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RF3L05250CB4

Model information

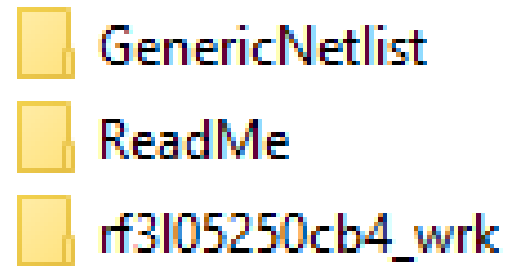
Keysight Advanced Design System Model
Generic Netlist Model

STModelSimulation

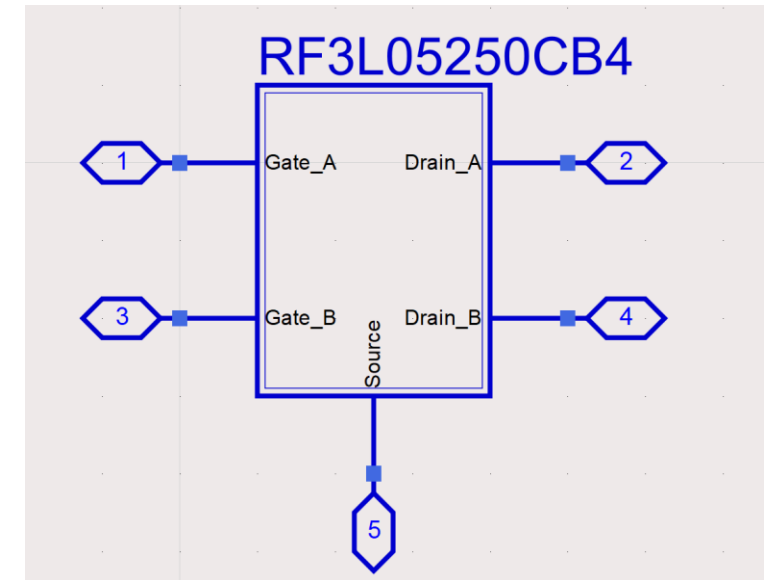
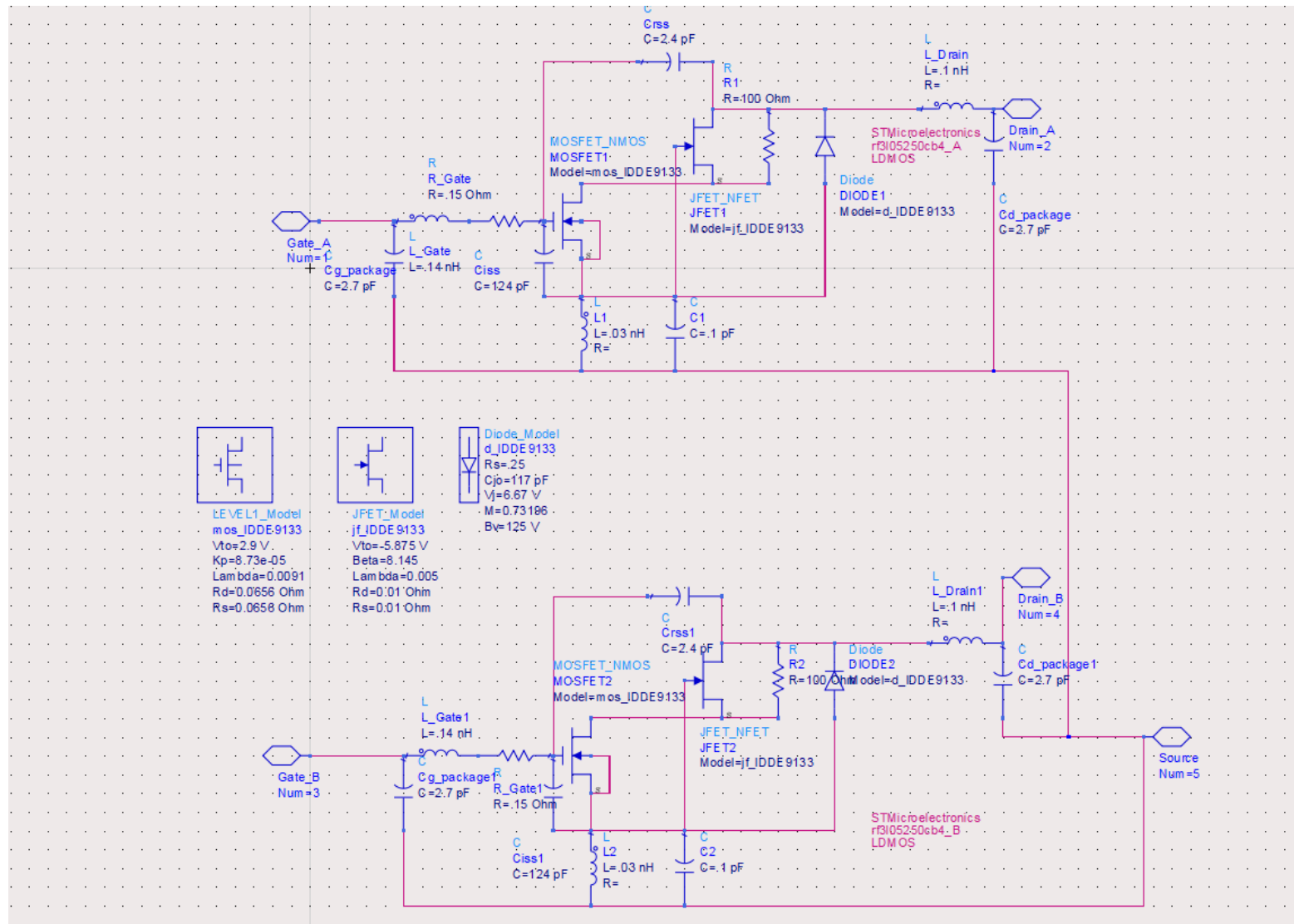
STMicroelectronics

