



life.augmented

# RF3L05400

## Model information




Keysight Advanced Design System Model  
Generic Netlist Model

ST Model Simulation

STMicroelectronics

February 23, 2022

# Files inside compressed model folder

-  Generic Netlist
-  ReadMe
-  RF3L05400CB4\_Model\_wrk



# Generic netlist

```
*RF3L05400_rev1_0 ONE SIDE
*2/23/2022
*STMicroelectronics
*Terminals 1 = GATE , 7 = Drain , 8 = Source
*
.SUBCKT RF3L05400CB4_OneSide 1 7 8
C5 1 8 2.7P
L3 1 2 .077N,R=5.3mohm
RG 2 3 .2
CISS 3 4 203P
L1 4 8 0.01N
C3 4 8 .1P
CRSS 3 5 4.78P
R 5 6 100K
L5 5 7 .05N,R=2.61mohm
C7 7 8 2.7P
MOS 6 3 4 4 mos_IDDE09226 L=1UM W=226mM
JFET 5 4 6 jf_IDDE09226
DBODY 4 5 d_IDDE09226

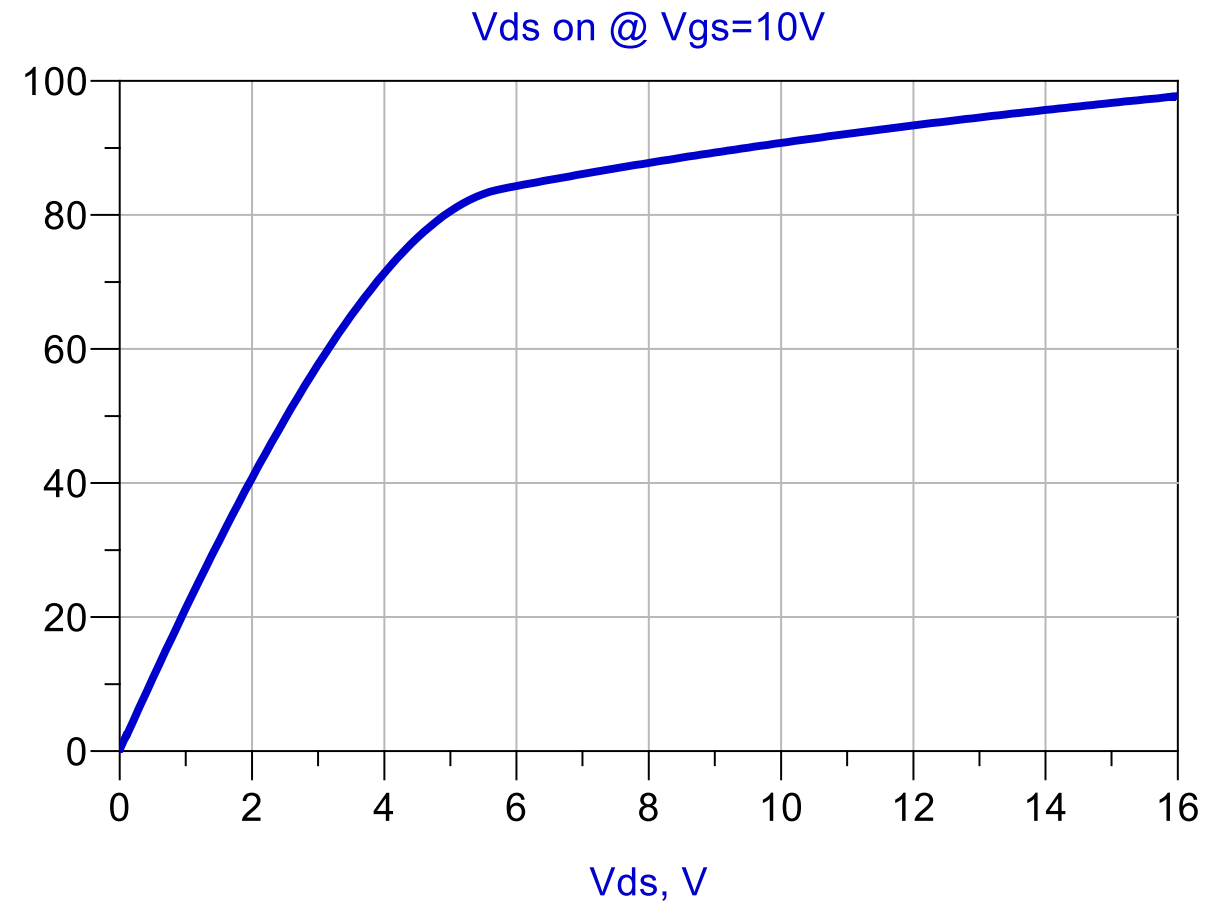
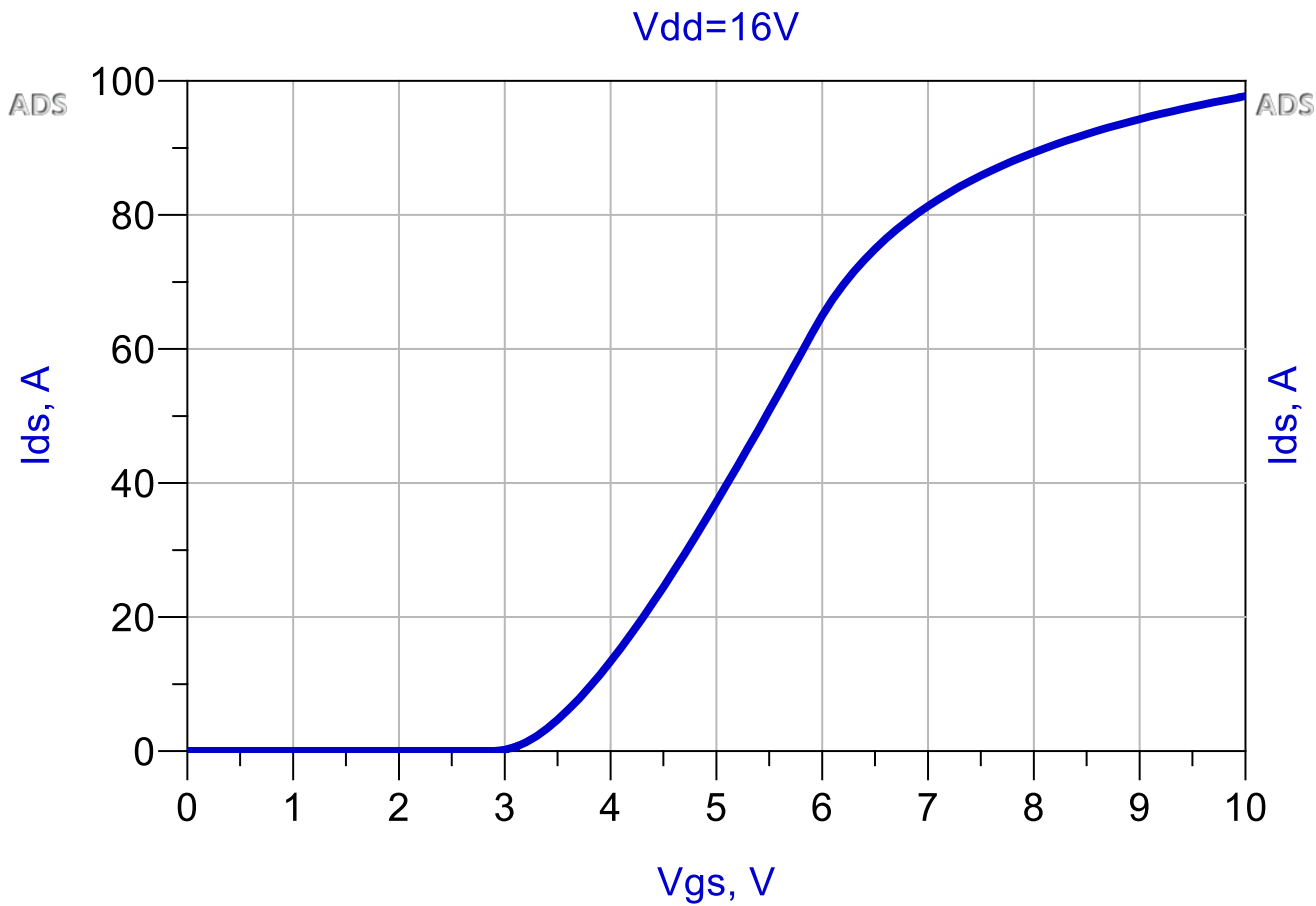
.MODEL mos_IDDE09226 nmos (vto=2.91 KP=5.03768e-005 LAMBDA=0.1 RD=0.028 RS=0.028)
.MODEL jf_IDDE09226 njf (VTO=-5.65 BETA=4.5559 LAMBDA=0.10341026925 Rd=0 Rs=0)
.MODEL d_IDDE09226 d (CJO=221.6p RS=0 VJ=8.551 M=0.84 BV=98)

.ENDS
```

