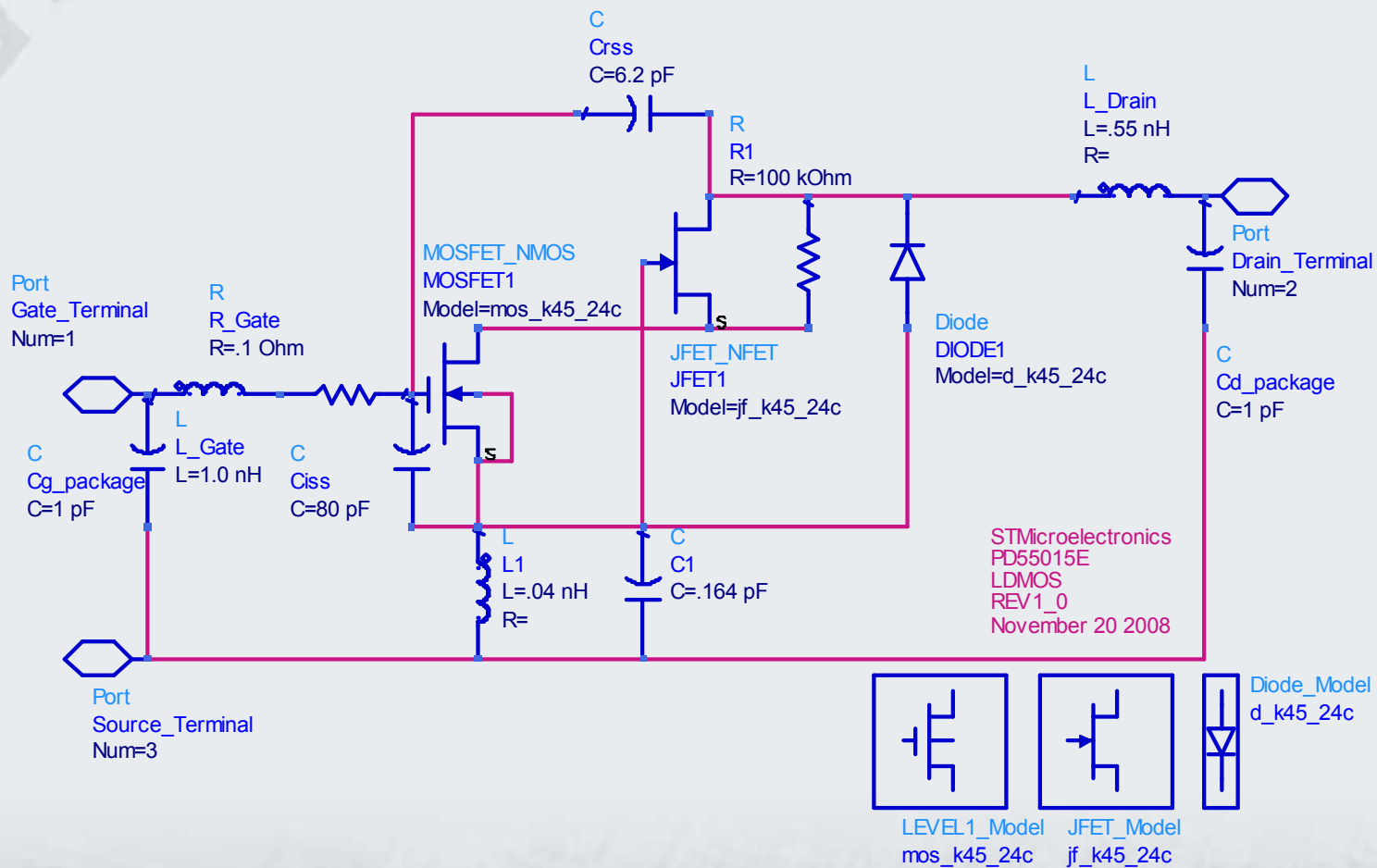


PD55015E_rev1_0

Model Information



Quakertown , PA
Qtn-jp-213-rev1
November 20 , 2008

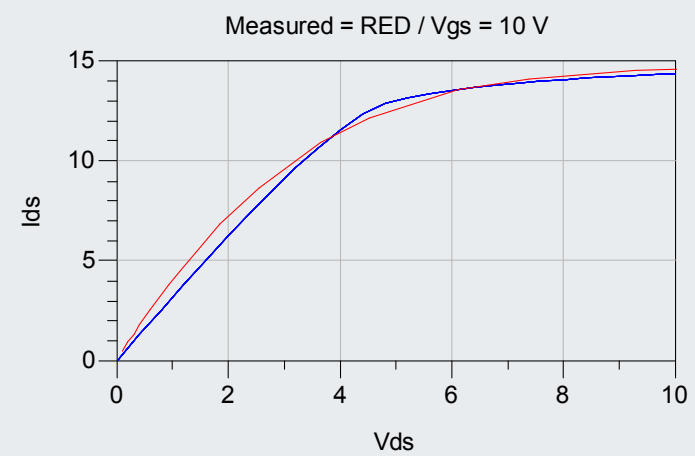
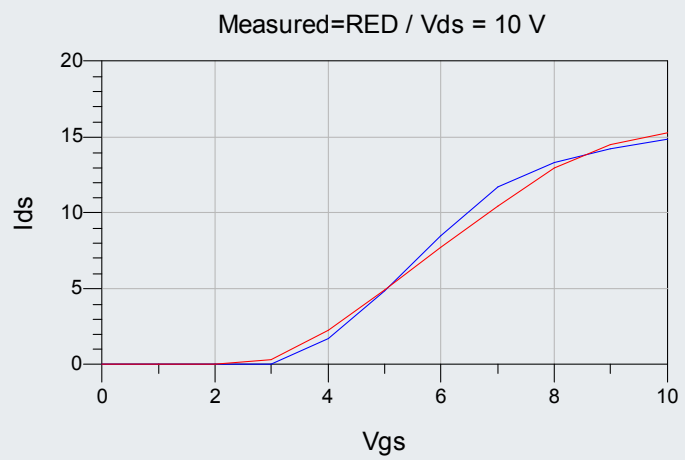


PD55015E Model



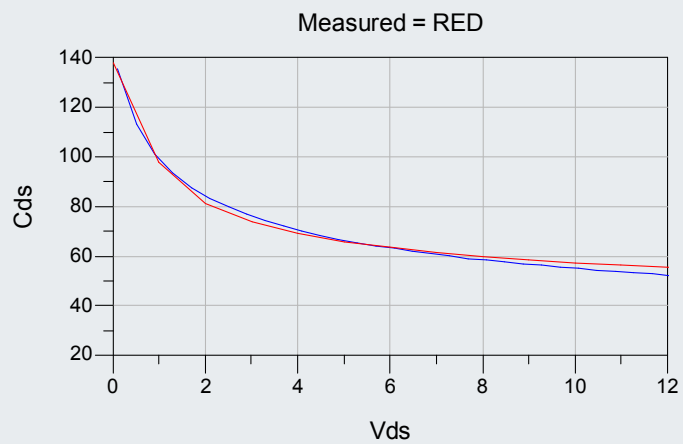
PD55015E

DC



PD55015E

C_{ds}



| VBias | Coss_pF | |
|--------|----------------|--|
| | freq=1.000 MHz | |
| 0.000 | 145.200 | |
| 1.000 | 99.045 | |
| 2.000 | 84.286 | |
| 3.000 | 76.036 | |
| 4.000 | 70.503 | |
| 5.000 | 66.427 | |
| 6.000 | 63.245 | |
| 7.000 | 60.662 | |
| 8.000 | 58.504 | |
| 9.000 | 56.663 | |
| 10.000 | 55.064 | |
| 11.000 | 53.657 | |
| 12.000 | 52.405 | |



PD55015E

S-parameter

measured

| freq | S(1,1) | S(2,1) | S(1,2) | S(2,2) |
|-----------|------------------|-----------------|-----------------|------------------|
| 50.00 MHz | 0.783 / -164.000 | 10.630 / 89.000 | 0.027 / -2.000 | 0.762 / -164.000 |
| 100.0 MHz | 0.831 / -170.000 | 5.230 / 77.000 | 0.027 / -12.000 | 0.775 / -170.000 |
| 150.0 MHz | 0.857 / -173.000 | 3.360 / 68.000 | 0.026 / -18.000 | 0.784 / -171.000 |
| 200.0 MHz | 0.873 / -174.000 | 2.400 / 60.000 | 0.024 / -24.000 | 0.810 / -172.000 |
| 250.0 MHz | 0.886 / -175.000 | 1.820 / 54.000 | 0.022 / -30.000 | 0.827 / -172.000 |
| 300.0 MHz | 0.899 / -176.000 | 1.430 / 47.000 | 0.020 / -34.000 | 0.852 / -173.000 |
| 350.0 MHz | 0.909 / -177.000 | 1.150 / 42.000 | 0.018 / -37.000 | 0.870 / -174.000 |
| 400.0 MHz | 0.921 / -178.000 | 0.950 / 37.000 | 0.016 / -41.000 | 0.882 / -175.000 |
| 450.0 MHz | 0.928 / -179.000 | 0.800 / 33.000 | 0.015 / -44.000 | 0.896 / -175.000 |
| 500.0 MHz | 0.937 / 180.000 | 0.670 / 28.000 | 0.013 / -45.000 | 0.911 / -177.000 |
| 550.0 MHz | 0.943 / 179.000 | 0.580 / 25.000 | 0.011 / -45.000 | 0.920 / -177.000 |
| 600.0 MHz | 0.947 / 178.000 | 0.500 / 22.000 | 0.010 / -48.000 | 0.929 / -178.000 |
| 650.0 MHz | 0.954 / 177.000 | 0.440 / 19.000 | 0.008 / -45.000 | 0.935 / -179.000 |

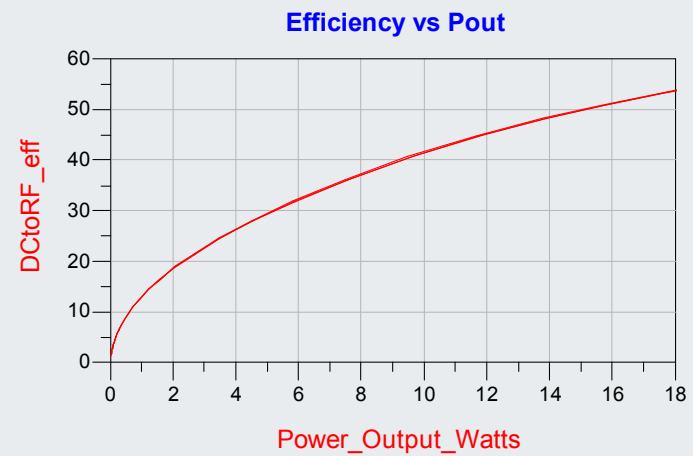
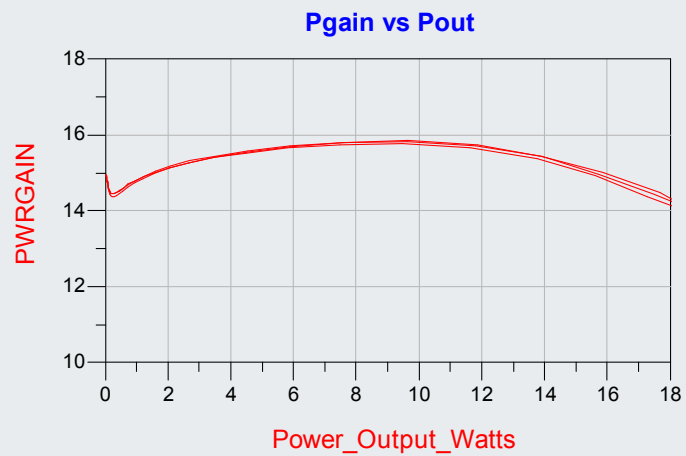
simulated