December 15 2020

Files inside compressed model folder



Model configuration



Generic netlist

```
*RF3L05250CB4 ONE SIDE
*12/15/2020
*STMicroelectronics
*Terminals 1 = GATE , 10 = Drain , 11 = Source
*
.SUBCKT RF3L05250CB4_OneSide 10 20 30
LGATE 10 11 0.14n
RGATE 11 12 0.15
CLEAD 10 30 2.7p
CRSS 12 17 2.4p
CGS 12 14 124p
LS 14 30 0.03n
CS 14 30 0.1p
R 17 13 100
LD 17 20 .1n
COLEAD 20 30 2.7p
MOS 13 12 14 mos_IDDE09133 L=0.6uM W=133mM
JFET 17 14 13 jf_IDDE09133
DBODY 14 17 d_IDDE09133

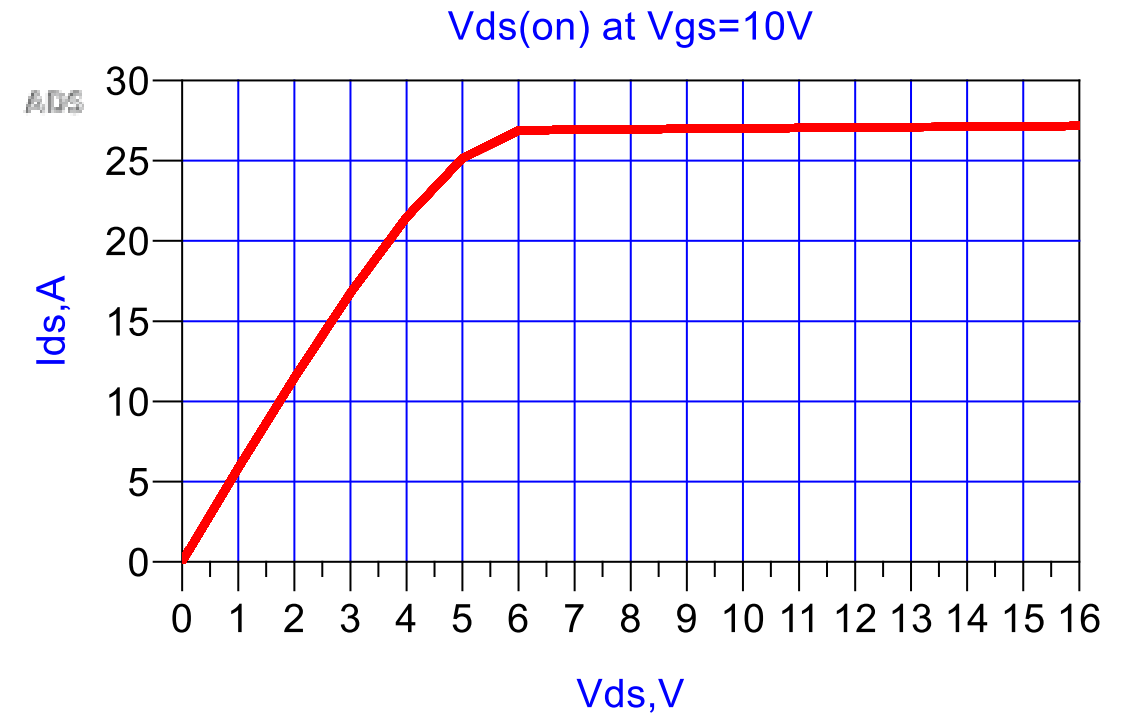
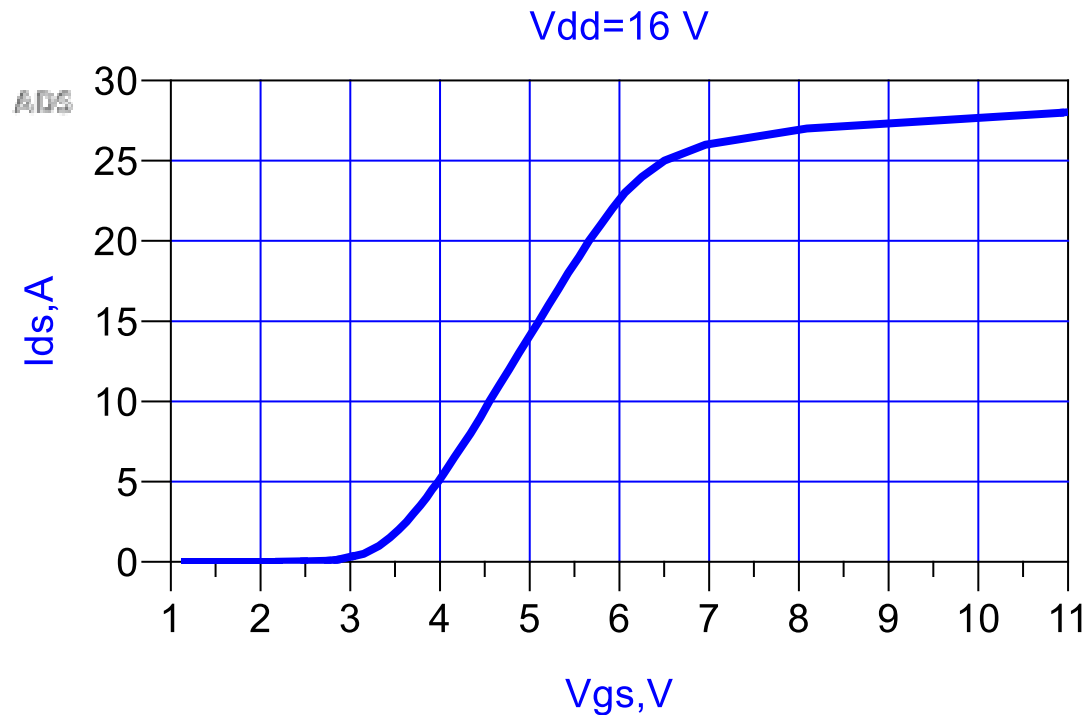
.MODEL mos_IDDE09133 nmos (vto=2.9 KP=8.73E-5 LAMBDA=0.0091 RD=0.0656 RS=0.656)
.MODEL jf_IDDE09133 njf (VTO=-5.875 BETA=8.145 LAMBDA=.005 Rd=0.01 Rs=0.01)
.MODEL d_IDDE09133 d (CJO=117p RS=0.25 VJ=6.67 M=0.73196 BV=125)

.ENDS
```

