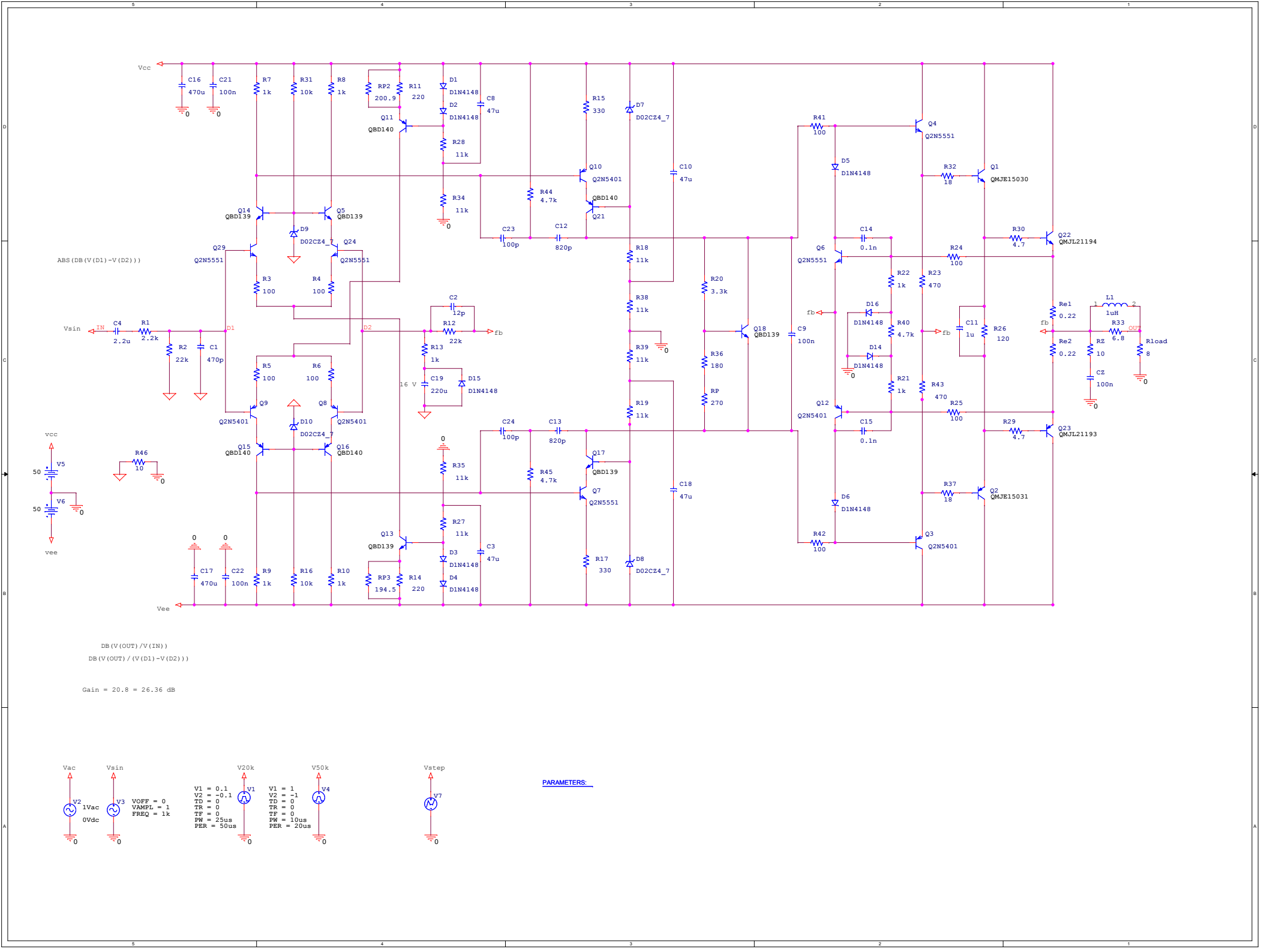
Vcc
C16 470u
C21 100n
R7 1k
R31 10k
R8 1k
RP2 200.9
R11 220
D1 D1N4148
D2 D1N4148
C8 47u
Q11 QBD140
R28 11k
R34 11k
R15 330
D7 D02CZ4_7
Q10 Q2N5401
Q21 QBD140
R44 4.7k
C23 100p
C12 820p
C10 47u
R41 100
Q4 Q2N5551
D5 D1N4148
R32 18
Q1 QMJE15030
Q14 QBD139
Q5 QBD139
D9 D02CZ4_7
Q29 Q2N5551
Q24 Q2N5551
R3 100
R4 100
ABS(DB(V(D1)-V(D2)))
C14 0.1n
R30 4.7
Q22 QMJL21194
Q6 Q2N5551
R24 100
R22 1k
R23 470
D16 D1N4148
R40 4.7k
D14 D1N4148
R21 1k
R43 470
Q12 Q2N5401
C15 0.1n
R25 100
R29 4.7
Q23 QMJL21193
C11 1u
R26 120
Re1 0.22
Re2 0.22
L1 1uH
R33 6.8
Rz 10
Cz 100n
Rload 8
Vsin
C4 2.2u
R1 2.2k
R2 22k
C1 470p
C2 12p
R12 22k
R13 1k
C19 220u
D15 D1N4148
16 V
fb
R18 11k
R38 11k
R39 11k
R19 11k
R20 3.3k
R36 180
RP 270
Q18 QBD139
C9 100n
R5 100
R6 100
Q9 Q2N5401
Q8 Q2N5401
D10 D02CZ4_7
Q15 QBD140
Q16 QBD140
R46 10
vcc
V5 50
V6 50
vee
C24 100p
C13 820p
R35 11k
R45 4.7k
Q17 QBD139
Q7 Q2N5551
C18 47u
R27 11k
Q13 QBD139
D3 D1N4148
D4 D1N4148
C3 47u
R17 330
D8 D02CZ4_7
R42 100
Q3 Q2N5401
D6 D1N4148
R37 18
Q2 QMJE15031
C17 470u
C22 100n
R9 1k
R16 10k
R10 1k
RP3 194.5
R14 220
Vee
DB(V(OUT)/V(IN))
DB(V(OUT)/(V(D1)-V(D2)))
Gain = 20.8 = 26.36 dB
Vac
V2 1Vac 0Vdc
Vsin
V3 VOFF = 0 VAMPL = 1 FREQ = 1k
V20k
V1 V1 = 0.1 V2 = -0.1 TD = 0 TR = 0 TF = 0 PW = 25us PER = 50us
V50k
V4 V1 = 1 V2 = -1 TD = 0 TR = 0 TF = 0 PW = 10us PER = 20us
Vstep
V7
PARAMETERS: