



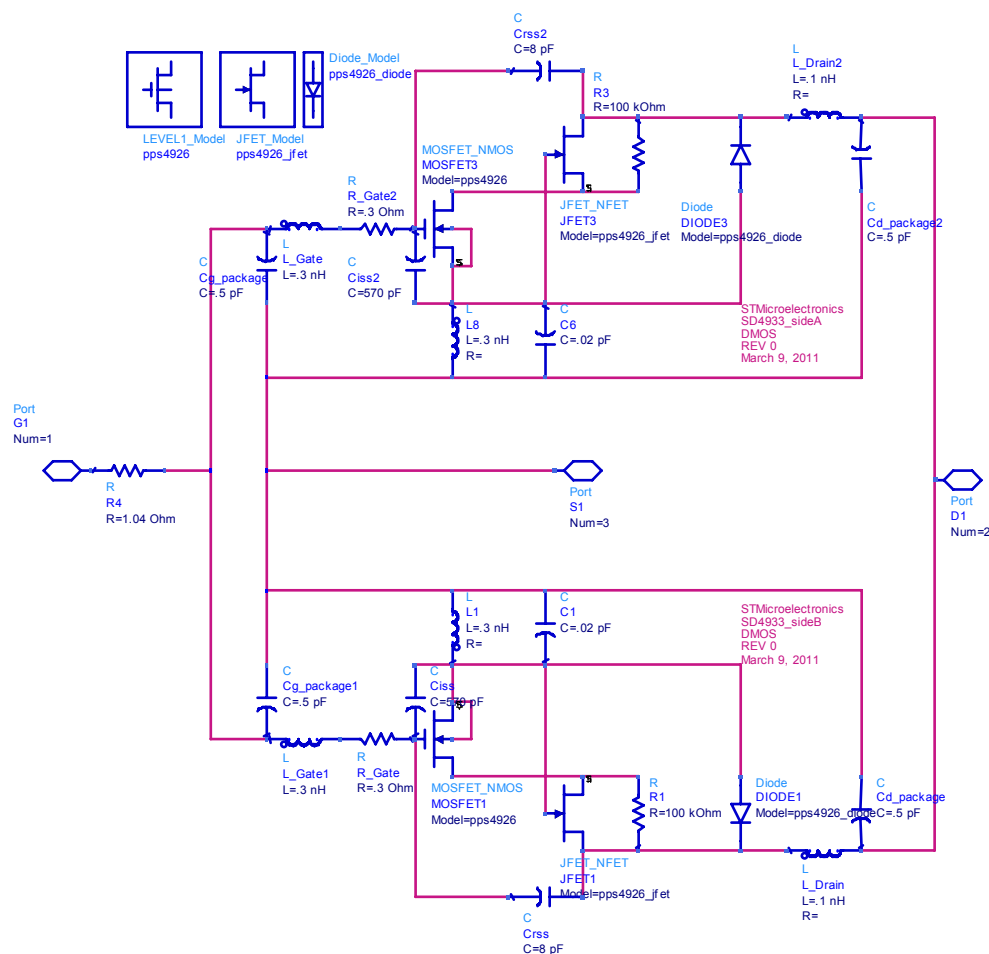
## **SD4933**

### **model information**

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*Power Transistor Division  
IMS , Industrial and Multisegment Sector  
Model and Simulation  
Quakertown , PA  
Qtn-ms-11010-rev0  
March 10 ,2011*