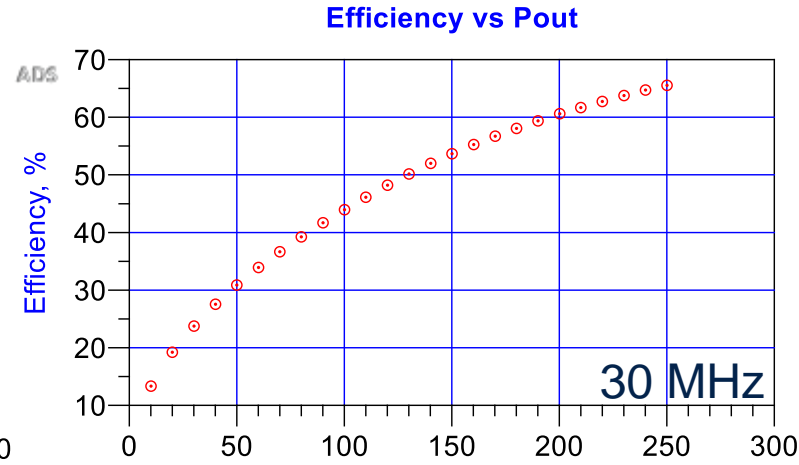
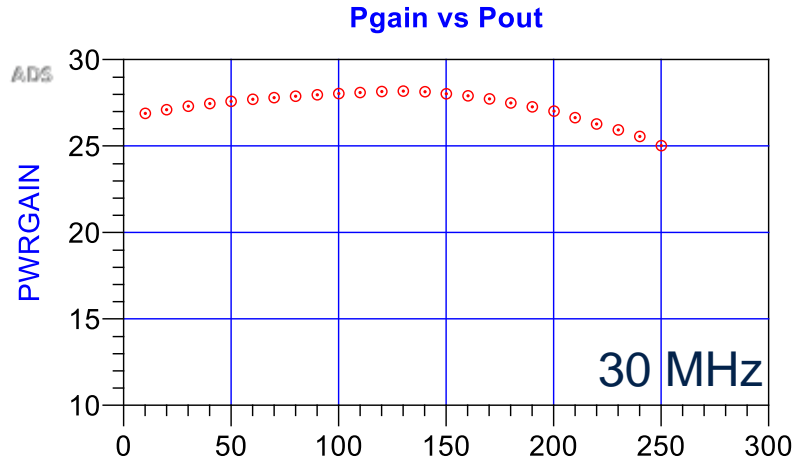
Comments:

- The Minr of the MOS Model may need to be assigned a value of 0.01ohm.
- The Netlist references one side of the device.

