



***** operating point information tnom= 25.000 temp= 25.000 *****

***** operating point status is all simulation time is 0.

node =voltage node =voltage node =voltage

+0:1 = -3.8055 0:2 = -4.2540 0:3 = -4.4806

+0:4 = 0. 0:5 = 0. 0:6 = -3.8477

+0:7 = -4.5371 0:8 = -2.3335 0:9 = -5.0000

+0:10 = -4.0739 0:11 = -4.7792 0:12 = 625.2743m

+0:13 = 2.3385 0:14 = -5.0000 0:15 = 1.5576

+0:16 = 698.8489m 0:17 = 0. 0:100 = 5.0000

+0:200 = -5.0000

subckt

element 0:vcc 0:vee 0:vin

volts 5.0000 -5.0000 0.

current -716.8478m 716.8478m 0.

power 3.5842 3.5842 0.

**** resistors

subckt

element 0:r1 0:r2 0:r3 0:r4 0:r5 0:r6

r value 8.8000k 1.2000k 18.0000k 1.0000k 50.0000 44.0000k

v drop -8.8055 1.1945 -9.2540 519.3511m 0. 8.8477

current -1.0006m 995.3872u -514.1093u 519.3511u 0. 201.0836u

power 8.8111m 1.1890m 4.7576m 269.7256u 0. 1.7791m

subckt

element	0:r7	0:r8	0:r9	0:r10	0:r12	0:r13
r value	6.0000k	8.0000k	500.0000	100.0000	83.0000k	10.0000k
v drop	1.1523	7.3335	-462.8583m	0.	-9.0739	926.1053m
current	192.0535u	916.6864u	-925.7166u	0.	-109.3240u	92.6105u
power	221.3072u	6.7225m	428.4756u	0.	991.9948u	85.7671u

subckt

element	0:r14	0:r15	0:r16	0:r17	0:r18	0:r19
r value	125.0000	25.0000	2.5000k	8.4000k	8.0000	50.0000
v drop	220.8255m	0.	-4.3747	-2.6615	5.6988	0.
current	1.7666m	0.	-1.7499m	-316.8477u	712.3561m	0.
power	390.1111u	0.	7.6553m	843.2965u	4.0596	0.

**** bipolar junction transistors

subckt

element	0:q1	0:q2	0:q3	0:q4	0:q5
model	0:mynpn	0:mynpn	0:mynpn	0:mynpn	0:mynpn2
ib	5.2419u	9.0301u	16.7135u	316.8477u	32.8449m
ic	514.1093u	916.6864u	1.7499m	32.5281m	679.5112m
vbe	675.1134m	689.4626m	705.2798m	780.8705m	858.7603m
vce	226.6818m	2.2037	5.4044	3.4424	4.3012
vbc	448.4317m	-1.5142	-4.6992	-2.6615	-3.4424
vs	4.2540	2.3335	-625.2743m	-5.0000	-5.0000
power	120.0781u	2.0263m	9.4690m	112.2217m	2.9509
betad	98.0776	101.5142	104.6992	102.6615	20.6885
gm	20.0084m	35.6710m	68.0940m	1.2658	26.4419
rpi	4.9735k	2.8451k	1.5372k	81.0858	782.2169m

rx	0.	0.	0.	0.	0.
ro	123.2550k	110.7404k	59.8318k	3.1561k	152.2306
cpi	0.	0.	0.	0.	0.
cmu	0.	0.	0.	0.	0.
cbx	0.	0.	0.	0.	0.
ccs	0.	0.	0.	0.	0.
betaac	99.5112	101.4885	104.6735	102.6358	20.6833
ft	3.184e+12	5.677e+12	1.083e+13	2.014e+14	4.208e+15

freq	gain
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10.00000k	23.0621k
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100.00000k	23.0623k
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y

x

freq	rin
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10.00000k	48.1999
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100.00000k	48.1999
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total harmonic distortion = 11.1407 percent