FW301
C11	100pF Hi-Q Low ESR 0505C Series	Passive Plus, Inc	0505C101FW301
C10,C12,C16,C18	5nF Low ESR By-Pass Capacitors 0505X Series	Passive Plus, Inc	0505X502KN500
C13	470uF Aluminum Electrolytic, 100V	Panasonic	ECA-2AHG471
C19	47uF Aluminum Electrolytic, 100V	Panasonic	ECA-2AHG470
L1,L2	27nH 5% 1111SQ Series	Coilcraft	1111SQ-27NJEB
R1,R2	15 Ohms 1/8W RCC-0805 SMD, 175mW	IMS	RCC-0805S-15R0F
R3	RES SMD 10K OHM 5% 1/4W 1206	Rohm Semiconductor	MCR18EZPJ103
Q1	GaN	Polyfet RF Devices	GP3441
J1,J2	SMA Female; 4 Hole Panel Mount	Pasternack	PE4000-SF
PCB	PTFE / Woven Fi ber glass / Ceramic Filled Laminate AD1000L Er=10.2+/-0,.25 30mil 1/1oz copper	Rogers Corp.	AD1000L