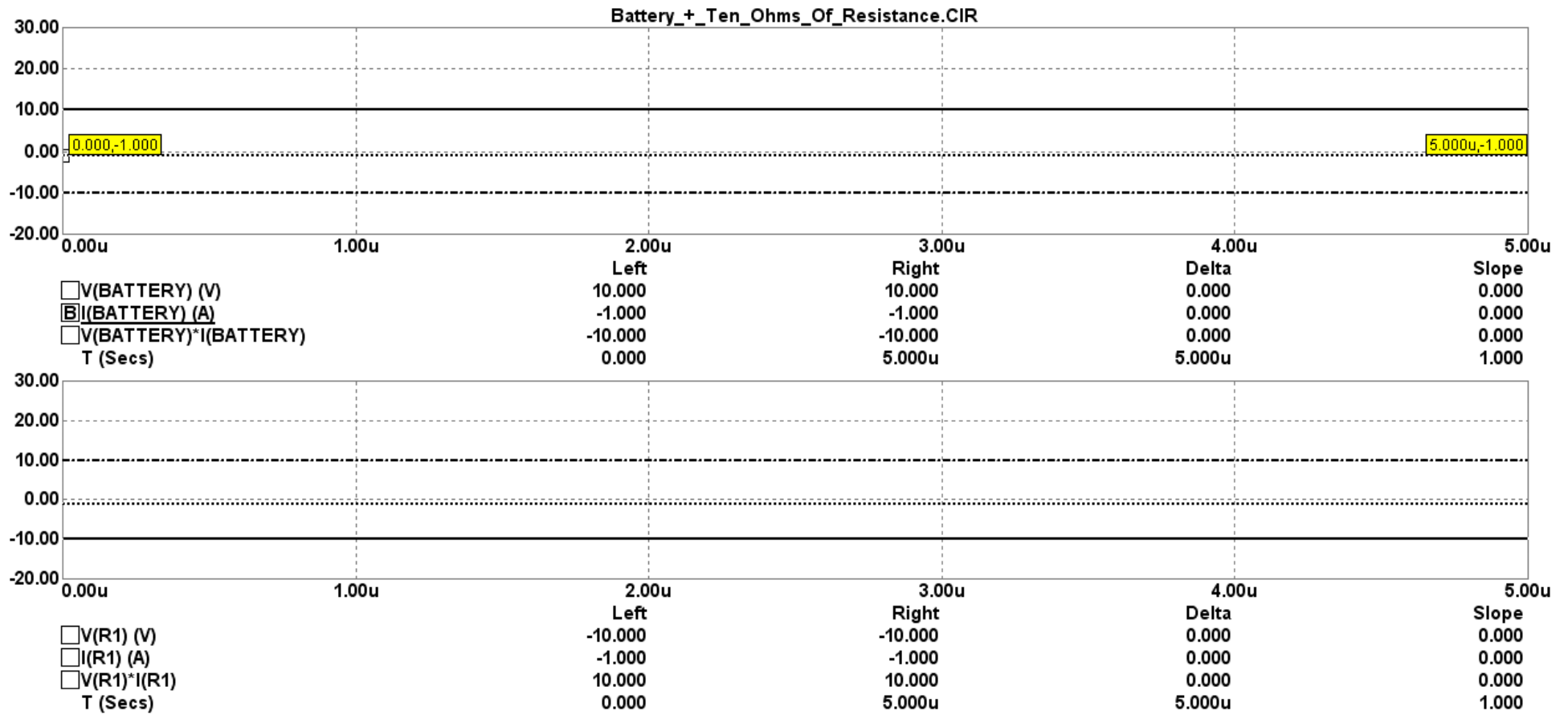


FIG. 1



**FIG. 2**

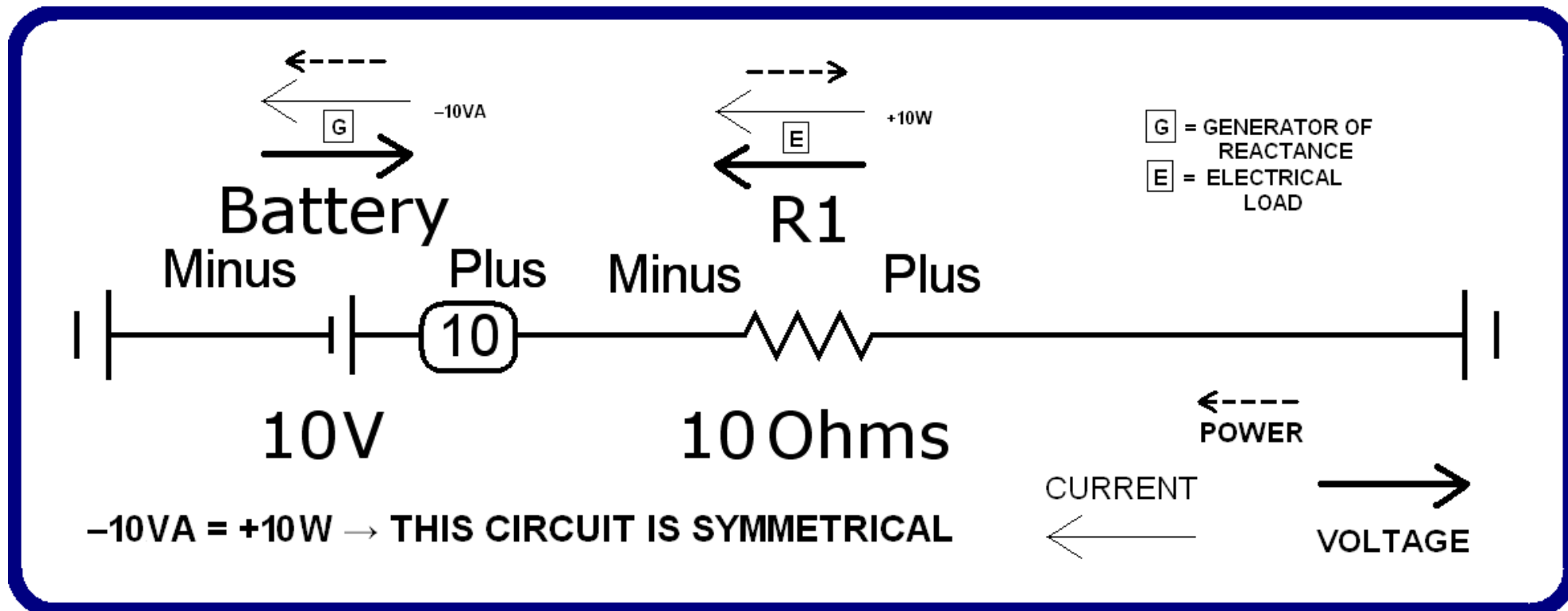


FIG. 3

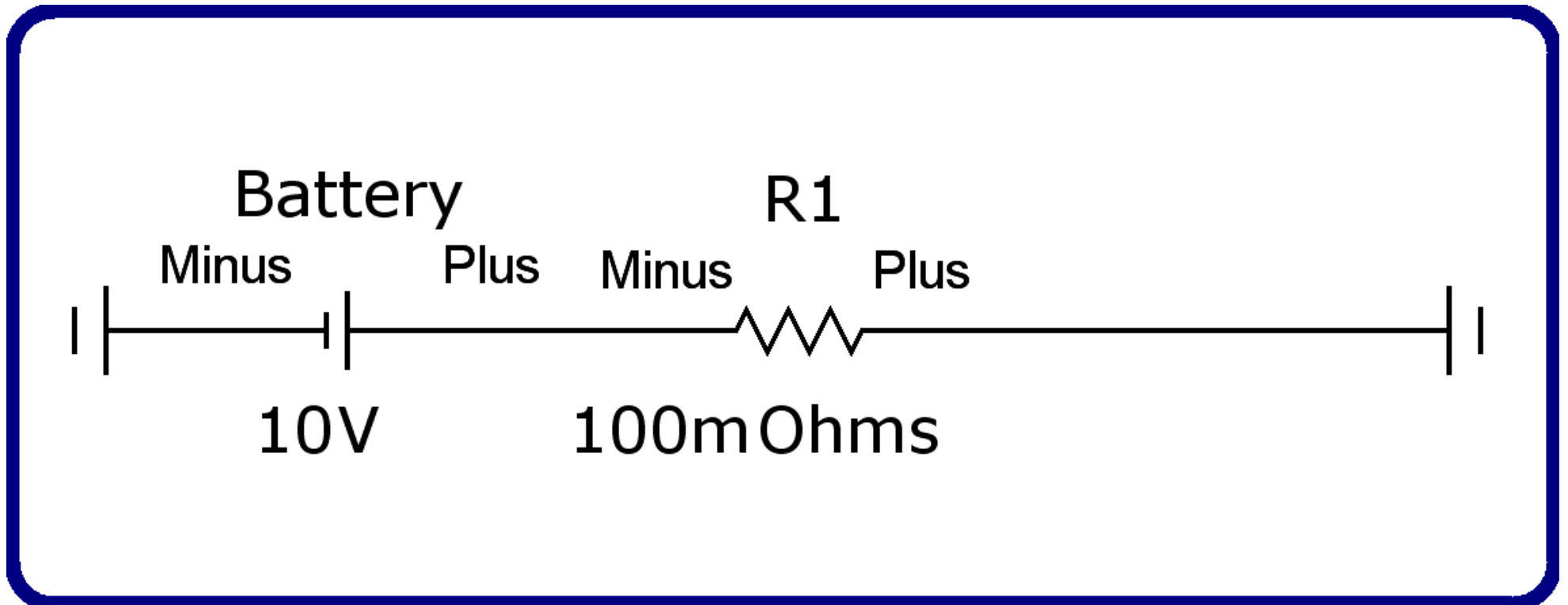
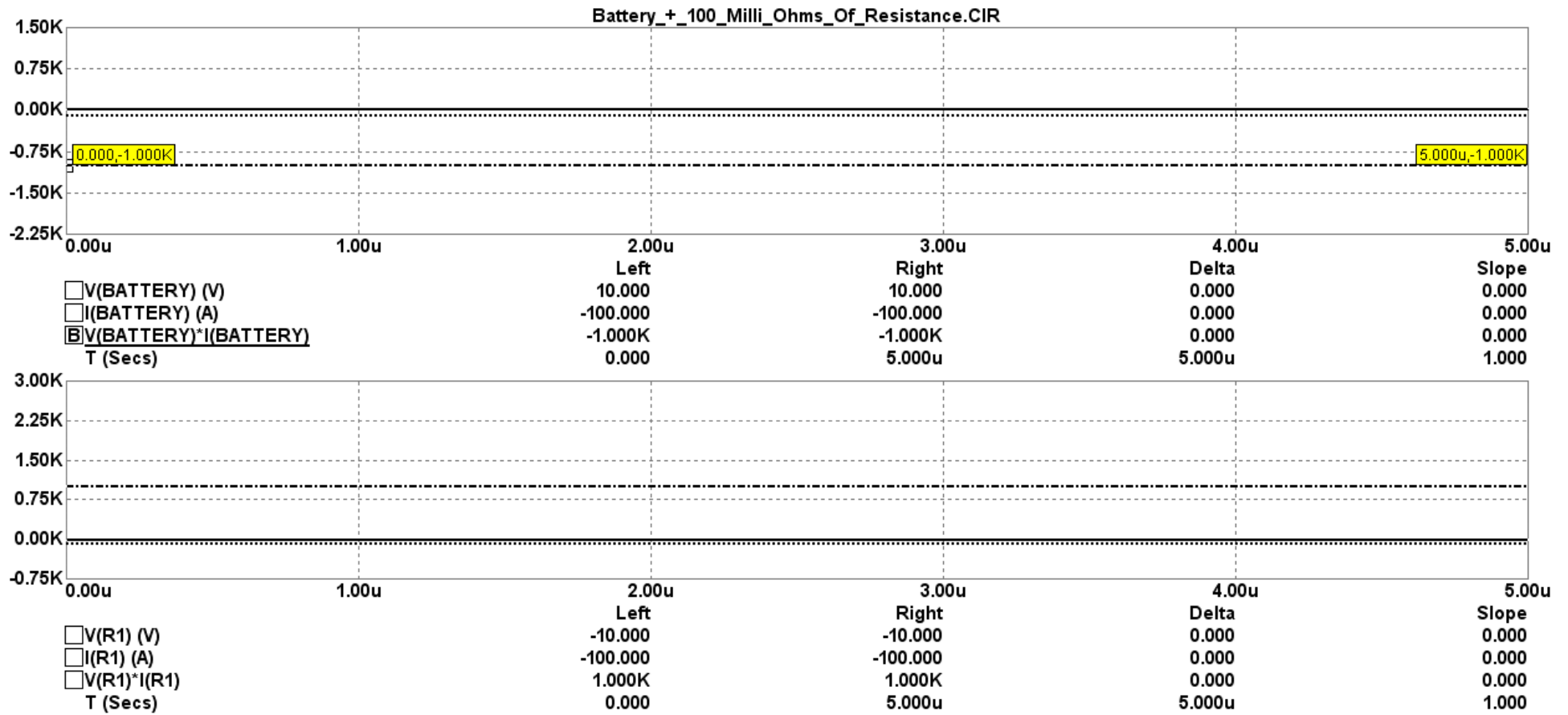


FIG. 4



**FIG. 5**

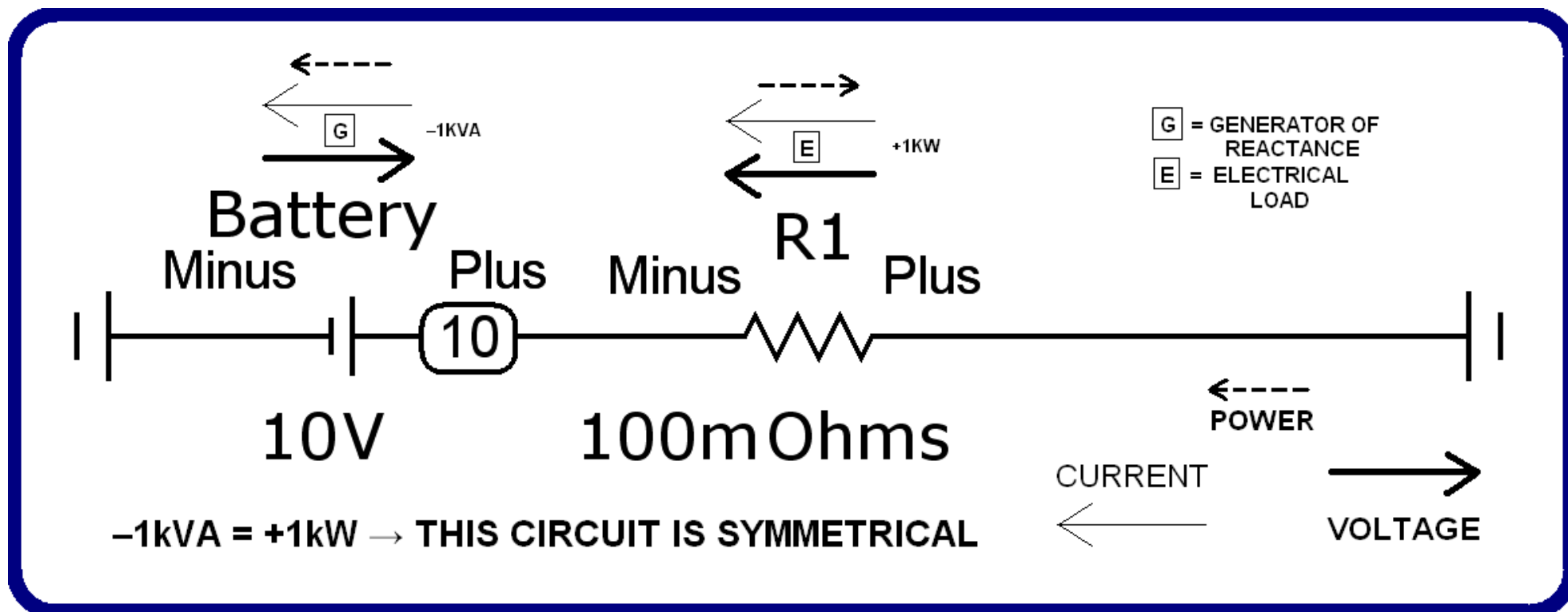


FIG. 6

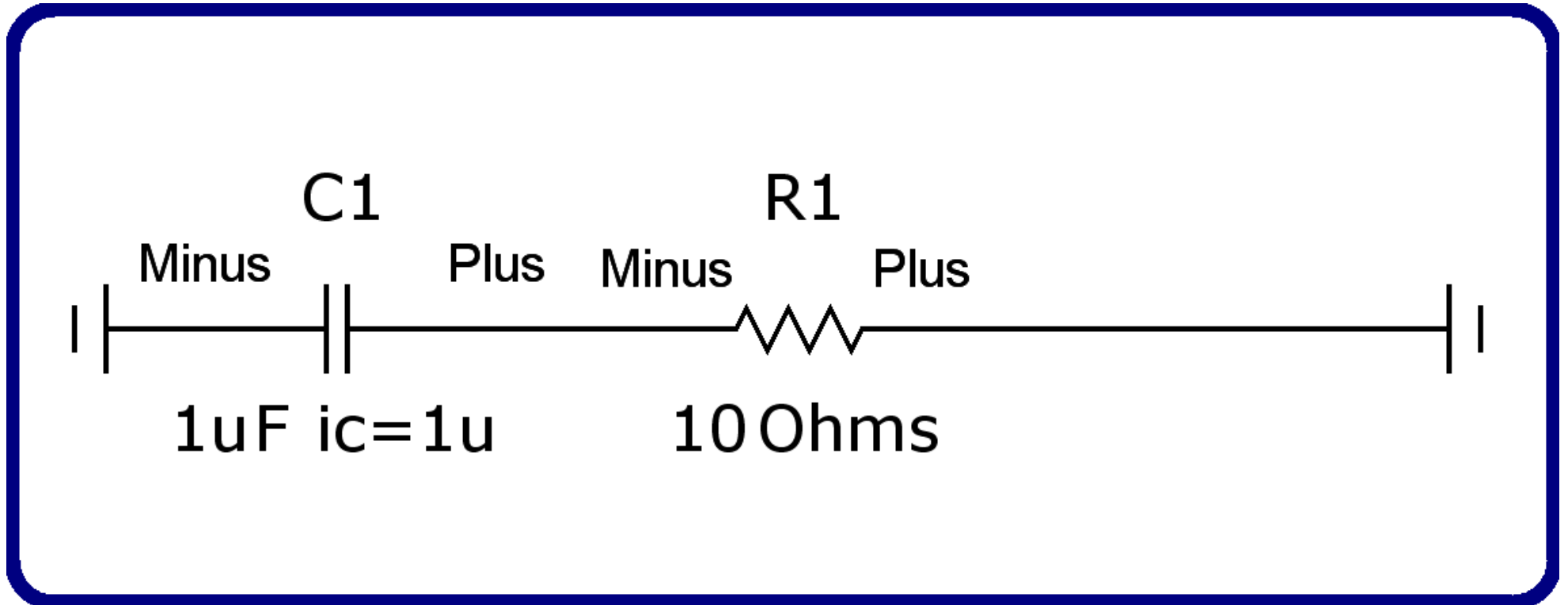
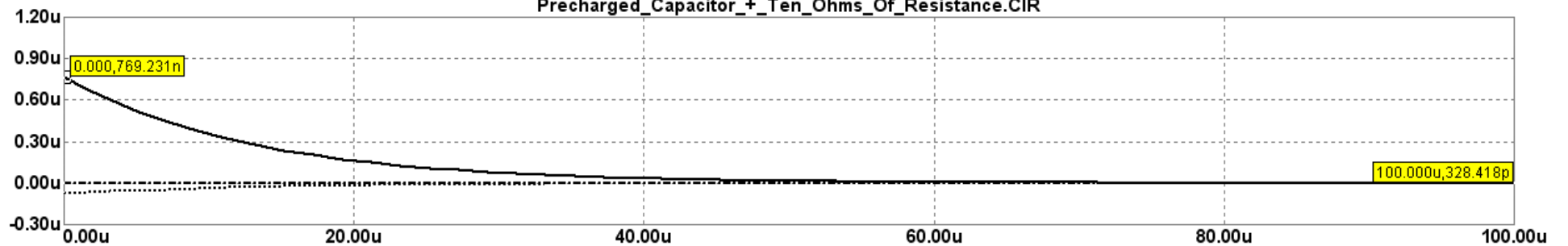
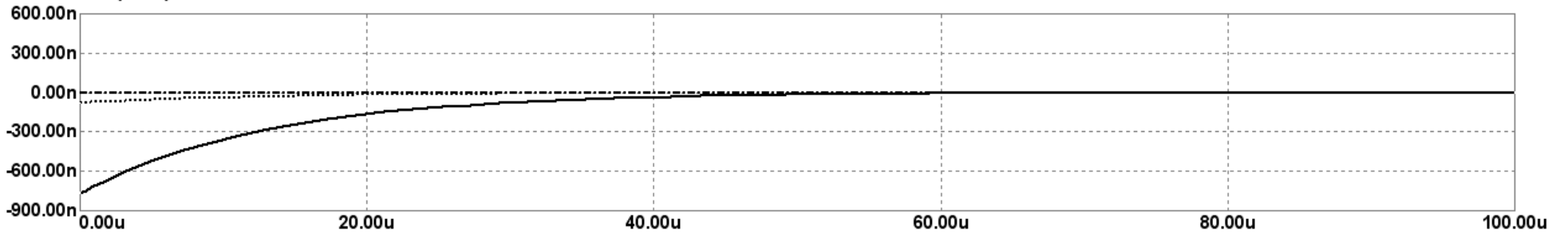


FIG. 7

Precharged\_Capacitor+\_Ten\_Ohms\_Of\_Resistance.CIR



	Left	Right	Delta	Slope
V(C1) (V)	769.231n	328.418p	-768.902n	-7.689m
I(C1) (A)	-76.923n	-32.842p	76.890n	768.902u
V(C1)*I(C1)	-59.172f	-1.079E-20	59.172f	591.716p
T (Secs)	0.000	100.000u	100.000u	1.000



	Left	Right	Delta	Slope
V(R1) (V)	-769.231n	-328.418p	768.902n	7.689m
I(R1) (A)	-76.923n	-32.842p	76.890n	768.902u
V(R1)*I(R1)	59.172f	1.079E-20	-59.172f	-591.716p
T (Secs)	0.000	100.000u	100.000u	1.000

