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# ST05250

## Model information

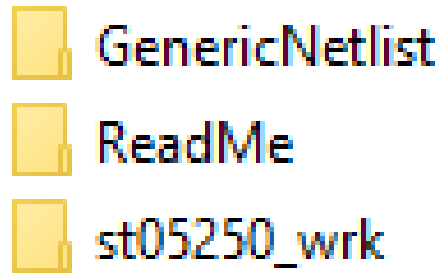
Keysight Advanced Design System Model  
Generic Netlist Model

STModelSimulation

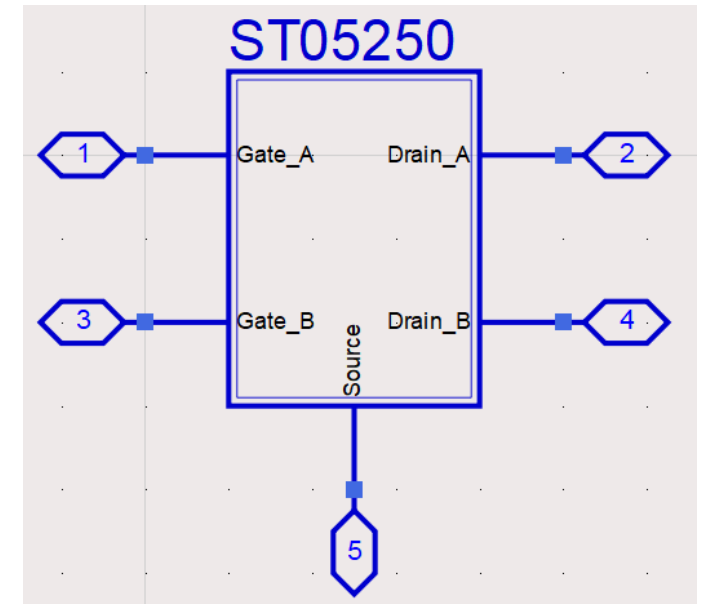
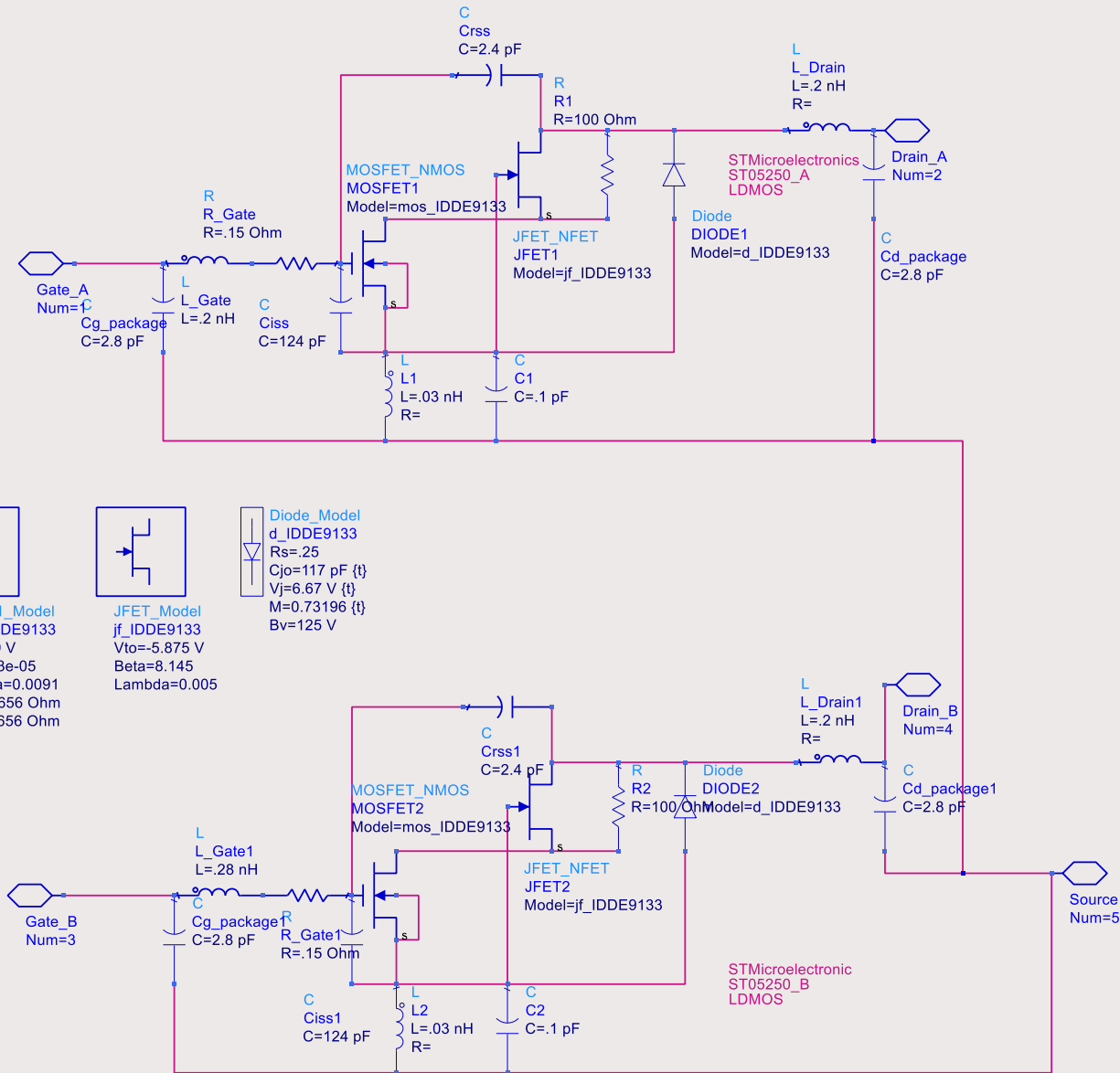
STMicroelectronics

