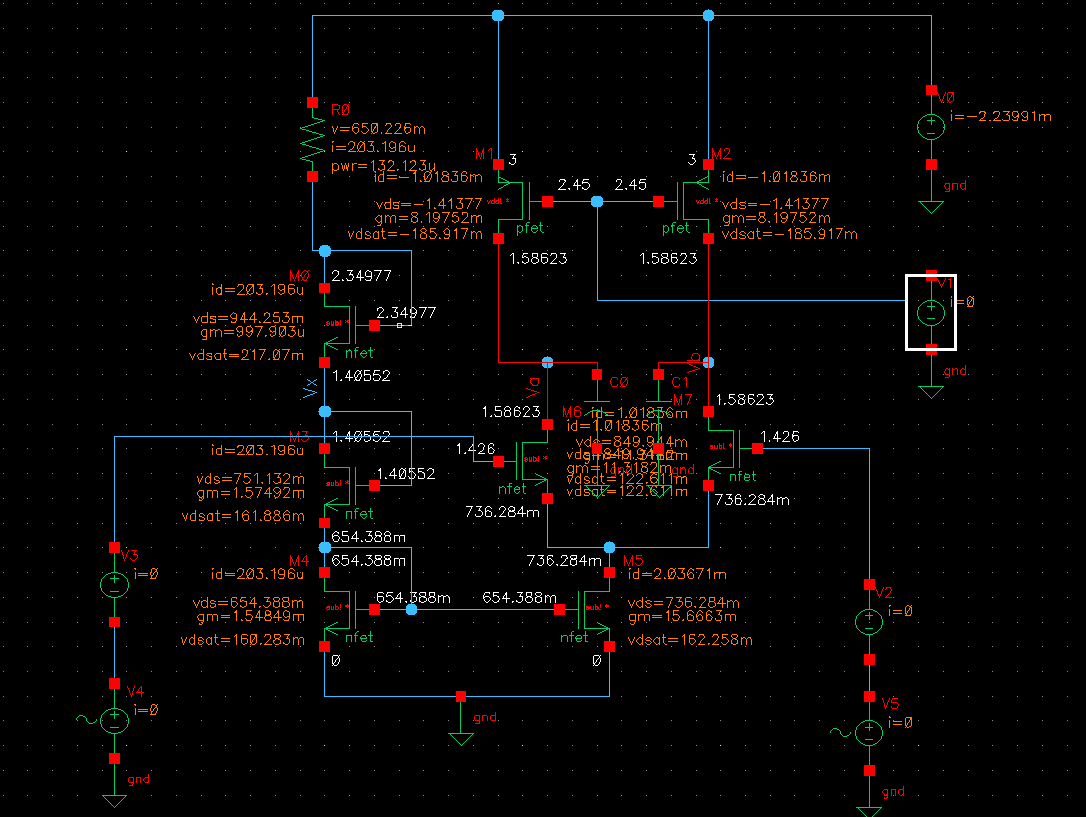
Q-1

Total current in bias path=2.03mA

Current in individual differential path=1.017mA

Rb=3.2Kohm,Vb=2.45V

All transistors are in saturation region.



Q-2)

For Vb=2.5V

|  |  |  |  |
| --- | --- | --- | --- |
|  | ron | rop | gm |
| M0 | 4.64k |  | 1m |
| M3 | 3.7k |  | 1.585m |
| M4 | 3.219k |  | 1.56m |
| M6 | 164.6 |  | 10m |
| M7 | 164.6 |  | 10m |
| M5 | 340.469 |  | 15.5m |
| M1(PMOS) |  | 2.128K |  |
| M2(PMOS) |  | 2.128k |  |

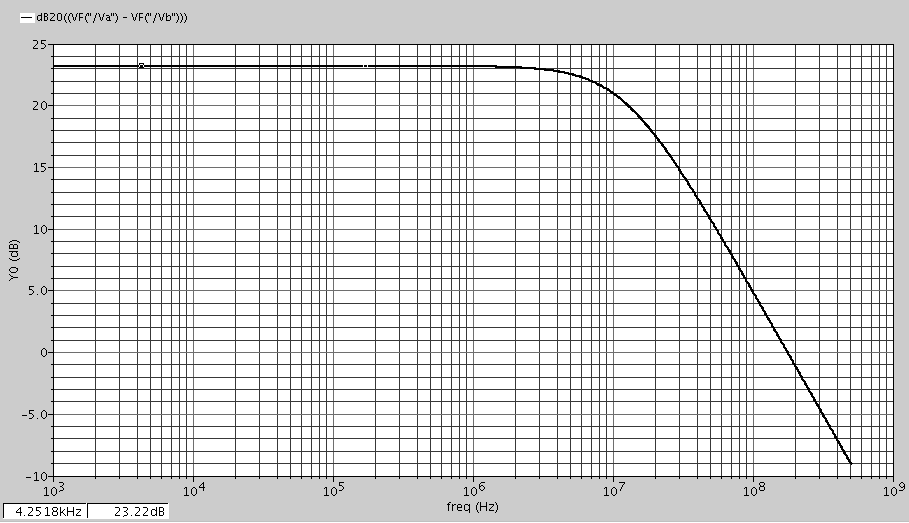
Q-3)

Sensitivity of Va and Vb on the voltage Vb



Q-4

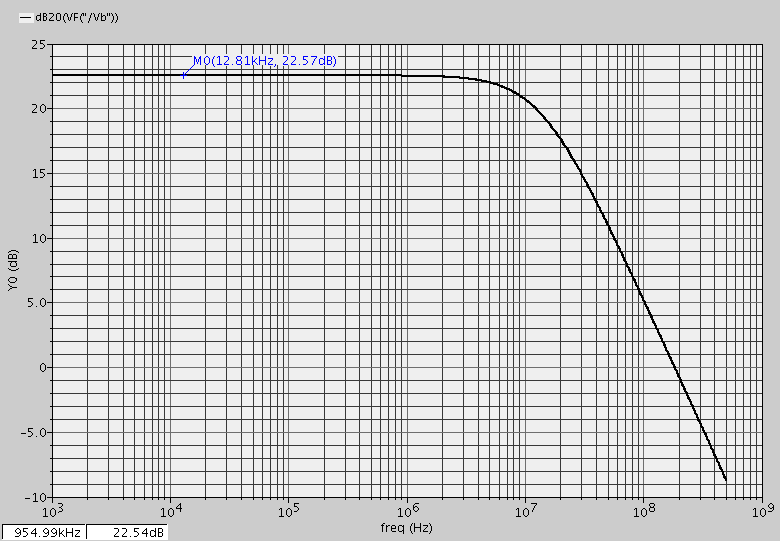
Gain is 23.22 DB



Q-5)

Q-7)

Gain is 22.5DB which is almost equal to 23 db for previous topology



Q-9)



