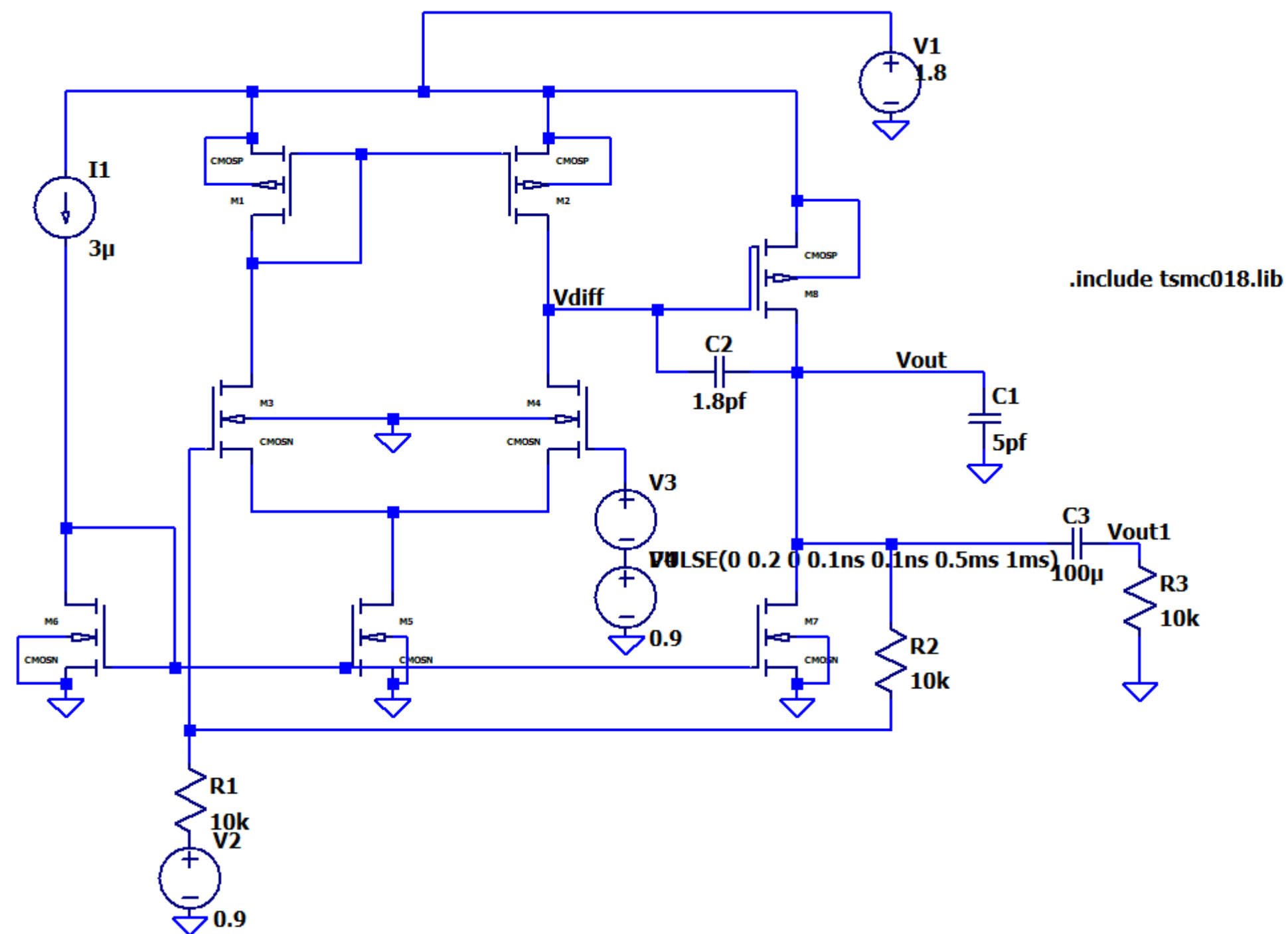


2 Stage OTA Simulations

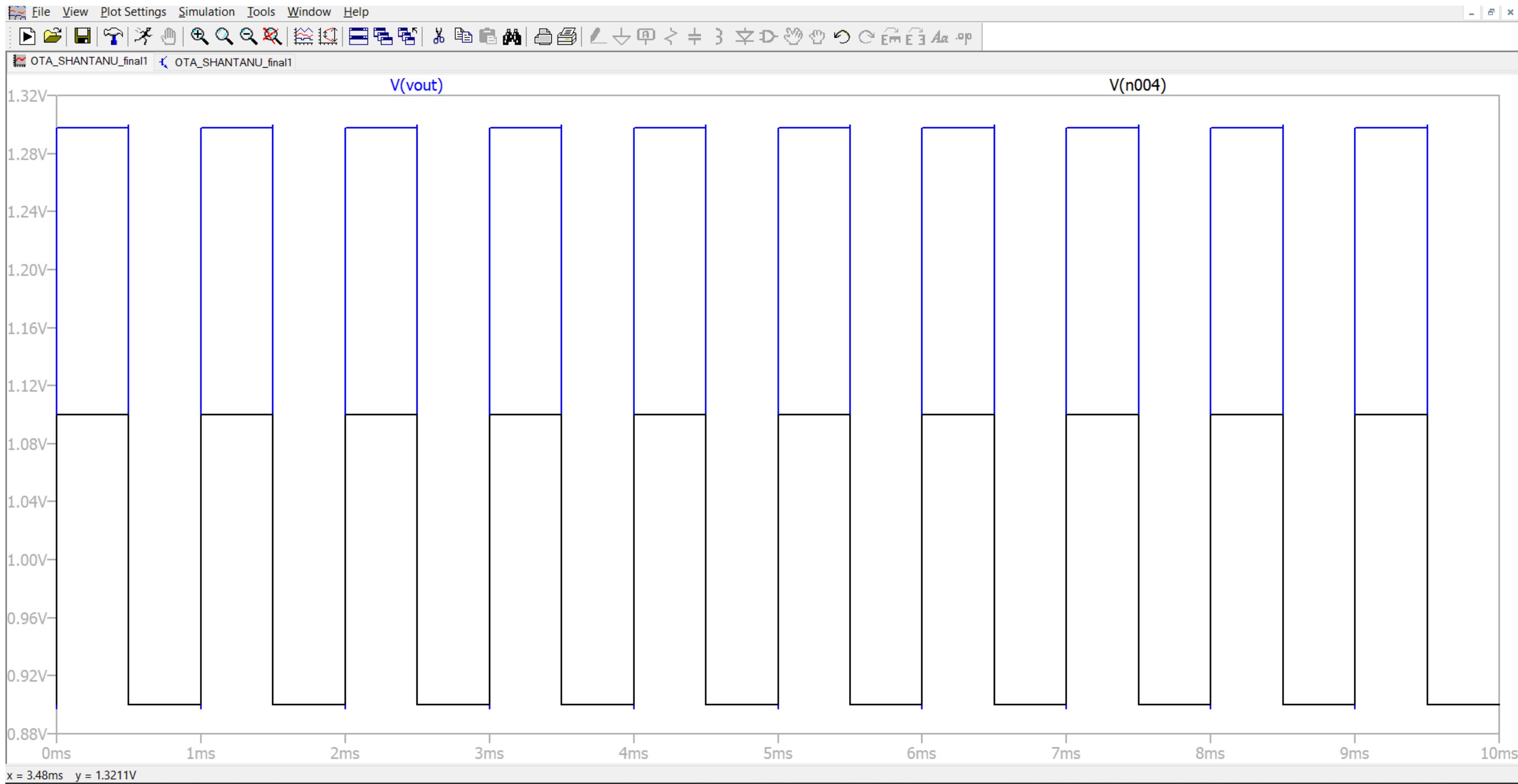
Roll no. 230108011