FIG. 8

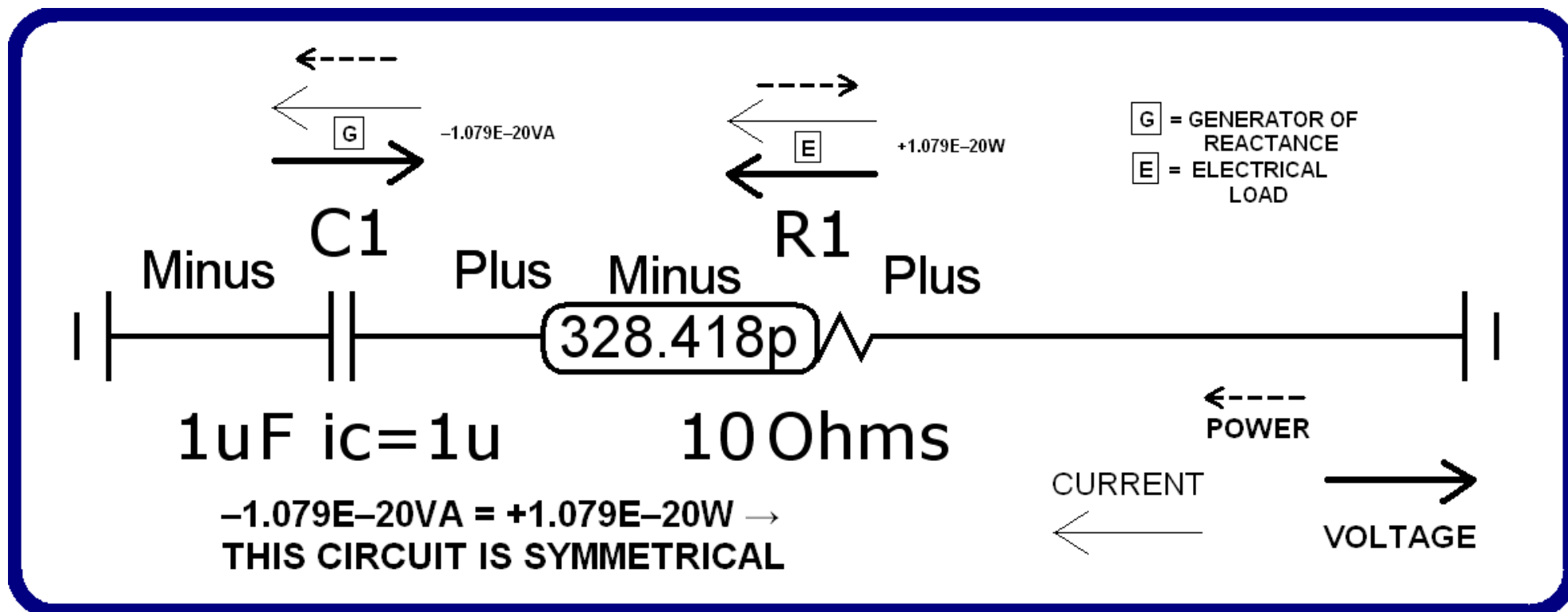


FIG. 9

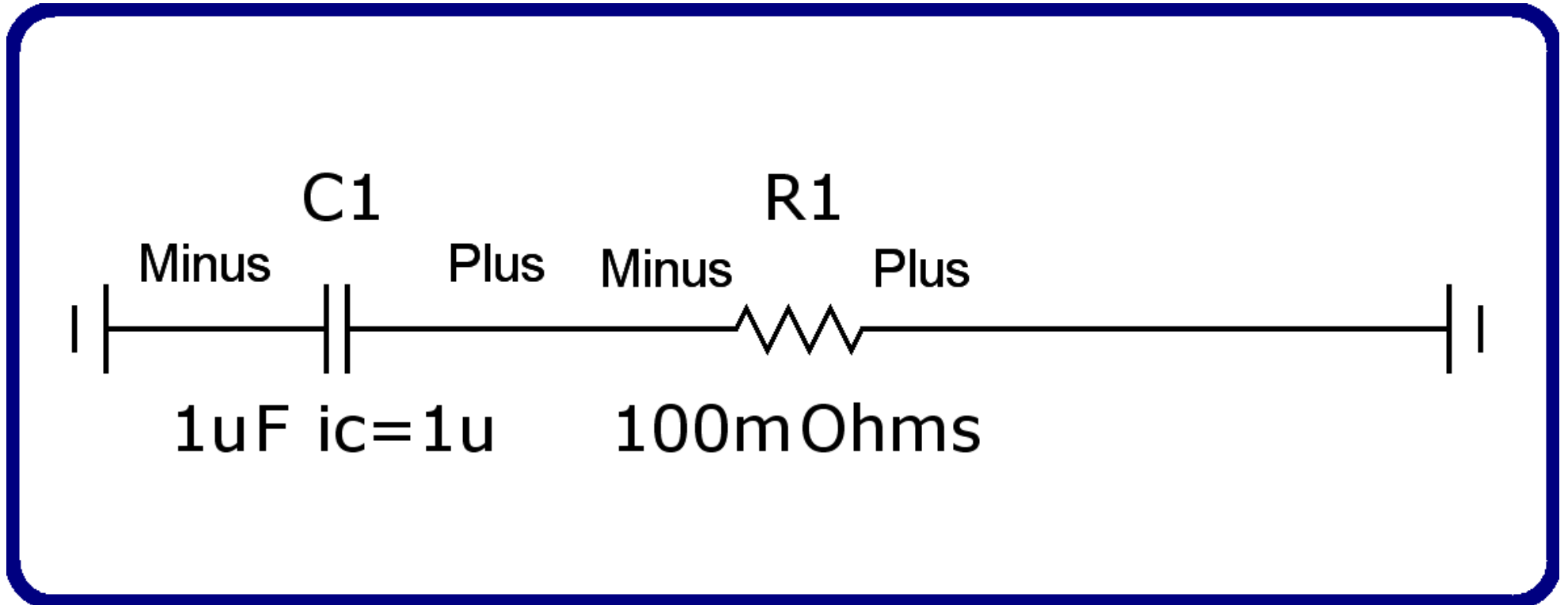


FIG. 10

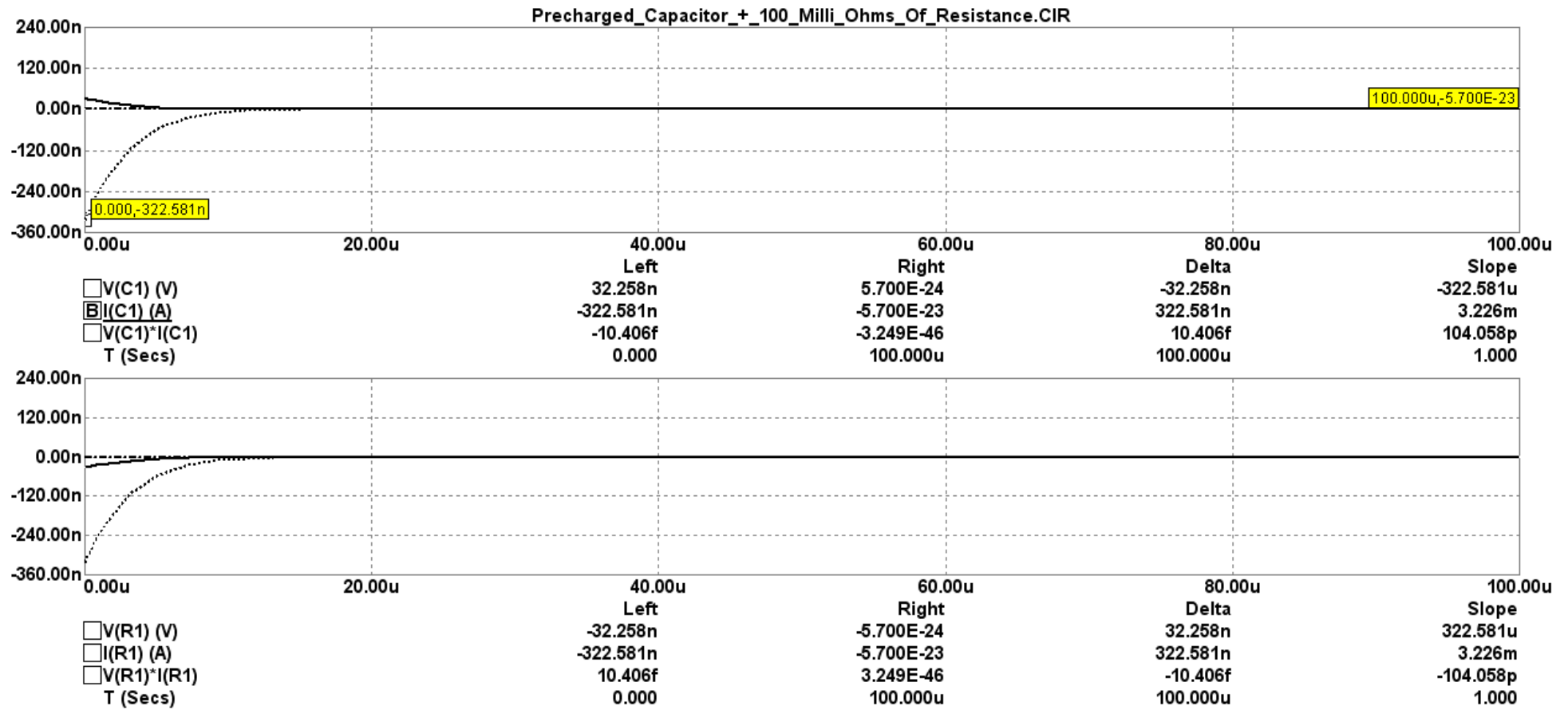


FIG. 11

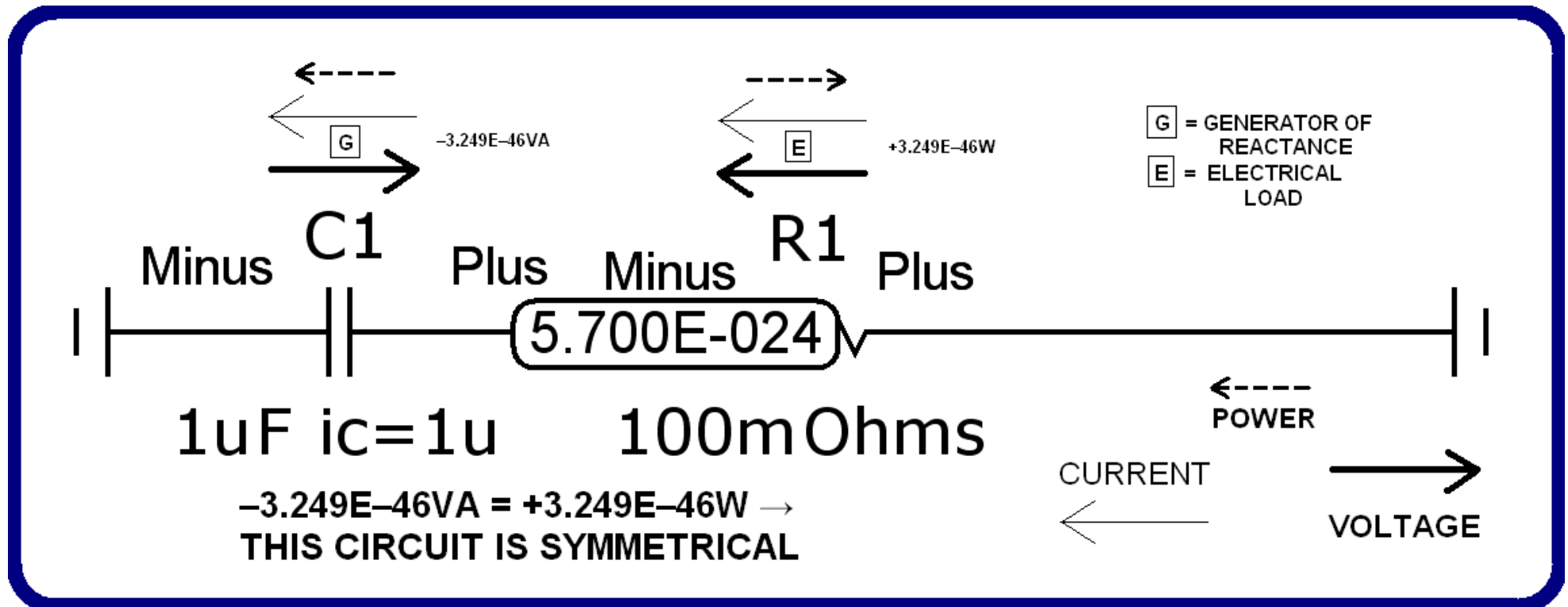


FIG. 12

## NEON BULB, SPARK GAP MACRO

.PARAMETERS(VTHRES=90, VARC=10, ISUS=500M,RNEG=-1,LPL=130N,RPL=2K,CPAR=1P,CARC=3P)

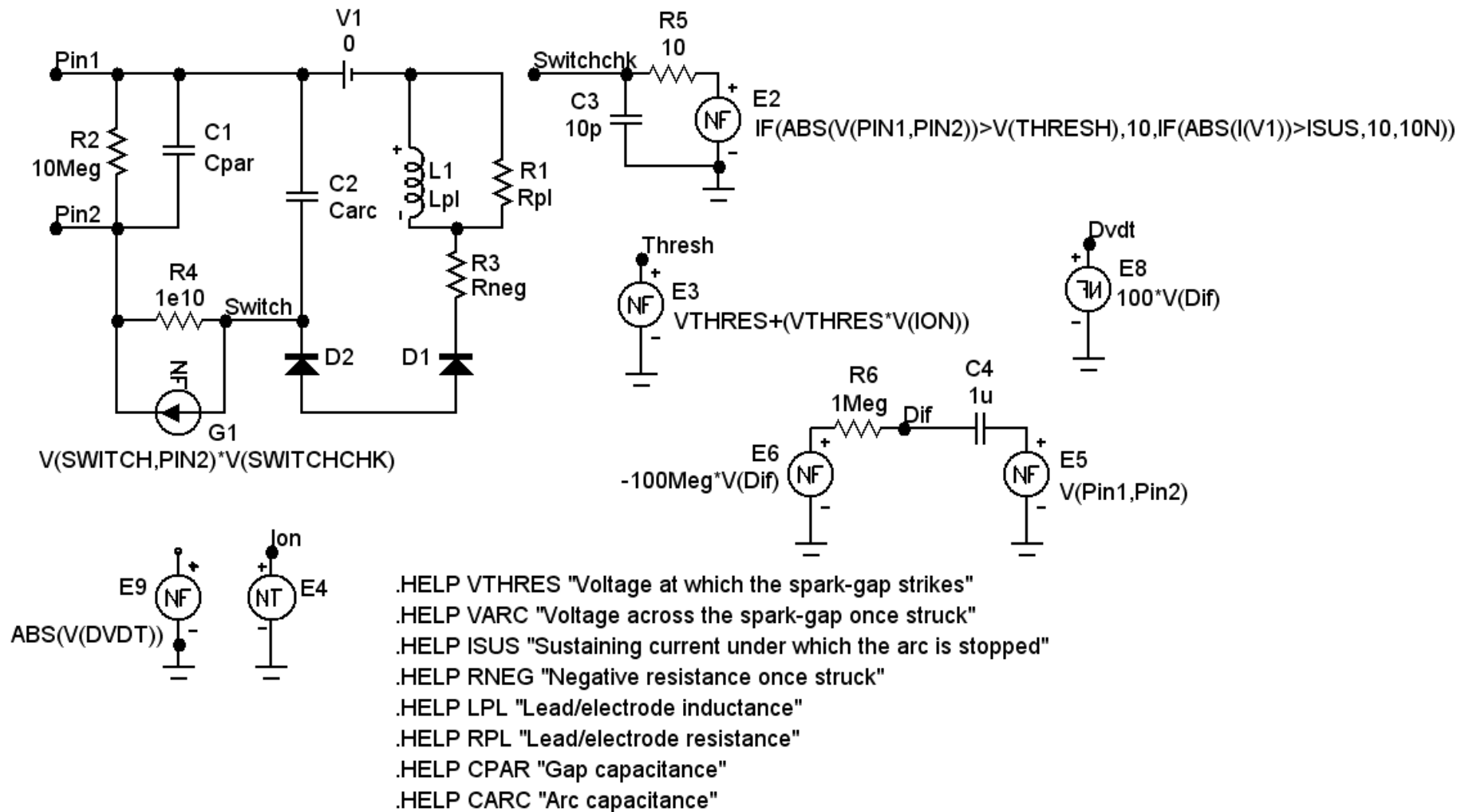


FIG. 13

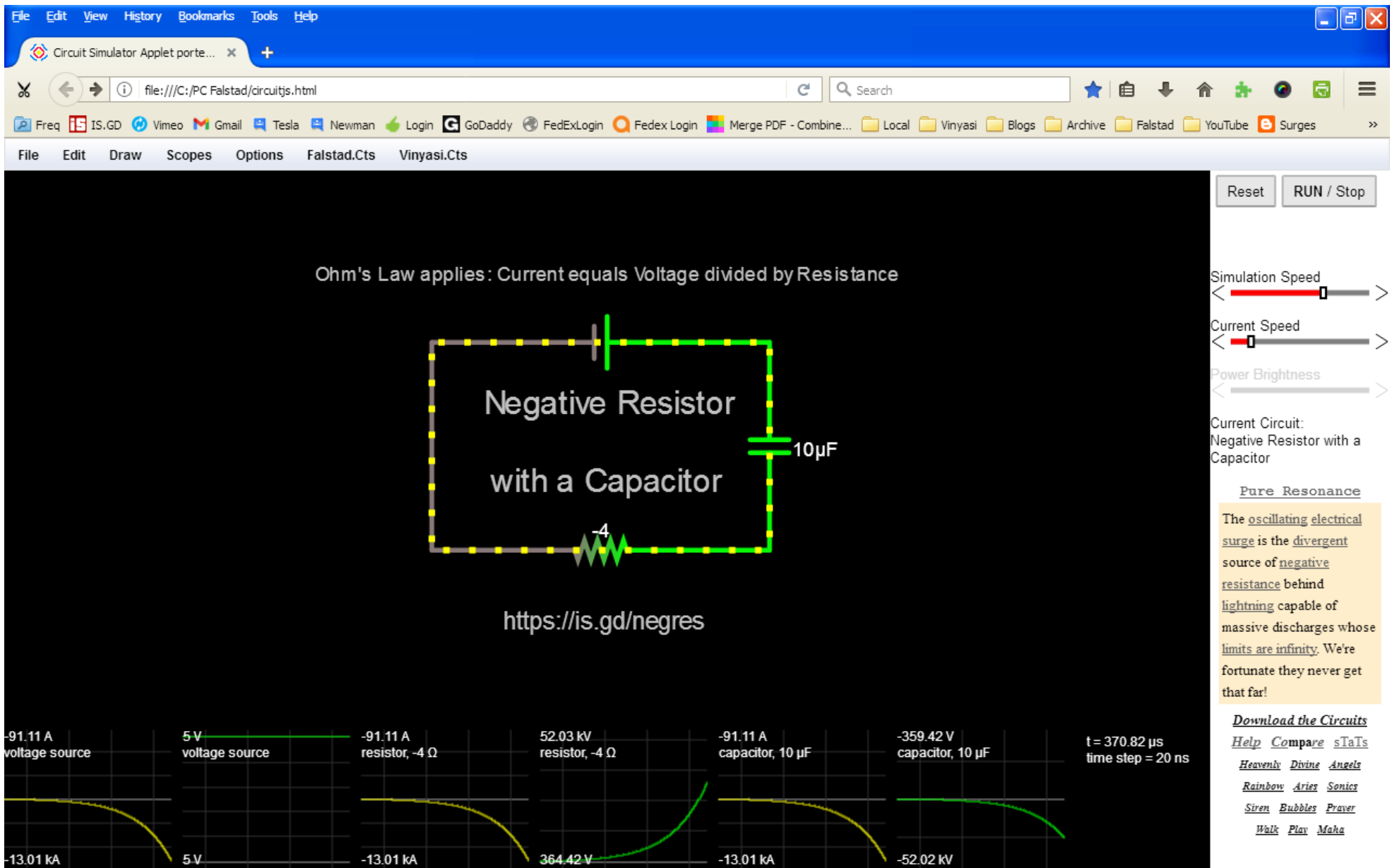


FIG. 14

### NEON BULB, SPARK GAP MACRO

.PARAMETERS(VTHRES=90, VARC=10, ISUS=500M,RNEG=-1,LPL=130N,RPL=2K,CPAR=1P,CARC=3P)

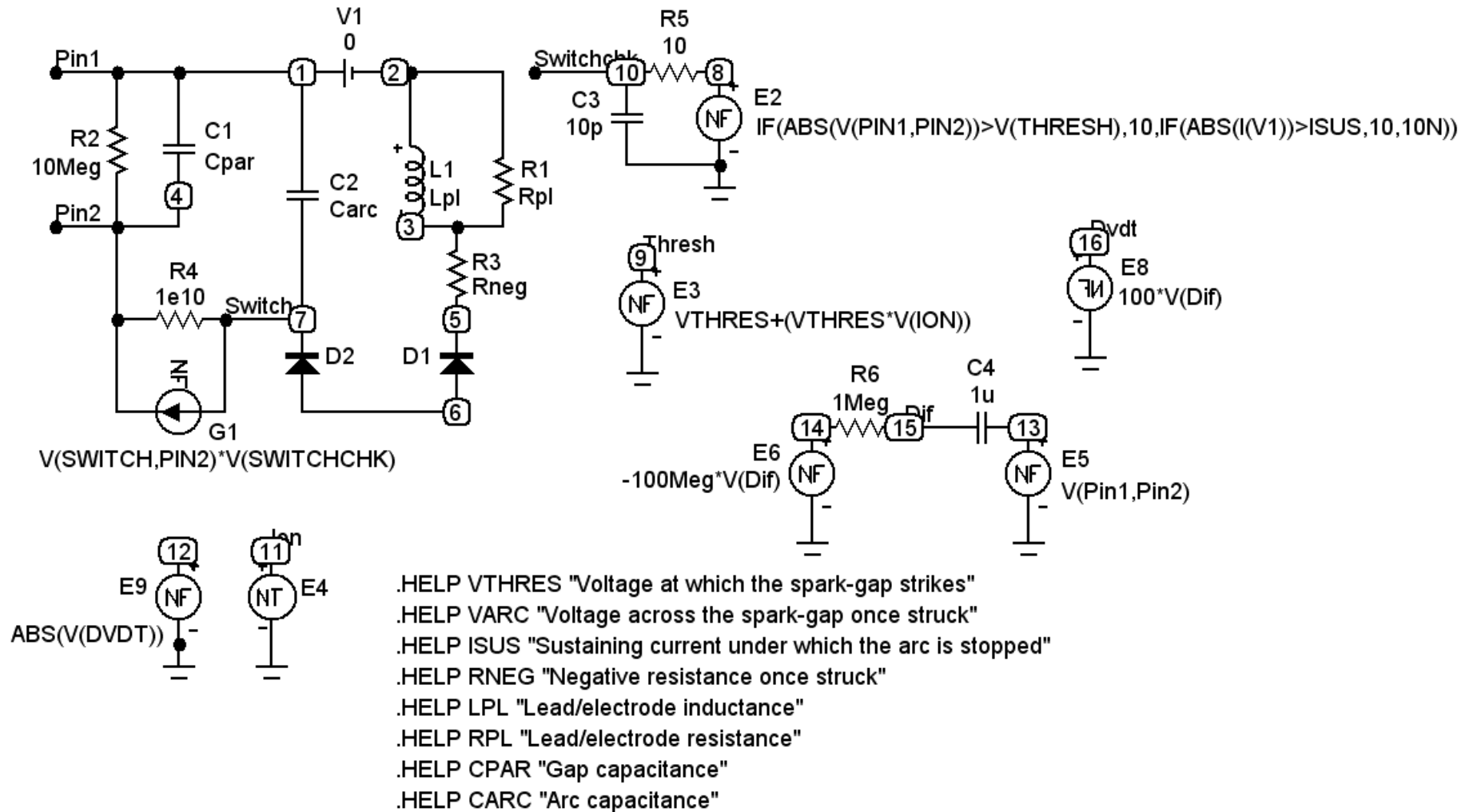
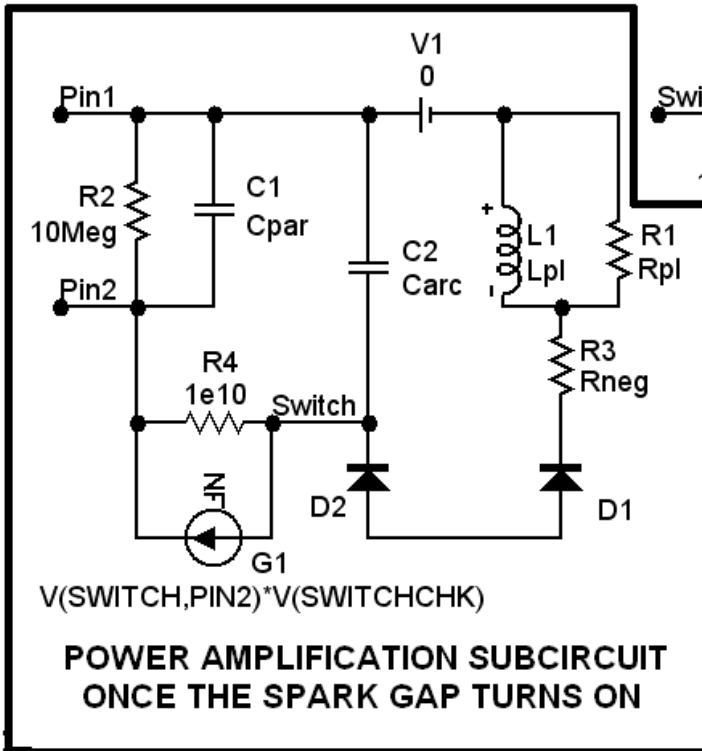


