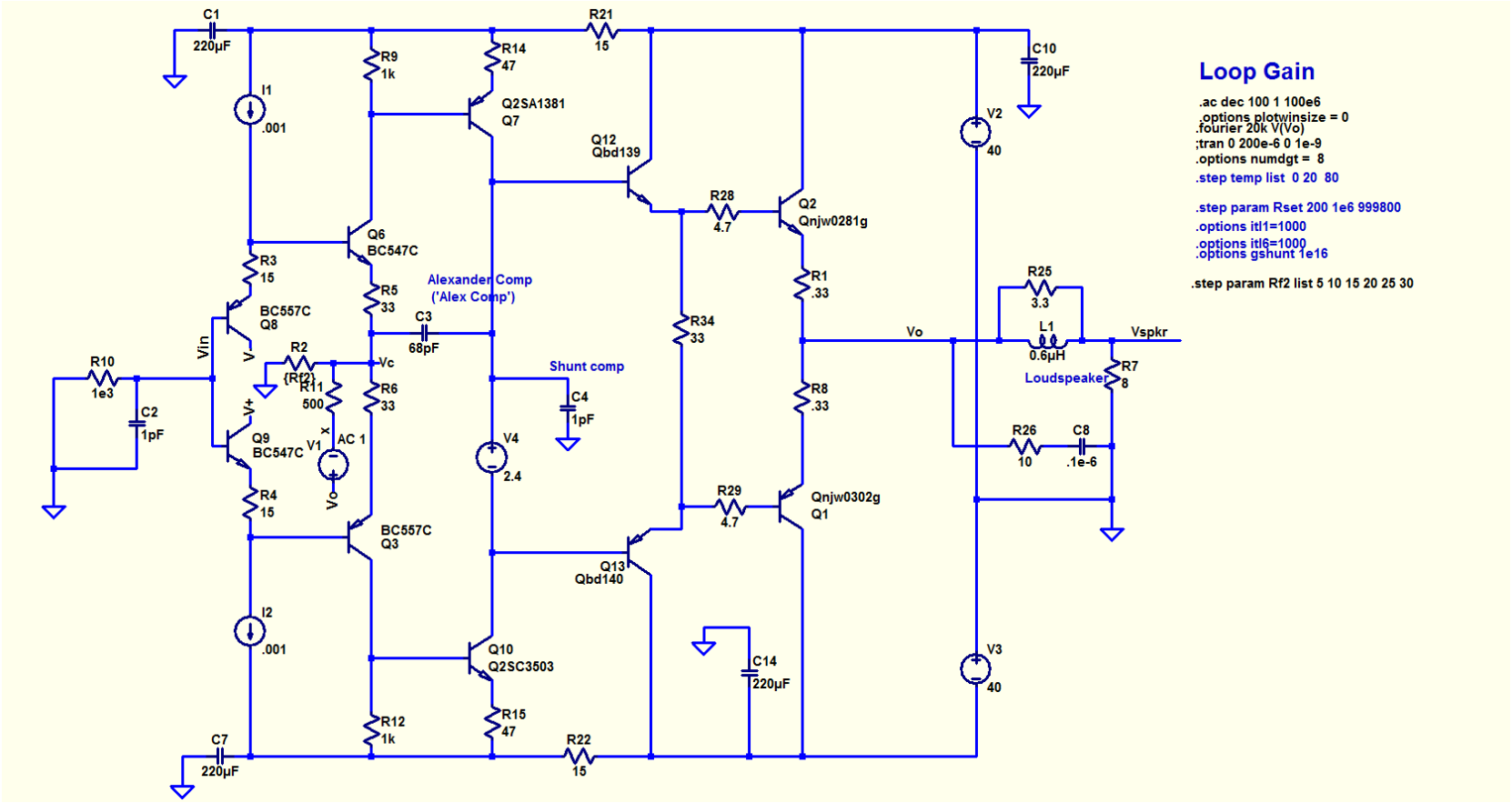