Name : Shantanu Barai

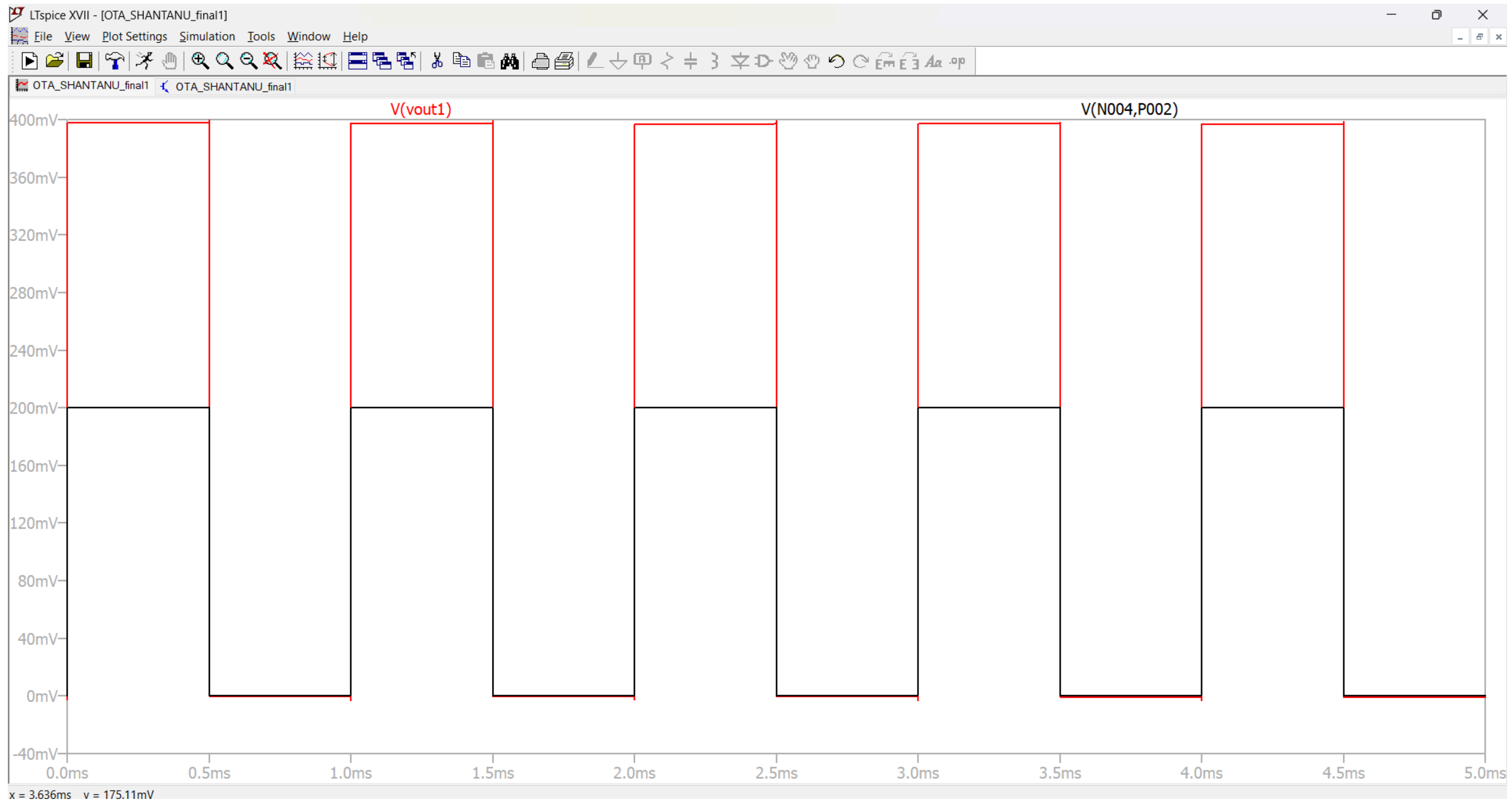
Non inverting
amplifier with
gain 2