December 10 2020

# Files inside compressed model folder



# Model configuration



# Generic netlist

```
*ST05250 ONE SIDE
*12/10/2020
*STMicroelectronics
*Terminals 1 = GATE , 10 = Drain , 11 = Source
*
.SUBCKT ST05250_OneSide 10 20 30
LGATE 10 11 0.15n
RGATE 11 12 0.15
CLEAD 10 30 2.8p
CRSS 12 17 2.4p
CGS 12 14 124p
LS 14 30 0.03n
CS 14 30 0.1p
MOS 13 12 14 mos_IDDE09133 L=0.6uM W=133mM
JFET 17 14 13 jf_IDDE09133
DBODY 14 17 d_IDDE09133

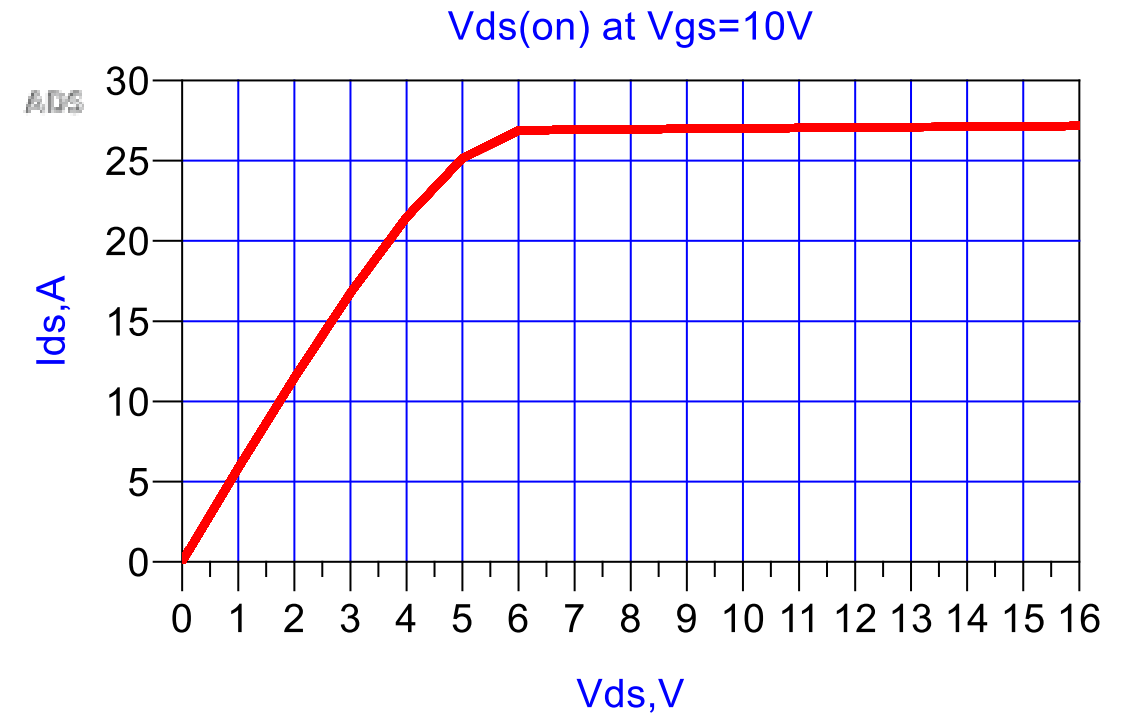
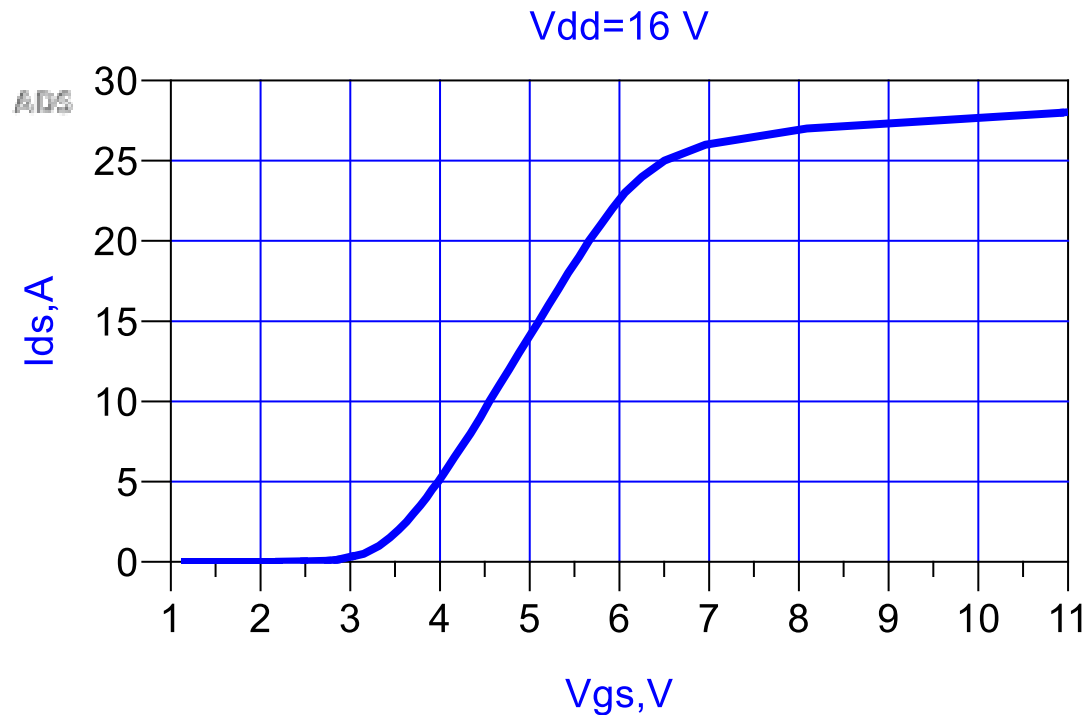
.MODEL mos_IDDE09133 nmos (vto=2.9 KP=8.73E-5 LAMBDA=0.0091 RD=0.0656 RS=0.656)
.MODEL jf_IDDE09133 njf (VTO=-5.875 BETA=8.145 LAMBDA=.005 Rd=0.01 Rs=0.01)
.MODEL d_IDDE09133 d (CJO=117p RS=0.25 VJ=6.67 M=0.73196 BV=125)

.ENDS
```

