

*D1013

*PSPICE MODEL FOR POINT NINE TECHNOLOGIES, Inc RF N-CHANNEL VERTICAL DMOS POWER FET
*PRELIMINARY DATA, SEPTEMBER 1995

*TO GENERATE S PARAMETERS MATCHING DATA SHEET, SET VG=3.7V FOR IDQ=1A

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*      ____GATE
*      I      ____DRAIN
*      I      I      ____SOURCE
*      I      I      I
.SUBCKT D1013 10 20 30
LG 10 11 1.71N
RGATE 11 12 0.78
CG 10 30 0.05P
CRSS 12 17 2.5P
CISS 12 14 60P
LS 14 30 0.30N
CS 14 30 0.1P
LD 17 20 0.85N
CD 20 30 1.44P
R_RC 16 17 35.73
C_RC 14 16 11.8P
MOS 13 12 14 15 D1013MOS L=0.71U W=0.056332 ;D G S B LEVEL1
JFET 17 14 13 D1013JF ;D G S
DBODY 14 17 D1013DB ;P N

.MODEL D1013MOS NMOS (VTO=2.2 KP=1.8E-5 LAMBDA=0.1 RD=0.25 RS=0.5)
.MODEL D1013JF NJF (VTO=-7.5 BETA=0.04 LAMBDA=1)
.MODEL D1013DB D (CJO=88.5P RS=0.25 VJ=0.7 M=0.33 BV=70)
.ENDS
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D1013.s2p

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!      Vds=28V, Idq=1A
#      MHz S MA R 50
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| !Freq | S11 | | S21 | | S12 | | S22 | |
|-------|-------|------|--------|-----|--------|-----|-------|------|
| !MHz | mag | ang | mag | ang | mag | ang | mag | ang |
| 100 | 0.759 | -133 | 22.387 | 88 | 0.0151 | 8 | 0.537 | -103 |
| 200 | 0.804 | -152 | 9.886 | 57 | 0.009 | 5 | 0.692 | -131 |
| 300 | 0.851 | -161 | 5.433 | 40 | 0.0079 | 59 | 0.785 | -143 |
| 400 | 0.871 | -169 | 3.428 | 27 | 0.0143 | 83 | 0.822 | -151 |
| 500 | 0.888 | -171 | 2.73 | 22 | 0.022 | 81 | 0.856 | -156 |
| 600 | 0.906 | -173 | 2.032 | 17 | 0.31 | 80 | 0.889 | -161 |
| 700 | 0.923 | -175 | 1.334 | 12 | 0.0389 | 78 | 0.923 | -166 |
| 800 | 0.923 | -170 | 1.072 | 6 | 0.0462 | 72 | 0.923 | -170 |
| 900 | 0.933 | 164 | 0.891 | 0 | 0.055 | 66 | 0.923 | -176 |
| 1000 | 0.933 | 161 | 0.724 | 0 | 0.0461 | 64 | 0.923 | -177 |