Example DC simulations



RF3L05250CB4, 2 MHz – 30 MHz

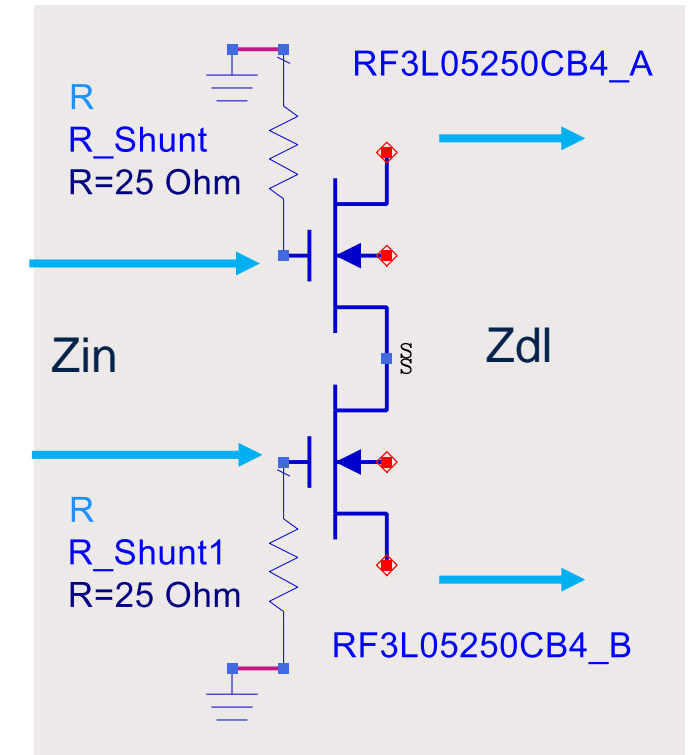


Power_Output_Watts
Zin, Gate-Gate

RF_freq	Rs	Xs
2.000	49.894	-2.262
3.000	49.763	-3.384
4.000	49.580	-4.495
5.000	49.347	-5.591
6.000	49.065	-6.669
7.000	48.737	-7.726
8.000	48.363	-8.759
9.000	47.947	-9.765
10.000	47.491	-10.743
11.000	46.998	-11.689
12.000	46.469	-12.602
13.000	45.909	-13.481
14.000	45.319	-14.324
15.000	44.703	-15.130
16.000	44.064	-15.898
17.000	43.403	-16.628
18.000	42.725	-17.320
19.000	42.032	-17.974
20.000	41.326	-18.589
21.000	40.610	-19.166
22.000	39.887	-19.706
23.000	39.158	-20.209
24.000	38.427	-20.676
25.000	37.693	-21.109
26.000	36.959	-21.508
27.000	36.228	-21.874
28.000	35.500	-22.209
29.000	34.778	-22.512
30.000	34.061	-22.787

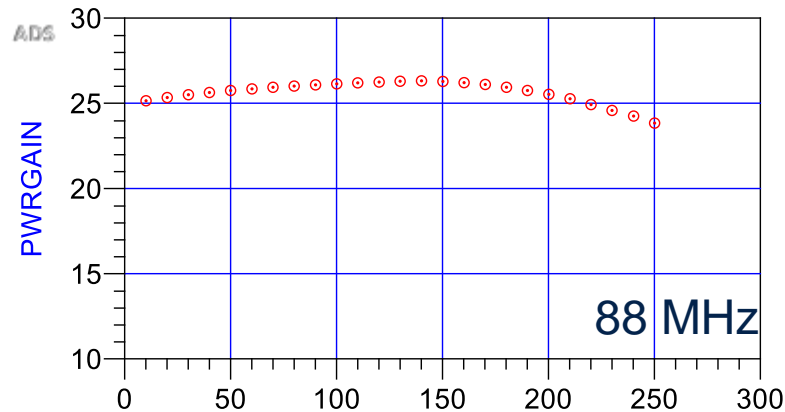
Power_Output_Watts
Z drain load, Drain-Drain

RF_freq	Rs load	Xs load
2.000	5.000	0.004
3.000	5.000	0.007
4.000	5.000	0.009
5.000	5.000	0.011
6.000	5.000	0.013
7.000	5.000	0.015
8.000	5.000	0.018
9.000	5.000	0.020
10.000	5.000	0.022
11.000	5.000	0.024
12.000	5.000	0.026
13.000	5.000	0.029
14.000	5.000	0.031
15.000	4.999	0.033
16.000	4.999	0.035
17.000	4.999	0.037
18.000	4.999	0.040
19.000	4.999	0.042
20.000	4.999	0.044
21.000	4.999	0.046
22.000	4.999	0.048
23.000	4.999	0.051
24.000	4.999	0.053
25.000	4.999	0.055
26.000	4.999	0.057
27.000	4.998	0.059
28.000	4.998	0.062
29.000	4.998	0.064
30.000	4.998	0.066