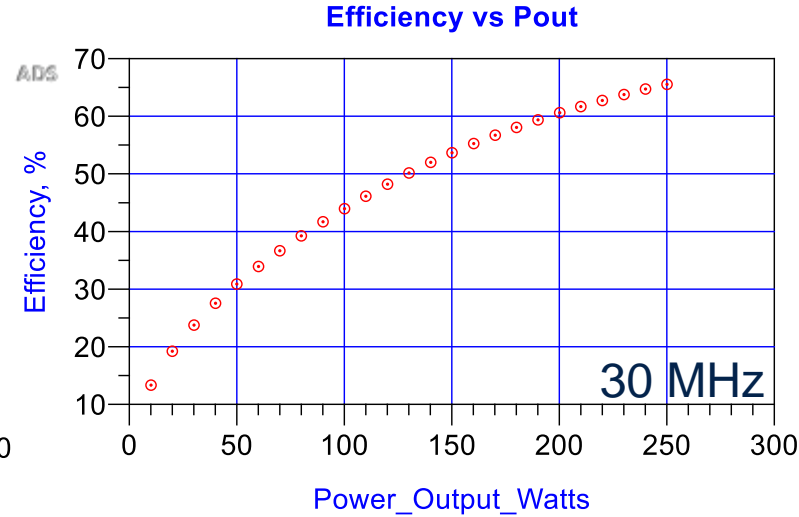
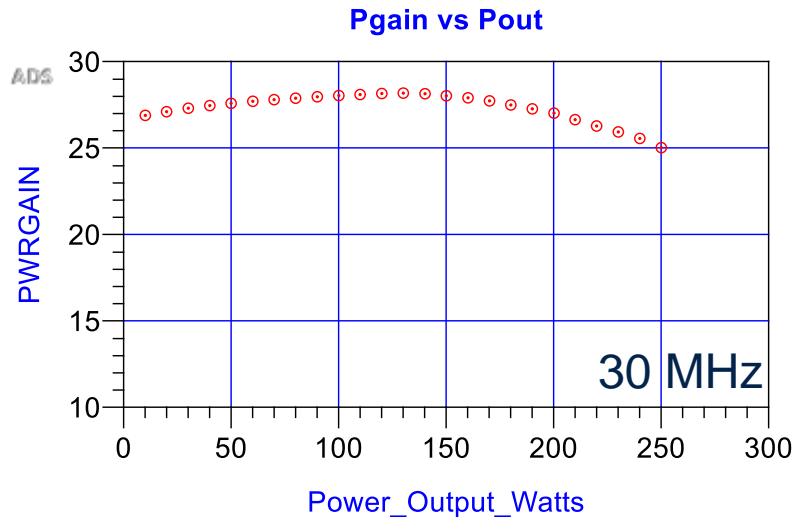
## Comments:

- 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



# ST05250, 2 MHz – 30 MHz

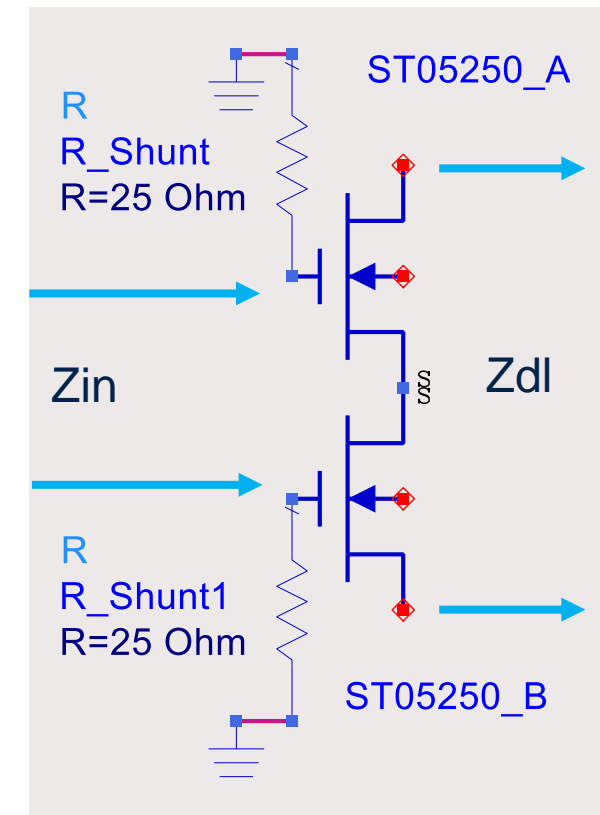


**Zin, Gate-Gate**

RF_freq	Rs	Xs
2.000	49.894	-2.264
3.000	49.763	-3.387
4.000	49.579	-4.499
5.000	49.346	-5.597
6.000	49.064	-6.676
7.000	48.735	-7.735
8.000	48.360	-8.769
9.000	47.943	-9.777
10.000	47.486	-10.756
11.000	46.992	-11.704
12.000	46.462	-12.619
13.000	45.899	-13.500
14.000	45.308	-14.344
15.000	44.690	-15.151
16.000	44.048	-15.921
17.000	43.386	-16.653
18.000	42.706	-17.345
19.000	42.011	-17.999
20.000	41.303	-18.616
21.000	40.584	-19.194
22.000	39.859	-19.734
23.000	39.127	-20.238
24.000	38.392	-20.706
25.000	37.657	-21.138
26.000	36.921	-21.536
27.000	36.187	-21.902
28.000	35.460	-22.235
29.000	34.734	-22.539
30.000	34.016	-22.813

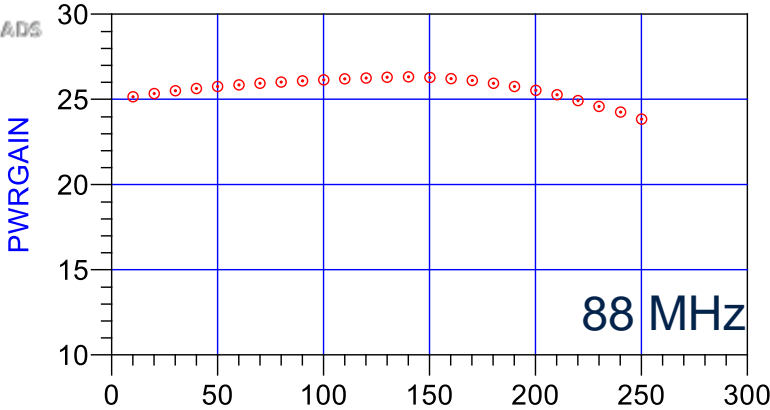
**Z drain load, Drain-Drain**

RF_freq	Rs_load	Xs_load
2.000	5.000	0.002
3.000	5.000	0.003
4.000	5.000	0.004
5.000	5.000	0.005
6.000	5.000	0.006
7.000	5.000	0.007
8.000	5.000	0.008
9.000	5.000	0.009
10.000	5.000	0.010
11.000	5.000	0.011
12.000	5.000	0.011
13.000	5.000	0.012
14.000	5.000	0.013
15.000	5.000	0.014
16.000	4.999	0.015
17.000	4.999	0.016
18.000	4.999	0.017
19.000	4.999	0.018
20.000	4.999	0.019
21.000	4.999	0.020
22.000	4.999	0.021
23.000	4.999	0.022
24.000	4.999	0.023
25.000	4.999	0.024
26.000	4.999	0.025
27.000	4.998	0.026
28.000	4.998	0.027
29.000	4.998	0.028
30.000	4.998	0.029



# ST05250, 30 MHz – 88 MHz

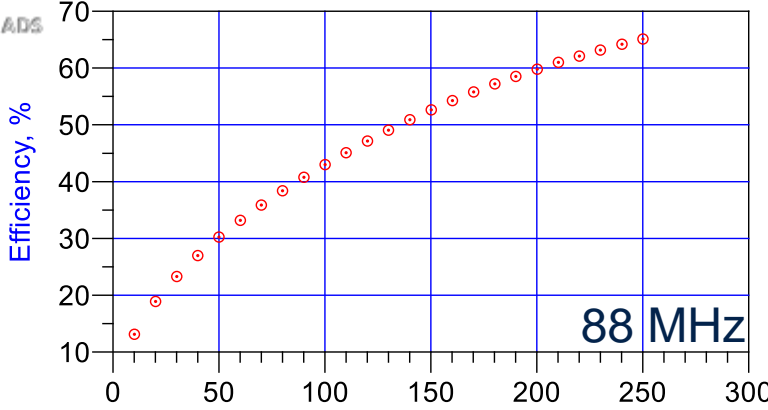
Pgain vs Pout



Power\_Output\_Watts  
Zin, Gate-Gate

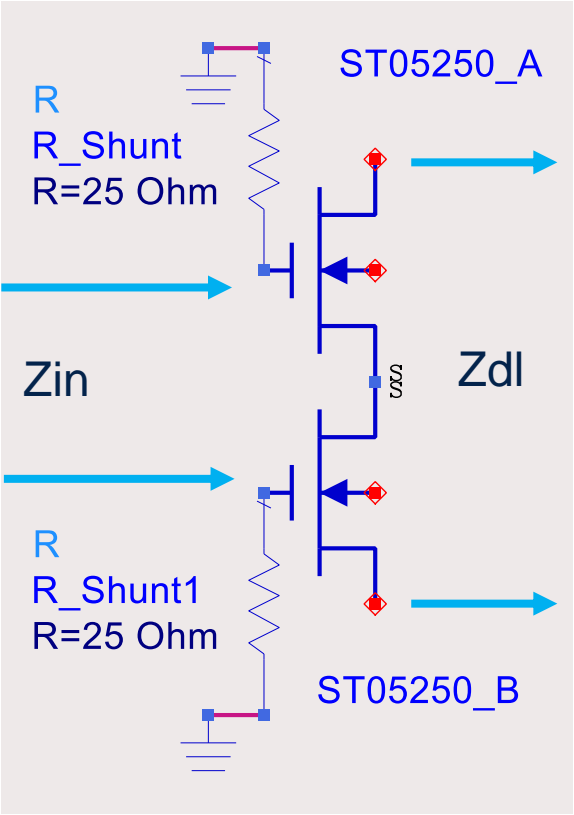
RF_freq	Rs	Xs
30.000	34.016	-22.813
32.000	32.602	-23.278
34.000	31.228	-23.641
36.000	29.895	-23.911
38.000	28.611	-24.100
40.000	27.376	-24.216
42.000	26.194	-24.267
44.000	25.065	-24.263
46.000	23.987	-24.209
48.000	22.961	-24.114
50.000	21.986	-23.982
52.000	21.061	-23.819
54.000	20.183	-23.631
56.000	19.351	-23.420
58.000	18.563	-23.191
60.000	17.817	-22.948
62.000	17.111	-22.692
64.000	16.442	-22.427
66.000	15.809	-22.155
68.000	15.210	-21.878
70.000	14.643	-21.596
72.000	14.108	-21.314
74.000	13.599	-21.030
76.000	13.117	-20.745
78.000	12.659	-20.461
80.000	12.224	-20.179
82.000	11.809	-19.896
84.000	11.415	-19.616
86.000	11.042	-19.342
88.000	10.687	-19.072

Efficiency vs Pout

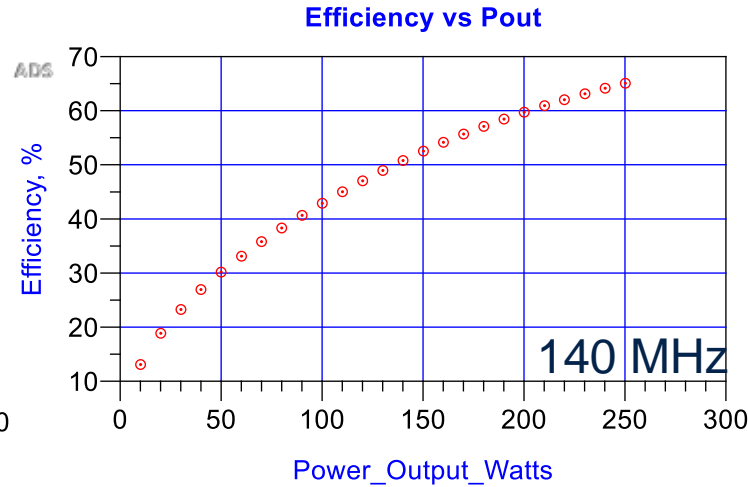
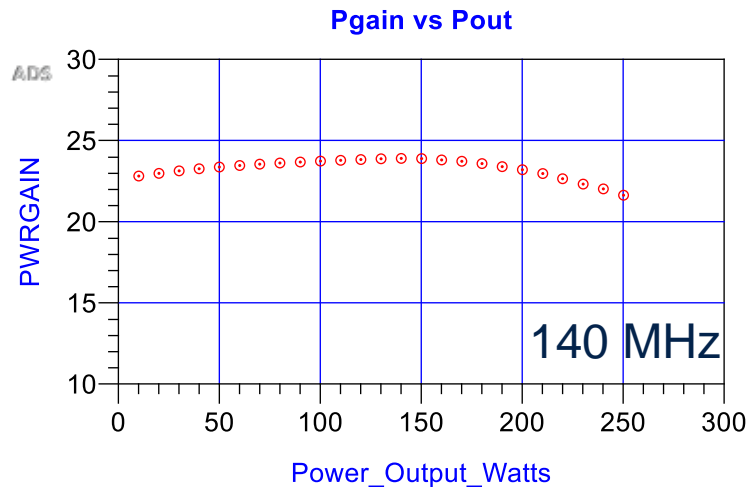


