

* This is the spice file for for simple amplifier

* d g s b type length width

*diff pair

m1 4 1 3 3 cmosn l=2.4u w=184.8u
m2 5 2 3 3 cmosn l=2.4u w=184.8u
* top diode connected transistors
m3 4 4 100 100 cmosp l=3.6u w=105.6u
m4 5 5 100 100 cmosp l=3.6u w=105.6u
* top current output of mirrors
m5 6 4 100 100 cmosp l=3.6u w=105.6u
m6 7 5 100 100 cmosp l=3.6u w=105.6u
* bottom current mirror
m7 6 6 0 0 cmosn l=3.6u w=46.8u
m8 7 6 0 0 cmosn l=3.6u w=46.8u

cl 7 0 10p
Io 3 0 50u
vdd 100 0 3.0

vfb 7 1 0.0
vin 2 0 pwl(0.0 1.0 10n 1.0 15n 2.0)
.tran 0.01u 1u

*vcm 66 0 1.5
*rcm 66 0 1g
*vid 67 0 dc 0 ac 1.0
*rid 67 0 1g
*e1 1 66 67 0 0.5
*e2 2 66 67 0 -0.5

*.op
*.ac dec 10 1.0 10Meg
*.dc vid -0.05 0.05 0.0001
*.noise v(7) vid 10

.probe

.options nopage limpts=1200 reltol=1e-4 nomod

.MODEL CMOSN NMOS LEVEL=3 PHI=0.700000 TOX=3.0500E-08 XJ=0.200000U TPG=1
+ VTO=0.5705 DELTA=1.2520E+00 LD=1.7770E-09 KP=7.9173E-05
+ UO=699.3 THETA=1.2260E-01 RSH=9.0910E-02 GAMMA=0.5623
+ NSUB=1.2210E+16 NFS=6.5000E+11 VMAX=2.0250E+05 ETA=1.0560E-01
+ KAPPA=1.9540E-01 CGDO=5.0000E-11 CGSO=5.0000E-11
+ CGBO=3.2665E-10 CJ=2.7366E-04 MJ=5.4287E-01 CJSW=1.7362E-10
+ MJSW=1.0000E-01 PB=9.9000E-01
*+ KF= 1.19E-23
+ KF=1.884e-27
* Weff = Wdrawn - Delta_W
* The suggested Delta_W is 8.2640E-07
.MODEL CMOSP PMOS LEVEL=3 PHI=0.700000 TOX=3.0500E-08 XJ=0.200000U TPG=-1
+ VTO=-0.8351 DELTA=2.1860E+00 LD=1.1000E-09 KP=1.9485E-05
+ UO=172.1 THETA=9.6900E-02 RSH=1.7270E-01 GAMMA=0.3423
+ NSUB=4.5250E+15 NFS=6.5000E+11 VMAX=2.0380E+05 ETA=1.4870E-01

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+ KAPPA=9.9980E+00 CGDO=5.0000E-11 CGSO=5.0000E-11
+ CGB0=3.4117E-10 CJ=2.8838E-04 MJ=4.9284E-01 CJSW=2.0216E-10
*+ KF=          5.05E-25
+ KF=1.967e-29
+ MJSW=1.0000E-01 PB=9.9000E-01
* Weff = Wdrawn - Delta_W
* The suggested Delta_W is 8.9420E-07

.END
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