## Comments:

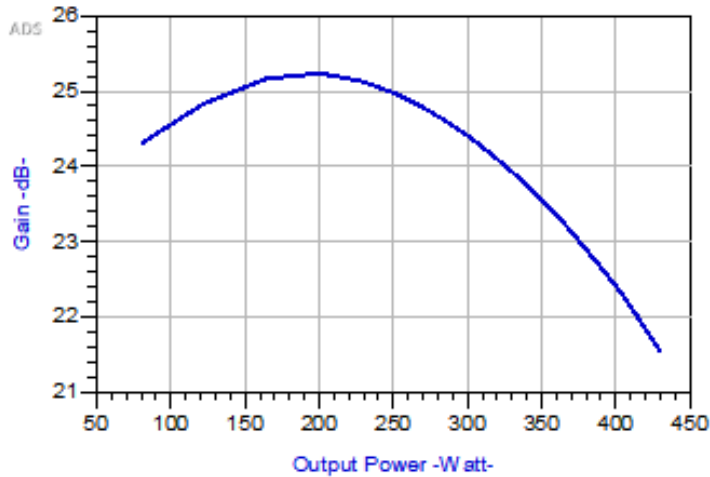
- The Minr of the MOS Model may need to be assigned a value of 0.01ohm.
- The Netlist references one side of the device.