Power\_Output\_Watts  
Z drain load, Drain-Drain

RF_freq	Rs_load	Xs_load
30.000	4.998	0.029
32.000	4.998	0.030
34.000	4.998	0.032
36.000	4.997	0.034
38.000	4.997	0.036
40.000	4.997	0.038
42.000	4.996	0.040
44.000	4.996	0.042
46.000	4.996	0.044
48.000	4.995	0.045
50.000	4.995	0.047
52.000	4.994	0.049
54.000	4.994	0.051
56.000	4.993	0.053
58.000	4.993	0.055
60.000	4.992	0.057
62.000	4.992	0.058
64.000	4.991	0.060
66.000	4.991	0.062
68.000	4.990	0.064
70.000	4.990	0.066
72.000	4.989	0.068
74.000	4.988	0.069
76.000	4.987	0.071
78.000	4.987	0.073
80.000	4.986	0.075
82.000	4.985	0.077
84.000	4.985	0.078
86.000	4.984	0.080
88.000	4.983	0.082



# ST05250, 118 MHz – 140 MHz

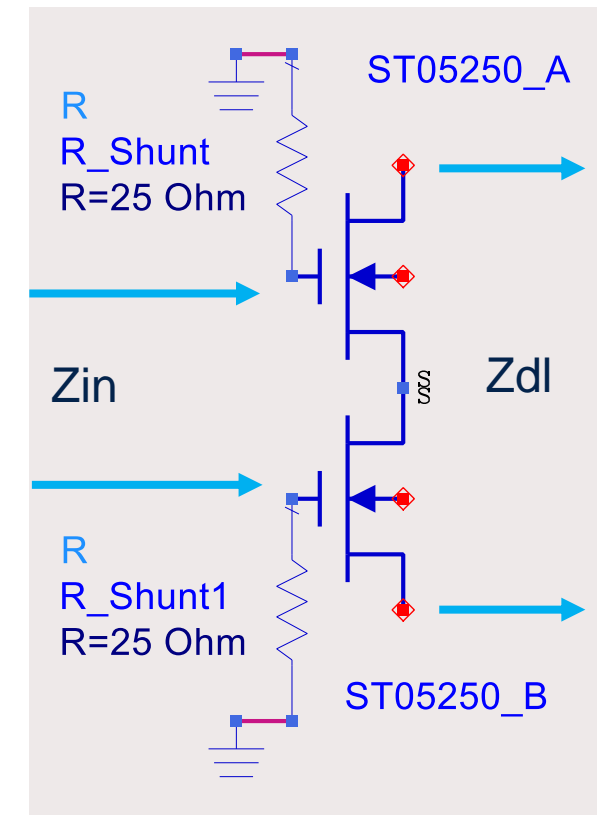


**Zin, Gate-Gate**

RF_freq	Rs	Xs
118.000	6.996	-15.491
119.000	6.912	-15.390
120.000	6.829	-15.294
121.000	6.748	-15.199
122.000	6.669	-15.105
123.000	6.591	-15.012
124.000	6.516	-14.921
125.000	6.442	-14.831
126.000	6.369	-14.743
127.000	6.298	-14.655
128.000	6.229	-14.569
129.000	6.160	-14.484
130.000	6.093	-14.400
131.000	6.027	-14.316
132.000	5.961	-14.233
133.000	5.896	-14.150
134.000	5.832	-14.068
135.000	5.768	-13.986
136.000	5.706	-13.904
137.000	5.644	-13.822
138.000	5.583	-13.741
139.000	5.523	-13.659
140.000	5.463	-13.576

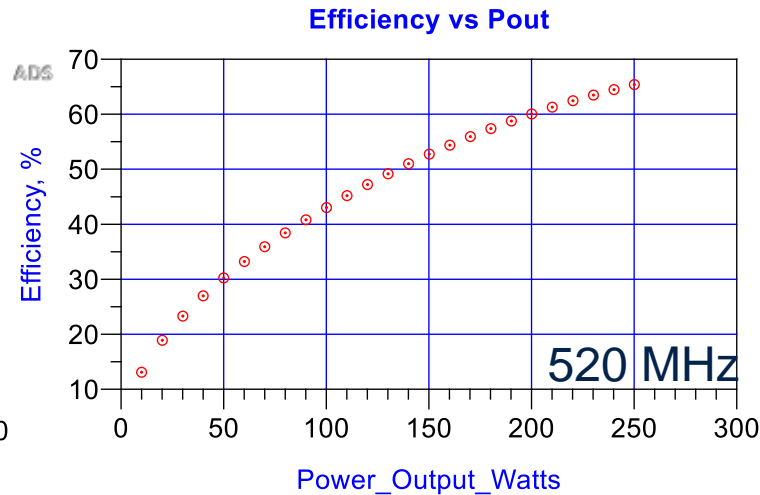
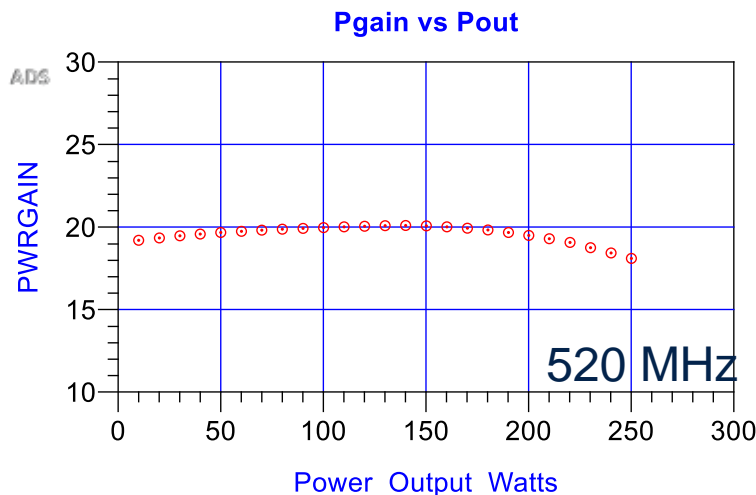
**Z drain load, Drain-Drain**