RF3L05250CB4, 30 MHz – 88 MHz

Pgain vs Pout

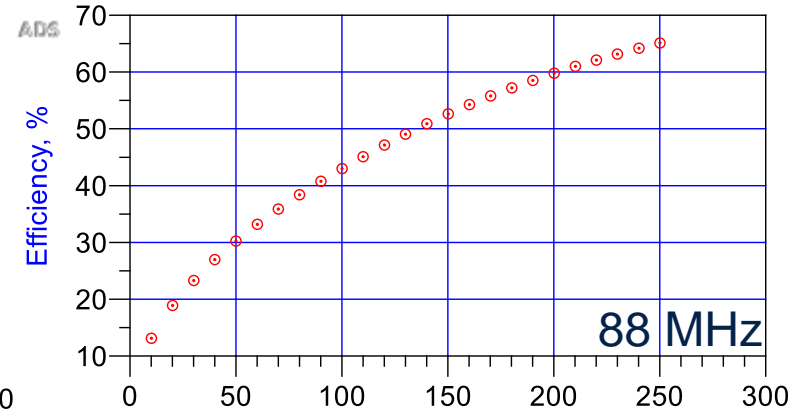


Power_Output_Watts

Zin, Gate-Gate

RF_freq	Rs	Xs
30.000	34.062	-22.787
32.000	32.652	-23.254
34.000	31.280	-23.619
36.000	29.952	-23.893
38.000	28.668	-24.085
40.000	27.435	-24.204
42.000	26.253	-24.260
44.000	25.124	-24.259
46.000	24.047	-24.210
48.000	23.021	-24.118
50.000	22.045	-23.991
52.000	21.119	-23.832
54.000	20.240	-23.647
56.000	19.407	-23.441
58.000	18.618	-23.216
60.000	17.870	-22.976
62.000	17.162	-22.725
64.000	16.491	-22.463
66.000	15.856	-22.194
68.000	15.255	-21.920
70.000	14.685	-21.641
72.000	14.146	-21.359
74.000	13.638	-21.079
76.000	13.157	-20.798
78.000	12.701	-20.519
80.000	12.267	-20.239
82.000	11.856	-19.962
84.000	11.465	-19.689
86.000	11.093	-19.416
88.000	10.740	-19.149

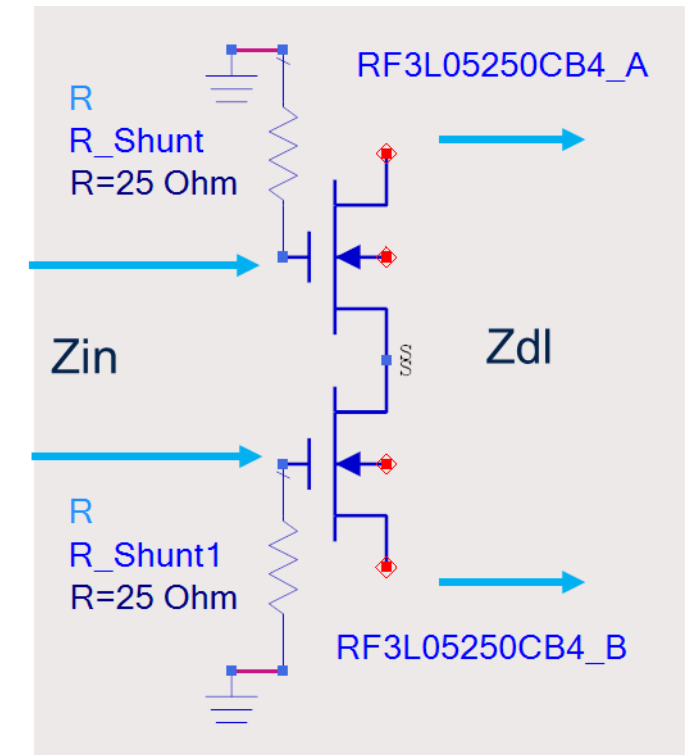
Efficiency vs Pout



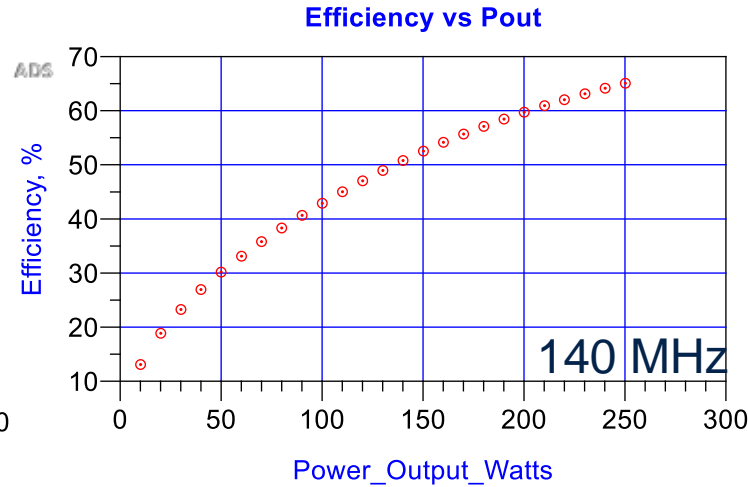
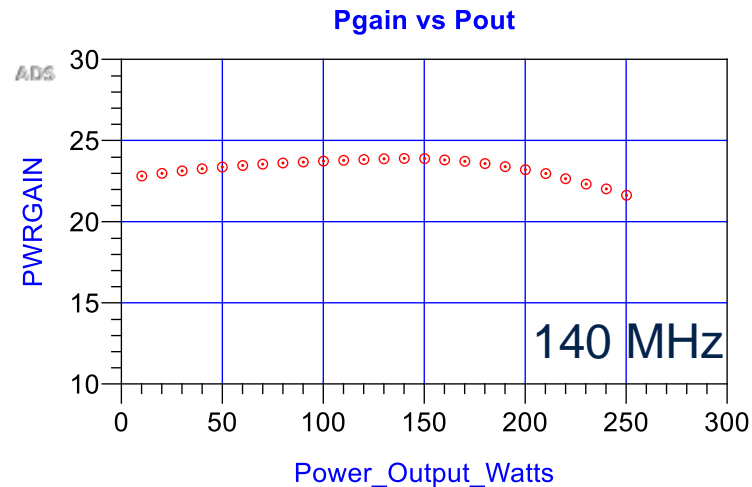
Power_Output_Watts

