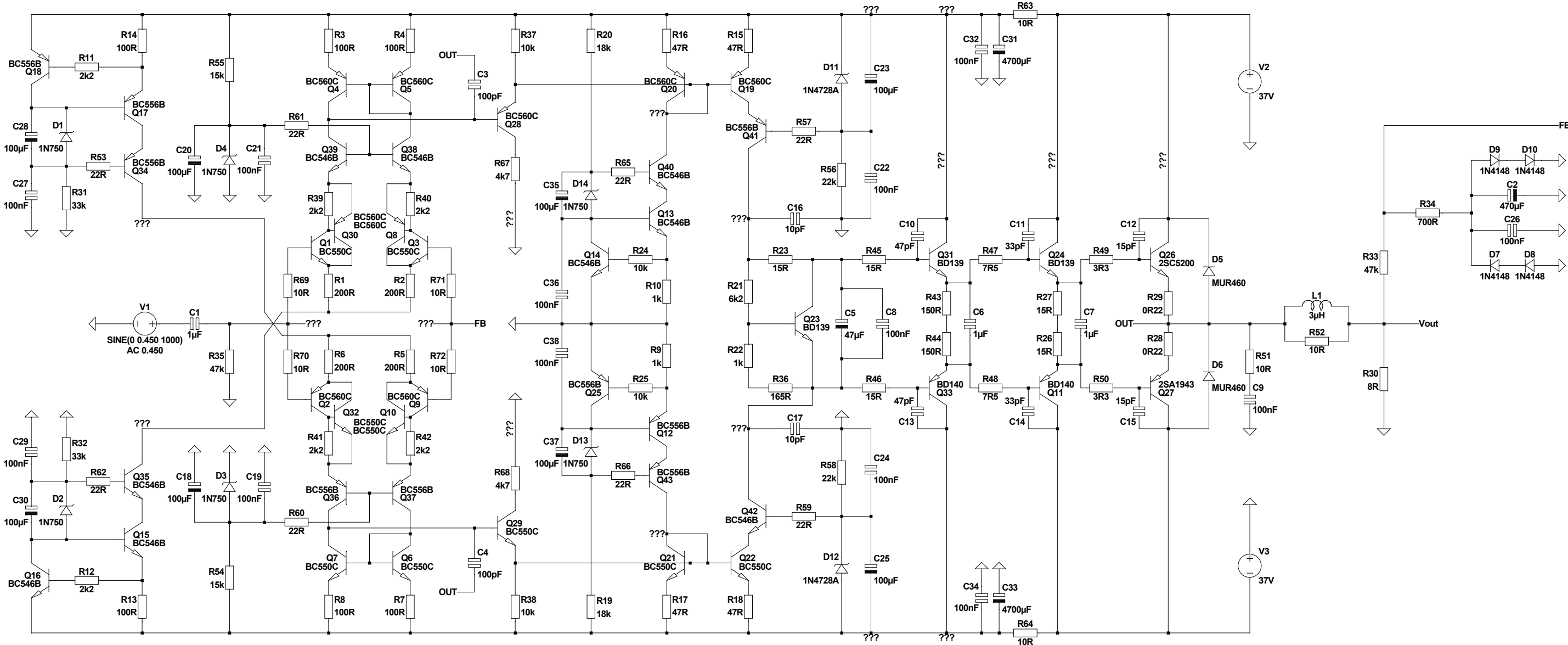


;ac dec 1000 1 1G
 ;tran 0 10m 0 10n
 .op
 .four 1000 10 100 v(Vout)
 .options numdgt = 7
 .options plotwinsize = 0



.model 1N4728A D (IS=15N N=2.22 BV=3.3 IBV=76M RS=169M CJO=4P VJ=750M M=330M FC=500M TT=100N EG=1.11 XTI=3 KF=0 AF=1)
 .model BC550C NPN (IS=7.049E-14 NF=23.89 BF=493.2 ISE=99.2E-15 BR=1.829 IKF=1542 Nk=6339 Xtb=1.5 BR=2.886 Isc=7.371E-15 Ikr=1.508 Ikr=5.426 Rc=1.175 Cjc=5.5p Mjc=.3132 Vjc=.4924 Fc=.5 Cje=11.5p Mje=.6556 Vje=.5 Tr=10n Tf=420.3p If=1.374 Xtf=39.42 Vtf=10 mfg=PHILIPS)
 .model BC560C PNP (IS=1.02E-13 Xbi=3 Egr=1.11 Vaf=34.62 Bf=401.6 Ise=38.26p Ne=5.635 Ikf=74.73m Nk=512 Xtb=1.5 BR=9.011 Isc=1.517E-15 Ikr=1.831 Ikr=1.469 Rc=1.151 Cjc=9.81p Mjc=.332 Vjc=.4865 Fc=.5 Cje=30p Mje=.3333 Vje=.5 Tr=10n Tf=524p If=9847 Xtf=17.71 Vtf=10 mfg=PHILIPS)
 .model BC546B NPN (IS=2.39E-14 NF=1.008 ISE=3.55E-15 NE=1.541 BF=394.3 IKF=0.1357 VAF=63.2 NR=1.004 ISC=6.27E-14 NC=1.243 BR=7.946 IKR=0.1144 VAR=25.9 RB=1 IRB=1.00E-06 RBM=1 RE=0.4683 RC=0.85 XTB=0 EG=1.11 XTI=3 CJE=1.36E-11 VJE=0.65 MJE=0.3279 TF=4.38E-10 XTF=120 VTF=2.643 ITF=0.7495 PTF=0 CJC=3.73E-12 VJC=0.3997 MJC=0.2955 XCJC=0.6193 TR=1.00E-32 CJS=0 VJS=0.75 MJS=0.333 FC=0.9579 Vceo=65 Icrating=100m mfg=NXP)
 .model BC556B PNP (IS=3.83E-14 NF=1.008 ISE=1.22E-14 NE=1.528 BF=344.4 IKF=0.08039 VAF=21.11 NR=1.005 ISC=2.85E-13 NC=1.28 BR=14.84 IKR=0.047 VAR=32.02 RB=1 IRB=1.00E-06 RBM=1 RE=0.6202 RC=0.5713 XTB=0 EG=1.11 XTI=3 CJE=1.23E-11 VJE=0.6106 MJE=0.378 TF=5.60E-10 XTF=3.414 VTF=5.23 ITF=0.1483 PTF=0 CJC=1.08E-11 VJC=0.1022 MJC=0.3563 XCJC=0.6288 TR=1.00E-32 CJS=0 VJS=0.75 MJS=0.333 FC=0.8027 Vceo=65 Icrating=100m mfg=NXP)
 .model BD139 NPN (IS=2.385E-13 BF=244.9 NF=1.0 BR=78.11 NR=1.007 ISE=1.047E-14 NE=1.2 ISC=1.931E-11 NC=1.45 VAF=98.5 VAR=7.46 IKF=1.1863 IKR=0.1445 RB=2.14 RBM=0.001 IRB=0.031 RE=0.0832 RC=0.01 CJE=2.9270E-10 VJE=0.67412 MJE=0.3300 FC=0.5 CJC=4.8831E-11 VJC=0.5258 MJC=0.3928 XCJC=0.5287 XTB=1.1398 EG=1.2105 XTI=3.0 Vceo=80 Icrating=3 mfg=Fairchild)
 .model BD140 PNP (IS=2.9537E-13 BF=201.4 NF=1.0 BR=23.765 NR=1.021 ISE=1.8002E-13 NE=1.5 ISC=7.0433p NC=1.38 VAF=137.0 VAR=8.41 IKF=1.0993 IKR=0.10 RB=1.98 RBM=0.01 IRB=0.011 RE=0.1109 RC=0.01 CJE=2.1982E-10 VJE=0.7211 MJE=0.3685 FC=0.5 CJC=6.8291E-11 VJC=0.5499 MJC=0.3668 XCJC=0.5287 XTB=1.4883 EG=1.2343 XTI=3.0 Vceo=80 Icrating=3 mfg=Fairchild)
 .model 2SC5200 NPN (IS=300F BF=100 NF=1 BR=8.025 NR=1.0 ISE=200p IKF=18 NE=2.0 ISC=2.01764E-10 NC=1.5 VAF=400 VAR=100 IKR=1.39087 RB=1.1 RBM=0.00011 IRB=1.51189E-6 RE=0.0032 RC=0.0183 CJE=6.1n VJE=0.711 MJE=0.304 FC=0.5 CJC=380p VJC=0.84 MJC=0.25 TF=5n TR=3.342E-7 XTB=1.72 EG=0.78 XTI=3 mfg=Toshiba)
 .model 2SA1943 PNP (IS=650F BF=100 NF=1 BR=8.805 NR=1.0 ISE=10p IKF=15 NE=2.0 ISC=2.01764E-10 NC=1.5 VAF=600 VAR=100 IKR=1.39087 RB=1.1 RBM=0.00011 IRB=1.51189E-6 RE=0.0061 RC=0.0103 CJE=5.26n VJE=0.711 MJE=0.304 FC=0.5 CJC=750p VJC=0.84 MJC=0.25 TF=5n TR=3.342E-7 XTB=2.28 EG=0.81 XTI=3 mfg=Toshiba)