A Qucs compact EDD macromodel representation of the EPFL- EKV 2.6 MOSFET model

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Device numbers

26 EDD

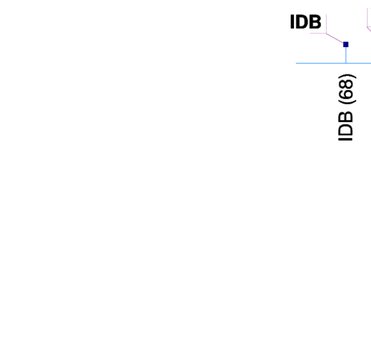
35 CCVS

19 VCVS

1 R

Equation

Eqn2
Ce=14*(22e-3)^2
esi=104.5e-12
VT=vt(300)
CA=0.028
Leff=L+DL
Weff=W+DW
Cox=COX*NP*Weff*NS*Leff
ee=CA*(10*(Leff/LK)-1)
DeltaVRSCE=(2*Q0/COX)/(1.0+0.5*(ee+sqrt(ee*ee+Ce)))^2
GAMMAa=GAMMA+AGAMMA/(sqrt(NP*Weff*NS*Leff))
VTOa=VTO+AVTO/sqrt(NP*Weff*NS*Leff)
KPa=KP*(1+AKPO/sqrt(NP*Weff*NS*Leff))
LC=sqrt(esi*XJ/COX)
Lmin=NS*Leff/10
VC=UCRIT*NS*Leff
Const1=-VTOa-DeltaVRSCE+PHI+GAMMAa*sqrt(PHI)
Const2=-PHI+GAMMAa*GAMMAa/2
Const3=GAMMAa*GAMMAa/4
Const4=2.0*VT*VT
Const5=PHI+4*VT
Const6=GAMMAa/2
Const7=KPa*NP*Weff
Const8=0.5/VT
Const9=16*VT*VT
Const10=esi/COX
Const11=3*WETA/Weff
Const12=LETA/Leff
Const13=0.1*VT
Const14=VT/VC
Const15=4.0*VT
Const16=1/64
Const17=LAMBDA*LC
Const18=1/(LC*UCRIT)
Const19=NS*Leff
Const20=1/UCRIT
Const21=VT*(ln(VC/(2*VT))-0.6)
Const22=Cox*VT
Const23=-GAMMAa/VT
Const24=1/Cox
Const25=2*IBN
Const26=IBA/IBB
Const27=-IBB*LC



EKV261
L=0.5e-6
W=5e-6
VTO=0.6
GAMMA=0.71
PHI=0.97
KP=150e-6
THETA=0
COX=3.45e-3
XJ=0.15e-6
DW=-0.05e-6
DL=-0.02e-6
NP=1
NS=1
E0=88e6
UCRIT=4.5e6
WETA=0.05
LETA=0.28
Q0=280e-6
LK=0.5e-6
IBA=200e6
IBB=350e6
IBN=1.0
AVTO=15e-9
AKPO=25e-9
AGAMMA=15e-9
LAMBDA=0.23
RG=5

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