| freq | S(1,1) | S(2,1) | S(1,2) | S(2,2) |
|-----------|------------------|-----------------|-----------------|------------------|
| 50.00 MHz | 0.839 / -164.343 | 15.216 / 88.708 | 0.023 / -0.267 | 0.719 / -161.123 |
| 100.0 MHz | 0.846 / -171.249 | 7.458 / 77.483 | 0.022 / -10.452 | 0.732 / -167.087 |
| 150.0 MHz | 0.858 / -173.492 | 4.786 / 68.982 | 0.021 / -17.876 | 0.754 / -168.324 |
| 200.0 MHz | 0.872 / -174.798 | 3.415 / 61.656 | 0.020 / -24.072 | 0.780 / -168.879 |
| 250.0 MHz | 0.887 / -175.879 | 2.580 / 55.218 | 0.018 / -29.303 | 0.806 / -169.456 |
| 300.0 MHz | 0.900 / -176.925 | 2.021 / 49.550 | 0.016 / -33.658 | 0.831 / -170.174 |
| 350.0 MHz | 0.912 / -177.983 | 1.625 / 44.561 | 0.015 / -37.194 | 0.852 / -171.013 |
| 400.0 MHz | 0.923 / -179.056 | 1.334 / 40.165 | 0.013 / -39.951 | 0.871 / -171.925 |
| 450.0 MHz | 0.932 / 179.865 | 1.113 / 36.282 | 0.012 / -41.948 | 0.886 / -172.871 |
| 500.0 MHz | 0.940 / 178.788 | 0.941 / 32.840 | 0.010 / -43.176 | 0.900 / -173.821 |
| 550.0 MHz | 0.946 / 177.719 | 0.806 / 29.777 | 0.009 / -43.580 | 0.911 / -174.759 |
| 600.0 MHz | 0.952 / 176.661 | 0.698 / 27.038 | 0.008 / -43.052 | 0.920 / -175.674 |
| 650.0 MHz | 0.957 / 175.617 | 0.610 / 24.579 | 0.007 / -41.396 | 0.929 / -176.561 |