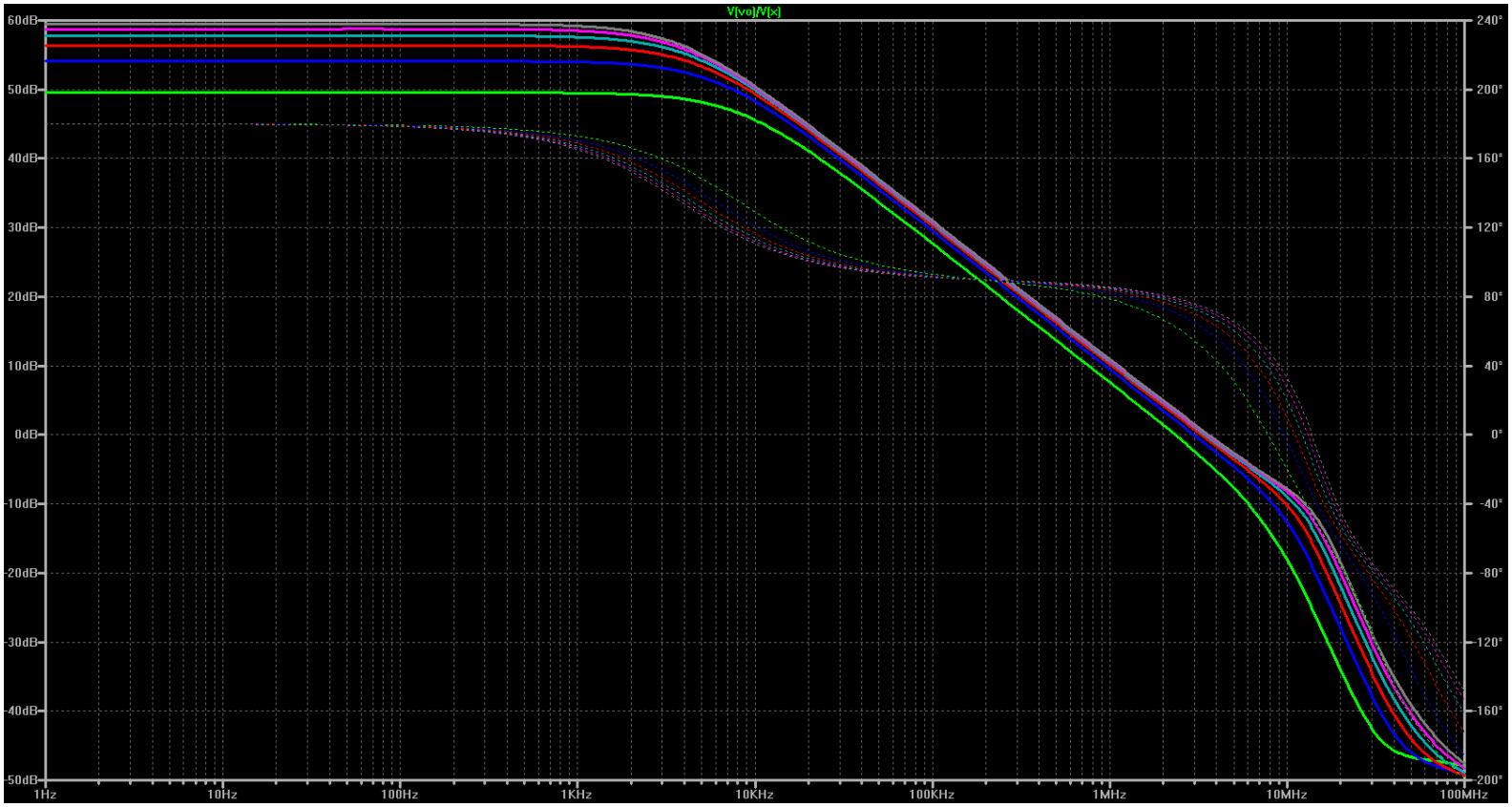
CLF Study 2

