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**** 05/23/20 11:38:39 ***** PSpice 9.2 (Mar 2000) ***** ID# 1 *****

** Profile: "SCHEMATIC1-analog ct_ha" [d:\145730\proposal\analog\analog circuit ha-schematic1-analog ct_ha.sim]

**** CIRCUIT DESCRIPTION

** Creating circuit file "analog circuit ha-schematic1-analog ct_ha.sim.cir"
 ** WARNING: THIS AUTOMATICALLY GENERATED FILE MAY BE OVERWRITTEN BY SUBSEQUENT SIMULATIONS

*Libraries:

* Local Libraries :

* From [PSPICE NETLIST] section of C:\Program Files\Orcad\PSpice\PSpice.ini file:

.lib "nom.lib"

*Analysis directives:

.TRAN 0 0.1 0

.PROBE V(*) I(*) W(*) D(*) NOISE(*)

.INC ".\analog circuit ha-SCHEMATIC1.net"

**** INCLUDING "analog circuit ha-SCHEMATIC1.net" ****

* source ANALOG CIRCUIT HA

X_VR2 0 N01763 N01859 SCHEMATIC1_VR2

R_R1 N00617 N00634 10K

C_C1 N00617 N00779 0.1u

R_R2 N00779 N00806 10K

R_Microphone 0 N00617 1k

R_R3 N00634 N00863 15K

C_C3 N01131 N02282 0.1u

R_R4 N00863 0 15K

X_Speaker N01859 0 bulb PARAMS: Vnom=120V Pnom=100W HCTau=4.082

R_R5 N01105 N00806 100K

R_R6 N00705 N00634 680

X_VR1 N01131 N01105 N01131 SCHEMATIC1_VR1

V_V1 N01933 0 9V

R_R7 N01268 N02282 10K

C_C2 N00634 0 100u

R_R8 N01485 N00705 15K

C_C4 N00705 0 100u

R_R9 0 N01485 15K

X_IC1 N00806 N00863 N00634 0 N01131 OP-176/AD

C_C5 N01730 N01763 22u

R_R10 N01268 N01730 47K

X_IC2 N01268 N01485 N00705 0 N01730 OP-176/AD

X_U4 N01933 N00705 Sw_tClose PARAMS: tClose=0 ttran=1u Rclosed=0.01

+ Ropen=1Meg

.subckt SCHEMATIC1_VR2 1 2 t

RT_VR2 1 t {(1K*(1-0.5))+.001}

RB_VR2 t 2 {(1K*0.5)+.001}

.ends SCHEMATIC1_VR2

```
.subckt SCHEMATIC1_VR1 1 2 t
RT_VR1      1 t {(470K*(1-0.5))+.001}
RB_VR1      t 2 {(470K*0.5)+.001}
.ends SCHEMATIC1_VR1
```

```
**** RESUMING "analog circuit ha-schematic1-analog ct_ha.sim.cir" ****
.END
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**** Diode MODEL PARAMETERS
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*****
```

	X_IC1.DX	X_IC1.DY	X_IC1.DZ	X_IC1.DEN
IS	1.000000E-12	1.000000E-15	1.000000E-15	1.000000E-12
BV		50	7	
RS				4.350000E+03
KF				1.950000E-15

	X_IC1.DIN	X_IC2.DX	X_IC2.DY	X_IC2.DZ
IS	1.000000E-12	1.000000E-12	1.000000E-15	1.000000E-15
BV			50	7
RS	268			
KF	1.080000E-15			

	X_IC2.DEN	X_IC2.DIN
IS	1.000000E-12	1.000000E-12
RS	4.350000E+03	268
KF	1.950000E-15	1.080000E-15

```
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**** BJT MODEL PARAMETERS
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*****
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	X_IC1.QX	X_IC2.QX
	PNP	PNP
IS	100.000000E-18	100.000000E-18
BF	500.000000E+03	500.000000E+03
NF	1	1

BR	1	1
NR	1	1
CN	2.2	2.2
D	.52	.52

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**** Voltage Controlled Switch MODEL PARAMETERS

	X_U4.Smod
RON	.01
ROFF	1.000000E+06
VON	1
VOFF	0

ERROR -- Convergence problem in transient bias point calculation

Last node voltages tried were:

NODE	VOLTAGE	NODE	VOLTAGE	NODE	VOLTAGE	NODE	VOLTAGE
(N00617)	-.0794	(N00634)	-.8735	(N00705)	-.8901	(N00779)	-.1842
(N00806)	-.1842	(N00863)	-.4245	(N01105)	-.1842	(N01131)	-.1840
(N01268)	-.1875	(N01485)	-.4301	(N01730)	-.1875	(N01763)	0.0000
(N01859)	0.0000	(N01933)	6.5691	(N02282)	-.1875	(X_U4.3)	0.0000
(X_IC1.3)	-.1842			(X_IC1.4)	.6043		
(X_IC1.5)	.1814			(X_IC1.6)	153.5E-06		
(X_IC1.7)	.4607			(X_IC1.8)	.6042		
(X_IC1.9)	-.0980			(X_IC2.3)	-.1875		
(X_IC2.4)	.5988			(X_IC2.5)	.1814		
(X_IC2.6)	132.2E-06			(X_IC2.7)	.4551		
(X_IC2.8)	.5987			(X_IC2.9)	-.0996		
(X_IC1.10)	726.4E-18			(X_IC1.11)	-1.4598		
(X_IC1.12)	1.4598			(X_IC1.13)	-1.914E-15		

(X_IC1.14)	-1.4598	(X_IC1.15)	1.4598
(X_IC1.16)	-1.914E-15	(X_IC1.17)	-1.4598
(X_IC1.18)	-.3188	(X_IC1.19)	-1.6230
(X_IC1.20)	.9854	(X_IC1.21)	-.2327
(X_IC1.22)	-.2327	(X_IC1.23)	-.1698
(X_IC1.24)	-.1240	(X_IC1.25)	-.2661
(X_IC1.26)	-.3188	(X_IC1.27)	-.0905
(X_IC1.28)	-.4368	(X_IC1.29)	-.1840
(X_IC1.30)	1.0860	(X_IC1.31)	-1.4540
(X_IC1.32)	-.7048	(X_IC1.33)	50.4070
(X_IC1.35)	1.4598	(X_IC1.36)	-.2828
(X_IC1.51)	0.0000	(X_IC1.97)	-.6376
(X_IC1.98)	-.3188	(X_IC2.10)	726.4E-18
(X_IC2.11)	-1.4598	(X_IC2.12)	1.4598
(X_IC2.13)	-1.914E-15	(X_IC2.14)	-1.4598
(X_IC2.15)	1.4598	(X_IC2.16)	-1.914E-15
(X_IC2.17)	-1.4598	(X_IC2.18)	-.3248
(X_IC2.19)	-1.6350	(X_IC2.20)	.9854
(X_IC2.21)	-.2371	(X_IC2.22)	-.2371
(X_IC2.23)	-.1731	(X_IC2.24)	-.1263
(X_IC2.25)	-.2663	(X_IC2.26)	-.3248
(X_IC2.27)	-.0922	(X_IC2.28)	-.4450
(X_IC2.29)	-.1875	(X_IC2.30)	1.0825
(X_IC2.31)	-1.4575	(X_IC2.32)	-.7053
(X_IC2.33)	50.4080	(X_IC2.35)	1.4598
(X_IC2.36)	-.2867	(X_IC2.51)	0.0000
(X_IC2.97)	-.6497	(X_IC2.98)	-.3248
(X_Speaker.c)	0.0000	(X_Speaker.res)	.0438
(X_Speaker.temp)	218.9700	(X_Speaker.ambnt)	218.9700

These supply currents failed to converge:

I(X_IC2.EP)	=	10.00GA	\	10.00GA
I(X_IC2.EM)	=	-10.00GA	\	-10.00GA
I(X_IC2.V2)	=	-10.00GA	\	-10.00GA
I(X_IC2.V3)	=	-10.00GA	\	-10.00GA