# Model electrical schematic



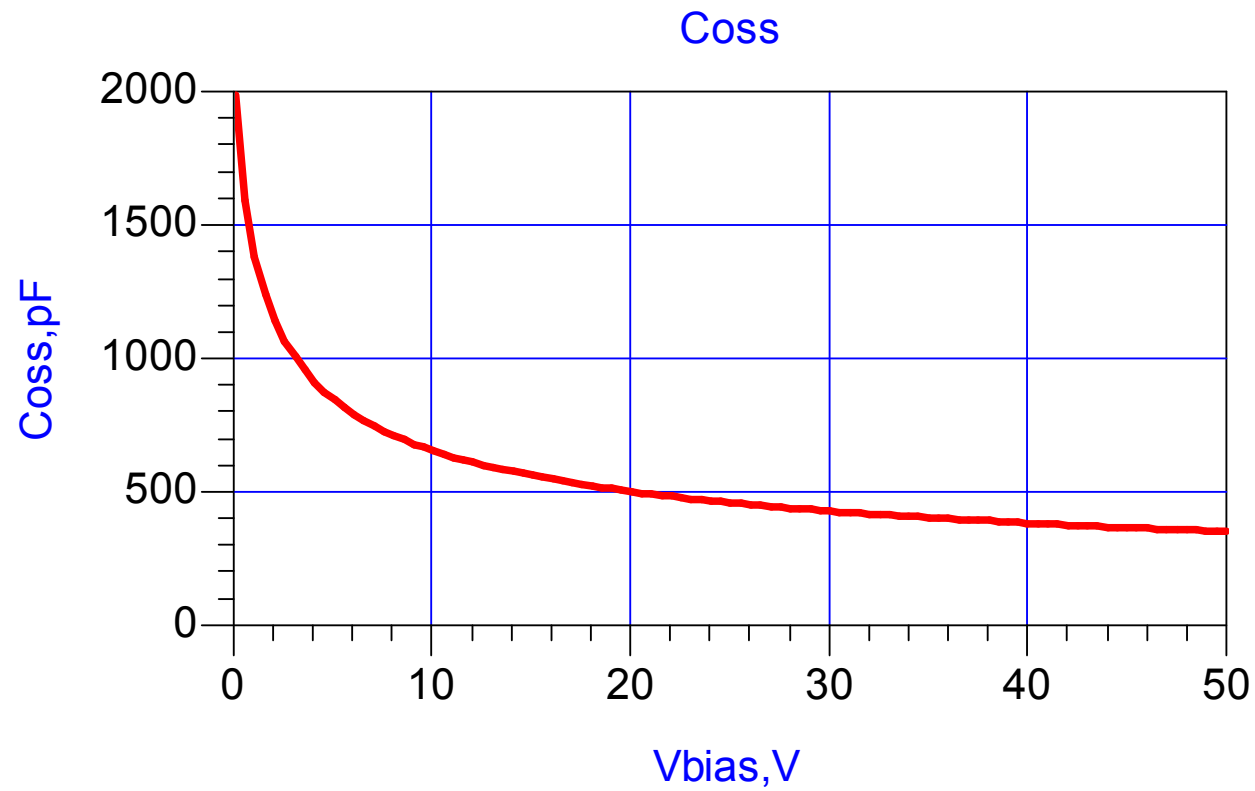


## Model generic net list

- \*SD4933\_rev1\_0
- \*March 10 ,2011
- \*STMicroelectronics
- \*port 1 = GATE , 2 = Drain , 3 = Source
- \*
- .SUBCKT SD4933 9 20 30
- Rseries 9 10 1.04
- LGATE1 10 11 .3N
- RGATE1 11 12 .3
- CG1 10 30 .5P
- CRSS1 12 17 8P
- CISS1 12 14 570P
- LS1 14 30 0.3N
- CS1 14 30 .02P
- R1 17 13 100K
- LD1 17 20 .1N
- CD1 20 30 .5P
- MOS1 13 12 14 14 mos\_4926 L=.2UM W= 925mM
- JFET1 17 14 13 jf\_4926
- DBODY1 14 17 d\_4926
- LGATE2 10 11 .3N
- RGATE2 11 12 .3
- CG2 10 30 .5P
- CRSS2 12 17 8p
- CISS2 12 14 570P
- LS2 14 30 0.3N
- CS2 14 30 .02P
- R2 17 13 100K
- LD2 17 20 .1N
- CD2 20 30 .5P
- MOS2 13 12 14 14 mos\_4926 L=.2UM W= 925mM
- JFET2 17 14 13 jf\_4926
- DBODY2 14 17 d\_4926
- .MODEL mos\_4926 nmos (vto=2.5 KP=.71E-6 LAMBDA=1 RD=0.1001 RS=0.1001)
- .MODEL jf\_4926 njf (VTO=-6 BETA=3.26 LAMBDA=3 Rd=.09 Rs=.09)
- .MODEL d\_4926 d (CJO=1050p RS=0.25 VJ=.6 M=0.416 BV=255)
- .ENDS