Basic CFA

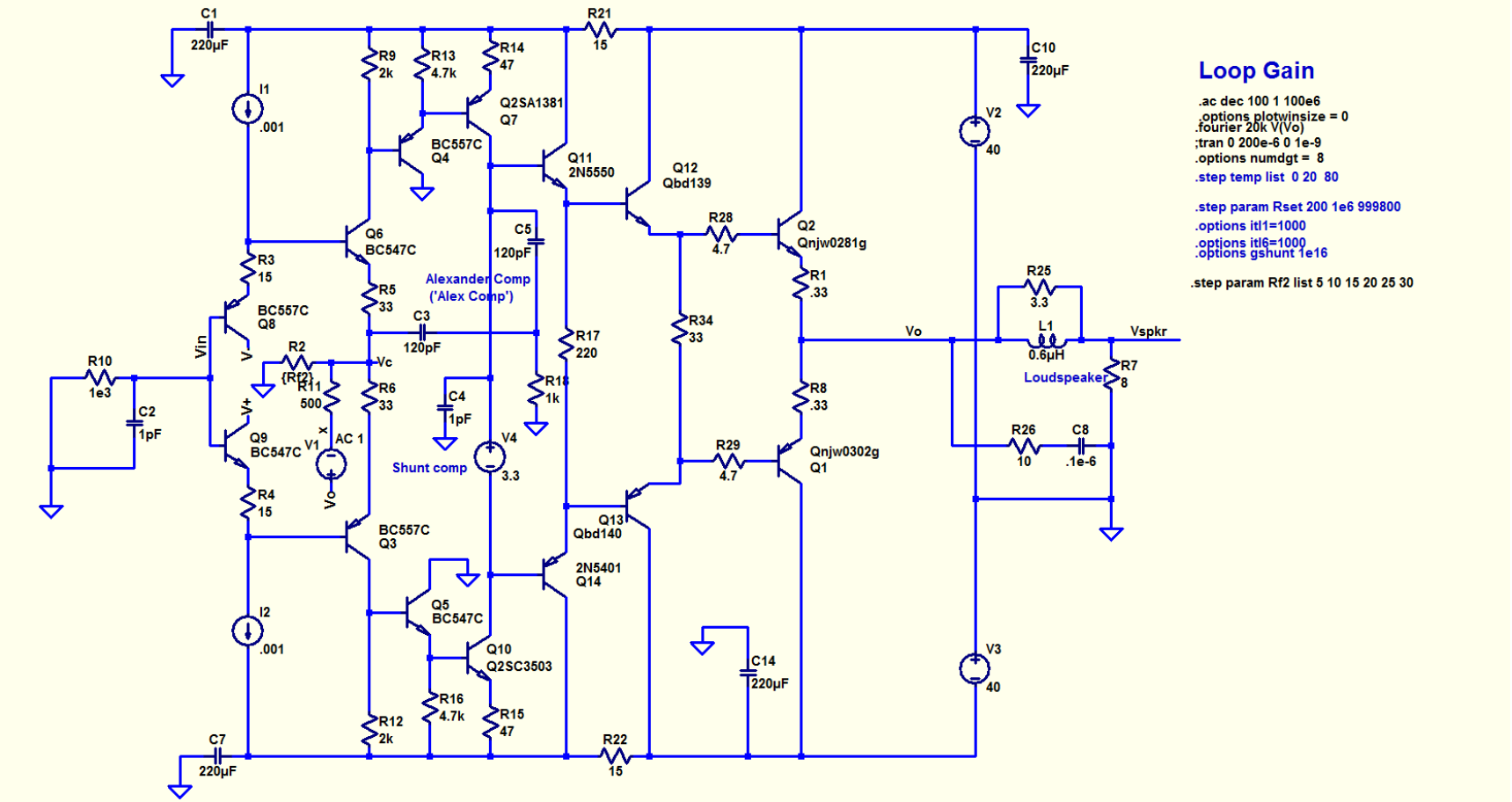

C1
220µF
I1
.001
R9
1k
R14
47
Q2SA1381
Q7
R21
15
Q12
Qbd139
C10
220µF
V2
40
R28
4.7
Q2
Qnjw0281g
Q6
BC547C
R3
15
BC557C
Q8
Alexander Comp
('Alex Comp')
R5
33
C3
68pF
R34
33
R1
.33
R25
3.3
L1
0.6µH
Vo
Vspkr
R10
1e3
Vin
R2
{Rf2}
R11
500
Vc
R6
33
Shunt comp
C4
1pF
R7
8
Loudspeaker
C2
1pF
Q9
BC547C
V1
AC 1
V4
2.4
R8
.33
R26
10
C8
.1e-6
R4
15
BC557C
Q3
R29
4.7
Qnjw0302g
Q1
Q13
Qbd140
I2
.001
Q10
Q2SC3503
C14
220µF
V3
40
R12
1k
R15
47
C7
220µF
R22
15
Loop Gain
.ac dec 100 1 100e6
.options plotwinsize = 0
.fourier 20k V(Vo)
;tran 0 200e-6 0 1e-9
.options numdgt = 8
.step temp list 0 20 80
.step param Rset 200 1e6 999800
.options itl1=1000
.options itl6=1000
.options gshunt 1e16
.step param Rf2 list 5 10 15 20 25 30