FIG. 15

# SPARKGAP MACRO

.PARAMETERS(GRES=1,VTHRES=90,VARC=10,ISUS=500M,RNEG=-1,LPL=130N,RPL=2K,CPAR=1P,CARC=3P)



**EVERYTHING ELSE OUTSIDE  
OF THIS SUBCIRCUIT, ABOVE,  
MERELY DETERMINES WHEN  
TO TURN ON THIS SPARK GAP  
BEYOND ITS THRESHOLD OF  
RESISTANCE.**

- .HELP GRES "Resistance of ground connection"
- .HELP VTHRES "Voltage at which the spark-gap strikes"
- .HELP VARC "Voltage across the spark-gap once struck"
- .HELP ISUS "Sustaining current under which the arc is stopped"
- .HELP RNEG "Negative resistance once struck"
- .HELP LPL "Lead/electrode inductance"
- .HELP RPL "Lead/electrode resistance"
- .HELP CPAR "Gap capacitance"
- .HELP CARC "Arc capacitance"

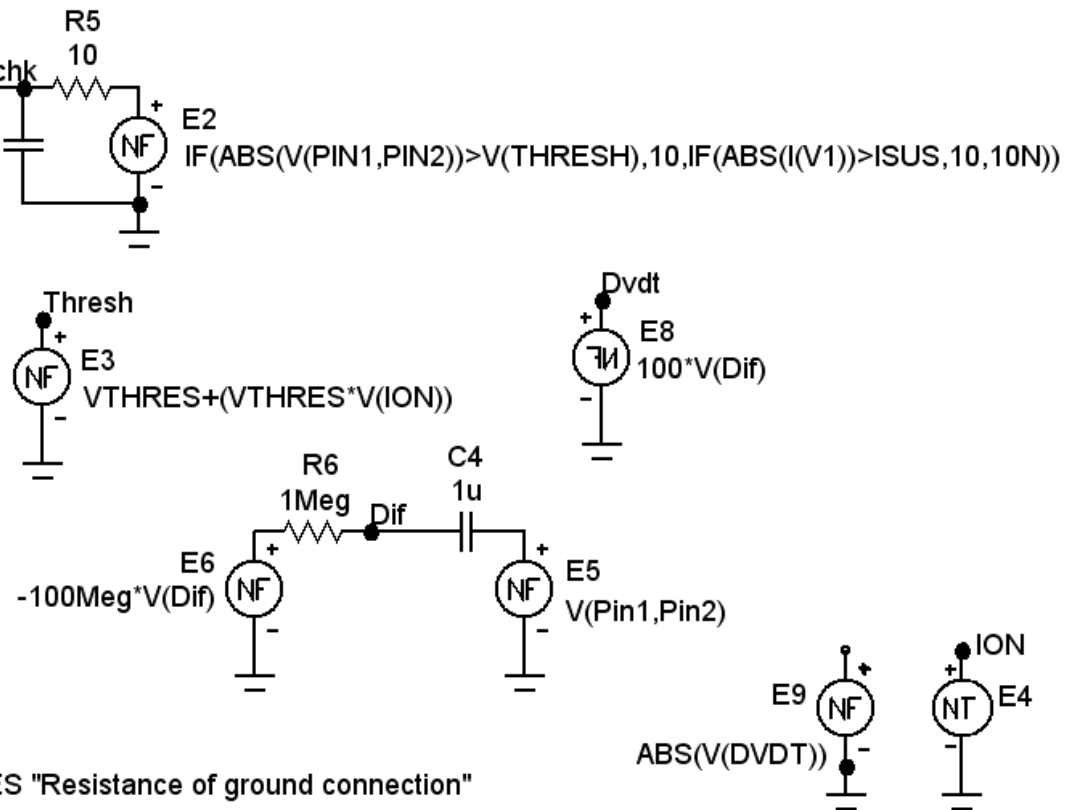
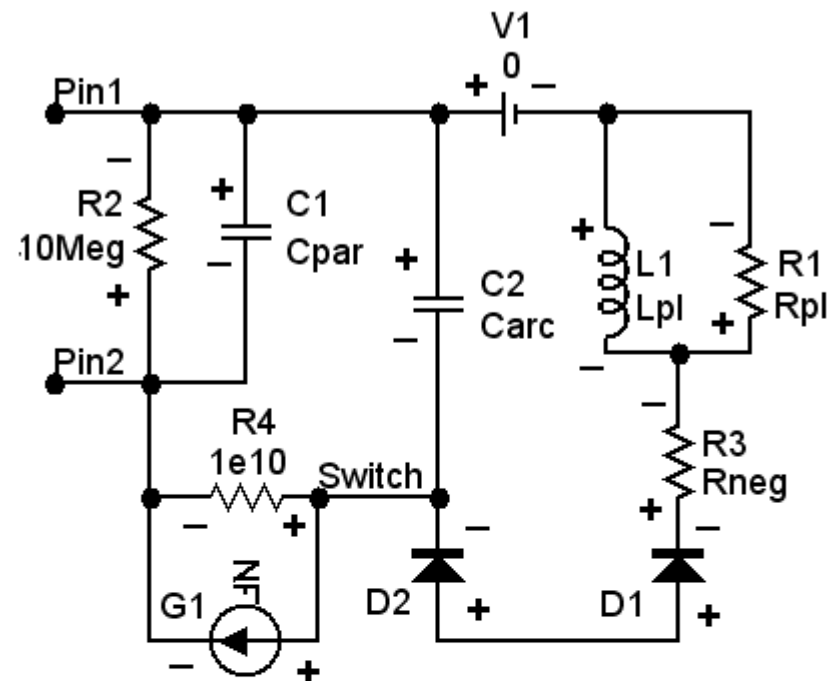


FIG. 16



$$V(\text{SWITCH}, \text{PIN2}) * V(\text{SWITCHCHK})$$

**Each component is labeled with either a positive or negative polarity to reference the polarity of its output. So, a negative current is coming out of a negative label while a positive current is located at a positive label.**

**FIG. 17**

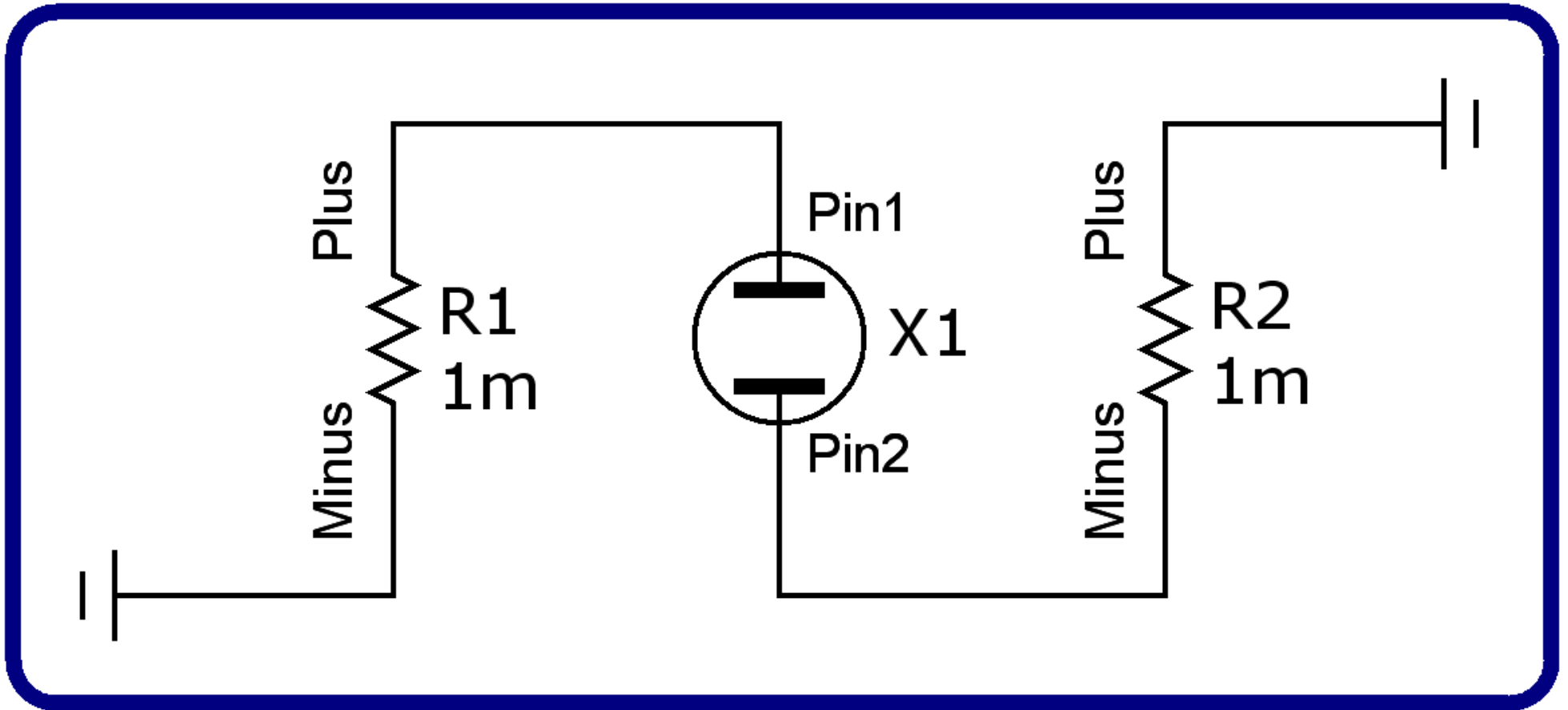


FIG. 18

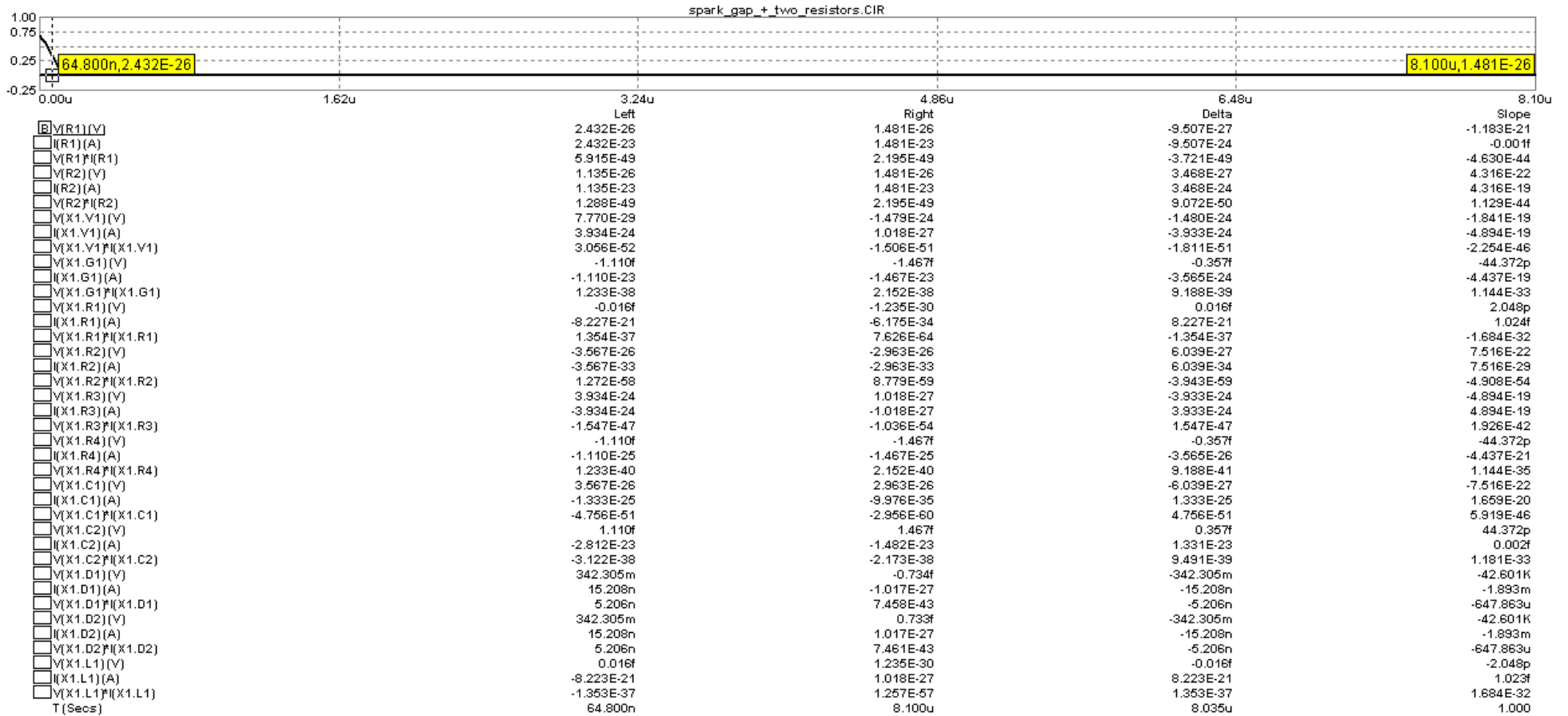


FIG. 19

## NEON BULB, SPARK GAP MACRO

.PARAMETERS(VTHRES=90, VARC=10, ISUS=500M,RNEG=-1,LPL=130N,RPL=2K,CPAR=1P,CARC=3P)

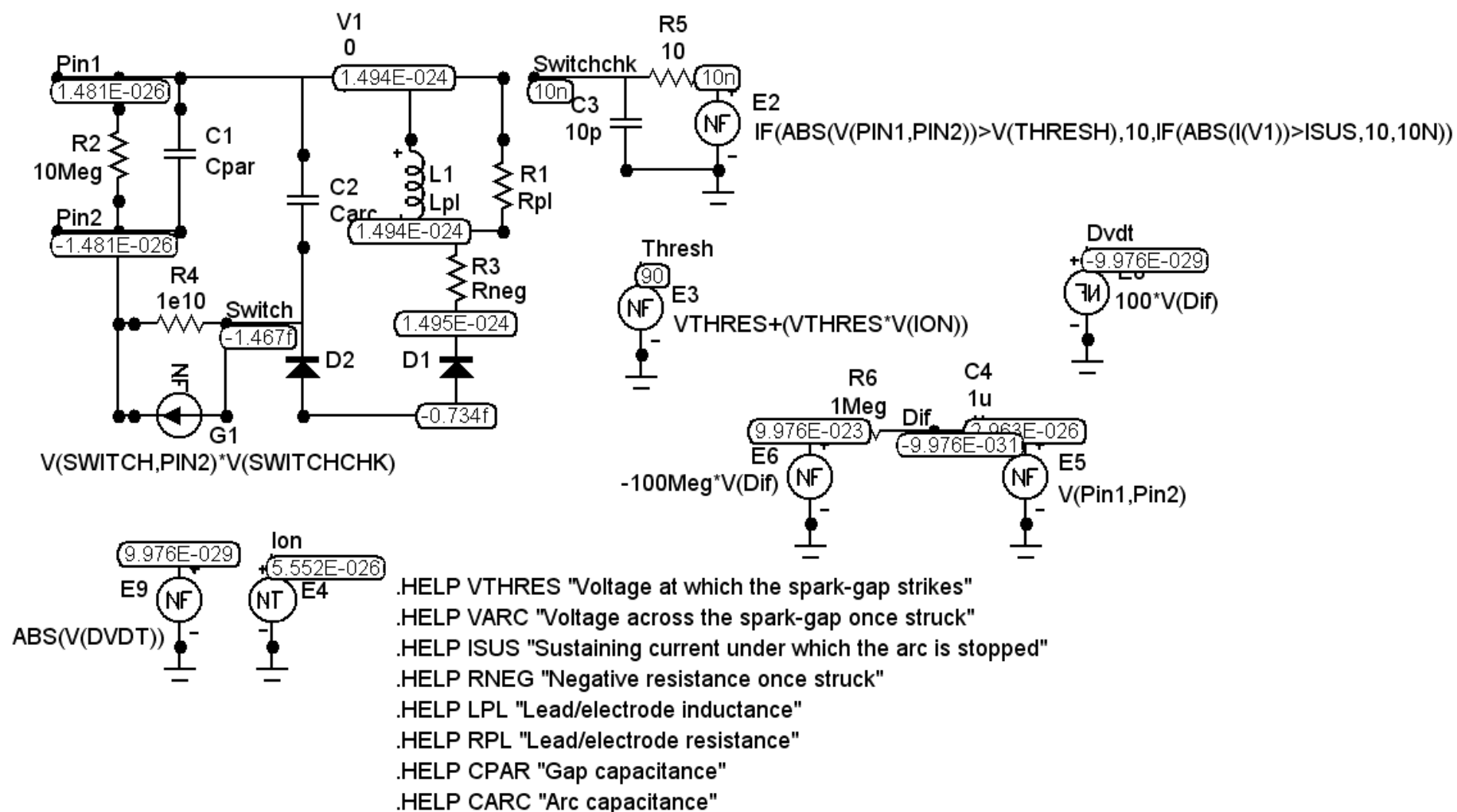
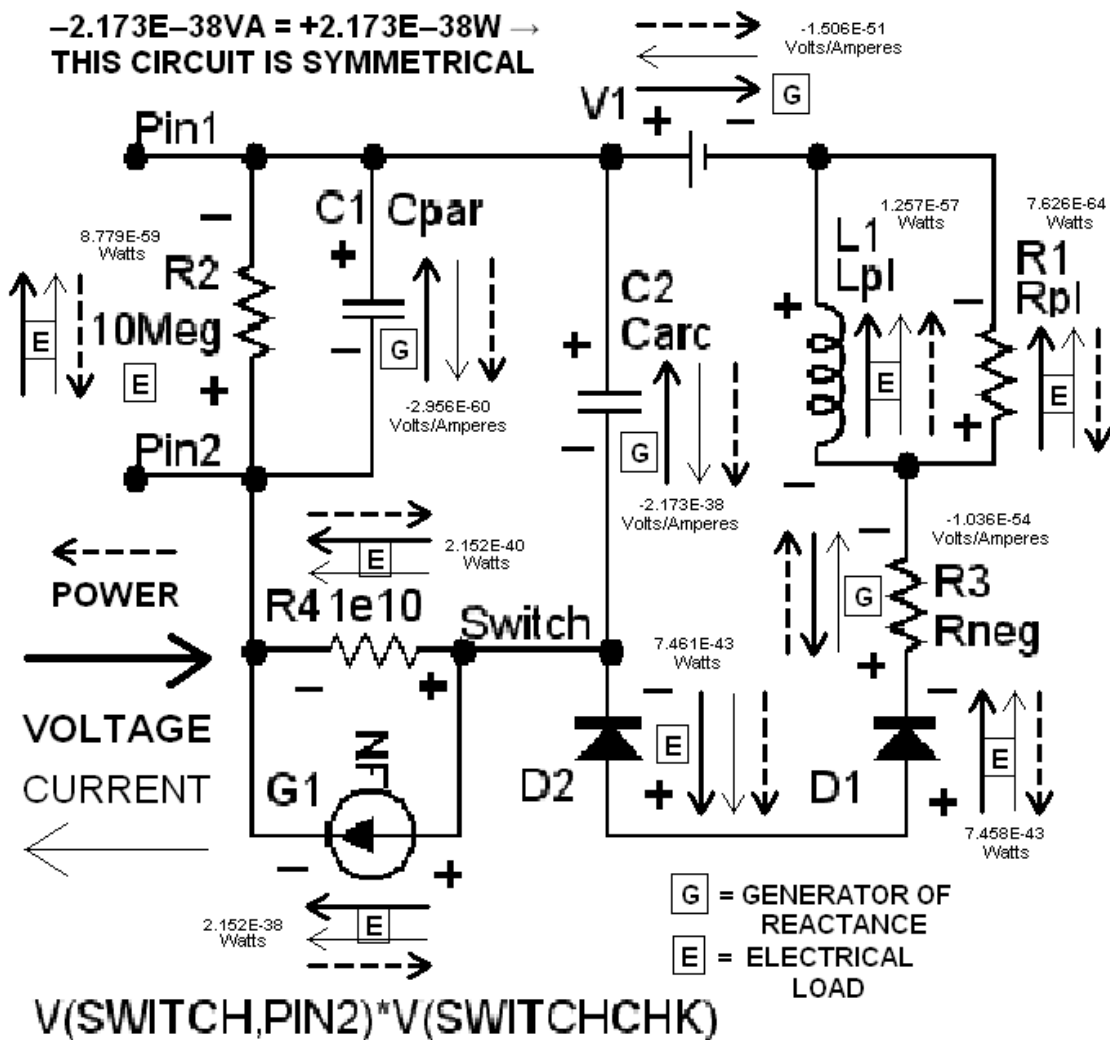


FIG. 20



SUB-TOTALS		RAW DATA	
<b>G</b>	-2.173E-38	1.481E-26	<input type="checkbox"/> V(R1)(V)
Volts/Amperes	-1.506E-51	1.481E-23	<input type="checkbox"/> I(R1)(A)
	-1.036E-54	2.195E-49	<input type="checkbox"/> V(R1)*I(R1)
	-2.956E-60	1.481E-26	<input type="checkbox"/> V(R2)(V)
	-2.173E-38	1.481E-23	<input type="checkbox"/> I(R2)(A)
		2.195E-49	<input type="checkbox"/> V(R2)*I(R2)
		-1.479E-24	<input type="checkbox"/> V(X1.V1)(V)
		1.018E-27	<input type="checkbox"/> I(X1.V1)(A)
		-1.506E-51	<input type="checkbox"/> V(X1.V1)*I(X1.V1)
		-1.467E-01	<input type="checkbox"/> V(X1.G1)(V)
		-1.467E-23	<input type="checkbox"/> I(X1.G1)(A)
		2.152E-38	<input type="checkbox"/> V(X1.G1)*I(X1.G1)
		-1.235E-30	<input type="checkbox"/> V(X1.R1)(V)
		-6.175E-34	<input type="checkbox"/> I(X1.R1)(A)
		7.626E-64	<input type="checkbox"/> V(X1.R1)*I(X1.R1)
		-2.963E-26	<input type="checkbox"/> V(X1.R2)(V)
		-2.963E-33	<input type="checkbox"/> I(X1.R2)(A)
		8.779E-59	<input type="checkbox"/> V(X1.R2)*I(X1.R2)
		1.018E-27	<input type="checkbox"/> V(X1.R3)(V)
		-1.018E-27	<input type="checkbox"/> I(X1.R3)(A)
		-1.036E-54	<input type="checkbox"/> V(X1.R3)*I(X1.R3)
		2.152E-38	<input type="checkbox"/> V(X1.C1)(V)
		-9.976E-35	<input type="checkbox"/> I(X1.C1)(A)
		-2.956E-60	<input type="checkbox"/> V(X1.C1)*I(X1.C1)
		1.467E-01	<input type="checkbox"/> V(X1.C2)(V)
		-1.482E-23	<input type="checkbox"/> I(X1.C2)(A)
		-2.173E-38	<input type="checkbox"/> V(X1.C2)*I(X1.C2)
		-0.734E-01	<input type="checkbox"/> V(X1.D1)(V)
		-1.017E-27	<input type="checkbox"/> I(X1.D1)(A)
		7.458E-43	<input type="checkbox"/> V(X1.D1)*I(X1.D1)
		0.733E-01	<input type="checkbox"/> V(X1.D2)(V)
		1.017E-27	<input type="checkbox"/> I(X1.D2)(A)
		7.461E-43	<input type="checkbox"/> V(X1.D2)*I(X1.D2)
		1.235E-30	<input type="checkbox"/> V(X1.L1)(V)
		1.018E-27	<input type="checkbox"/> I(X1.L1)(A)
		1.257E-57	<input type="checkbox"/> V(X1.L1)*I(X1.L1)
		8.100E-01	<input type="checkbox"/> T(Seconds)