RF_freq	Rs_load	Xs_load
118.000	4.970	0.108
119.000	4.970	0.109
120.000	4.969	0.109
121.000	4.968	0.110
122.000	4.968	0.111
123.000	4.967	0.112
124.000	4.966	0.112
125.000	4.966	0.113
126.000	4.965	0.114
127.000	4.964	0.115
128.000	4.963	0.116
129.000	4.963	0.117
130.000	4.962	0.117
131.000	4.961	0.118
132.000	4.961	0.119
133.000	4.960	0.120
134.000	4.959	0.121
135.000	4.959	0.122
136.000	4.958	0.122
137.000	4.958	0.123
138.000	4.958	0.124
139.000	4.957	0.125
140.000	4.957	0.126





# ST05250, 30 MHz – 520 MHz

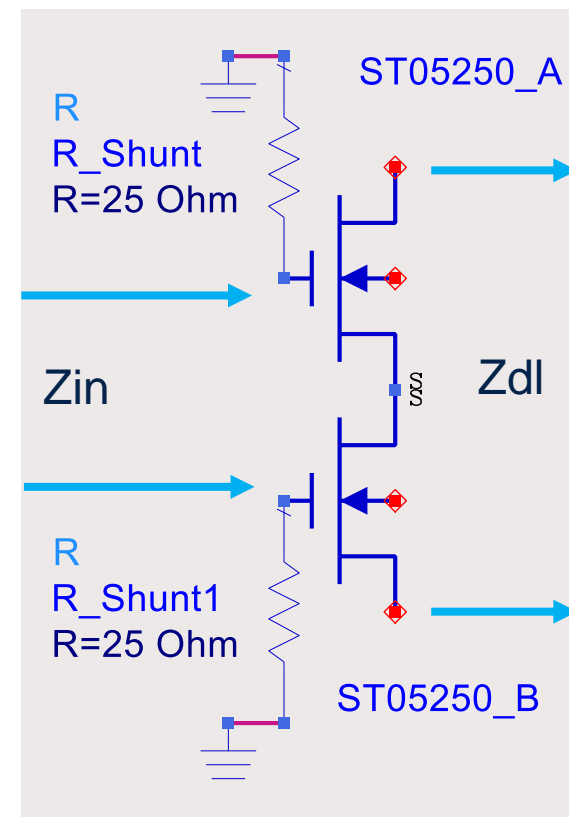


**Zin, Gate-Gate**

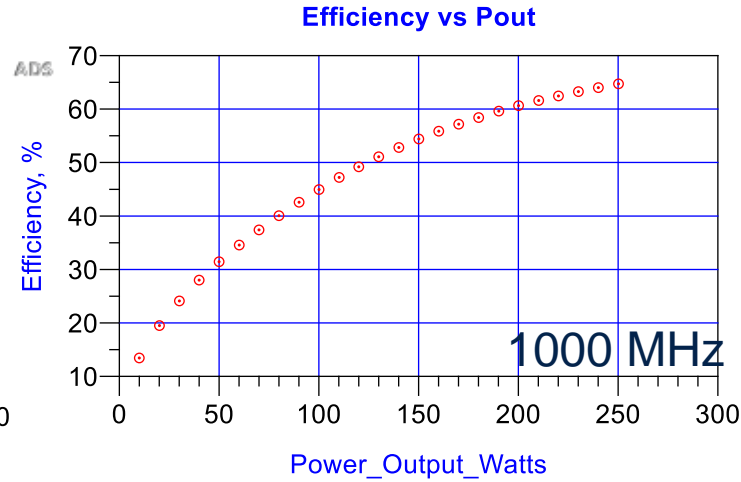
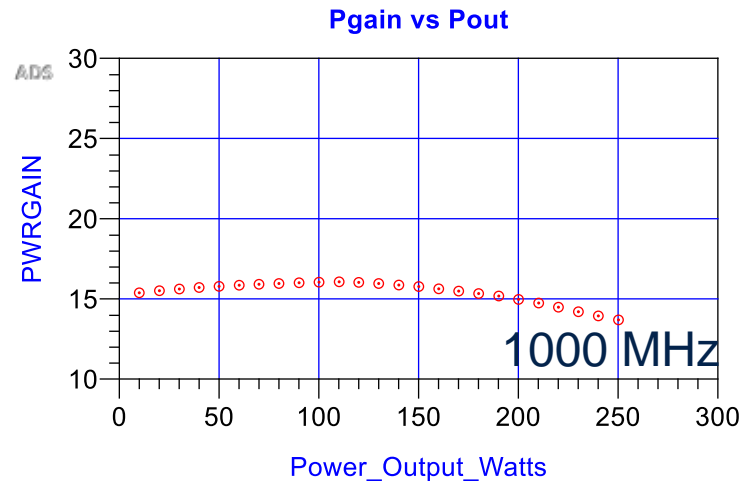
RF_freq	Rs	Xs
30.000	34.016	-22.813
50.000	21.987	-23.982
70.000	14.643	-21.596
90.000	10.353	-18.813
110.000	7.747	-16.383
130.000	6.093	-14.400
150.000	4.919	-12.802
170.000	4.155	-11.384
190.000	3.630	-10.277
210.000	3.140	-9.324
230.000	2.750	-8.503
250.000	2.460	-7.801
270.000	2.200	-7.277
290.000	1.891	-6.906
310.000	1.578	-6.510
330.000	1.500	-5.925
350.000	1.495	-5.399
370.000	1.528	-4.940
390.000	1.572	-4.526
410.000	1.607	-4.148
430.000	1.620	-3.815
450.000	1.625	-3.513
470.000	1.638	-3.243
490.000	1.655	-3.010
510.000	1.632	-2.817
520.000	1.583	-2.749

