

```
.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
end
```

 simulate

## MODEL

```
.save b d g n
.save @n.xml.nsg13_lv_nmos[cgcol]
.save @n.xml.nsg13_lv_nmos[cgdol]
.save @n.xml.nsg13_lv_nmos[cdd]
.save @n.xml.nsg13_lv_nmos[cgb]
.save @n.xml.nsg13_lv_nmos[cgd]
.save @n.xml.nsg13_lv_nmos[cgg]
.save @n.xml.nsg13_lv_nmos[cgs]
.save @n.xml.nsg13_lv_nmos[css]
.save @n.xml.nsg13_lv_nmos[gds]
.save @n.xml.nsg13_lv_nmos[gm]
.save @n.xml.nsg13_lv_nmos[gmb]
.save @n.xml.nsg13_lv_nmos[ids]
.save @n.xml.nsg13_lv_nmos[l]
.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[sfl]
.save @n.xml.nsg13_lv_nmos[cjd]
.save @n.xml.nsg13_lv_nmos[cjs]
.save @n.xml.nsg13_lv_nmos[rq]
```

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