Input-referred flicker noise

Channel current noise

R1
value={R_s}
noisetemp={T}
noiseflow=0
dcvar=0 dcvarlot=0

L1
value={L_s}
iinit=0

V2
value=0
noise={4*k*T*n*Gamma*f_ell^AF/g_m/f}
dc=0
dcvar=0

H1
{1/g_m}

I1
value=0
dc=0
dcvar=0
noise={4*k*T*n*Gamma*g_m}

Input-referred channel voltage noise

V1
value=0
dc=0
dcvar=0
noise=0

R2
value={R_t}
noisetemp={T}
noiseflow=0
dcvar=0 dcvarlot=0

Termination resistor

E1
{1/(s*tau_i)}

in   out

F1
{s/(2*pi*f_T)}

Gate-induced noise

Integrating voltage amplifier

Rceive coil (resonance not modeled > 150 kHz)

.param n=1.35 Gamma={2/3} AF=1 alpha=0.0033
.param f_ell={alpha*f_T^(1/AF)} f_T={g_m/(2*pi*c_iss)}
.param L_s = 120m R_s=875 tau_i=15.9u
.param R_t=10k

Shot noise associated with the DC gate current is not modeled (IG = 0)