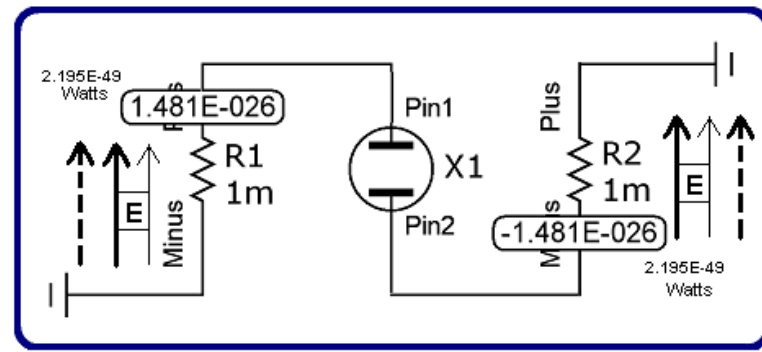


FIG. 21

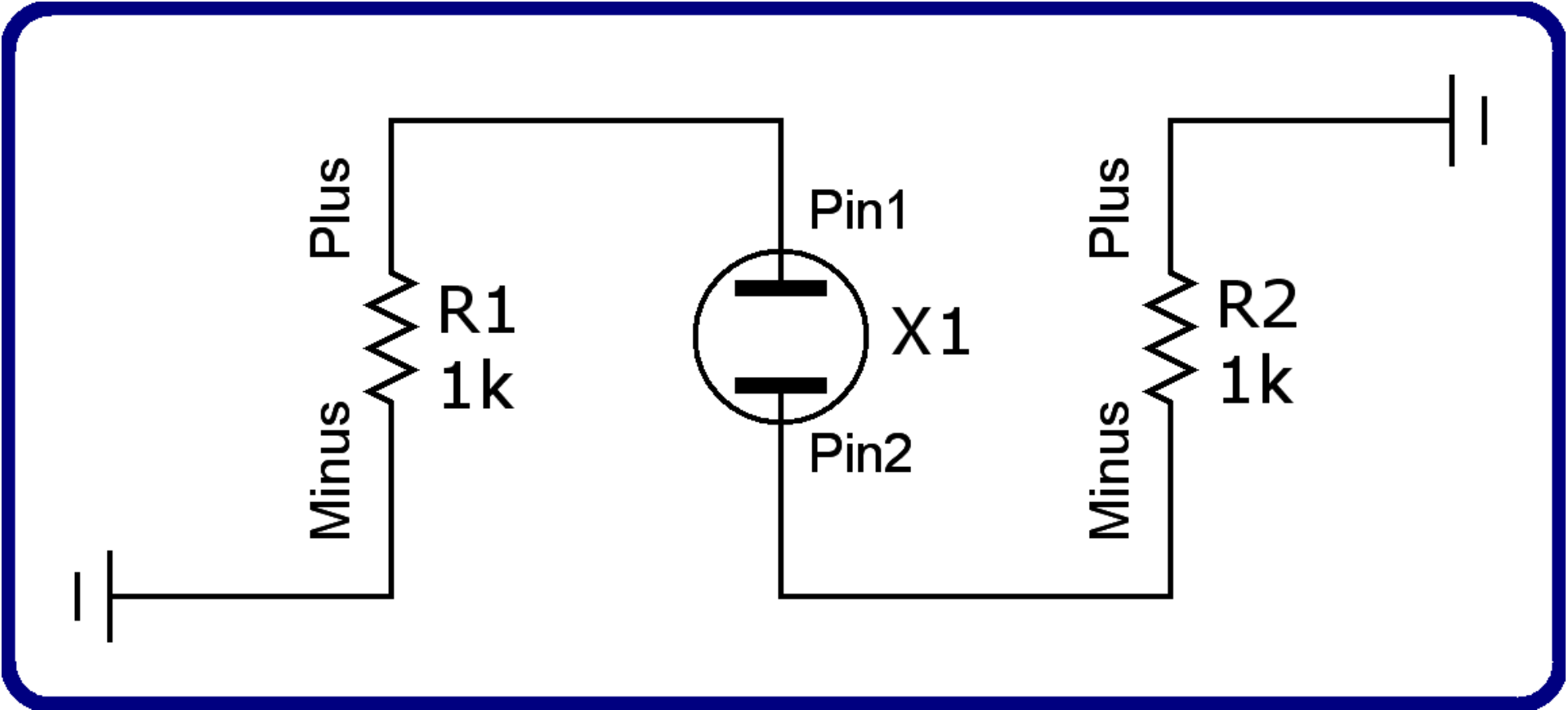


FIG. 22

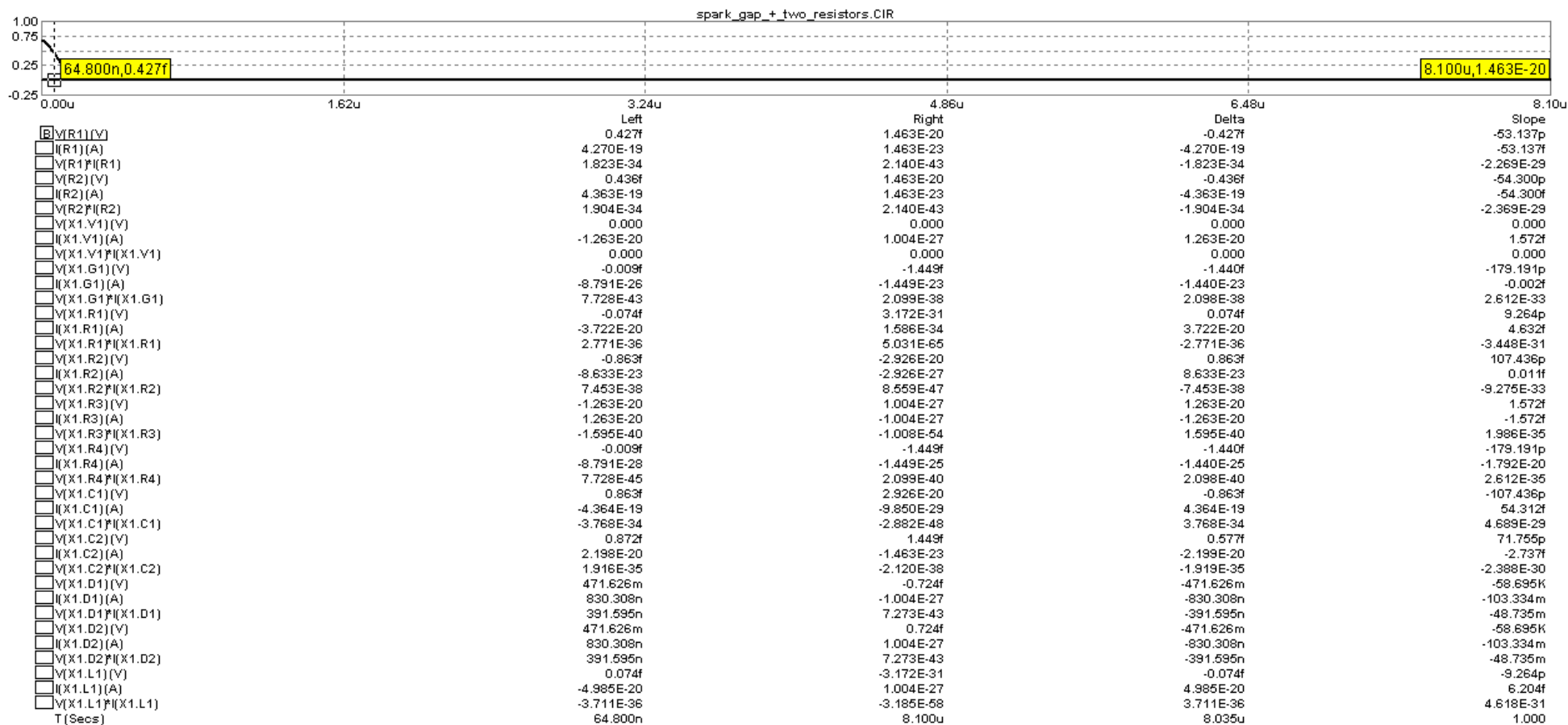


FIG. 23

## NEON BULB, SPARK GAP MACRO

.PARAMETERS(VTHRES=90, VARC=10, ISUS=500M,RNEG=-1,LPL=130N,RPL=2K,CPAR=1P,CARC=3P)

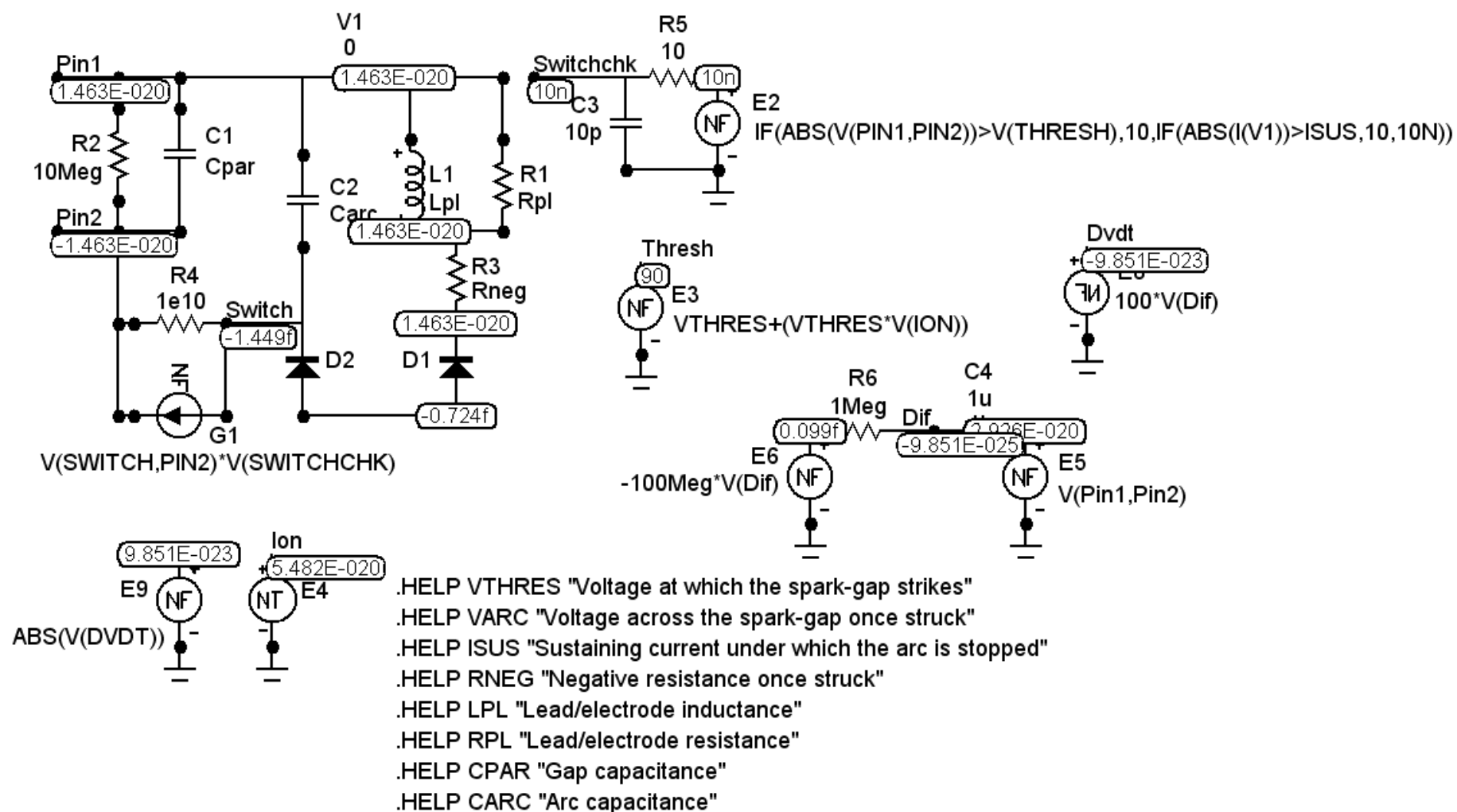
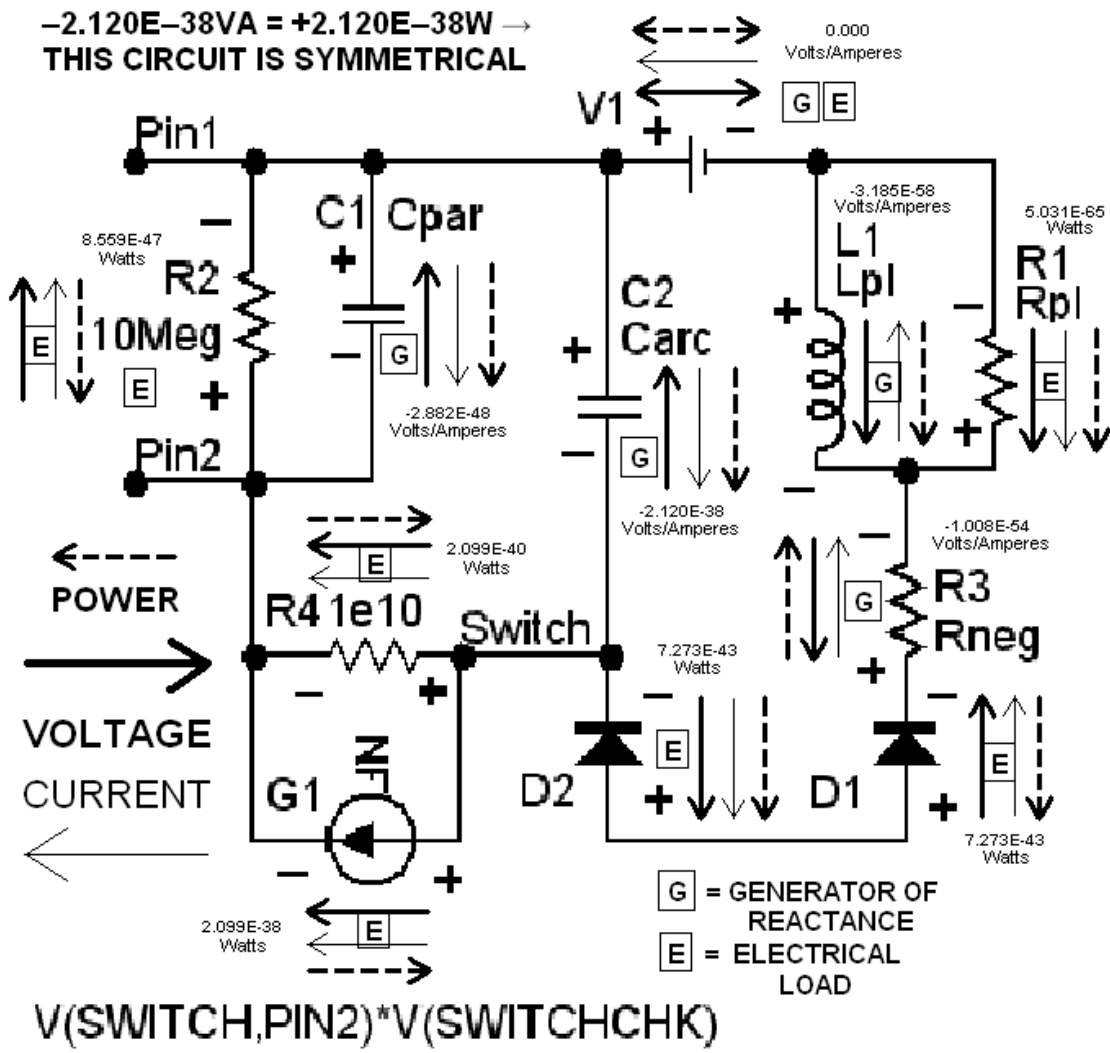


FIG. 24



0.000	0.000	2.099E-38	2.099E-40
-2.120E-38	-2.882E-48	7.273E-43	7.273E-43
-1.008E-54	-3.185E-58	2.140E-43	2.140E-43
0.000	0.000	2.140E-43	2.140E-43
		8.559E-47	5.031E-65
		0.000	0.000
			<b>+2.120E-38</b>

**SUB-TOTALS**

Watts

1.463E-20	B[V(R1)](V)	-1.449F	V[X1.R4](V)
1.463E-23	I(R1)(A)	-1.449E-25	I(X1.R4)(A)
2.140E-43	V(R1)*(R1)	2.099E-40	V(X1.R4)*(X1.R4)
1.463E-20	V(R2)(V)	2.926E-20	V(X1.C1)(V)
1.463E-23	I(R2)(A)	-9.850E-29	I(X1.C1)(A)
2.140E-43	V(R2)*(R2)	-2.882E-48	V(X1.C1)*(X1.C1)
0.000	V(X1.V1)(V)	1.449F	V(X1.C2)(V)
1.004E-27	I(X1.V1)(A)	-1.463E-23	I(X1.C2)(A)
0.000	V(X1.V1)*(X1.V1)	-2.120E-38	V(X1.C2)*(X1.C2)
-1.449F	V(X1.G1)(V)	-0.724f	V(X1.D1)(V)
-1.449E-23	I(X1.G1)(A)	1.004E-27	I(X1.D1)(A)
2.099E-38	V(X1.G1)*(X1.G1)	-1.004E-27	V(X1.D1)*(X1.D1)
3.172E-31	V(X1.R1)(V)	7.273E-43	V(X1.D1)*(X1.D1)
1.586E-34	I(X1.R1)(A)	0.724f	V(X1.D2)(V)
5.031E-65	V(X1.R1)*(X1.R1)	1.004E-27	I(X1.D2)(A)
-2.926E-20	V(X1.R2)(V)	7.273E-43	V(X1.D2)*(X1.D2)
-2.926E-27	I(X1.R2)(A)	-3.172E-31	V(X1.L1)(V)
8.559E-47	V(X1.R2)*(X1.R2)	1.004E-27	I(X1.L1)(A)
1.004E-27	V(X1.R3)(V)	-3.185E-58	V(X1.L1)*(X1.L1)
-1.004E-27	I(X1.R3)(A)	8.100u	T(Seconds)
-1.008E-54	V(X1.R3)*(X1.R3)		

**RAW DATA**

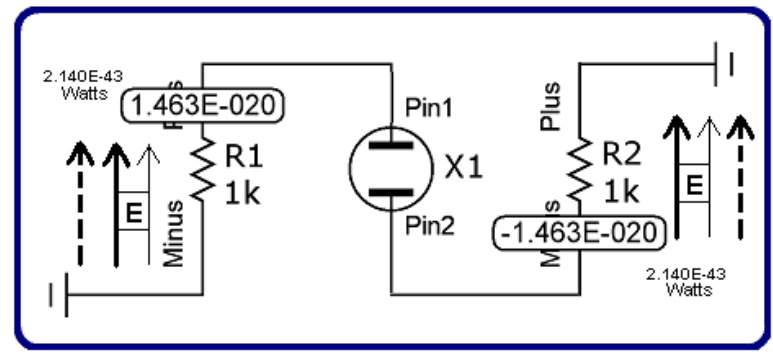


FIG. 25

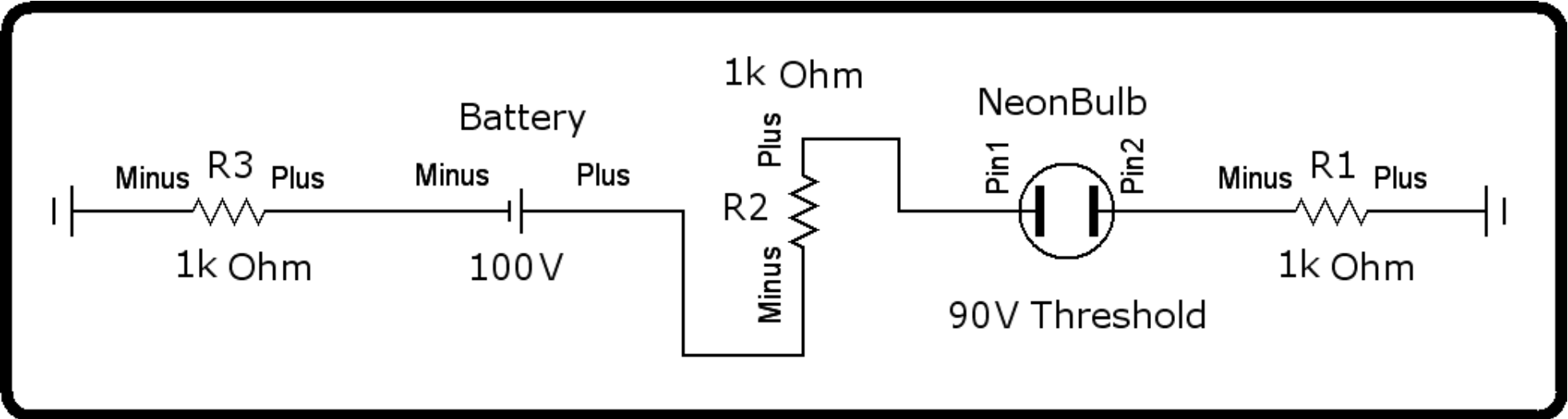


FIG. 26

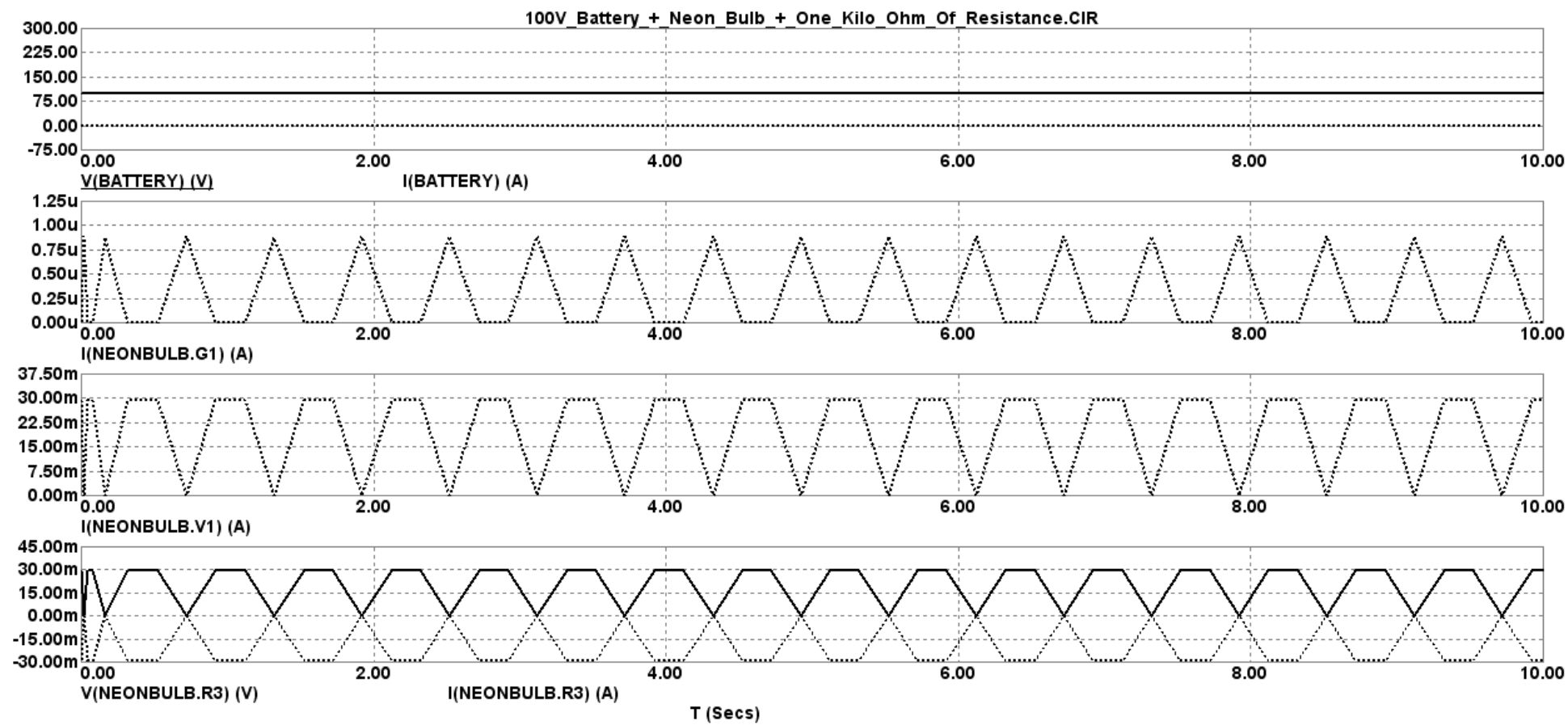


FIG. 27

	Left	Right	Delta	Slope
<input type="checkbox"/> V(BATTERY)(V)	100.000	100.000	0.000	0.000
<input type="checkbox"/> I(BATTERY)(A)	-29.431m	-29.448m	-17.305u	-1.737u
<input type="checkbox"/> V(BATTERY)*I(BATTERY)	-2.943	-2.945	-1.731m	-173.747u
<input type="checkbox"/> V(R1)(V)	-29.431	-29.448	-17.305m	-1.737m
<input type="checkbox"/> I(R1)(A)	-29.431m	-29.448m	-17.305u	-1.737u
<input type="checkbox"/> V(R1)*I(R1)	866.168m	867.187m	1.019m	102.300u
<input type="checkbox"/> V(R2)(V)	-29.431	-29.448	-17.305m	-1.737m
<input type="checkbox"/> I(R2)(A)	-29.431m	-29.448m	-17.305u	-1.737u
<input type="checkbox"/> V(R2)*I(R2)	866.168m	867.187m	1.019m	102.300u
<input type="checkbox"/> V(R3)(V)	-29.431	-29.448	-17.305m	-1.737m
<input type="checkbox"/> I(R3)(A)	-29.431m	-29.448m	-17.305u	-1.737u
<input type="checkbox"/> V(R3)*I(R3)	866.168m	867.187m	1.019m	102.300u
<input type="checkbox"/> V(NEONBULB.G1)(V)	5.933m	5.936m	3.042u	305.403n
<input type="checkbox"/> I(NEONBULB.G1)(A)	59.331p	59.361p	30.418f	3.054f
<input type="checkbox"/> V(NEONBULB.G1)*I(NEONBULB.G1)	352.011f	352.372f	0.361f	0.036f
<input type="checkbox"/> V(NEONBULB.V1)(V)	0.000	0.000	0.000	0.000
<input type="checkbox"/> I(NEONBULB.V1)(A)	29.430m	29.447m	17.306u	1.738u
<input type="checkbox"/> V(NEONBULB.V1)*I(NEONBULB.V1)	0.000	0.000	0.000	0.000
<input type="checkbox"/> V(NEONBULB.R1)(V)	-191.286n	5.429n	196.716n	19.751n
<input type="checkbox"/> I(NEONBULB.R1)(A)	-95.643p	2.715p	98.358p	9.875p
<input type="checkbox"/> V(NEONBULB.R1)*I(NEONBULB.R1)	0.018f	1.474E-20	-0.018f	-0.002f
<input type="checkbox"/> V(NEONBULB.R2)(V)	-11.708	-11.656	51.916m	5.212m
<input type="checkbox"/> I(NEONBULB.R2)(A)	-1.171u	-1.166u	5.192n	521.240p
<input type="checkbox"/> V(NEONBULB.R2)*I(NEONBULB.R2)	13.707u	13.586u	-121.294n	-12.178n
<input type="checkbox"/> V(NEONBULB.R3)(V)	29.430m	29.447m	17.306u	1.738u
<input type="checkbox"/> I(NEONBULB.R3)(A)	-29.430m	-29.447m	-17.306u	-1.738u
<input type="checkbox"/> V(NEONBULB.R3)*I(NEONBULB.R3)	-866.100u	-867.119u	-1.019u	-102.300n
<input type="checkbox"/> V(NEONBULB.R4)(V)	5.933m	5.936m	3.042u	305.403n
<input type="checkbox"/> I(NEONBULB.R4)(A)	593.305f	593.609f	0.304f	0.031f
<input type="checkbox"/> V(NEONBULB.R4)*I(NEONBULB.R4)	3.520f	3.524f	0.004f	3.625E-19
<input type="checkbox"/> V(NEONBULB.C1)(V)	11.708	11.656	-51.916m	-5.212m
<input type="checkbox"/> I(NEONBULB.C1)(A)	-4.413n	125.253p	4.538n	455.646p
<input type="checkbox"/> V(NEONBULB.C1)*I(NEONBULB.C1)	-51.666n	1.460n	53.126n	5.334n
<input type="checkbox"/> V(NEONBULB.C2)(V)	11.702	11.650	-51.919m	-5.213m
<input type="checkbox"/> I(NEONBULB.C2)(A)	44.041p	-2.925p	-46.966p	-4.715p
<input type="checkbox"/> V(NEONBULB.C2)*I(NEONBULB.C2)	515.357p	-34.078p	-549.435p	-55.164p
<input type="checkbox"/> V(NEONBULB.D1)(V)	-10.748	-10.722	25.946m	2.605m
<input type="checkbox"/> I(NEONBULB.D1)(A)	-885.564	-324.731	560.833	56.309
<input type="checkbox"/> V(NEONBULB.D1)*I(NEONBULB.D1)	9.518K	3.482K	-6.036K	-606.042
<input type="checkbox"/> V(NEONBULB.D2)(V)	983.420m	957.465m	-25.955m	-2.606m
<input type="checkbox"/> I(NEONBULB.D2)(A)	885.564	324.622	-560.942	-56.319
<input type="checkbox"/> V(NEONBULB.D2)*I(NEONBULB.D2)	870.881	310.814	-560.066	-56.232
<input type="checkbox"/> V(NEONBULB.L1)(V)	191.286n	-5.429n	-196.716n	-19.751n
<input type="checkbox"/> I(NEONBULB.L1)(A)	29.430m	29.447m	17.306u	1.738u
<input checked="" type="checkbox"/> V(NEONBULB.L1)*I(NEONBULB.L1)	5.629n	-159.874p	-5.789n	-581.260p
T(Secs)	40.000m	10.000	9.960	1.000

FIG. 28

## NEON BULB, SPARK GAP MACRO

.PARAMETERS(VTHRES=90, VARC=10, ISUS=500M,RNEG=-1,LPL=130N,RPL=2K,CPAR=1P,CARC=3P)

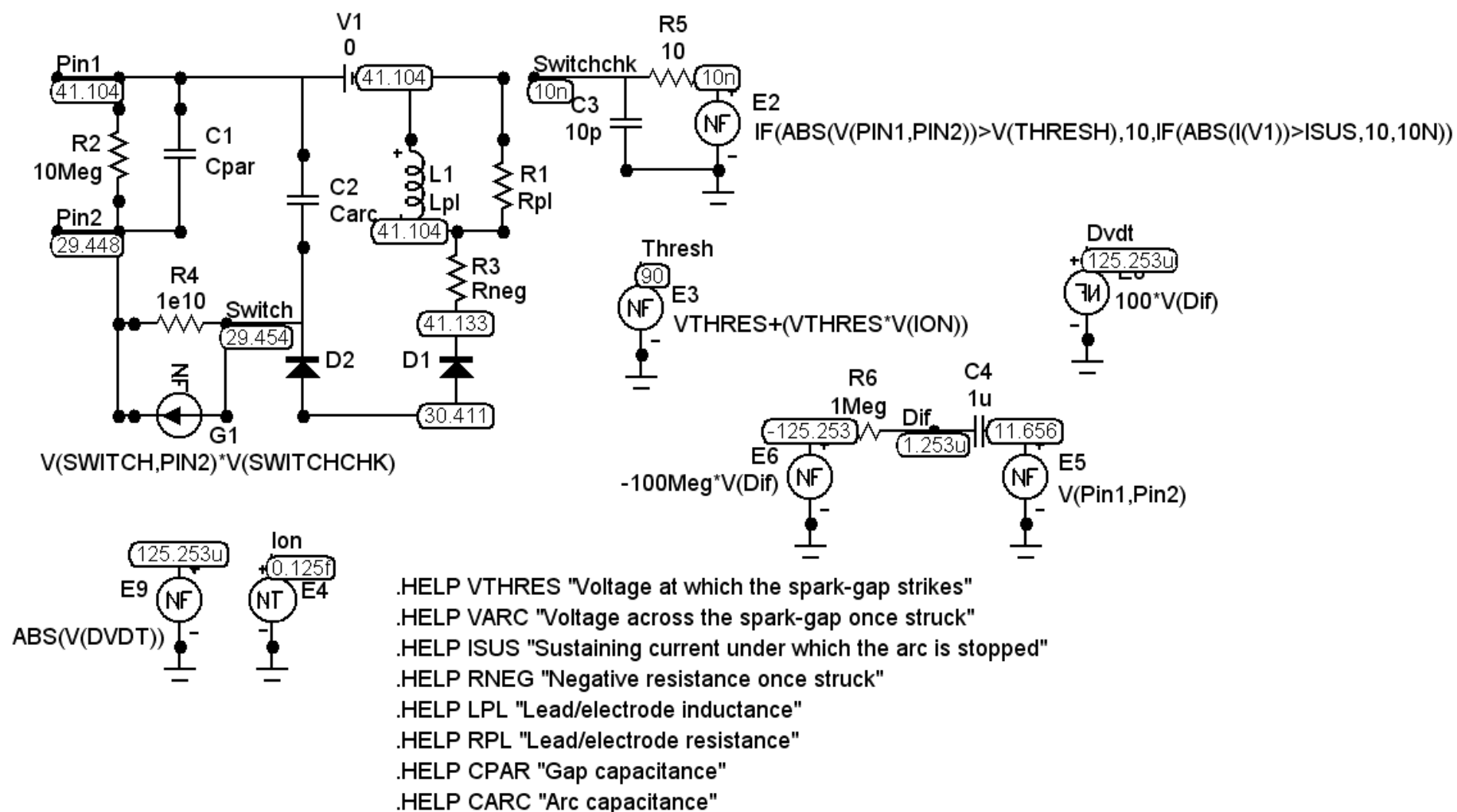


FIG. 29

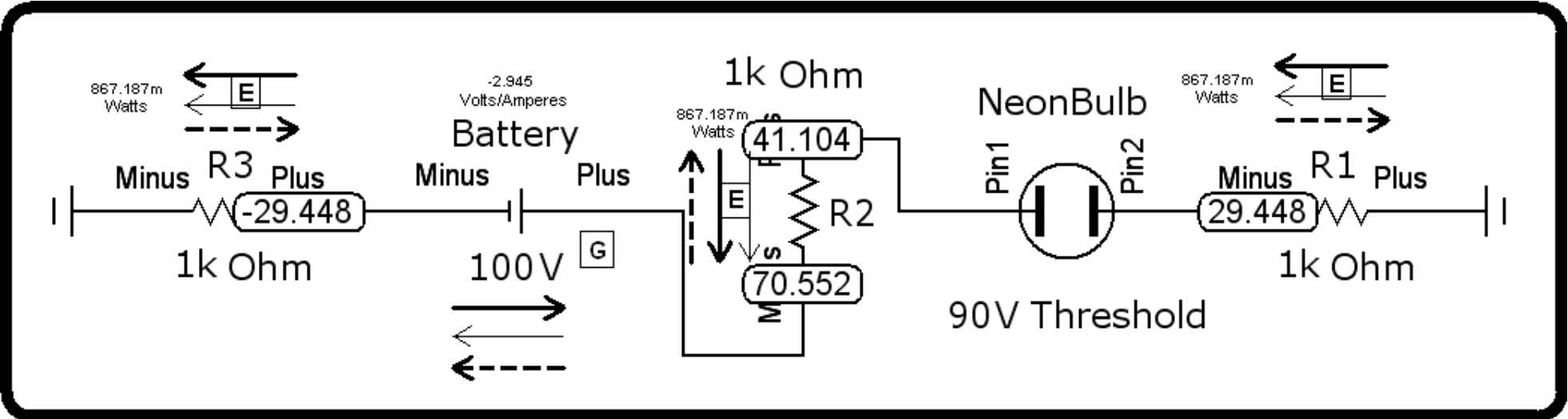
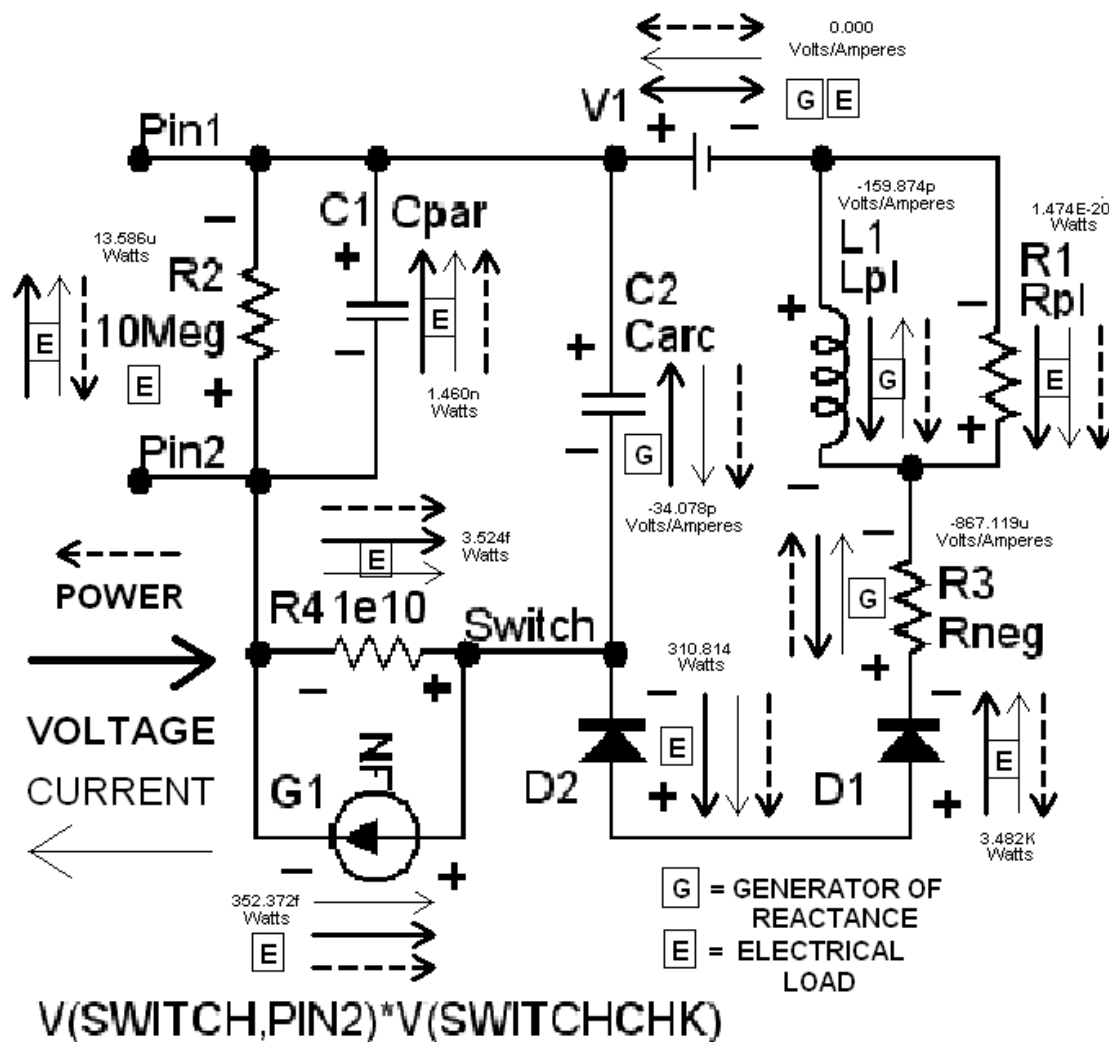


FIG. 30



**-2.945VA ≠ +3.7928KW → THIS CIRCUIT IS ASYMMETRICAL BY A FACTOR OF → +1,287.83W TO -1VA**

SUB-TOTALS		SUB-TOTALS	
<b>G</b>	-2.945	3.482K	
Volts/Amperes	-867.119u	310.814	
	-34.078p	867.187m	
	-159.874p	867.187m	
	0.000	13.586u	
	-2.945	1.460n	
		352.372f	
		3.524f	
		1.474E-20	
		0.000	
		<b>+3.7928k</b>	

RAW DATA		RAW DATA	
867.187m	V(R1)(R1)	-29.448	V(R1)(V)
867.187m	V(R2)(R2)	-29.448m	I(R11)(A)
867.187m	V(R3)(R3)	-29.448	V(R2)(V)
-2.945	V(BATTERY)(BATTERY)	-29.448m	I(R21)(A)
352.372f	V(NEONBULB.G1)(NEONBULB.G1)	0.000	V(R3)(V)
0.000	V(NEONBULB.V1)(NEONBULB.V1)	-29.448m	I(R31)(A)
1.474E-20	V(NEONBULB.R1)(NEONBULB.R1)	-29.448	V(R3)(V)
13.586u	V(NEONBULB.R2)(NEONBULB.R2)	-29.448m	I(R31)(A)
-867.119u	V(NEONBULB.R3)(NEONBULB.R3)	100.000	V(BATTERY)(V)
3.524f	V(NEONBULB.R4)(NEONBULB.R4)	-29.448m	I(BATTERY)(A)
1.460n	V(NEONBULB.C1)(NEONBULB.C1)	5.936m	V(NEONBULB.G1)(V)
-34.078p	V(NEONBULB.C2)(NEONBULB.C2)	59.361p	I(NEONBULB.G11)(A)
3.482K	V(NEONBULB.D1)(NEONBULB.D1)	0.000	V(NEONBULB.V1)(V)
310.814	V(NEONBULB.D2)(NEONBULB.D2)	29.447m	I(NEONBULB.V11)(A)
-159.874p	V(NEONBULB.L1)(NEONBULB.L1)	5.429n	V(NEONBULB.R1)(V)
11.650	V(NEONBULB.C2)(V)	2.715p	I(NEONBULB.R11)(A)
-2.925p	I(NEONBULB.C2)(A)	-11.656	V(NEONBULB.R2)(V)
-10.722	V(NEONBULB.D1)(V)	-1.166u	I(NEONBULB.R21)(A)
-324.731	I(NEONBULB.D1)(A)	29.447m	V(NEONBULB.R3)(V)
957.465m	V(NEONBULB.D2)(V)	-29.447m	I(NEONBULB.R31)(A)
324.622	I(NEONBULB.D2)(A)	5.936m	V(NEONBULB.R4)(V)
-5.429n	V(NEONBULB.L1)(V)	593.609f	I(NEONBULB.R41)(A)
29.447m	I(NEONBULB.L1)(A)	11.656	V(NEONBULB.C1)(V)
		125.253p	I(NEONBULB.C11)(A)

**FIG. 31**

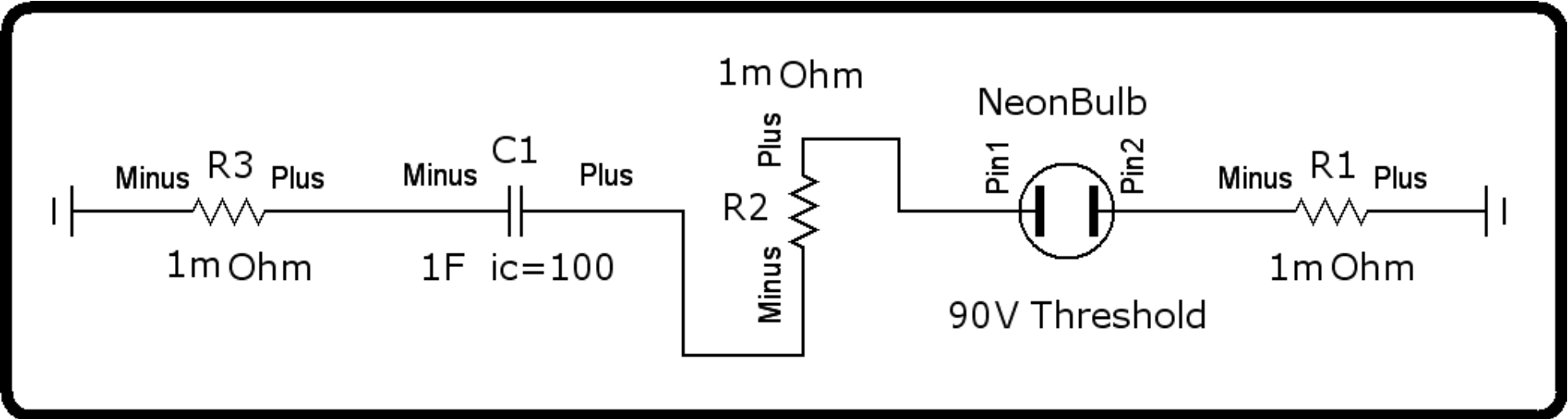


FIG. 32

Precharged\_Capacitor + Neon\_Bulb + One\_Milli\_Ohm\_Of\_Resistance.CIR

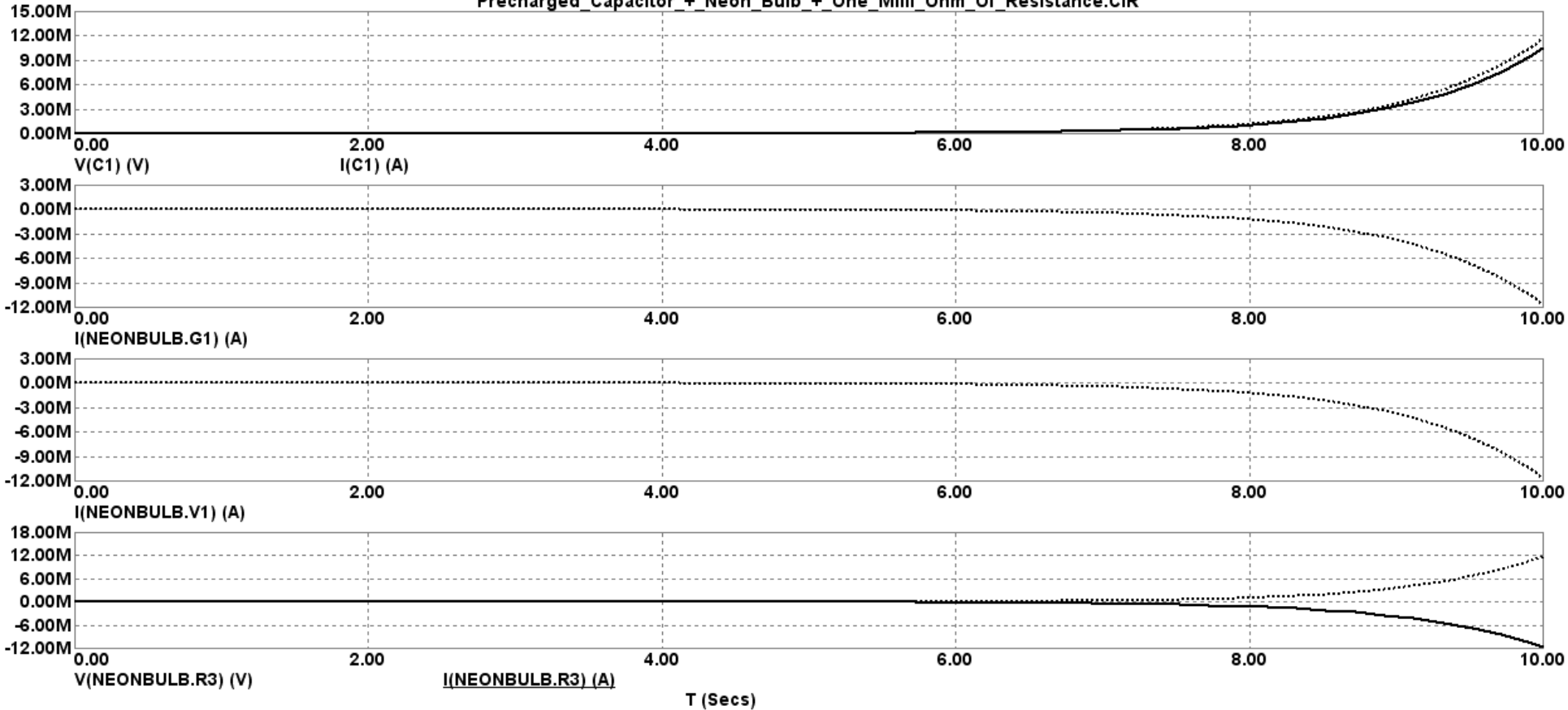


FIG. 33

Precharged\_Capacitor + Neon Bulb + One Milli\_Ohm\_Of\_Resistance.CIR

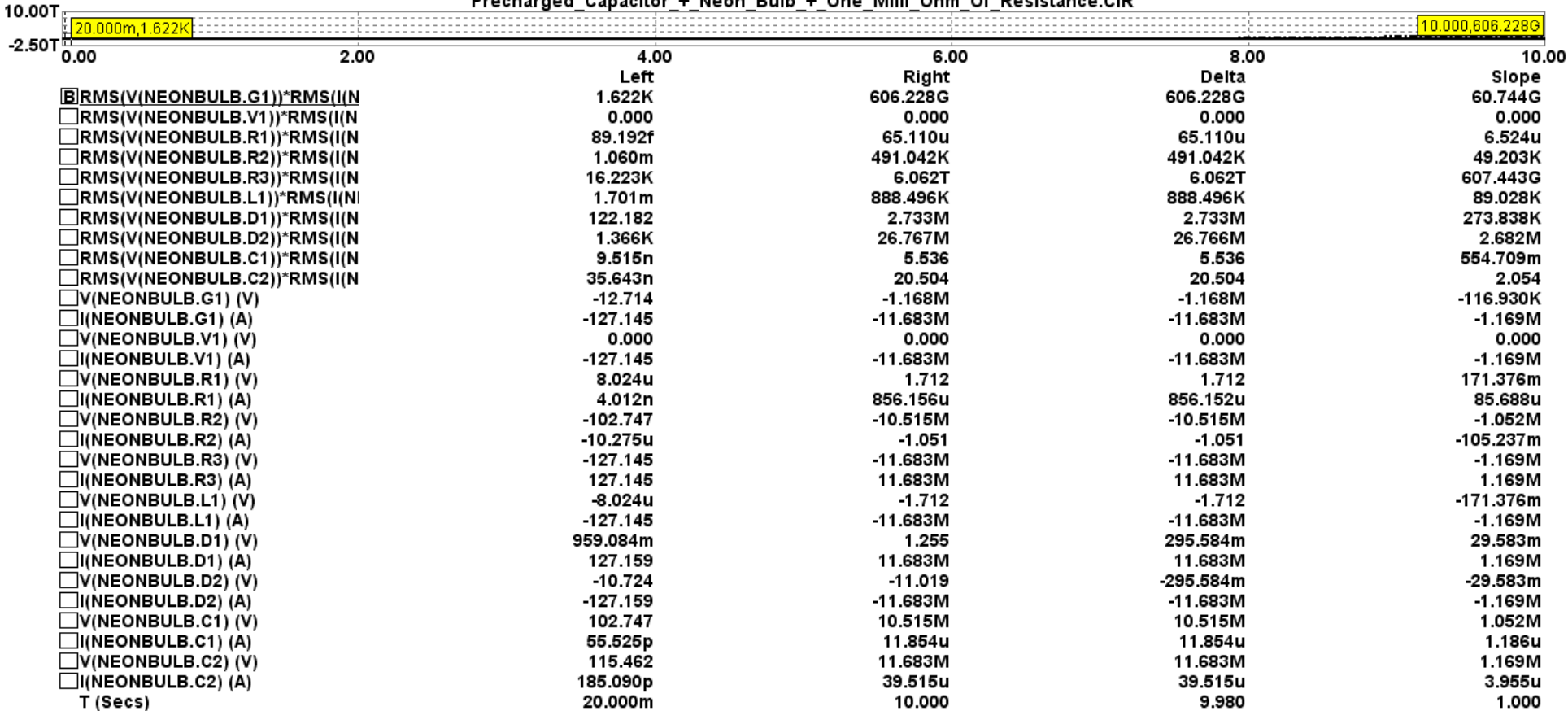


FIG. 34

Precharged\_Capacitor+\_Neon\_Bulb+\_One\_Milli\_Ohm\_Of\_Resistance.CIR

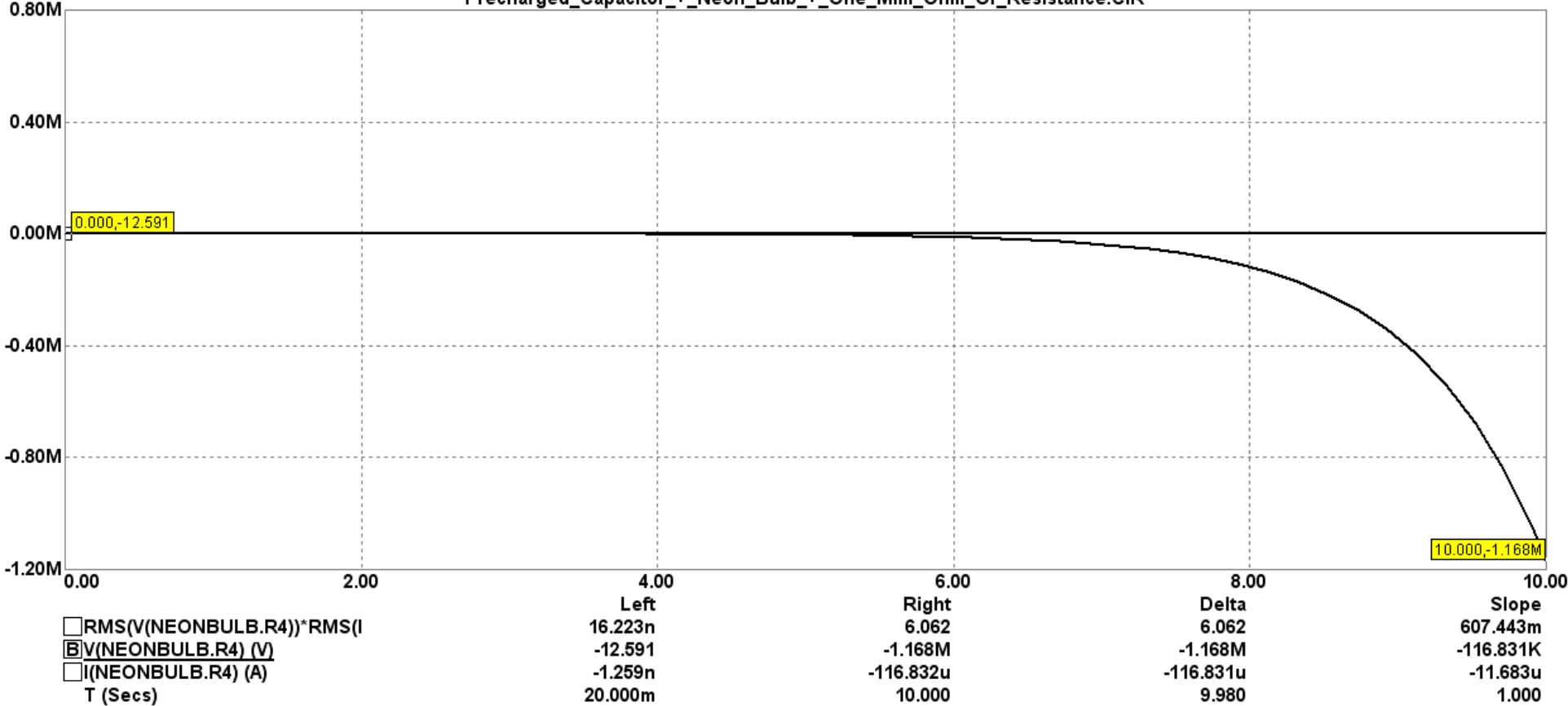
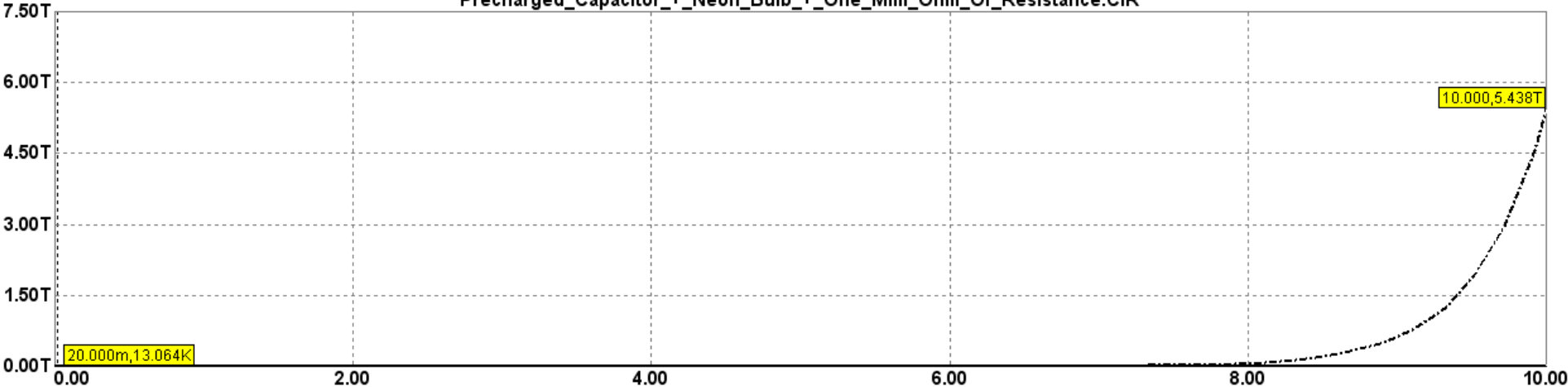


FIG. 35

Precharged\_Capacitor + Neon\_Bulb + One\_Milli\_Ohm\_Of\_Resistance.CIR



	Left	Right	Delta	Slope
<input checked="" type="checkbox"/> RMS(V(C1))*RMS(I(C1))	13.064K	5.438T	5.438T	544.875G
<input type="checkbox"/> RMS(V(R1))*RMS(I(R1))	16.223	6.062G	6.062G	607.443M
<input type="checkbox"/> RMS(V(R2))*RMS(I(R2))	16.223	6.062G	6.062G	607.443M
<input type="checkbox"/> RMS(V(R3))*RMS(I(R3))	16.223	6.062G	6.062G	607.443M
<input type="checkbox"/> V(C1) (V)	102.362	10.480M	10.480M	1.049M
<input type="checkbox"/> I(C1) (A)	127.140	11.683M	11.683M	1.169M
<input type="checkbox"/> V(R1) (V)	127.140m	11.683K	11.683K	1.169K
<input type="checkbox"/> I(R1) (A)	127.140	11.683M	11.683M	1.169M
<input type="checkbox"/> V(R2) (V)	127.140m	11.683K	11.683K	1.169K
<input type="checkbox"/> I(R2) (A)	127.140	11.683M	11.683M	1.169M
<input type="checkbox"/> V(R3) (V)	127.140m	11.683K	11.683K	1.169K
<input type="checkbox"/> I(R3) (A)	127.140	11.683M	11.683M	1.169M
T (Secs)	20.000m	10.000	9.980	1.000

FIG. 36



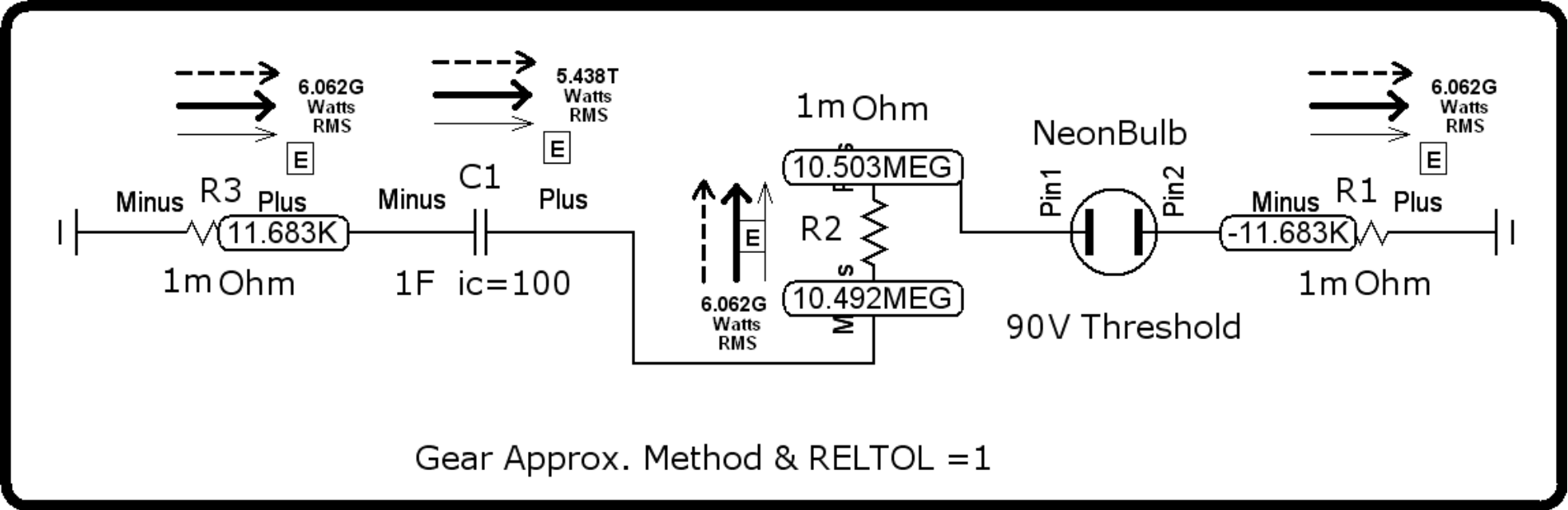


FIG. 38

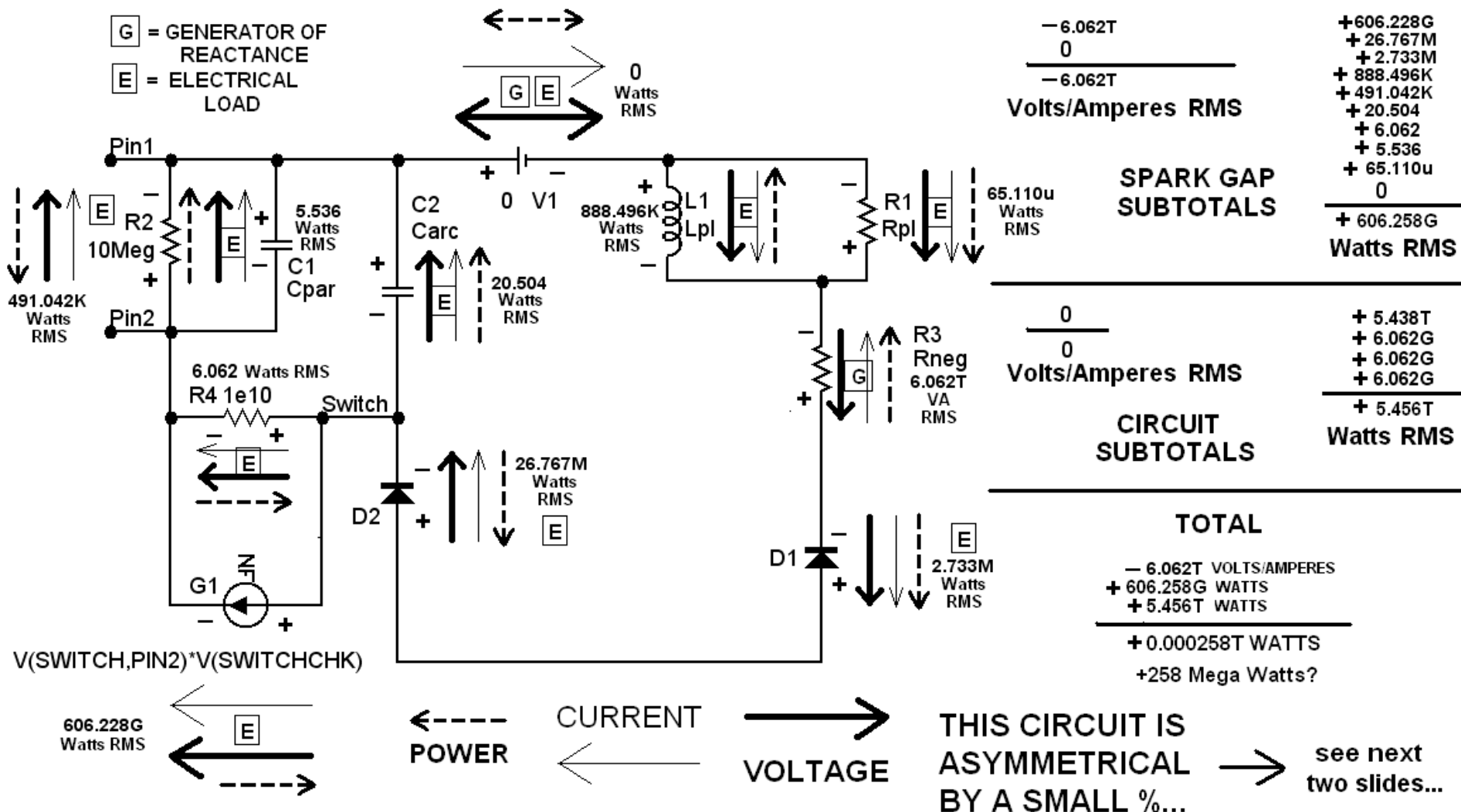
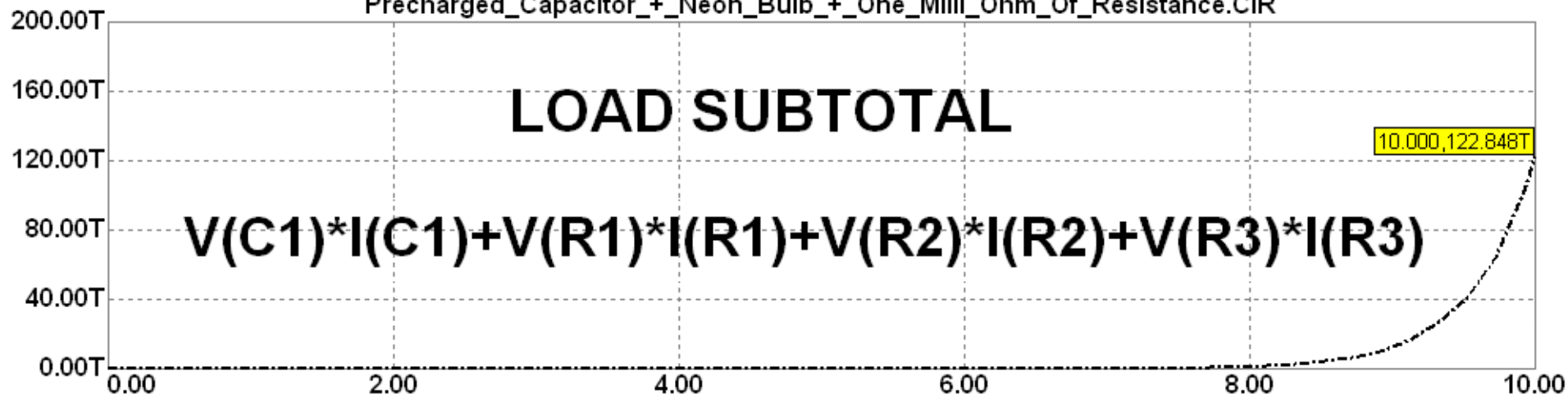
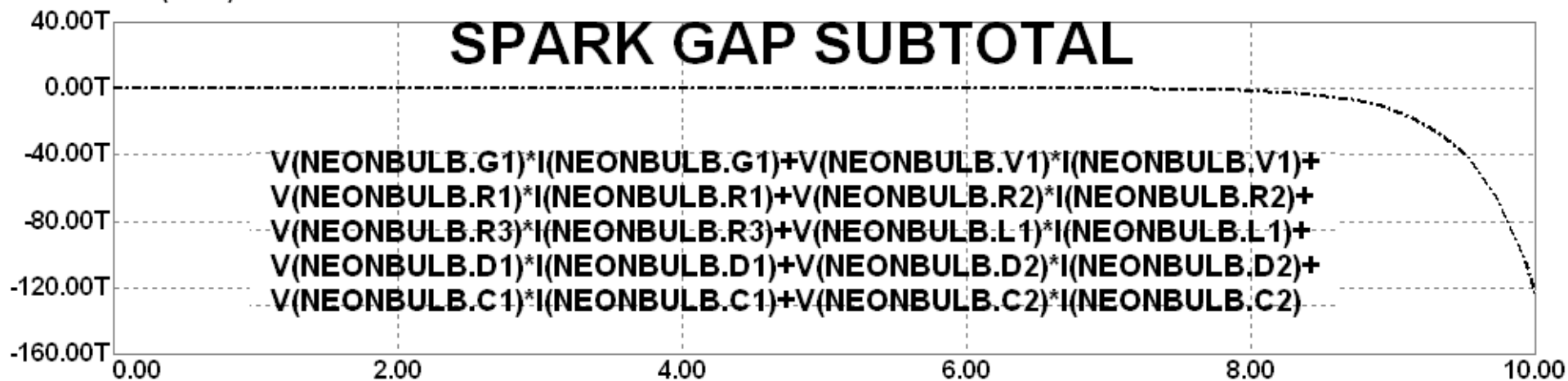


FIG. 39

Precharged\_Capacitor+\_Neon\_Bulb+\_One\_Milli\_Ohm\_Of\_Resistance.CIR



	Left	Right	Delta	Slope
$V(C1)*I(C1)+V(R1)*I(R1)$	122.848T	122.848T	0.000	INF
T (Secs)	10.000	10.000	0.000	1.000



	Left	Right	Delta	Slope
$V(NEONBULB.G1)*I(N$	-122.848T	-122.848T	0.000	INF
T (Secs)	10.000	10.000	0.000	1.000

FIG. 40

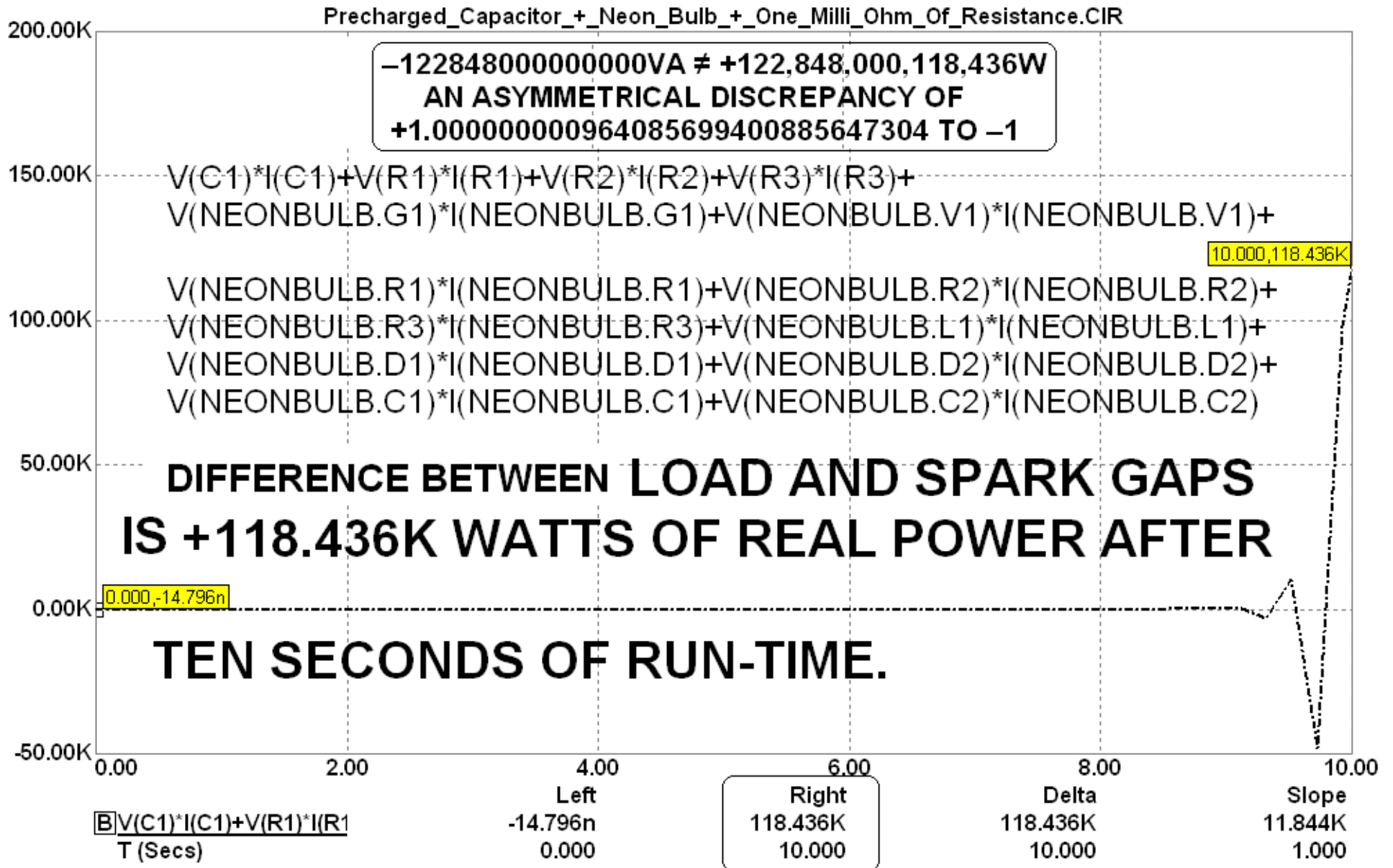


FIG. 41

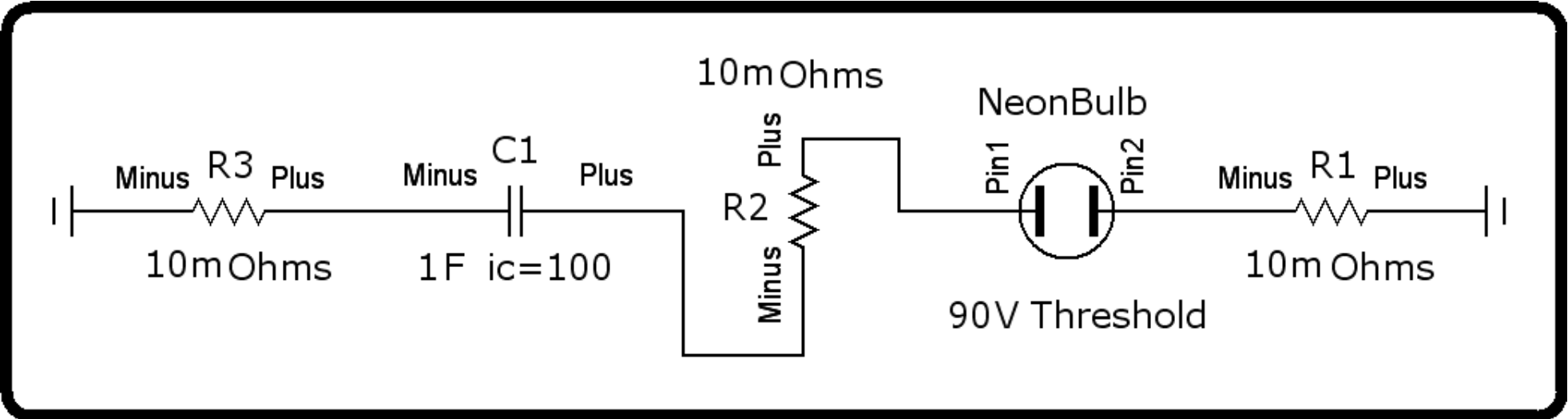


FIG. 42

Precharged Capacitor + Neon Bulb + Ten Milli Ohms Of Resistance.CIR

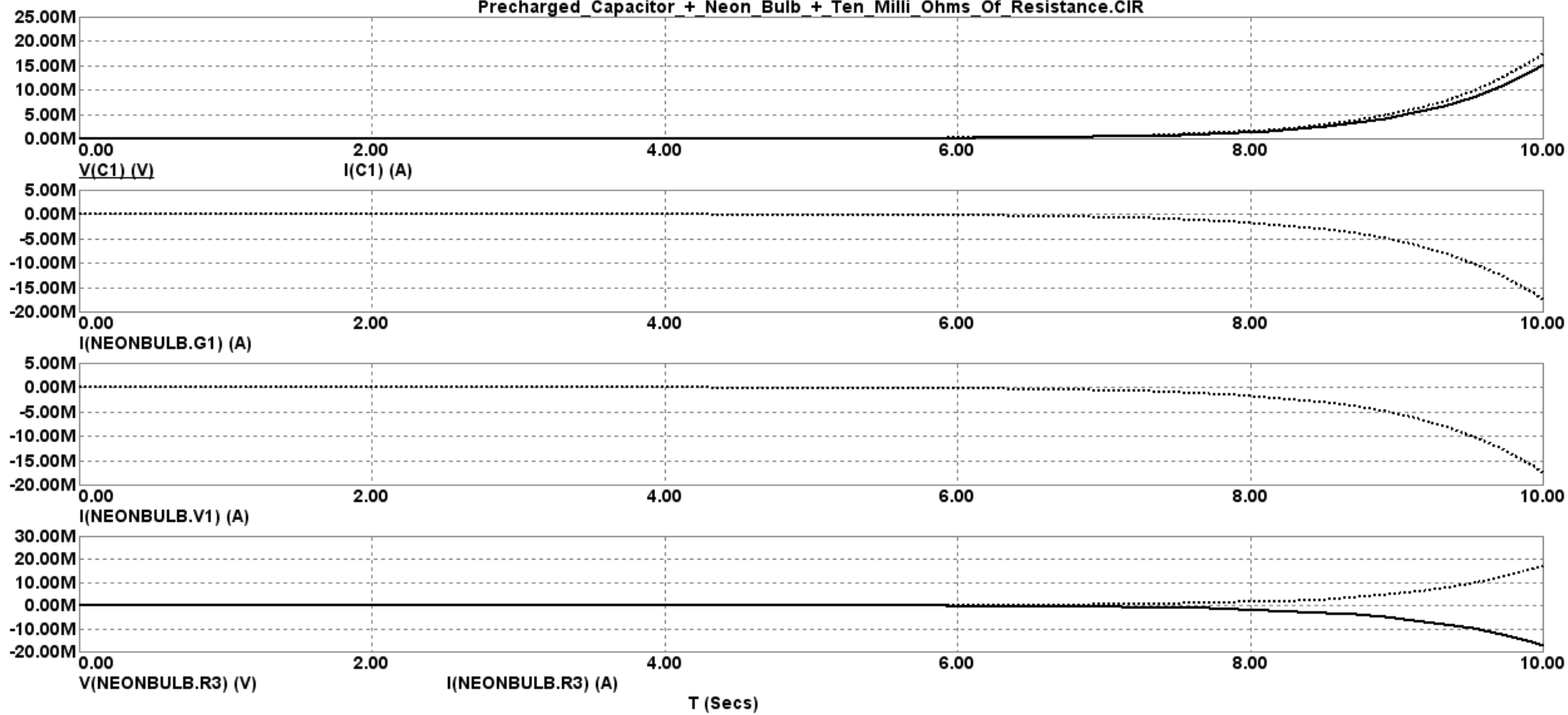


FIG. 43

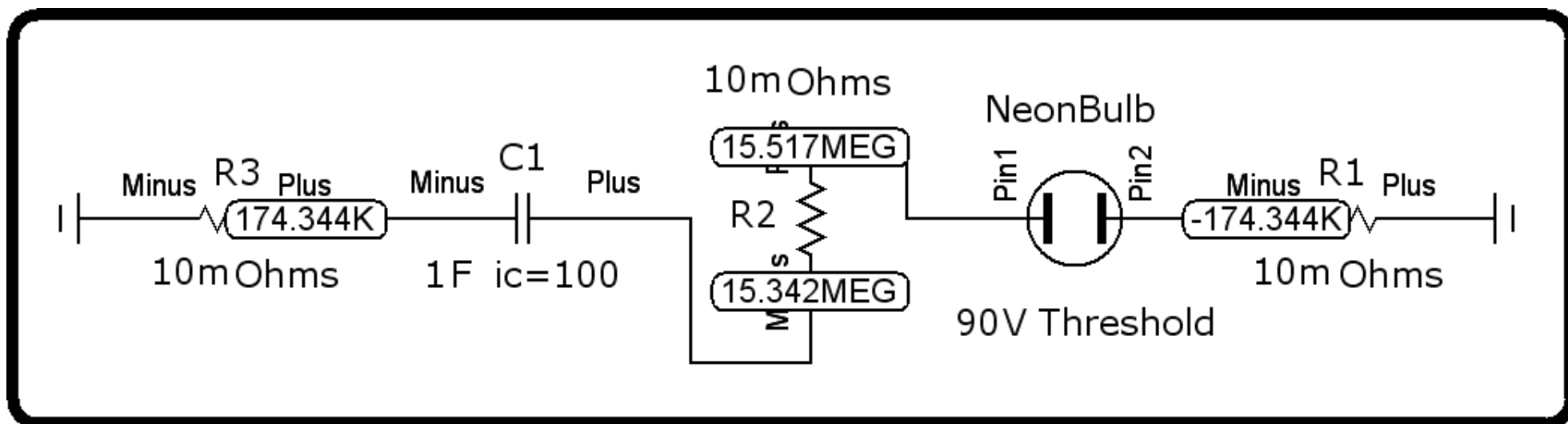


FIG. 44

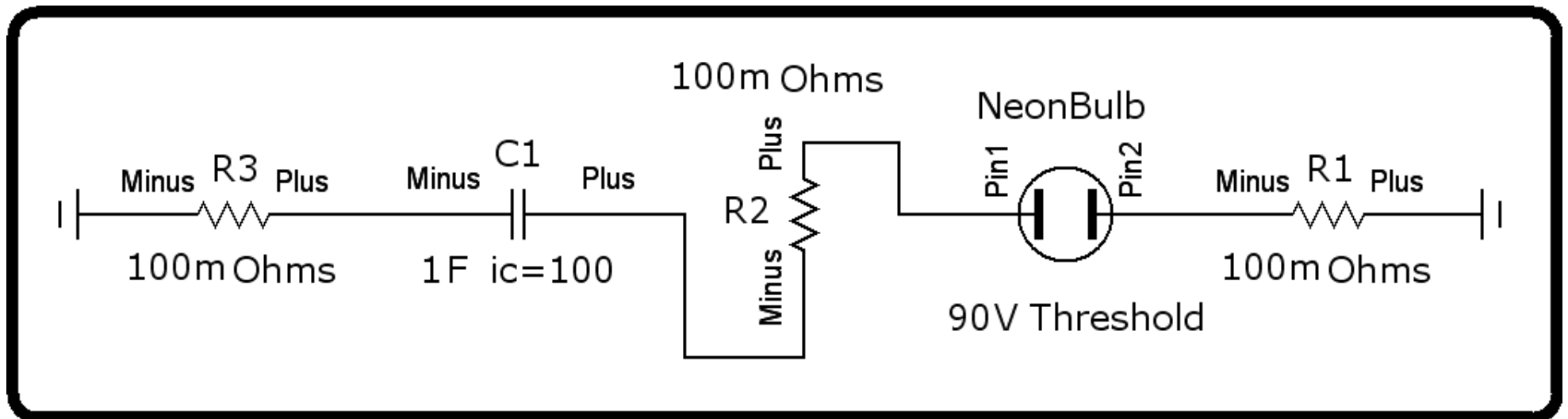


FIG. 45

Precharged Capacitor + Neon Bulb + 100 Milli Ohms Of Resistance.CIR

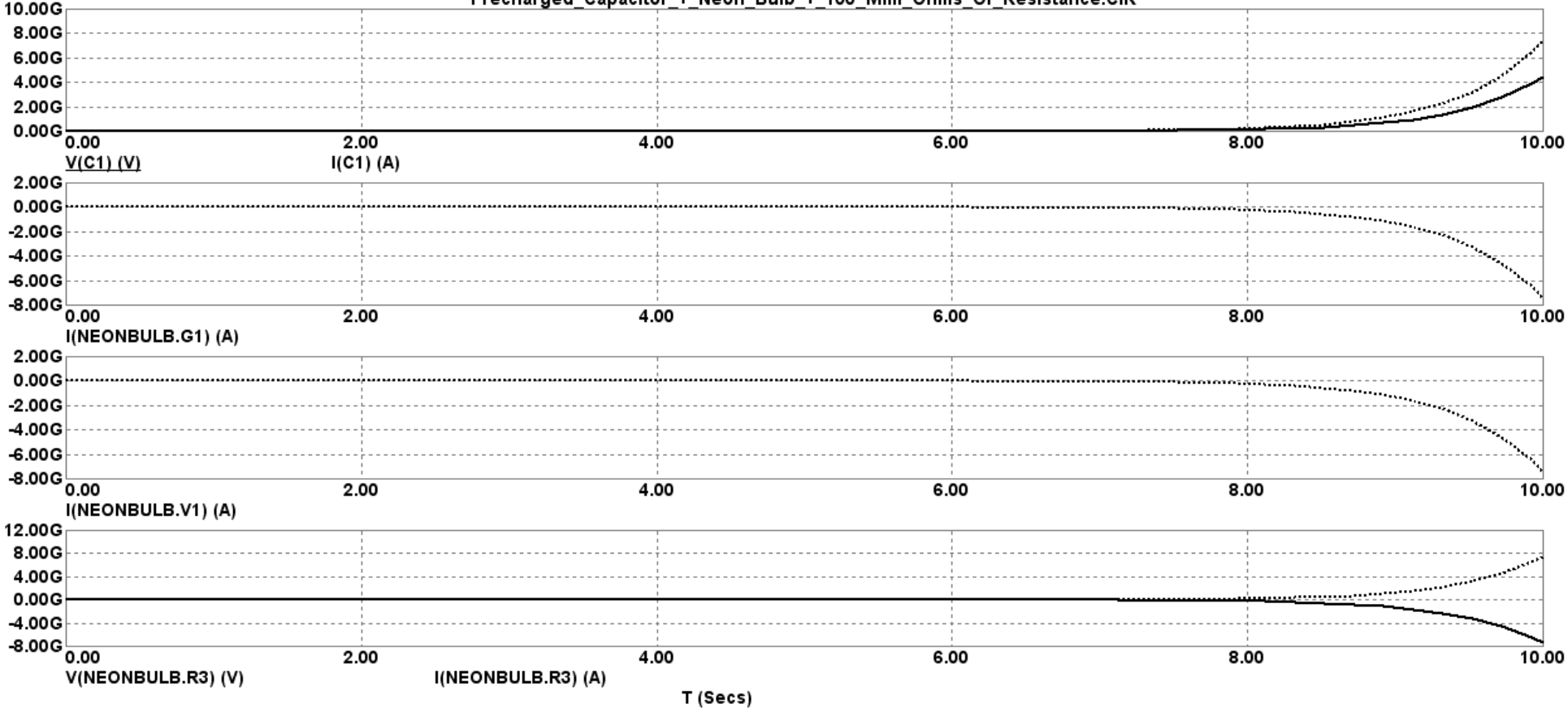


FIG. 46

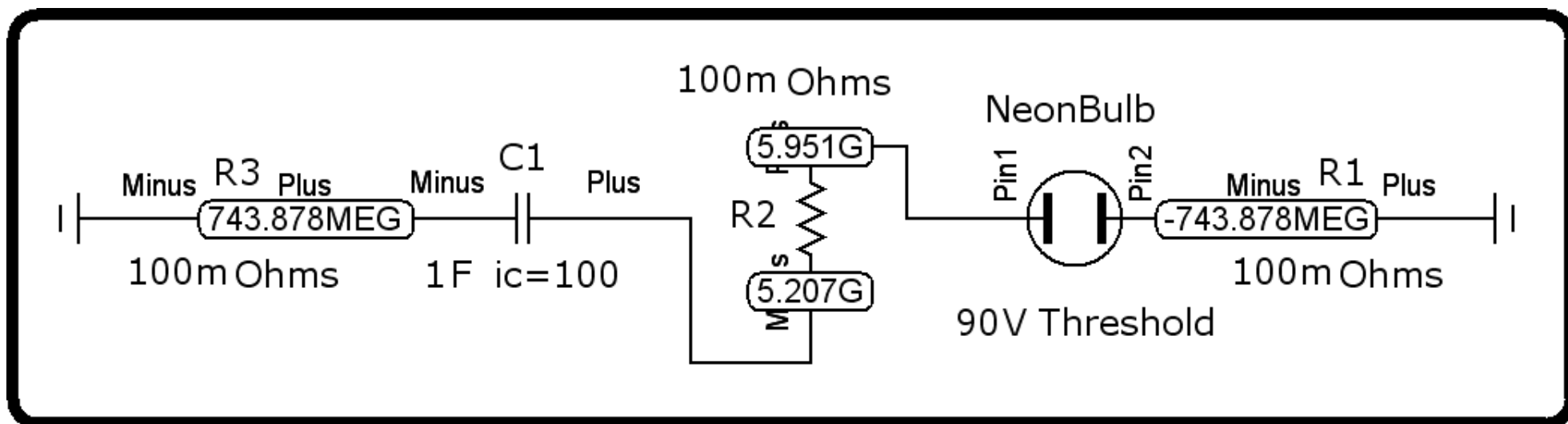


FIG. 47

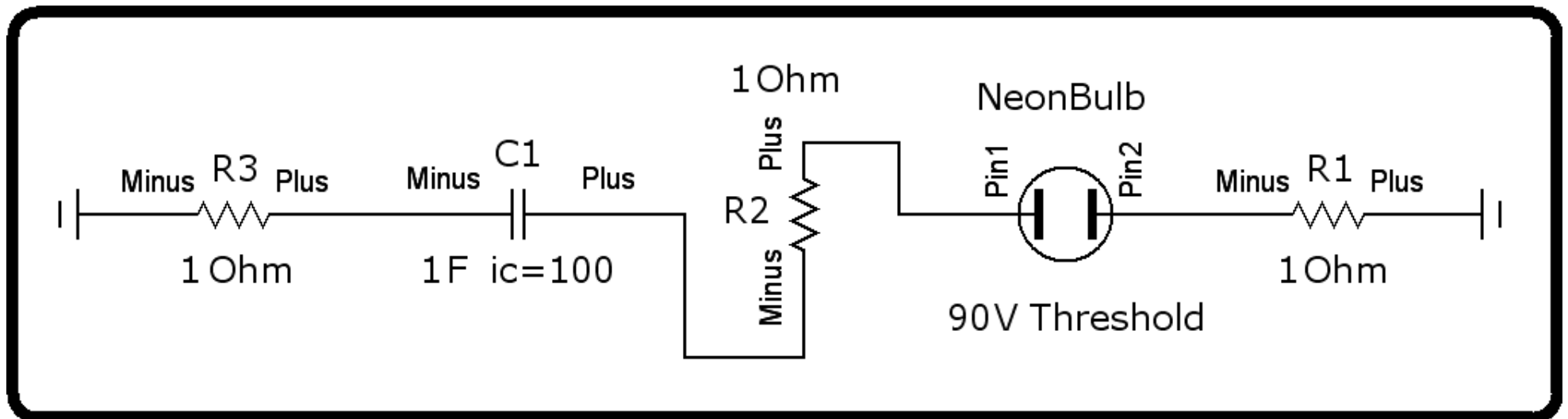


FIG. 48

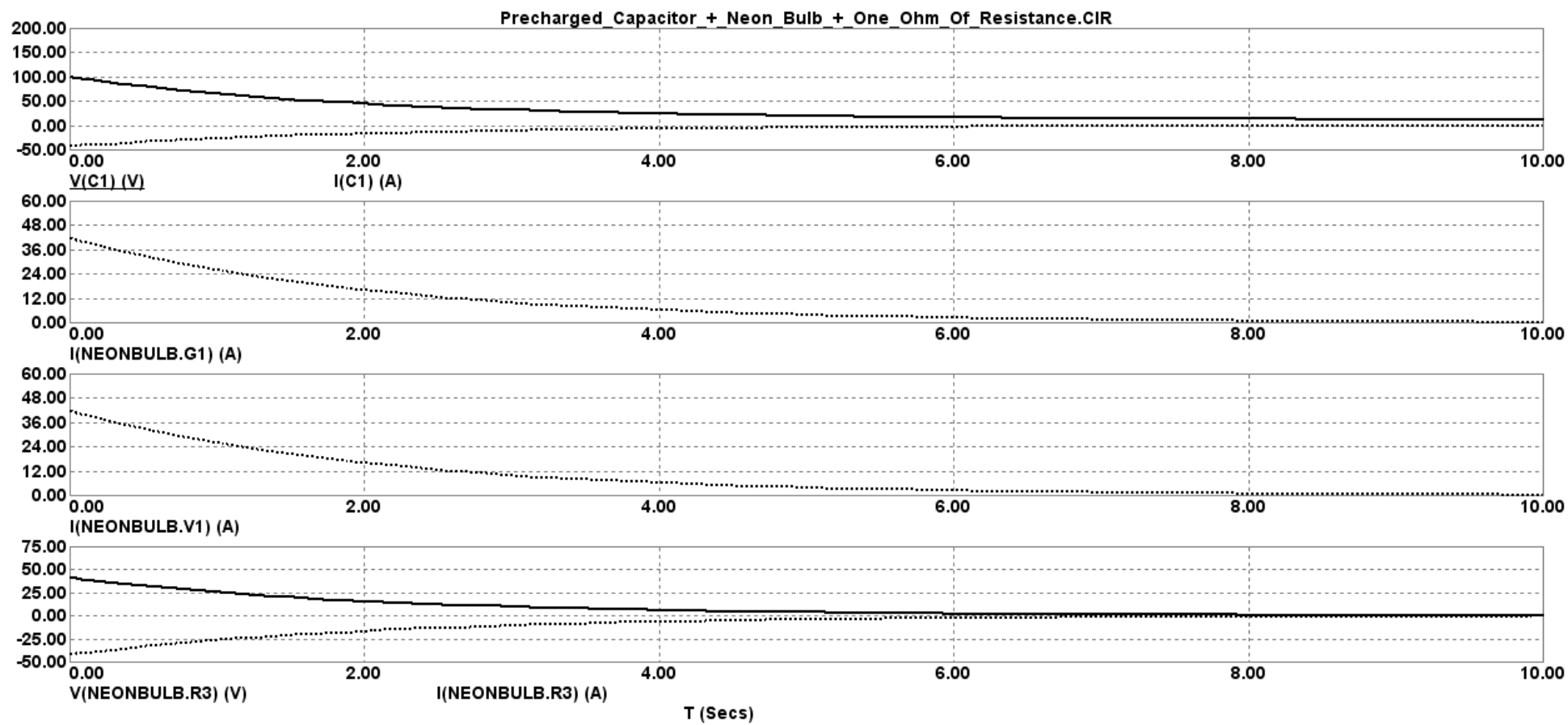


FIG. 49

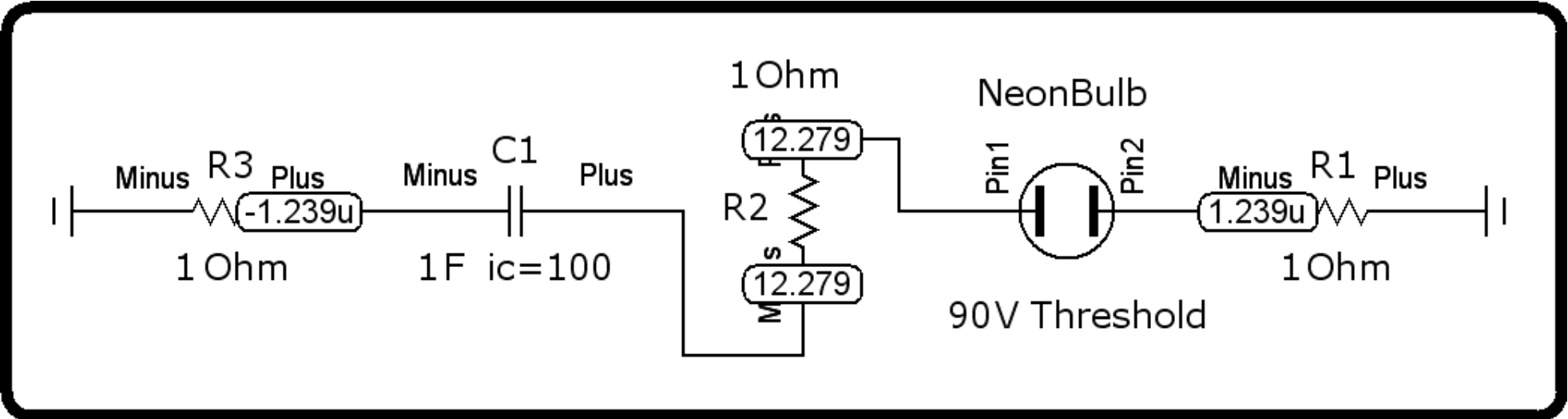


FIG. 50

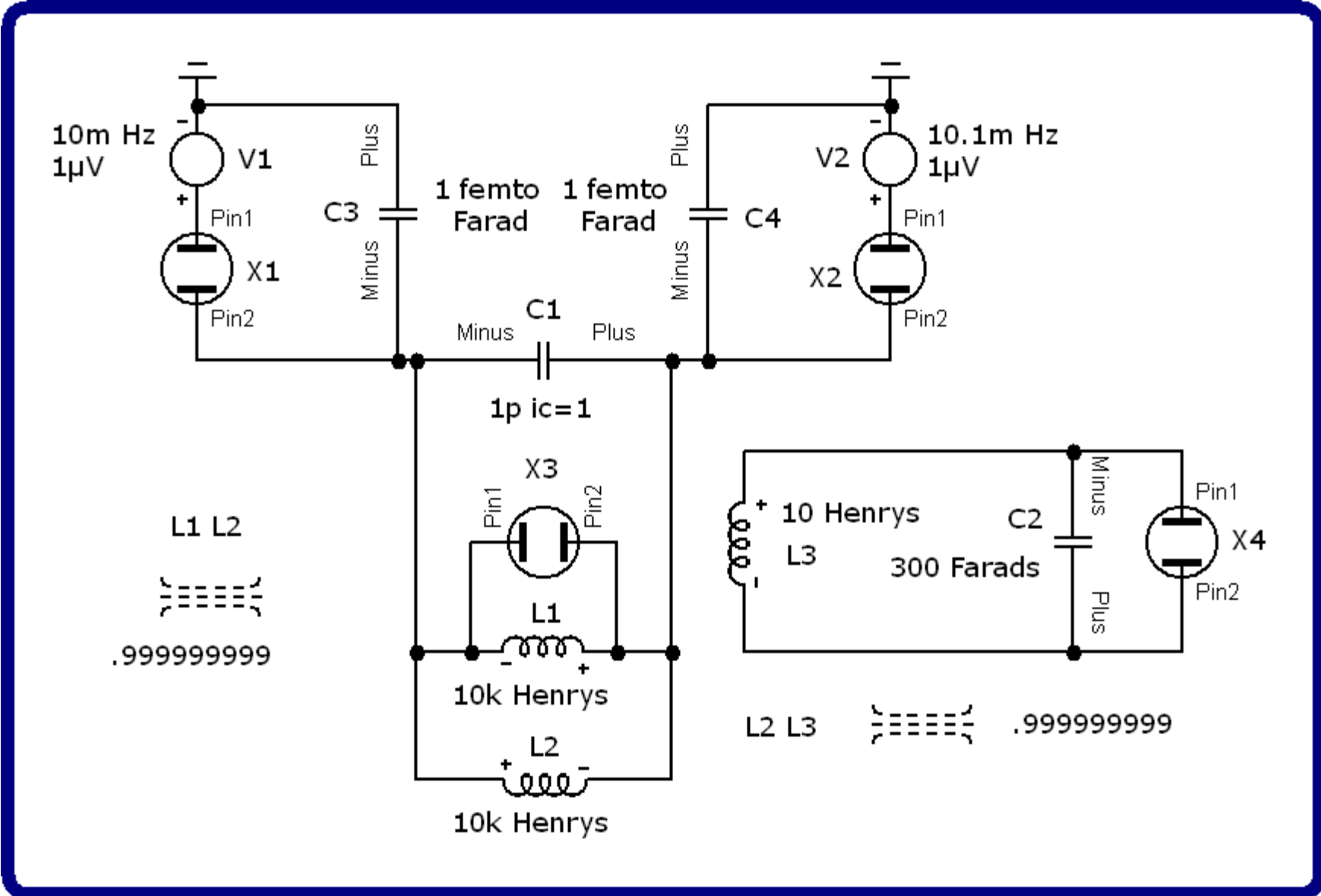


FIG. 51

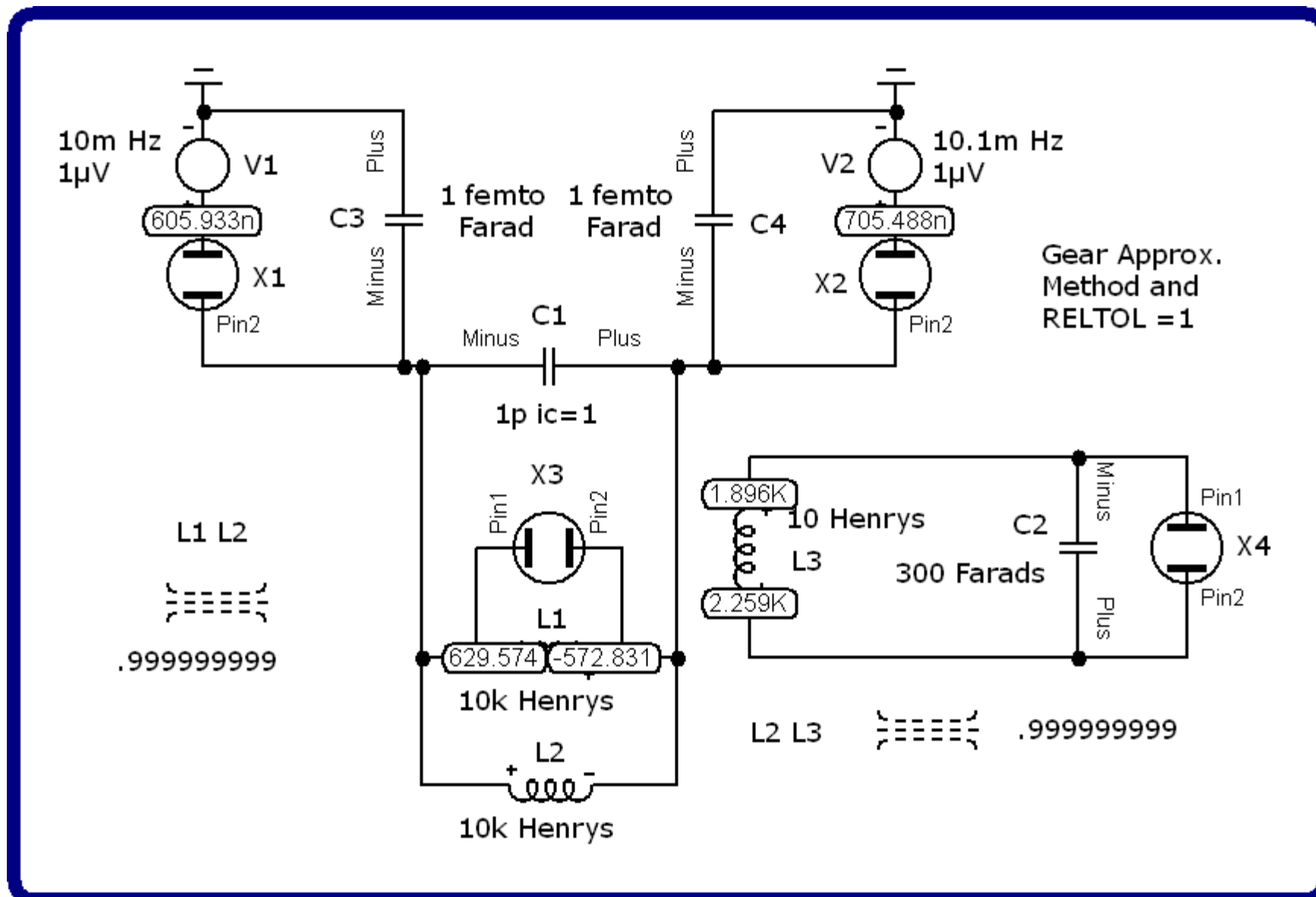
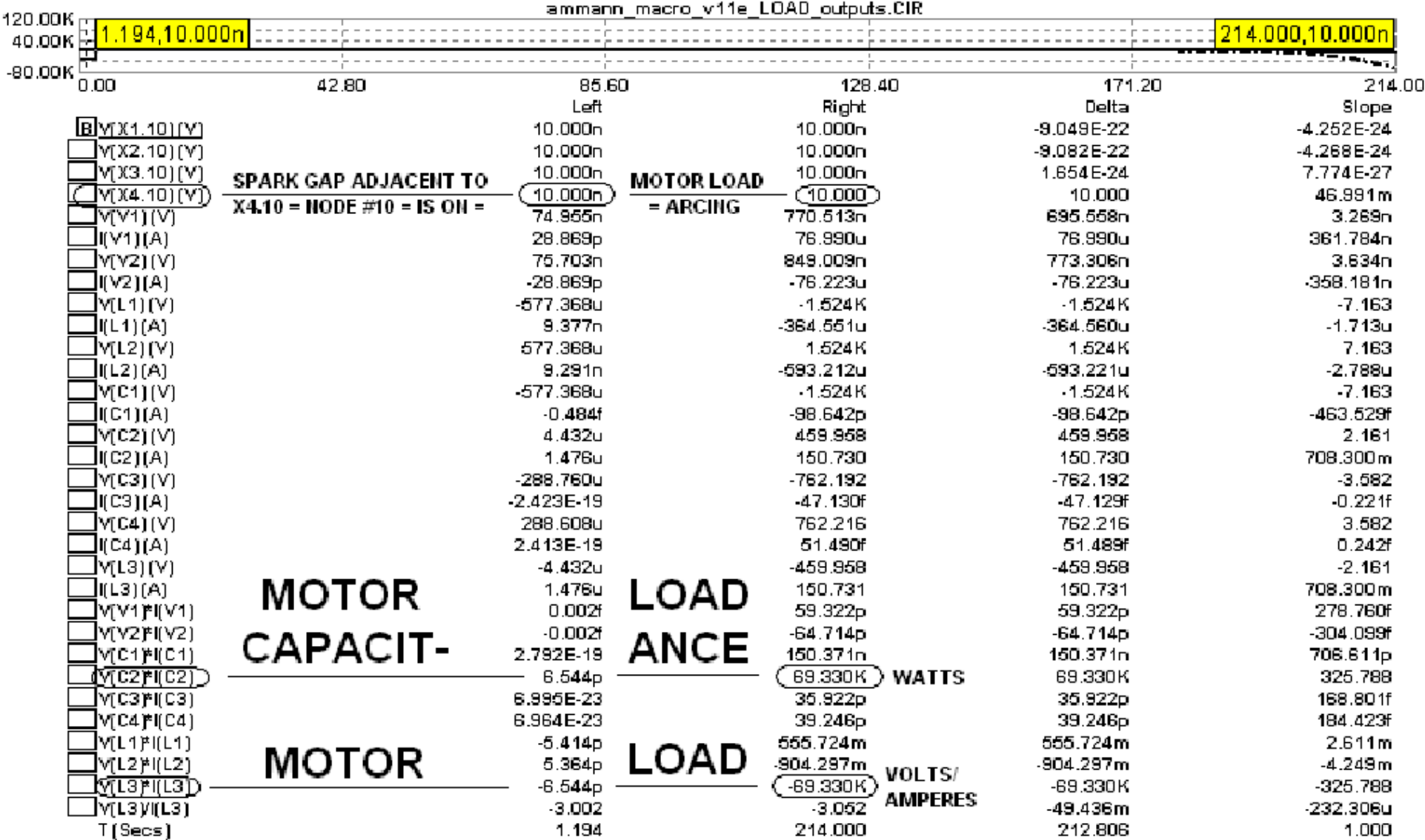


FIG. 52



**-69.33KVA = V(L3) × I(L3) = TARGET FOR AN ELECTRIC VEHICLE  
 { MOTOR COIL } = IN 214 SECONDS**

FIG. 53

ammann\_macro\_v11e\_X1\_outputs.CIR

	42.80	85.60	128.40	171.20	.00
	881.604m,6.315E-39			214.000,9.036E-33	
		Left	Right	Delta	Slope
<input checked="" type="checkbox"/> V(X1.R1) I(X1.R1)	6.315E-39	9.036E-33	9.036E-33	4.240E-35	
<input type="checkbox"/> V(X1.R2) I(X1.R2)	0.005f	251.164u	251.164u	1.179u	
<input type="checkbox"/> V(X1.R3) I(X1.R3)	-1.721E-36	-158.731f	-158.731f	-0.745f	
<input type="checkbox"/> V(X1.R4) I(X1.R4)	6.159E-23	155.603n	155.603n	730.125p	
<input type="checkbox"/> V(X1.D1) I(X1.D1)	13.833f	180.335n	180.335n	846.172p	
<input type="checkbox"/> V(X1.D2) I(X1.D2)	13.828f	4.071u	4.071u	19.100n	
<input type="checkbox"/> V(X1.L1) I(X1.L1)	4.656E-36	1.694E-21	1.694E-21	7.947E-24	
<input type="checkbox"/> V(X1.C1) I(X1.C1)	4.220E-23	162.479p	162.479p	762.386f	
<input type="checkbox"/> V(X1.C2) I(X1.C2)	5.177E-20	135.994f	135.994f	0.638f	
<input type="checkbox"/> V(X1.V1) I(X1.V1)	0.000	0.000	0.000	0.000	
<input type="checkbox"/> V(X1.G1) I(X1.G1)	6.159E-21	15.560u	15.560u	73.013n	
<input type="checkbox"/> V(X1.I0) (V)	10.000n	10.000n	3.309E-24	1.553E-26	
<input type="checkbox"/> V(X1.R1) (V)	-0.004f	4.251f	4.255f	0.020f	
<input type="checkbox"/> I(X1.R1) (A)	-1.777E-21	0.002f	0.002f	9.982E-21	
<input type="checkbox"/> V(X1.R2) (V)	7.315u	50.116	50.116	235.157m	
<input type="checkbox"/> I(X1.R2) (A)	731.494f	5.012u	5.012u	23.516n	
<input type="checkbox"/> V(X1.R3) (V)	0.001f	-398.410n	-398.410n	-1.869n	
<input type="checkbox"/> I(X1.R3) (A)	-0.001f	398.410n	398.410n	1.869n	
<input type="checkbox"/> V(X1.R4) (V)	-784.793n	-39.447	-39.447	-185.092m	
<input type="checkbox"/> I(X1.R4) (A)	-0.078f	-3.945n	-3.945n	-18.509p	
<input type="checkbox"/> V(X1.D1) (V)	48.750m	452.634m	403.883m	1.895m	
<input type="checkbox"/> I(X1.D1) (A)	283.750f	398.412n	398.412n	1.869n	
<input type="checkbox"/> V(X1.D2) (V)	48.744m	-10.217	-10.266	-48.170m	
<input type="checkbox"/> I(X1.D2) (A)	283.690f	-398.412n	-398.412n	-1.869n	
<input type="checkbox"/> V(X1.L1) (V)	0.004f	-4.251f	-4.255f	-0.020f	
<input type="checkbox"/> I(X1.L1) (A)	0.001f	-398.410n	-398.410n	-1.869n	
<input type="checkbox"/> V(X1.C1) (V)	-7.315u	-50.116	-50.116	-235.157m	
<input type="checkbox"/> I(X1.C1) (A)	-0.006f	-3.242p	-3.242p	-15.212f	
<input type="checkbox"/> V(X1.C2) (V)	-6.530u	-10.670	-10.670	-50.065m	
<input type="checkbox"/> I(X1.C2) (A)	-7.928f	-12.748f	-4.818f	-0.023f	
<input type="checkbox"/> V(X1.V1) (V)	0.000	0.000	0.000	0.000	
<input type="checkbox"/> I(X1.V1) (A)	0.001f	-398.410n	-398.410n	-1.869n	
<input type="checkbox"/> V(X1.G1) (V)	-784.793n	-39.447	-39.447	-185.092m	
<input type="checkbox"/> I(X1.G1) (A)	-7.848f	-394.466n	-394.466n	-1.851n	
T (Secs)	881.604m	214.000	213.118	1.000	

FIG. 54

ammann\_macro\_v11e\_X2\_outputs.CIR

	428.000m,2.227E-34	42.80	85.60	128.40	171.20	214.000,9.258E-33	.00
			Left	Right	Delta		Slope
<input checked="" type="checkbox"/> V(X2.R1) I(X2.R1)			2.227E-34	9.258E-33	9.036E-33		4.231E-35
<input type="checkbox"/> V(X2.R2) I(X2.R2)			0.001f	251.164u	251.164u		1.176u
<input type="checkbox"/> V(X2.R3) I(X2.R3)			-3.417E-25	-158.677f	-158.677f		-0.743f
<input type="checkbox"/> V(X2.R4) I(X2.R4)			0.006f	155.550n	155.550n		728.325p
<input type="checkbox"/> V(X2.D1) I(X2.D1)			295.527p	9.249u	9.249u		43.307n
<input type="checkbox"/> V(X2.D2) I(X2.D2)			292.096p	180.436n	180.144n		843.481p
<input type="checkbox"/> V(X2.L1) I(X2.L1)			3.901E-28	1.714E-21	1.714E-21		8.026E-24