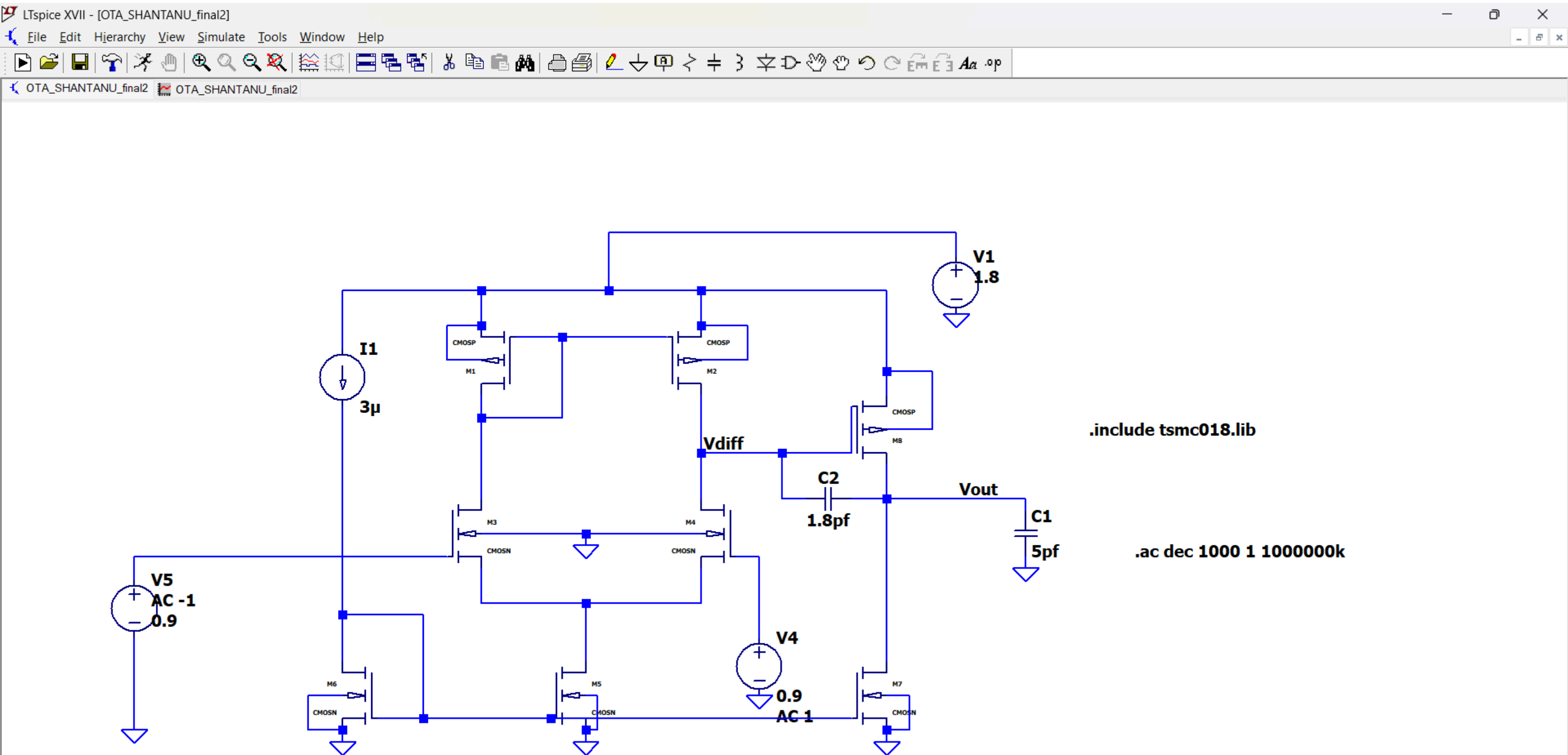
Simulation with Input pulse of 0.2V(black) giving output 0.4V(Blue).....at terminal Vout



