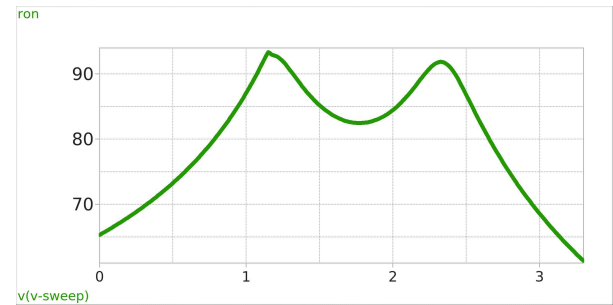
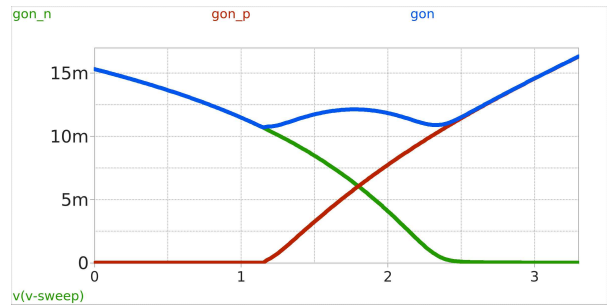
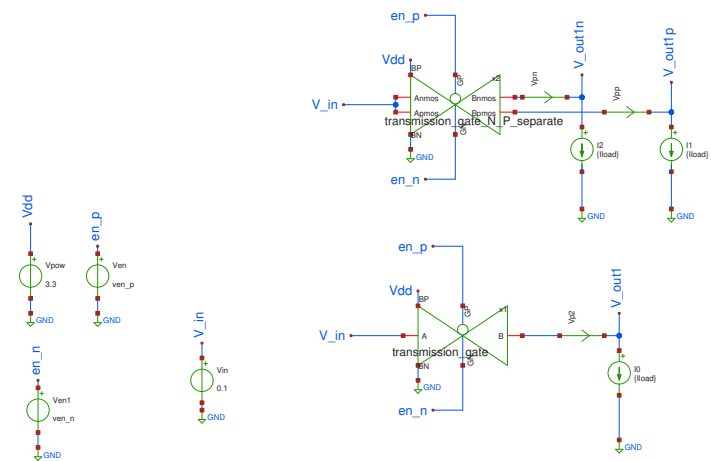


MODELS

```
.include $::180MCU_MODELS/design.ngspice
.lib $::180MCU_MODELS/sm141064.ngspice typical

.include /foss/pdks/gf180mcuD/libs.ref/gf180mcu_fd_sc_mcu7t5v0/spice/gf180mcu_fd_sc_mcu7t5v0.spice
```



```
SWEEP_SIM used to run ngspice sweep in parallel
SIM=ngspice

.param temp=27
.param mn_w=24.0u
.param mp_w=72.0u
.param ven_p=0
.param ven_n=3.3

.param temp=27
*.param Iload=500u
.param Iload=10u
.control
save all

set num_threads 1
*dc I0 -5m 5m 1.1u
dc Vin 0 3.3 0.01

let Ron_N=(V(V_in)-V(V_outn))/I(Vpn)
let Ron_P=(V(V_in)-V(V_outp))/I(Vpp)
let Gon_N=1/Ron_N
let Gon_P=1/Ron_P
let Gon = Gon_N + Gon_P
let Ron = 1/Gon
* meas dc Ronmax max Ron
* print Ronmax
* plot Ron title 'RON resistance' ylabel 'Ron'
* plot Gon_N Gon_P Gon title 'GON conductance' ylabel 'Gon'
* wrdata /foss/designs/SCS-Chipathon-2025_AC3E-Chile-team/xschem/tgate/out_Ron.txt Ron
write tb_tgate_N_P_separate.raw
.endc
```