# Example DC simulations

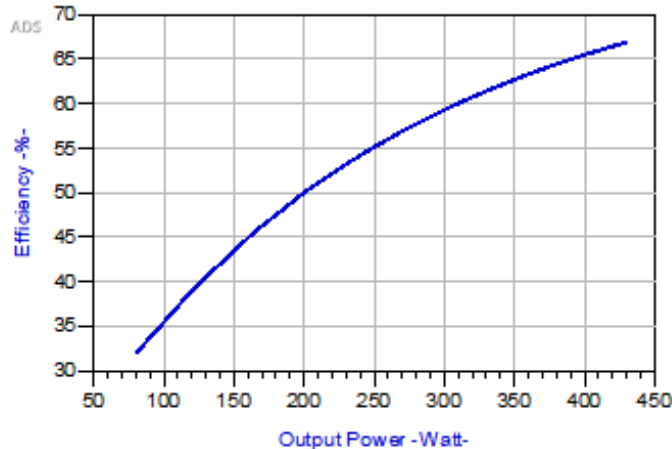


# RF3L05400, 2 MHz – 30 MHz

Gain Versus Output Power @ 30 MHz



Efficiency Versus Output Power @ 30MHz

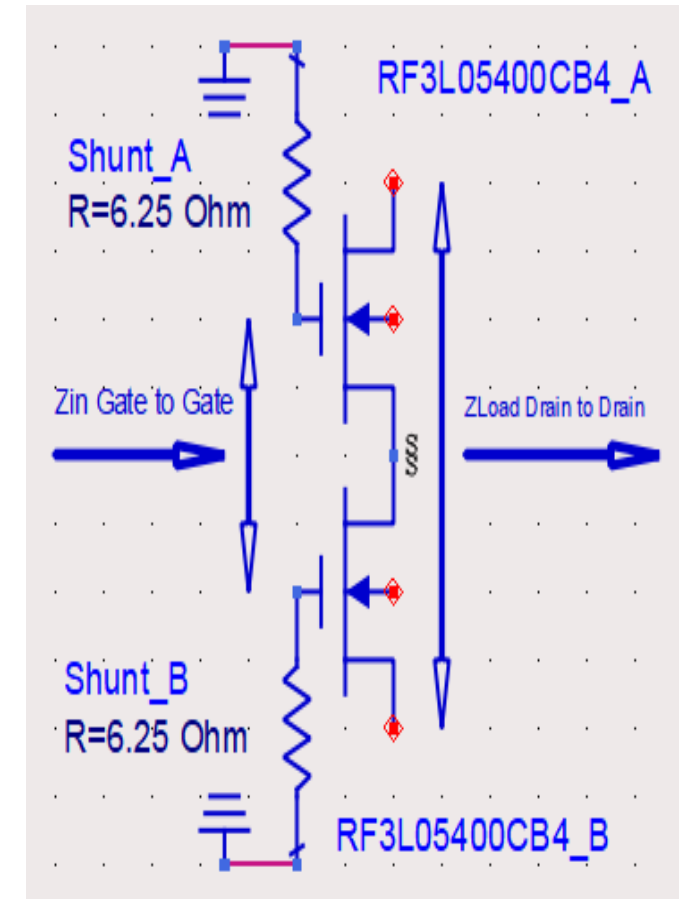


Drain Load Pushpull Impedance

RF_Freq	Zdlpp
2.000	3.005 + j0.003
4.000	3.005 + j0.005
6.000	3.005 + j0.008
8.000	3.005 + j0.011
10.000	3.005 + j0.014
12.000	3.005 + j0.016
14.000	3.005 + j0.019
16.000	3.005 + j0.022
18.000	3.005 + j0.024
20.000	3.005 + j0.027
22.000	3.005 + j0.030
24.000	3.004 + j0.033
26.000	3.004 + j0.035
28.000	3.004 + j0.038
30.000	3.004 + j0.041

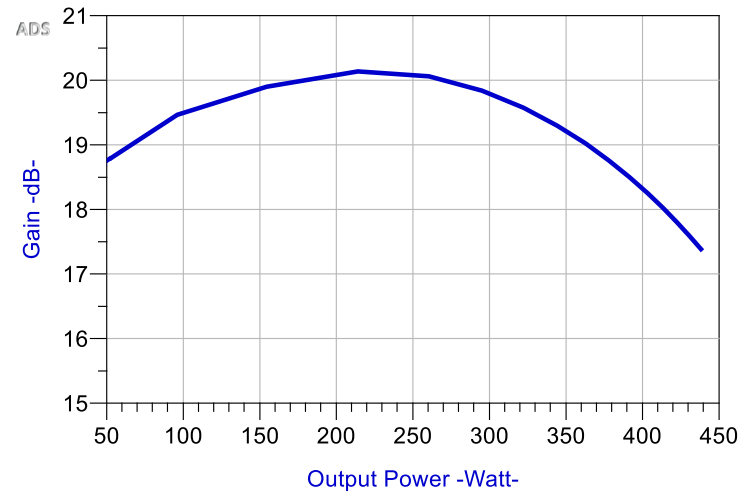
Input Pushpull Impedance

RF_Freq	Zingg
2.000	12.495 - j0.233
4.000	12.481 - j0.465
6.000	12.458 - j0.697
8.000	12.426 - j0.926
10.000	12.384 - j1.154
12.000	12.334 - j1.378
14.000	12.276 - j1.599
16.000	12.209 - j1.817
18.000	12.134 - j2.031
20.000	12.052 - j2.240
22.000	11.963 - j2.444
24.000	11.867 - j2.642
26.000	11.764 - j2.836
28.000	11.656 - j3.023
30.000	11.542 - j3.205