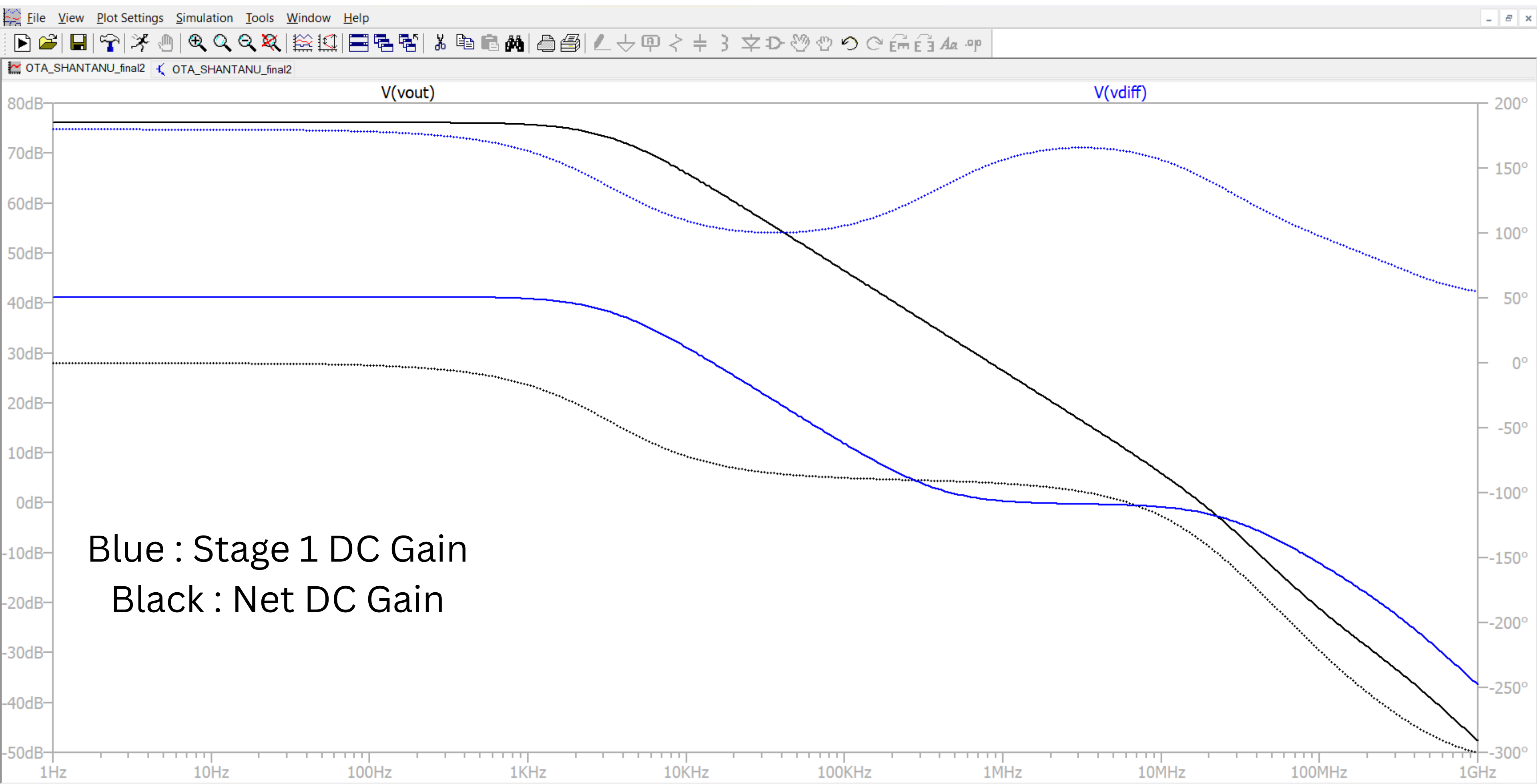
Output taken at terminal Vout1



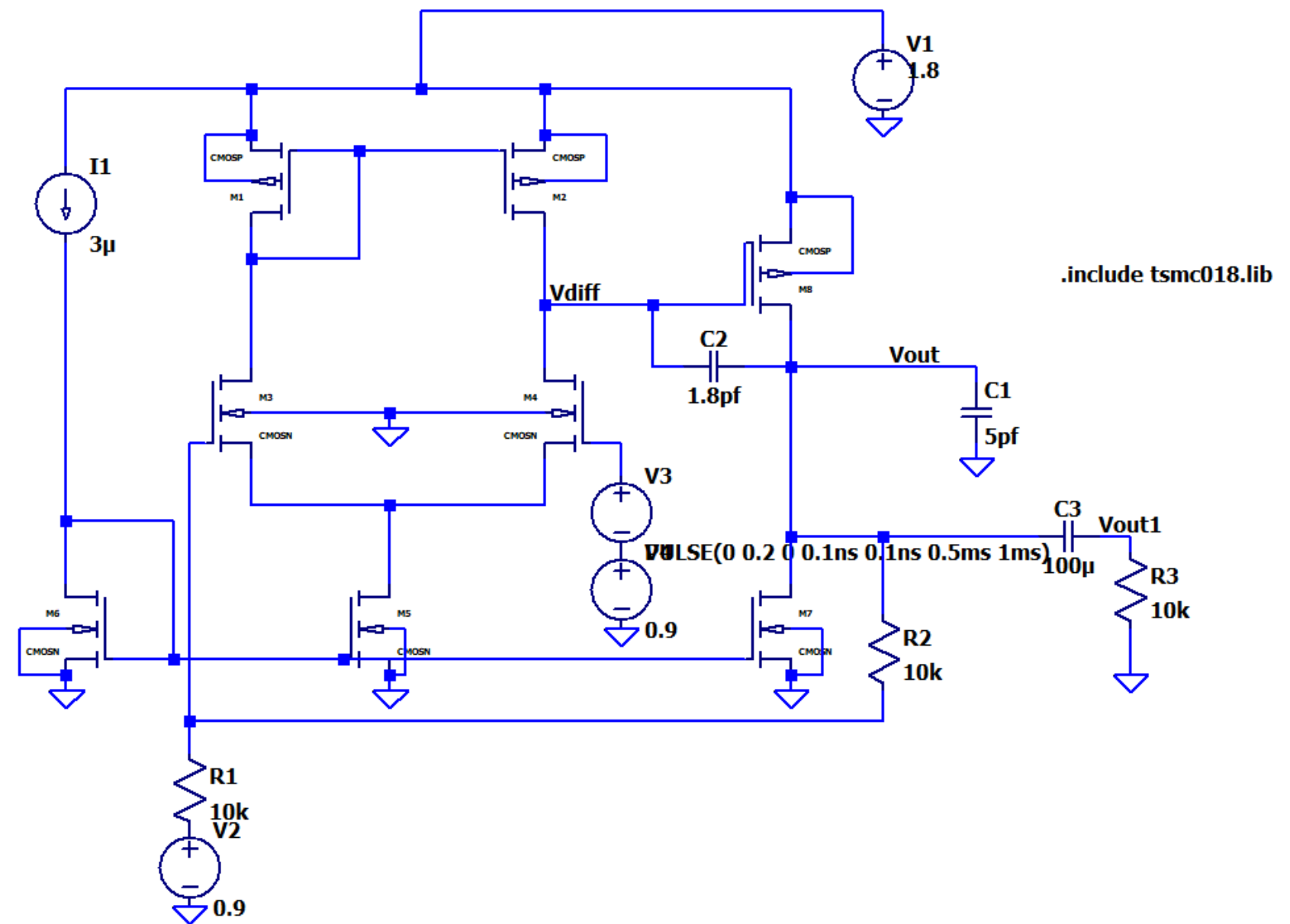
DC Gain



DC Gain

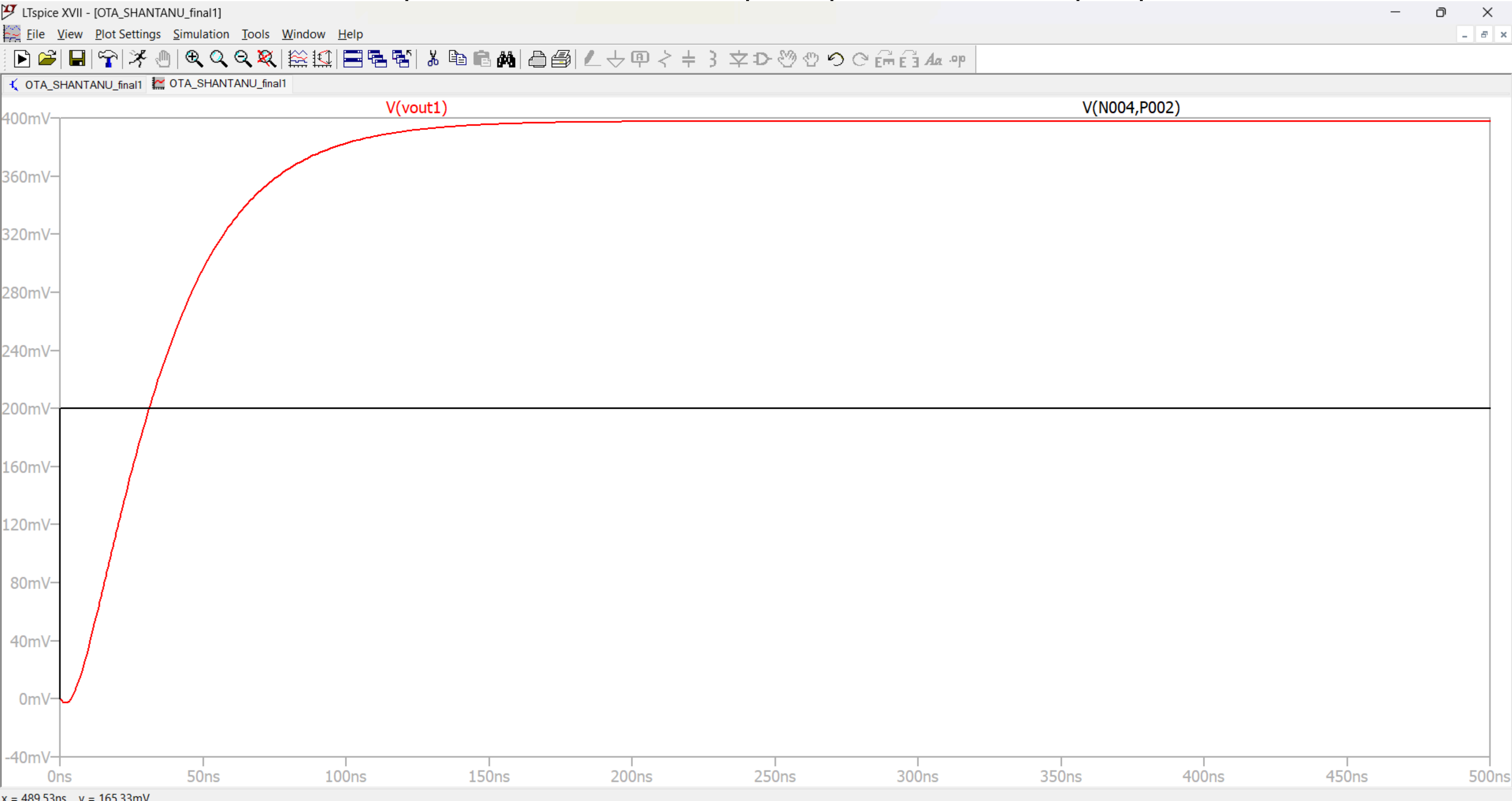