Z drain load, Drain-Drain

RF_freq	Rs_load	Xs_load
30.000	4.998	0.066
32.000	4.998	0.070
34.000	4.997	0.075
36.000	4.997	0.079
38.000	4.997	0.083
40.000	4.996	0.088
42.000	4.996	0.092
44.000	4.996	0.097
46.000	4.995	0.101
48.000	4.995	0.105
50.000	4.994	0.110
52.000	4.994	0.114
54.000	4.993	0.118
56.000	4.993	0.123
58.000	4.992	0.127
60.000	4.992	0.131
62.000	4.991	0.136
64.000	4.991	0.140
66.000	4.990	0.144
68.000	4.989	0.149
70.000	4.989	0.153
72.000	4.988	0.157
74.000	4.987	0.162
76.000	4.987	0.166
78.000	4.986	0.170
80.000	4.985	0.175
82.000	4.985	0.179
84.000	4.984	0.183
86.000	4.983	0.187
88.000	4.982	0.192



RF3L05250CB4, 118 MHz – 140 MHz

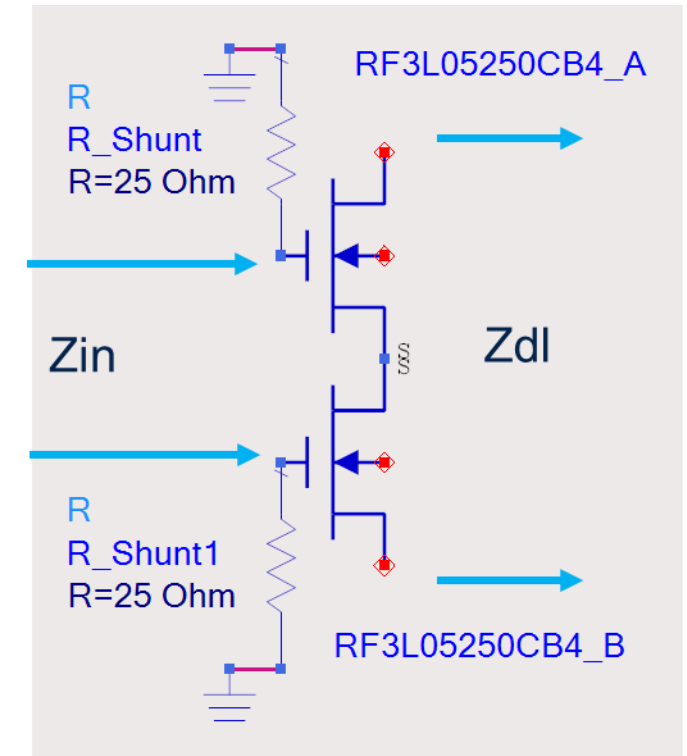


Zin, Gate-Gate

RF_freq	Rs	Xs
118.000	7.032	-15.612
119.000	6.946	-15.510
120.000	6.862	-15.411
121.000	6.779	-15.311
122.000	6.698	-15.212
123.000	6.619	-15.114
124.000	6.542	-15.018
125.000	6.466	-14.923
126.000	6.391	-14.828
127.000	6.318	-14.734
128.000	6.247	-14.642
129.000	6.176	-14.550
130.000	6.108	-14.459
131.000	6.040	-14.369
132.000	5.974	-14.280
133.000	5.909	-14.191
134.000	5.845	-14.105
135.000	5.783	-14.019
136.000	5.722	-13.933
137.000	5.662	-13.848
138.000	5.603	-13.764
139.000	5.545	-13.680
140.000	5.488	-13.598

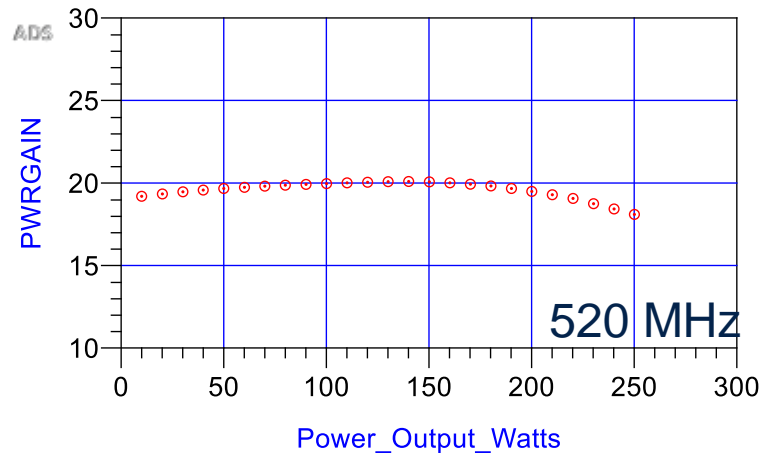
Z drain load, Drain-Drain

RF_freq	Rs_load	Xs_load
118.000	4.969	0.255
119.000	4.968	0.257
120.000	4.968	0.259
121.000	4.967	0.261
122.000	4.967	0.264
123.000	4.966	0.266
124.000	4.966	0.268
125.000	4.965	0.270
126.000	4.964	0.272
127.000	4.964	0.274
128.000	4.963	0.276
129.000	4.963	0.278
130.000	4.962	0.280
131.000	4.962	0.282
132.000	4.961	0.285
133.000	4.960	0.287
134.000	4.960	0.289
135.000	4.959	0.291
136.000	4.959	0.293
137.000	4.958	0.295
138.000	4.958	0.297
139.000	4.957	0.299
140.000	4.956	0.301