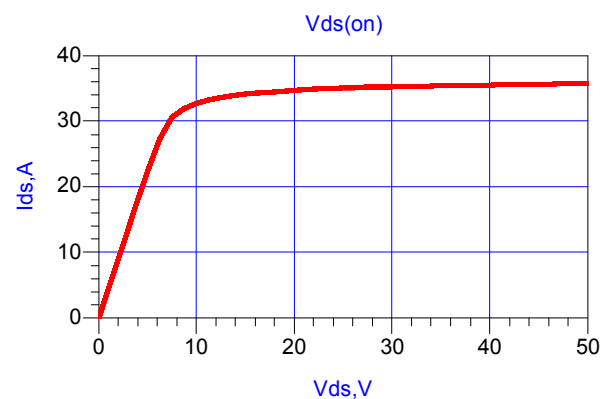
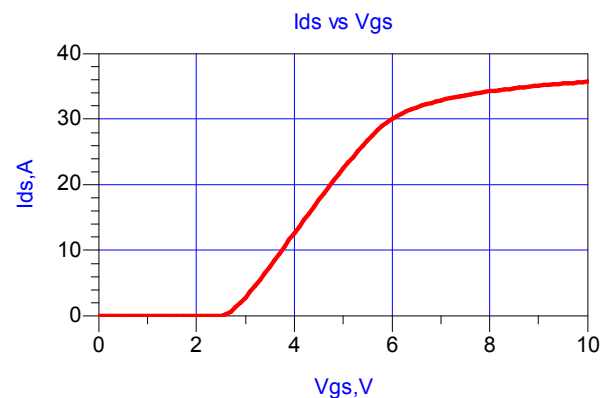
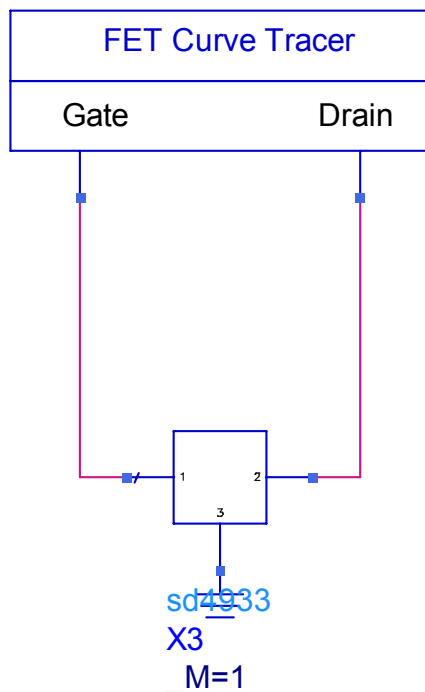
# Coss



# Example of imported generic netlist connected to EDA curve tracer with output data



```
DC_FET
DC_FET1
VGS_start=0
VGS_stop=10
VGS_points=101
VDS_start=0
VDS_stop=50.0
VDS_points=41
```