Transient Response of Closed loop amplifier with step input 0.2V

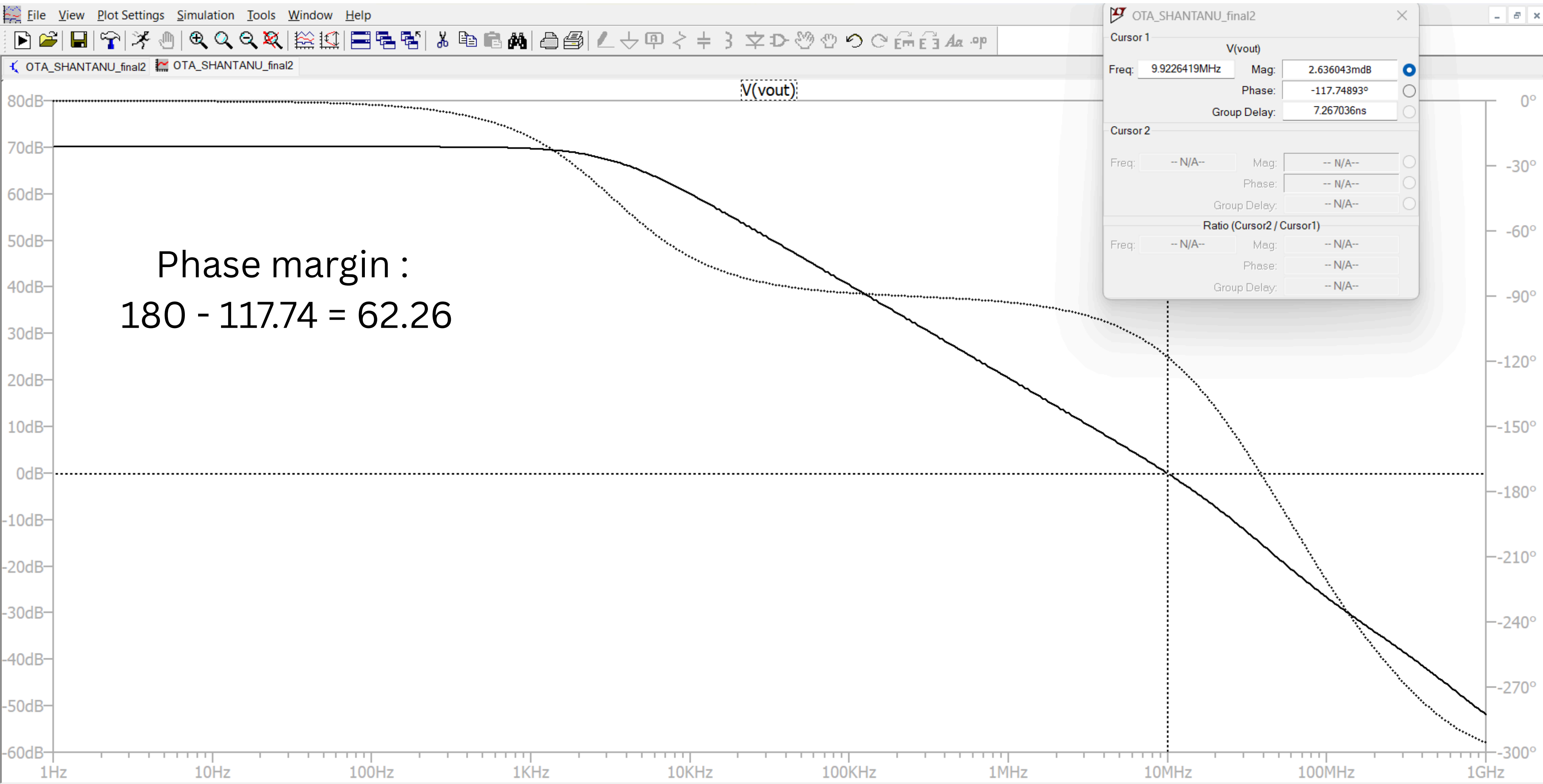


```
.tran 500ns
```

Transient Response of Closed loop amplifier with step input 0.2V



Phase Margin



DC operating points

 SPICE Error Log: C:\Users\shant\AppData\Local\Microsoft\Windows\INetCache\IE\NY7E9M5Z\OTA_SHANTANU_final2[1].log

Warning: Pd = 0 is less than W.

Warning: Ps = 0 is less than W.

Direct Newton iteration for .op point succeeded.