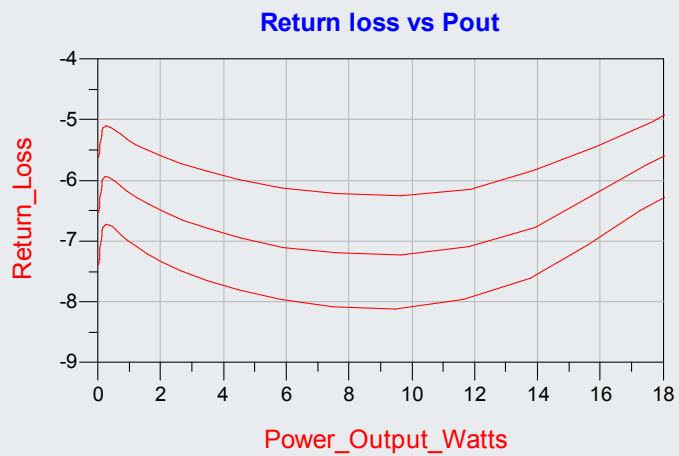
PD55015E

480 MHz – 520 MHz Large Signal RF



PD55015E

480 MHz – 520 MHz Large Signal RF



NETLIST

- *PD55015E_rev1_0
- *11/20/2008
- *STMicroelectronics
- *port 1 = GATE , 2 = Drain , 3 = Source
- *
- .SUBCKT PD55015E 10 20 30
- LGATE 10 11 1N
- RGATE 11 12 .1
- CG 10 30 1P
- CRSS 12 17 6.2P
- CISS 12 14 80P
- LS 14 30 0.04N
- CS 14 30 .164P
- R 17 13 100K
- LD 17 20 .55N
- CD 20 30 1P
- MOS 13 12 14 14 mos_55015E L=.6UM W= 99mM
- JFET 17 14 13 jf_55015E
- DBODY 14 17 d_55015E
- .MODEL mos_55015E nmos (vto=3 KP=2E-5 LAMBDA=0.15 RD=0.125 RS=0.125)
- .MODEL jf_55015E njf (VTO=-5 BETA=6 LAMBDA=1)
- .MODEL d_55015E d (CJO=138p RS=0.25 VJ=.4 M=0.325 BV=80)
- .ENDS





LEVEL1_Model

mos_55015e
NMOS=yes
PMOS=no
Vto=3
Kp=2e-5
Gamma=
Phi=
Lambda=0.15
Rd=0.125
Rs=0.125
Cbd=
Cbs=
Is=
Pb=
Cgso=
Cgdo=

Cgbo=
Rsh=
Cj=
Mj=
Cjsw=
Mjsw=
Js=
Tox=
Nsub=
Nss=
Tpg=
Ld=
Uo=
Nlev=
Gdsnoi=

Kf=
Af=
Fc=
Rg=
Rds=
Tnom=27
Trise=
N=
Tt=
Ffe=
Imax=
Imelt=
AllParams=



JFET_Model

jf_55015e
NFET=yes
PFET=no
Beta=6
Lambda=1
Rd=
Rs=
Is=
Cgs=
Cgd=
Pb=
Fc=
Tnom=27
Trise=
Kf=

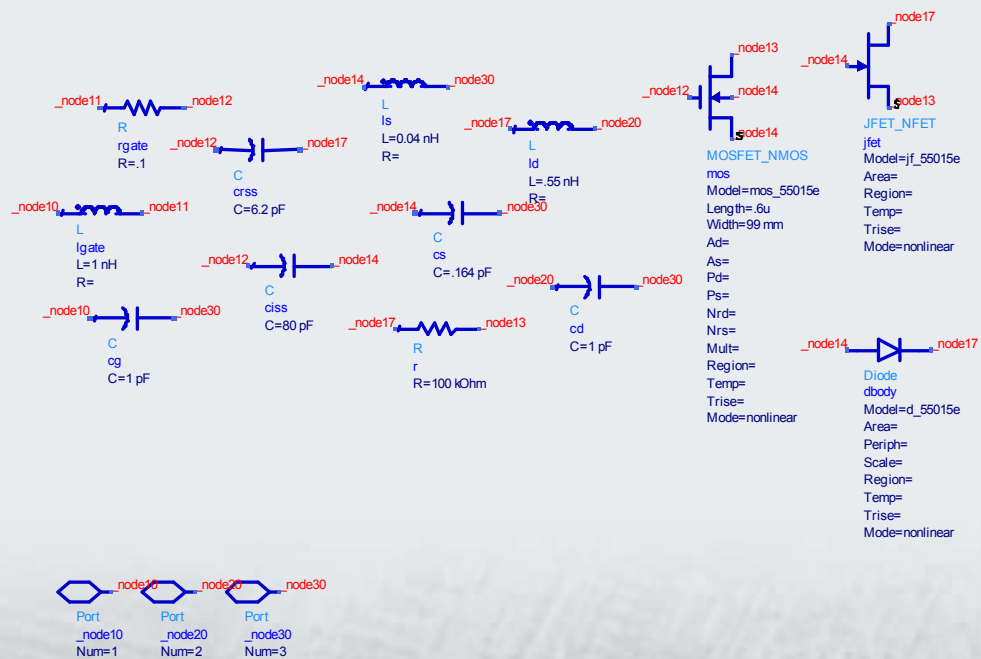
Af=
Imax=
Imelt=
N=
Nr=
Alpha=
Vt=
M=
Vt0=
Betaice=
Xti=
Ffe=
Gdsnoise=no
AllParams=



