AC ----LPF
*7-pole Chebyschev LPF
vi 1 0 dc 0 sin(0 1 10k 0 0) AC 1 0
r5 1 2 50
c1 2 0 430p
l1 2 3 1.3u
c2 3 0 820p
l3 3 4 1.5u
c4 4 0 820p
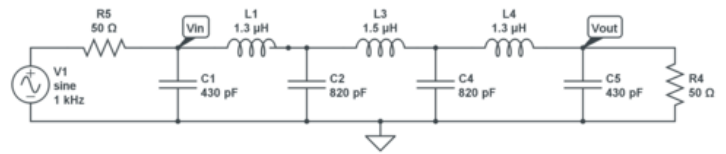l4 4 5 1.3u
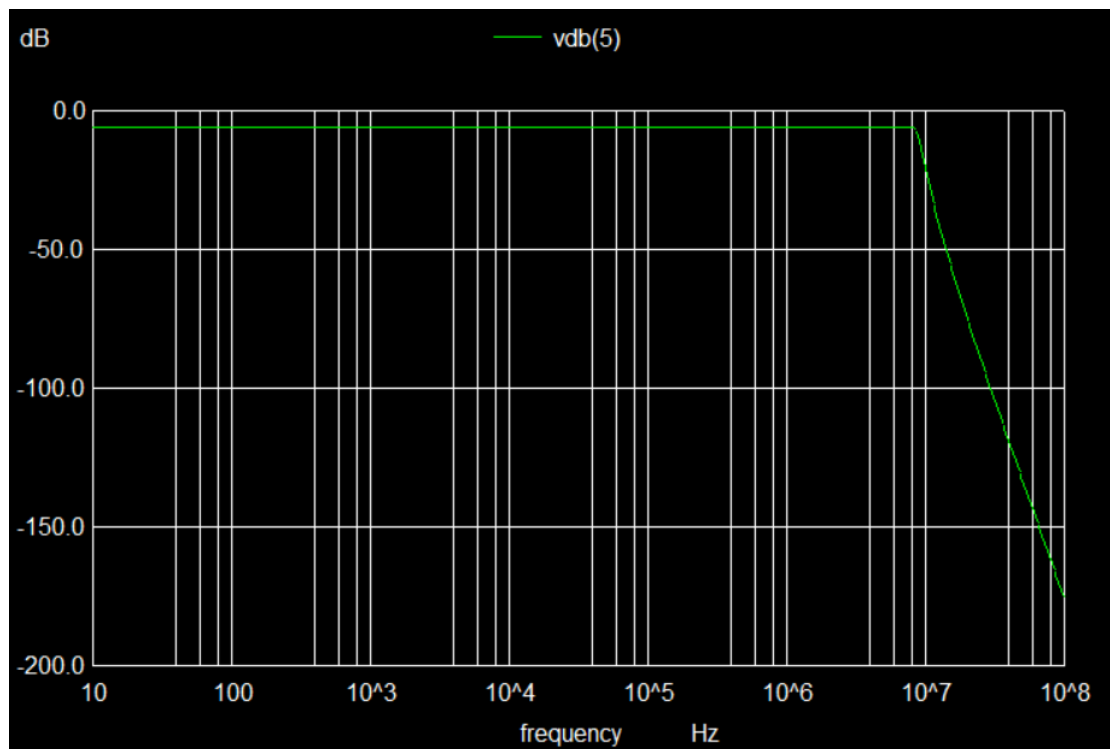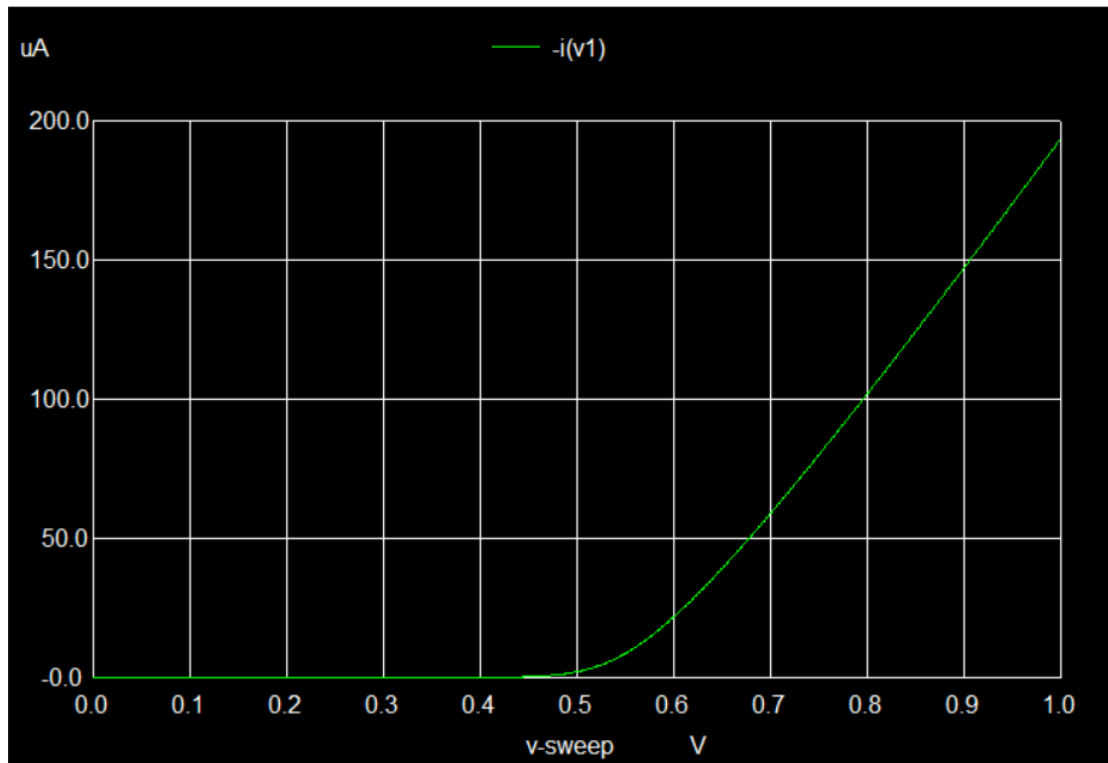c5 5 0 430p
r4 5 0 50
.ac dec 100 1k 1meg
.end

Ac dec 100 10 100meg
plot vdb(5)

DC analysis
diode circuit
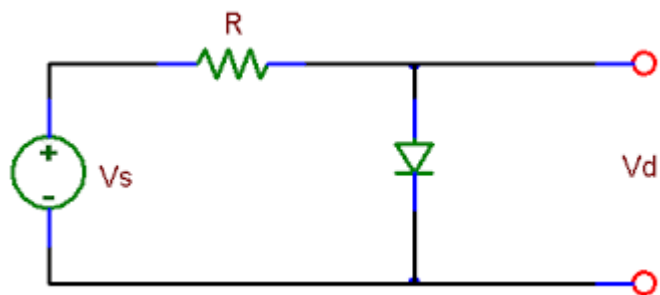V1 n1 0 5
r1 n1 n2 2k
D1 n2 0 diode1
.model diode1 D
.end

dc v1 0v 1v 0.01v
plot -i(v1)

Transient

Op uA741

Subcircuit(the following)

.subckt uA741   1 2 3 4 5

*

  c1   11 12 8.661E-12

  c2   6   7 30.00E-12

  dc   5 53 dx

  de   54   5 dx

  dlp 90 91 dx

  dln 92 90 dx

  dp   4   3 dx

  egnd 99   0 poly(2) (3,0) (4,0) 0 .5 .5

  fb   7 99 poly(5) vb vc ve vlp vln 0 10.61E6 -10E6 10E6 10E6 -10E6

  ga   6   0 11 12 188.5E-6

  gcm   0   6 10 99 5.961E-9

  iee   10   4 dc 15.16E-6

  hlim 90   0 vlim 1K

  q1   11   2 13 qx

  q2   12   1 14 qx

  r2   6   9 100.0E3

  rc1   3 11 5.305E3

  rc2   3 12 5.305E3

  re1 13 10 1.836E3

  re2 14 10 1.836E3

  ree 10 99 13.19E6

  ro1   8   5 50

  ro2   7 99 100

  rp   3   4 18.16E3

  vb   9   0 dc 0

  vc   3 53 dc 1

  ve   54   4 dc 1

  vlim 7   8 dc 0

  vlp 91   0 dc 40

  vln   0 92 dc 40

.model dx D(Is=800.0E-18 Rs=1)

.model qx NPN(Is=800.0E-18 Bf=93.75)

.ends
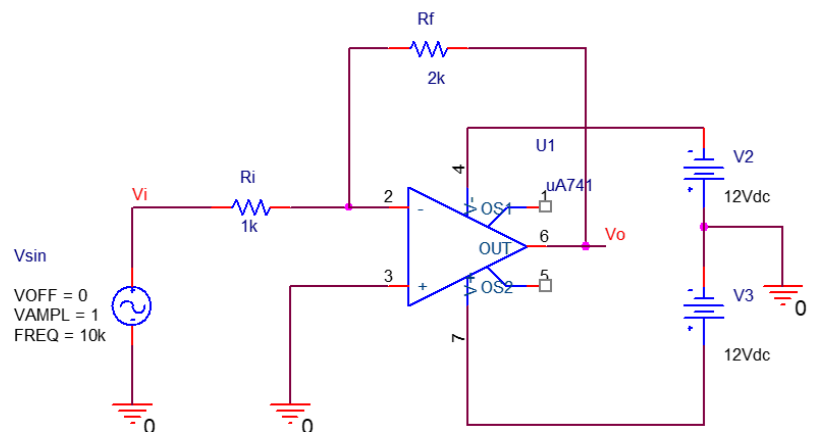
Main

```
* source OPAMP
.include mod.txt
X_U1          0 N00041 N00057 N00050 VO uA741
R_R1          N00035 N00041  1k
R_R2          N00041 VO  2k
V_V1          N00035 0
+SIN 0 3 100 0 0 0
V_V2          0 N00050 12Vdc
V_V3          N00057 0 12Vdc
.end
```


Main