Basic CFA Loop Gain plot



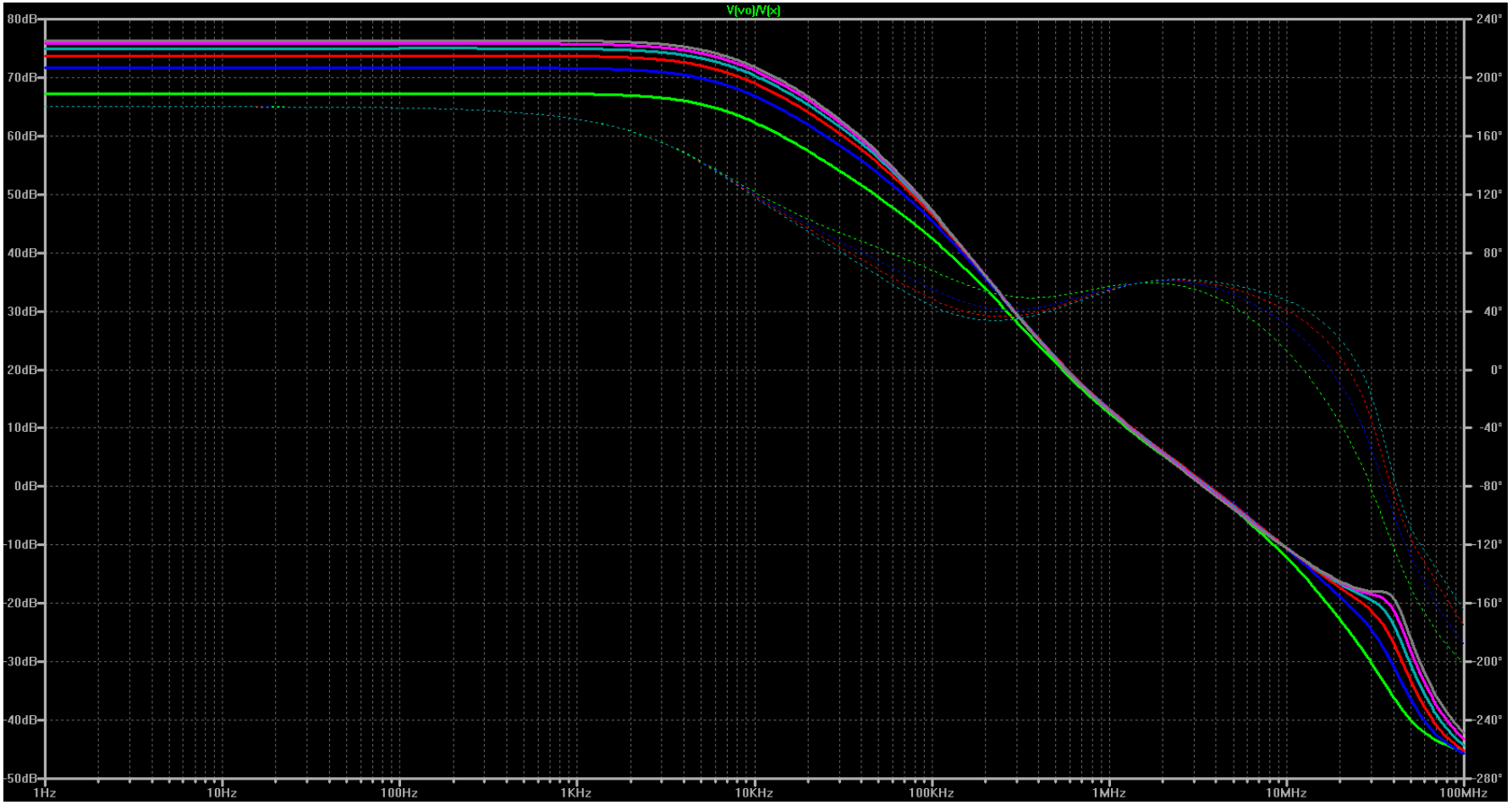
- CL gain stepped from 18x to 101x
- ULGF c. 3 MHz established by selecting C3; R11 could also be used for this purpose, but my view is in a practical discrete audio power amp, its easier to adjust C3

‘Quick ‘n Dirty’ CFA with TPC



- Added beta enhancers and EF3 (together adding 25 dB loop gain)

‘Quick ‘n Dirty CFA TPC LG Plots



- Even with TPC, - 3dB LG point remains fairly constant