

```

.option sparse
.temp 27
.param wx=5u lx=0.13u vbx=0
.noise v(n) vg lin 1 1 1 1
.control
option numdgt=3
set wr_singlescale
set wr_vecnames

compose l_vec values 0.13u 0.2u 0.3u 0.4u 0.5u 1u 5u 10u
compose vg_vec start= 0 stop=1.5 step=25m
compose vd_vec start= 0 stop=1.5 step=25m
compose vb_vec values 0 0.4 0.8 1.2

foreach var1 $&l_vec
  alterparam lx=$var1
  reset
  foreach var2 $&vg_vec
    alter vg $var2
    foreach var3 $&vd_vec
      alter vd $var3
      foreach var4 $&vb_vec
        alter vsb $var4
        run
        wrdata techsweep_sg13_lv_nmos.txt noise1.all
        destroy all
        set appendwrite
        unset set wr_vecnames
      end
    end
  end
end

set appendwrite=0

alterparam lx=0.13u
alterparam vbx=0
reset
op
*showmod
show
write techsweep_sg13g2_lv_nmos.raw
.endc

MODEL
.lib cornerMOSlv.lib mos tt

```

```
.save b d g n
.save @n.xml.nsg13_lv_nmos[cgso]
.save @n.xml.nsg13_lv_nmos[cgdo]
.save @n.xml.nsg13_lv_nmos[cd]
.save @n.xml.nsg13_lv_nmos[cb]
.save @n.xml.nsg13_lv_nmos[cd]
.save @n.xml.nsg13_lv_nmos[cg]
.save @n.xml.nsg13_lv_nmos[cs]
.save @n.xml.nsg13_lv_nmos[cs]
.save @n.xml.nsg13_lv_nmos[gs]
.save @n.xml.nsg13_lv_nmos[gm]
.save @n.xml.nsg13_lv_nmos[gm]
.save @n.xml.nsg13_lv_nmos[ds]
.save @n.xml.nsg13_lv_nmos[ds]
.save @n.xml.nsg13_lv_nmos[vgs]
.save @n.xml.nsg13_lv_nmos[vds]
.save @n.xml.nsg13_lv_nmos[vsb]
.save @n.xml.nsg13_lv_nmos[vth]
.save @n.xml.nsg13_lv_nmos[vdss]
.save @n.xml.nsg13_lv_nmos[fug]
.save @n.xml.nsg13_lv_nmos[sid]
.save @n.xml.nsg13_lv_nmos[sf]
.save @n.xml.nsg13_lv_nmos[cjd]
.save @n.xml.nsg13_lv_nmos[cjs]
.save @n.xml.nsg13_lv_nmos[rq]
```

- ➡ simulate
- ➡ annotate OP



```
gm=
?
gds=
?
vth=
?
ss(vds_sat)=
?
cgs=
?
fug(f_t)=
?
cdg=
?
rg=
?
sid=
?
```