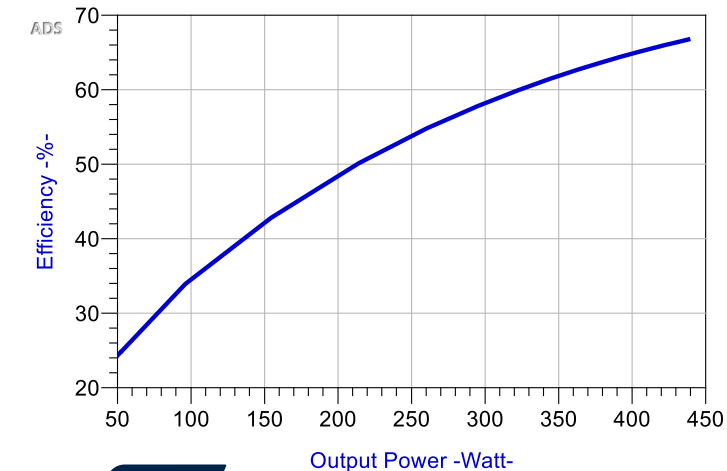


# RF3L05400CB4, 30 MHz – 520 MHz

Gain Versus Output Power @ 520 MHz



Efficiency Versus Output Power @ 520 MHz

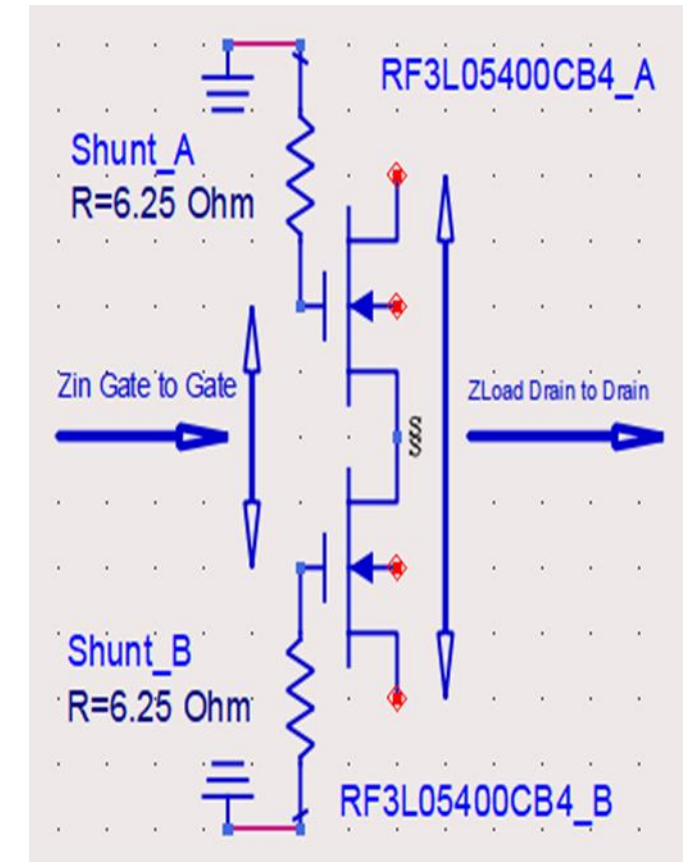


Drain Load Pushpull Impedance

RF_Freq	Zdlpp
30.000	3.004 + j0.041
49.600	3.002 + j0.067
69.200	2.999 + j0.094
88.800	2.995 + j0.120
108.400	2.990 + j0.146
128.000	2.984 + j0.172
147.600	2.977 + j0.197
167.200	2.969 + j0.223
186.800	2.960 + j0.248
206.400	2.950 + j0.272
226.000	2.940 + j0.297
245.600	2.928 + j0.321
265.200	2.916 + j0.344
284.800	2.902 + j0.367
304.400	2.888 + j0.389
324.000	2.873 + j0.411
343.600	2.858 + j0.433
363.200	2.841 + j0.453
382.800	2.824 + j0.473
402.400	2.807 + j0.493
422.000	2.788 + j0.512
441.600	2.769 + j0.530
461.200	2.750 + j0.548
480.800	2.730 + j0.565
500.400	2.709 + j0.581
520.000	2.688 + j0.596

Input Pushpull Impedance

RF_Freq	Zingg
30.000	11.542 - j3.205
49.600	10.215 - j4.645
69.200	8.746 - j5.482
88.800	7.369 - j5.842
108.400	6.186 - j5.884
128.000	5.214 - j5.739
147.600	4.431 - j5.495
167.200	3.804 - j5.209
186.800	3.302 - j4.910
206.400	2.898 - j4.616
226.000	2.570 - j4.336
245.600	2.302 - j4.072
265.200	2.080 - j3.827
284.800	1.896 - j3.600
304.400	1.741 - j3.390
324.000	1.611 - j3.195
343.600	1.500 - j3.015
363.200	1.405 - j2.849
382.800	1.323 - j2.694
402.400	1.252 - j2.550
422.000	1.190 - j2.415
441.600	1.137 - j2.290
461.200	1.090 - j2.172
480.800	1.049 - j2.062
500.400	1.012 - j1.958
520.000	0.980 - j1.860



# Thank you