**Z drain load, Drain-Drain**

RF_freq	Rs_load	Xs_load
30.000	4.998	0.029
50.000	4.995	0.047
70.000	4.990	0.066
90.000	4.982	0.084
110.000	4.974	0.101
130.000	4.962	0.117
150.000	4.952	0.134
170.000	4.938	0.151
190.000	4.923	0.167
210.000	4.911	0.175
230.000	4.891	0.184
250.000	4.864	0.197
270.000	4.834	0.216
290.000	4.811	0.233
310.000	4.801	0.259
330.000	4.805	0.274
350.000	4.788	0.278
370.000	4.769	0.281
390.000	4.751	0.281
410.000	4.726	0.272
430.000	4.690	0.260
450.000	4.649	0.250
470.000	4.604	0.239
490.000	4.556	0.229
510.000	4.503	0.219
520.000	4.474	0.226



# ST05250, 520 MHz – 1000 MHz

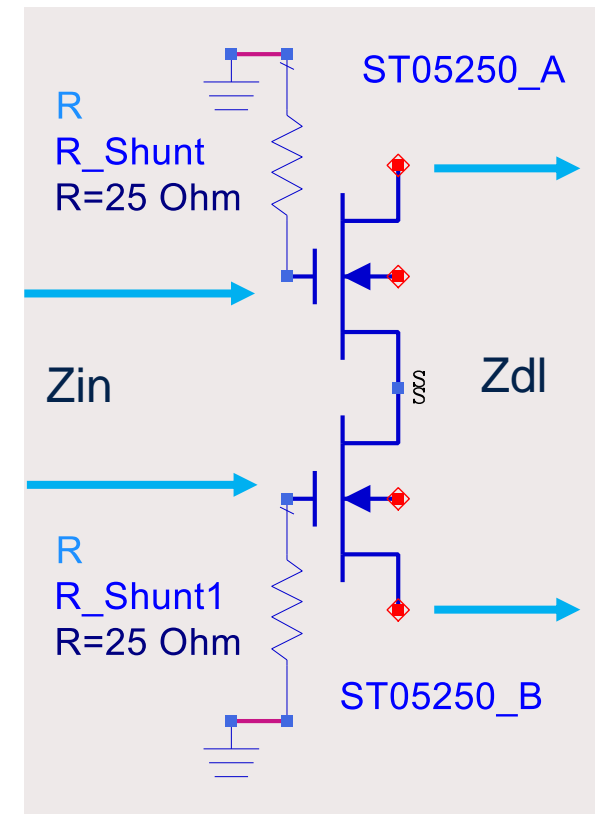


**Zin, Gate-Gate**

RF_freq	Rs	Xs
520.000	1.583	-2.749
540.000	1.346	-2.657
560.000	1.221	-2.527
580.000	1.192	-2.377
600.000	1.191	-2.224
620.000	1.188	-2.082
640.000	1.178	-1.941
660.000	1.174	-1.803
680.000	1.165	-1.678
700.000	1.175	-1.553
720.000	1.173	-1.426
740.000	1.161	-1.308
760.000	1.152	-1.199
780.000	1.168	-1.090
800.000	1.162	-0.978
820.000	1.145	-0.875
840.000	1.158	-0.779
860.000	1.157	-0.675
880.000	1.141	-0.578
900.000	1.161	-0.491
920.000	1.146	-0.392
940.000	1.144	-0.304
960.000	1.158	-0.220
980.000	1.140	-0.126
1000.000	1.155	-0.049

**Z drain load, Drain-Drain**

RF_freq	Rs_load	Xs_load
520.000	4.474	0.226
540.000	4.435	0.270
560.000	4.408	0.294
580.000	4.372	0.292
600.000	4.338	0.287
620.000	4.304	0.283
640.000	4.266	0.274
660.000	4.227	0.262
680.000	4.190	0.251
700.000	4.153	0.240
720.000	4.115	0.225
740.000	4.076	0.209
760.000	4.037	0.192
780.000	3.999	0.175
800.000	3.961	0.155
820.000	3.922	0.135
840.000	3.882	0.113
860.000	3.845	0.090
880.000	3.805	0.066
900.000	3.767	0.041
920.000	3.729	0.015
940.000	3.690	-0.013
960.000	3.653	-0.041
980.000	3.614	-0.070
1000.000	3.576	-0.102



# Thank you

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