Diode_Model
d_55015e

Is=
Rs=0.25
Gleak=
N=
Cd=
Cjo=138 pF
Vj=4
M=0.325
Fc=
Imax=
Imelt=
Isr=
Nr=
Ikf=
Bv=80
Ibv=1e-10
Nbv=
Ibv=
Tt=
Kf=
Af=
Ffe=
Jsw=
Rsw=
Gleaksw=
Ns=
Ikp=
Cjsw=
Msw=

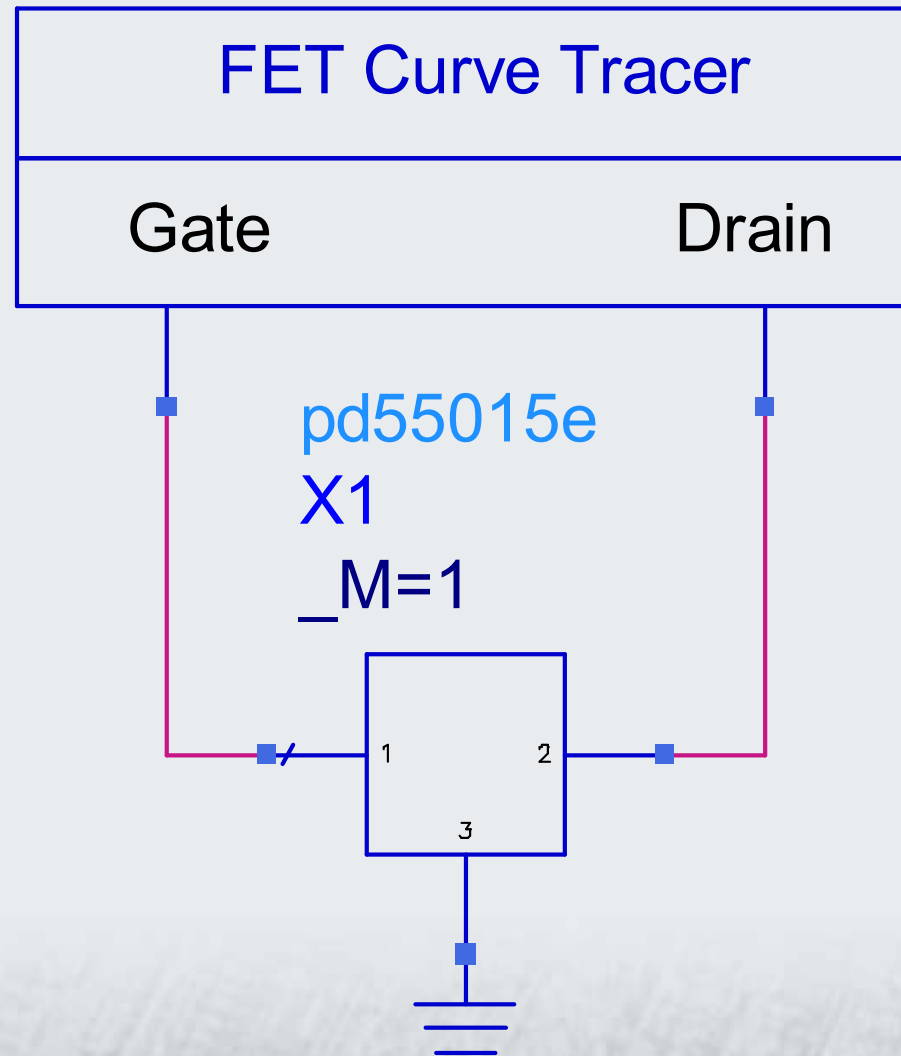
Vjsw=
Fcsw=
AllowScaling=no
Tnom=27
Trise=
Xti=
Eg=
AllParams=



Imported NETLIST



DC_FET
DC_FET1
VGS_start=0
VGS_stop=10
VGS_points=101
VDS_start=0
VDS_stop=16.0
VDS_points=41



Example of imported netlist attached to “X”