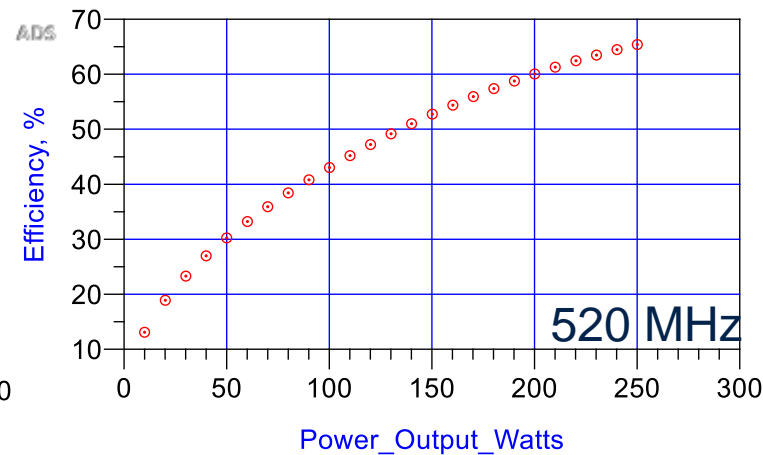


RF3L05250CB4, 30 MHz – 520 MHz

Pgain vs Pout



Efficiency vs Pout

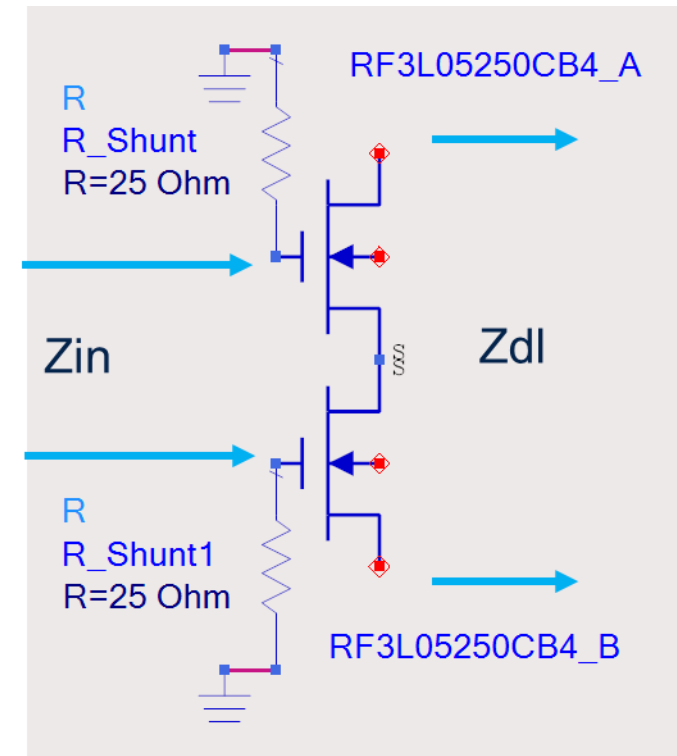


Zin, Gate-Gate

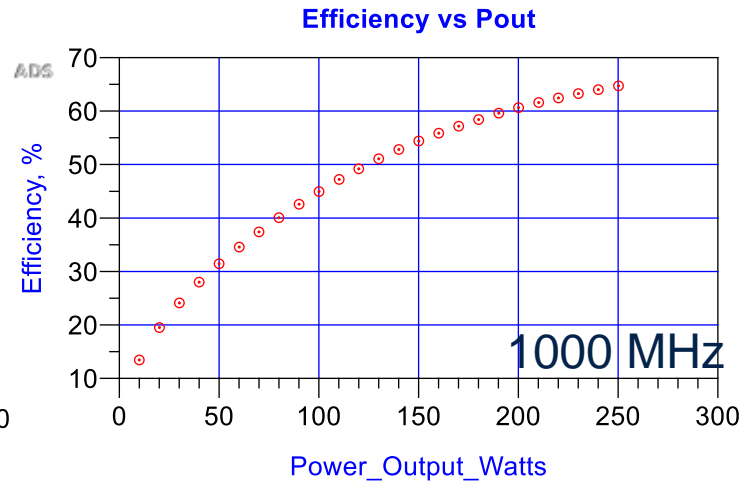
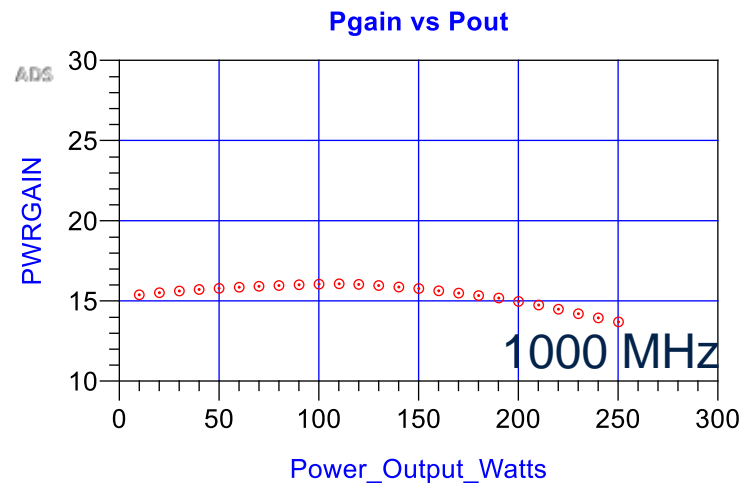
RF_freq	Rs	Xs
30.000	34.062	-22.787
50.000	22.046	-23.991
70.000	14.686	-21.641
90.000	10.403	-18.883
110.000	7.790	-16.462
130.000	6.108	-14.459
150.000	4.976	-12.821
170.000	4.181	-11.485
190.000	3.599	-10.374
210.000	3.161	-9.435
230.000	2.824	-8.630
250.000	2.562	-7.932
270.000	2.356	-7.319
290.000	2.192	-6.779
310.000	2.051	-6.305
330.000	1.937	-5.879
350.000	1.846	-5.492
370.000	1.777	-5.138
390.000	1.724	-4.812
410.000	1.680	-4.515
430.000	1.643	-4.242
450.000	1.613	-3.990
470.000	1.590	-3.757
490.000	1.573	-3.540
510.000	1.560	-3.339
520.000	1.554	-3.243