Semiconductor Device Operating Points:

--- BSIM3 MOSFETS ---

Name:	m8	m2	m1	m5	m7
Model:	cmosp	cmosp	cmosp	cmosn	cmosn
Id:	-9.68e-05	-1.02e-05	-1.02e-05	2.04e-05	9.68e-05
Vgs:	-6.21e-01	-6.21e-01	-6.21e-01	6.27e-01	6.27e-01
Vds:	-1.14e+00	-6.21e-01	-6.21e-01	2.45e-01	6.58e-01
Vbs:	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
Vth:	-4.40e-01	-4.41e-01	-4.41e-01	4.44e-01	4.43e-01
Vdsat:	-1.52e-01	-1.51e-01	-1.51e-01	1.41e-01	1.42e-01
Gm:	9.88e-04	1.05e-04	1.05e-04	2.10e-04	1.01e-03
Gds:	7.99e-06	1.14e-06	1.14e-06	8.45e-06	9.97e-06
Gmb	3.03e-04	3.19e-05	3.19e-05	5.84e-05	2.80e-04
Cbd:	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
Cbs:	0.00e+00	0.00e+00	0.00e+00	0.00e+00	0.00e+00
Cgsov:	2.67e-14	2.93e-15	2.93e-15	2.02e-15	9.18e-15
Cgdov:	2.67e-14	2.93e-15	2.93e-15	2.02e-15	9.18e-15
Cgbov:	4.41e-19	4.41e-19	4.41e-19	4.66e-19	4.66e-19
dQgdVgb:	1.84e-13	2.02e-14	2.02e-14	1.22e-14	5.51e-14
dQgdVdb:	-2.64e-14	-2.90e-15	-2.90e-15	-2.04e-15	-9.04e-15
dQgdVsb:	-1.53e-13	-1.68e-14	-1.68e-14	-9.64e-15	-4.37e-14
dQddVgb:	-7.82e-14	-8.60e-15	-8.60e-15	-5.26e-15	-2.37e-14
dQddVdb:	2.65e-14	2.92e-15	2.92e-15	2.06e-15	9.11e-15
dQddVsb:	6.80e-14	7.47e-15	7.47e-15	4.22e-15	1.91e-14
dQbdVgb:	-2.71e-14	-2.99e-15	-2.99e-15	-1.65e-15	-7.73e-15
dQbdVdb:	1.87e-17	-1.91e-18	-1.91e-18	-5.78e-17	6.68e-18
dQbdVsb:	-9.90e-15	-1.07e-15	-1.07e-15	-8.13e-16	-3.67e-15

DC operating points

SPICE Error Log: C:\Users\shant\AppData\Local\Microsoft\Windows\INetCache\IE\NY7E9M5Z\OTA_SHANTANU_final2[1].log X

Name:	m6	m4	m3
Model:	cmosn	cmosn	cmosn
Id:	3.00e-06	1.02e-05	1.02e-05
Vgs:	6.27e-01	6.55e-01	6.55e-01
Vds:	6.27e-01	9.35e-01	9.35e-01
Vbs:	0.00e+00	-2.45e-01	-2.45e-01
Vth:	4.02e-01	5.11e-01	5.11e-01
Vdsat:	1.69e-01	1.24e-01	1.24e-01
Gm:	2.64e-05	1.27e-04	1.27e-04
Gds:	2.21e-07	1.06e-06	1.06e-06
Gmb:	7.36e-06	3.23e-05	3.23e-05
Cbd:	0.00e+00	0.00e+00	0.00e+00
Cbs:	0.00e+00	0.00e+00	0.00e+00
Cgsbv:	4.03e-16	1.36e-15	1.36e-15
Cgdov:	4.03e-16	1.36e-15	1.36e-15
Cgbv:	9.66e-19	4.66e-19	4.66e-19
dQgdVgb:	4.13e-15	8.06e-15	8.06e-15
dQgdVdb:	-3.93e-16	-1.34e-15	-1.34e-15
dQgdVsb:	-3.55e-15	-6.40e-15	-6.40e-15
dQddVgb:	-1.73e-15	-3.48e-15	-3.48e-15
dQddVdb:	3.98e-16	1.35e-15	1.35e-15
dQddVsb:	1.76e-15	2.73e-15	2.73e-15
dQbdVgb:	-6.68e-16	-1.09e-15	-1.09e-15
dQbdVdb:	1.12e-19	1.66e-18	1.66e-18
dQbdVsb:	-3.71e-16	-4.17e-16	-4.17e-16

Date: Tue Apr 29 22:12:45 2025

Total elapsed time: 0.046 seconds.