## S-parameters

SD4933 50 V 500 mA

freq	S(1,1)	S(2,1)	S(1,2)	S(2,2)
30.00 MHz	0.888 / -174.733	7.794 / 56.233	0.004 / -24.370	0.757 / -163.174
40.00 MHz	0.902 / -175.235	5.213 / 48.020	0.003 / -27.836	0.812 / -164.082
50.00 MHz	0.913 / -175.704	3.711 / 41.590	0.003 / -27.378	0.853 / -165.375
60.00 MHz	0.921 / -176.146	2.761 / 36.535	0.002 / -21.308	0.884 / -166.710
70.00 MHz	0.927 / -176.550	2.126 / 32.521	0.001 / -5.745	0.907 / -167.951
80.00 MHz	0.932 / -176.914	1.682 / 29.298	0.001 / 22.359	0.924 / -169.057
90.00 MHz	0.936 / -177.238	1.361 / 26.678	0.001 / 50.947	0.936 / -170.026
100.0 MHz	0.939 / -177.526	1.123 / 24.527	0.002 / 68.129	0.946 / -170.871
110.0 MHz	0.941 / -177.783	0.941 / 22.744	0.002 / 77.149	0.954 / -171.611
120.0 MHz	0.943 / -178.015	0.799 / 21.256	0.003 / 82.119	0.960 / -172.260
130.0 MHz	0.944 / -178.223	0.687 / 20.007	0.003 / 85.052	0.964 / -172.833
140.0 MHz	0.945 / -178.413	0.597 / 18.957	0.003 / 86.881	0.968 / -173.342
150.0 MHz	0.946 / -178.587	0.523 / 18.074	0.004 / 88.068	0.972 / -173.797
160.0 MHz	0.947 / -178.746	0.462 / 17.331	0.004 / 88.861	0.974 / -174.205
170.0 MHz	0.948 / -178.894	0.411 / 16.711	0.005 / 89.400	0.977 / -174.574
180.0 MHz	0.948 / -179.032	0.368 / 16.197	0.005 / 89.770	0.979 / -174.910
190.0 MHz	0.949 / -179.161	0.332 / 15.778	0.006 / 90.025	0.980 / -175.216
200.0 MHz	0.949 / -179.282	0.300 / 15.443	0.006 / 90.197	0.982 / -175.496
210.0 MHz	0.950 / -179.396	0.273 / 15.185	0.007 / 90.312	0.983 / -175.755
220.0 MHz	0.950 / -179.504	0.249 / 14.996	0.007 / 90.383	0.984 / -175.994
230.0 MHz	0.950 / -179.607	0.229 / 14.873	0.007 / 90.423	0.985 / -176.216
240.0 MHz	0.950 / -179.706	0.211 / 14.811	0.008 / 90.440	0.986 / -176.422
250.0 MHz	0.951 / -179.800	0.195 / 14.805	0.008 / 90.439	0.986 / -176.616
260.0 MHz	0.951 / -179.891	0.180 / 14.854	0.009 / 90.425	0.987 / -176.797
270.0 MHz	0.951 / -179.978	0.168 / 14.954	0.009 / 90.400	0.988 / -176.967
280.0 MHz	0.951 / 179.937	0.156 / 15.104	0.009 / 90.368	0.988 / -177.128
290.0 MHz	0.951 / 179.856	0.146 / 15.302	0.010 / 90.330	0.989 / -177.280
300.0 MHz	0.951 / 179.776	0.137 / 15.546	0.010 / 90.287	0.989 / -177.424
310.0 MHz	0.952 / 179.699	0.129 / 15.835	0.011 / 90.240	0.989 / -177.561
320.0 MHz	0.952 / 179.624	0.121 / 16.168	0.011 / 90.191	0.990 / -177.692
330.0 MHz	0.952 / 179.551	0.114 / 16.544	0.011 / 90.140	0.990 / -177.816
340.0 MHz	0.952 / 179.480	0.108 / 16.962	0.012 / 90.087	0.990 / -177.935
350.0 MHz	0.952 / 179.410	0.102 / 17.421	0.012 / 90.034	0.991 / -178.049
360.0 MHz	0.952 / 179.341	0.097 / 17.921	0.013 / 89.979	0.991 / -178.159
370.0 MHz	0.952 / 179.274	0.092 / 18.461	0.013 / 89.924	0.991 / -178.264
380.0 MHz	0.952 / 179.208	0.088 / 19.040	0.013 / 89.869	0.991 / -178.365
390.0 MHz	0.952 / 179.143	0.084 / 19.657	0.014 / 89.813	0.992 / -178.463
400.0 MHz	0.952 / 179.079	0.080 / 20.311	0.014 / 89.757	0.992 / -178.557
410.0 MHz	0.952 / 179.016	0.077 / 21.001	0.014 / 89.702	0.992 / -178.648
420.0 MHz	0.952 / 178.954	0.074 / 21.727	0.015 / 89.646	0.992 / -178.736
430.0 MHz	0.952 / 178.893	0.071 / 22.487	0.015 / 89.591	0.992 / -178.822
440.0 MHz	0.952 / 178.833	0.068 / 23.280	0.016 / 89.536	0.992 / -178.905
450.0 MHz	0.952 / 178.773	0.065 / 24.105	0.016 / 89.482	0.992 / -178.985
460.0 MHz	0.952 / 178.714	0.063 / 24.960	0.016 / 89.427	0.993 / -179.064
470.0 MHz	0.952 / 178.656	0.061 / 25.844	0.017 / 89.373	0.993 / -179.140
480.0 MHz	0.952 / 178.598	0.059 / 26.755	0.017 / 89.319	0.993 / -179.215
490.0 MHz	0.953 / 178.541	0.057 / 27.692	0.017 / 89.266	0.993 / -179.287
500.0 MHz	0.953 / 178.484	0.055 / 28.652	0.018 / 89.213	0.993 / -179.358

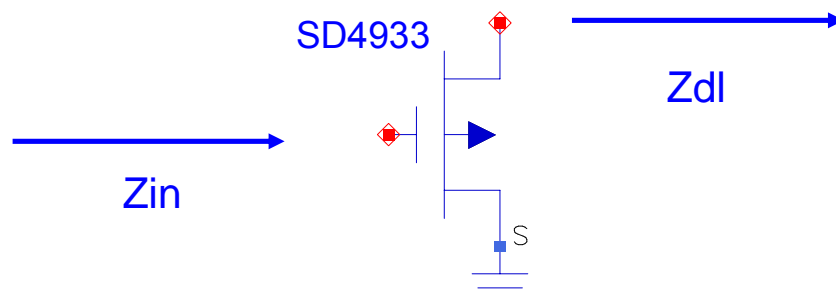
## Extracted device large signal impedance

$Z_{in}$

RF_freq	Rs	Xs
10.000	1.278	-13.369
20.000	1.352	-6.528
30.000	1.413	-4.247
40.000	1.470	-3.126
50.000	1.531	-2.467
60.000	1.579	-2.045
70.000	1.620	-1.757
80.000	1.648	-1.554

$Z_{drain\ load}$

RF_freq	Rs_load	Xs_load
10.000	3.007	0.199
20.000	2.968	0.392
30.000	2.906	0.576
40.000	2.823	0.746
50.000	2.723	0.899
60.000	2.610	1.034
70.000	2.488	1.150
80.000	2.361	1.247





# Large signal 30 MHz characteristics