Z drain load, Drain-Drain

RF_freq	Rs_load	Xs_load
30.000	4.998	0.066
50.000	4.994	0.110
70.000	4.989	0.153
90.000	4.982	0.196
110.000	4.973	0.238
130.000	4.962	0.280
150.000	4.950	0.322
170.000	4.936	0.363
190.000	4.921	0.403
210.000	4.903	0.442
230.000	4.885	0.481
250.000	4.865	0.519
270.000	4.844	0.556
290.000	4.821	0.593
310.000	4.798	0.629
330.000	4.773	0.663
350.000	4.747	0.697
370.000	4.720	0.729
390.000	4.692	0.760
410.000	4.663	0.790
430.000	4.633	0.819
450.000	4.600	0.847
470.000	4.566	0.873
490.000	4.531	0.897
510.000	4.495	0.920
520.000	4.477	0.932



RF3L05250CB4, 520 MHz – 1000 MHz

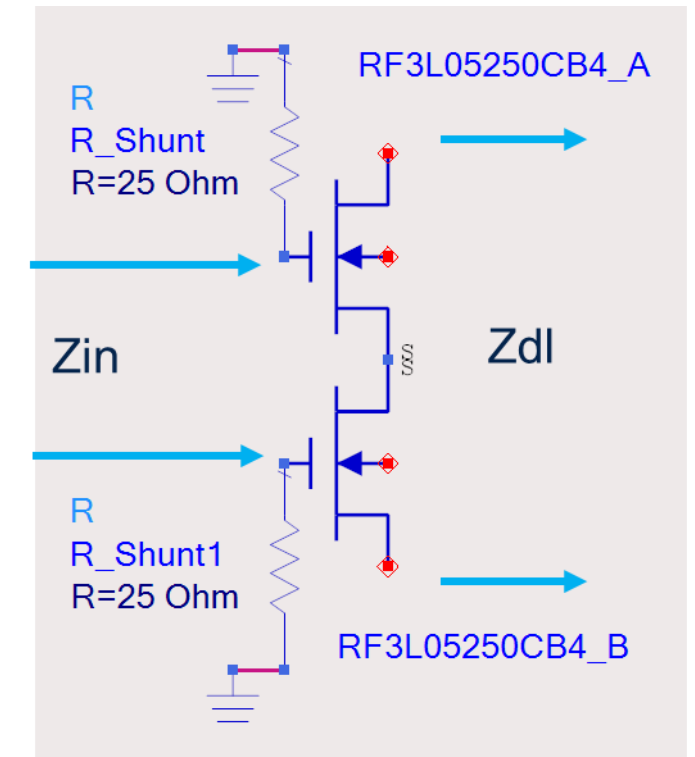


Zin, Gate-Gate

RF_freq	Rs	Xs
520.000	1.554	-3.243
540.000	1.544	-3.061
560.000	1.535	-2.893
580.000	1.526	-2.737
600.000	1.514	-2.591
620.000	1.499	-2.455
640.000	1.476	-2.327
660.000	1.451	-2.205
680.000	1.429	-2.090
700.000	1.410	-1.980
720.000	1.390	-1.876
740.000	1.368	-1.777
760.000	1.342	-1.681
780.000	1.319	-1.588
800.000	1.301	-1.499
820.000	1.288	-1.413
840.000	1.281	-1.329
860.000	1.277	-1.247
880.000	1.269	-1.168
900.000	1.251	-1.090
920.000	1.235	-1.013
940.000	1.222	-0.939
960.000	1.215	-0.868
980.000	1.213	-0.799
1000.000	1.213	-0.731

Z drain load, Drain-Drain

RF_freq	Rs_load	Xs_load
520.000	4.477	0.932
540.000	4.439	0.954
560.000	4.401	0.975
580.000	4.362	0.994
600.000	4.322	1.013
620.000	4.282	1.032
640.000	4.243	1.049
660.000	4.202	1.065
680.000	4.162	1.080
700.000	4.121	1.093
720.000	4.080	1.106
740.000	4.040	1.118
760.000	3.999	1.127
780.000	3.958	1.135
800.000	3.916	1.141
820.000	3.874	1.145
840.000	3.832	1.149
860.000	3.791	1.151
880.000	3.750	1.153
900.000	3.709	1.153
920.000	3.668	1.152
940.000	3.627	1.149
960.000	3.586	1.145
980.000	3.545	1.141
1000.000	3.505	1.135



Thank you

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