<input type="checkbox"/> V(X2.C1) I(X2.C1)			0.004f	162.478p	162.478p		760.766f
<input type="checkbox"/> V(X2.C2) I(X2.C2)			-0.495f	-1.129p	-1.129p		-5.286f
<input type="checkbox"/> V(X2.V1) I(X2.V1)			0.000	0.000	0.000		0.000
<input type="checkbox"/> V(X2.G1) I(X2.G1)			0.644f	15.555u	15.555u		72.833n
<input type="checkbox"/> V(X2.I0) (V)			10.000n	10.000n	0.009f		4.379E-20
<input type="checkbox"/> V(X2.R1) (V)			-0.667f	-4.303f	-3.636f		-0.017f
<input type="checkbox"/> I(X2.R1) (A)			-3.337E-19	-0.002f	-0.002f		-8.512E-21
<input type="checkbox"/> V(X2.R2) (V)			-3.325u	-50.116	-50.116		-234.657m
<input type="checkbox"/> I(X2.R2) (A)			-332.466f	-5.012u	-5.012u		-23.466n
<input type="checkbox"/> V(X2.R3) (V)			584.516f	398.342n	398.342n		1.865n
<input type="checkbox"/> I(X2.R3) (A)			-584.516f	-398.342n	-398.342n		-1.865n
<input type="checkbox"/> V(X2.R4) (V)			253.703u	39.440	39.440		184.666m
<input type="checkbox"/> I(X2.R4) (A)			25.370f	3.944n	3.944n		18.467p
<input type="checkbox"/> V(X2.D1) (V)			273.851m	-10.224	-10.498		-49.153m
<input type="checkbox"/> I(X2.D1) (A)			1.079n	-904.700n	-905.780n		-4.241n
<input type="checkbox"/> V(X2.D2) (V)			273.601m	452.629m	179.029m		838.258u
<input type="checkbox"/> I(X2.D2) (A)			1.068n	398.640n	397.572n		1.862n
<input type="checkbox"/> V(X2.L1) (V)			0.667f	4.303f	3.636f		0.017f
<input type="checkbox"/> I(X2.L1) (A)			584.515f	398.342n	398.342n		1.865n
<input type="checkbox"/> V(X2.C1) (V)			3.325u	50.116	50.116		234.657m
<input type="checkbox"/> I(X2.C1) (A)			1.168p	3.242p	2.074p		9.711f
<input type="checkbox"/> V(X2.C2) (V)			-250.379u	10.676	10.677		49.991m
<input type="checkbox"/> I(X2.C2) (A)			1.978p	-105.788f	-2.084p		-9.756f
<input type="checkbox"/> V(X2.V1) (V)			0.000	0.000	0.000		0.000
<input type="checkbox"/> I(X2.V1) (A)			584.516f	398.342n	398.342n		1.865n
<input type="checkbox"/> V(X2.G1) (V)			253.703u	39.440	39.440		184.666m
<input type="checkbox"/> I(X2.G1) (A)			2.537p	394.398n	394.396n		1.847n
T (Secs)			428.000m	214.000	213.572		1.000

FIG. 55

ammann\_macro\_v11e\_X3\_outputs.CIR

	42.80	85.60	128.40	171.20	.00
	856.000m,3.587E-46			214.000,1.616E-30	
		Left	Right	Delta	Slope
<input checked="" type="checkbox"/> V(X3.R1) I(X3.R1)	3.587E-46		1.616E-30	1.616E-30	7.580E-33
<input type="checkbox"/> V(X3.R2) I(X3.R2)	3.024E-21		90.284u	90.284u	423.583n
<input type="checkbox"/> V(X3.R3) I(X3.R3)	-2.015E-39		-38.355f	-38.355f	-0.180f
<input type="checkbox"/> V(X3.R4) I(X3.R4)	5.773E-31		37.599n	37.599n	176.404p
<input type="checkbox"/> V(X3.D1) I(X3.D1)	14.416f		171.823n	171.823n	806.134p
<input type="checkbox"/> V(X3.D2) I(X3.D2)	14.416f		9.017u	9.017u	42.305n
<input type="checkbox"/> V(X3.L1) I(X3.L1)	3.803E-41		-1.113E-20	-1.113E-20	-5.223E-23
<input type="checkbox"/> V(X3.C1) I(X3.C1)	4.710E-26		58.409p	58.409p	274.035f
<input type="checkbox"/> V(X3.C2) I(X3.C2)	1.413E-25		-6.150p	-6.150p	-28.854f
<input type="checkbox"/> V(X3.V1) I(X3.V1)	0.000		0.000	0.000	0.000
<input type="checkbox"/> V(X3.G1) I(X3.G1)	5.773E-29		3.760u	3.760u	17.640n
<input type="checkbox"/> V(X3.10) (V)	10.000n		10.000n	0.002f	1.032E-20
<input type="checkbox"/> V(X3.R1) (V)	-8.470E-22		-56.843f	-56.843f	-0.267f
<input type="checkbox"/> I(X3.R1) (A)	-4.235E-25		-0.028f	-0.028f	-1.333E-19
<input type="checkbox"/> V(X3.R2) (V)	173.891n		30.047	30.047	140.972m
<input type="checkbox"/> I(X3.R2) (A)	17.389f		3.005u	3.005u	14.097n
<input type="checkbox"/> V(X3.R3) (V)	4.489E-20		-195.845n	-195.845n	-918.840p
<input type="checkbox"/> I(X3.R3) (A)	-4.489E-20		195.845n	195.845n	918.840p
<input type="checkbox"/> V(X3.R4) (V)	-75.978p		-19.391	-19.391	-90.974m
<input type="checkbox"/> I(X3.R4) (A)	-7.598E-21		-1.939n	-1.939n	-9.097p
<input type="checkbox"/> V(X3.D1) (V)	49.553m		439.245m	389.692m	1.828m
<input type="checkbox"/> I(X3.D1) (A)	290.917f		391.177n	391.177n	1.835n
<input type="checkbox"/> V(X3.D2) (V)	49.553m		-10.218	-10.267	-48.170m
<input type="checkbox"/> I(X3.D2) (A)	290.915f		-882.500n	-882.500n	-4.140n
<input type="checkbox"/> V(X3.L1) (V)	8.470E-22		56.843f	56.843f	0.267f
<input type="checkbox"/> I(X3.L1) (A)	4.489E-20		-195.845n	-195.845n	-918.840p
<input type="checkbox"/> V(X3.C1) (V)	-173.891n		-30.047	-30.047	-140.972m
<input type="checkbox"/> I(X3.C1) (A)	-2.709E-19		-1.944p	-1.944p	-9.120f
<input type="checkbox"/> V(X3.C2) (V)	-173.815n		-10.657	-10.657	-49.998m
<input type="checkbox"/> I(X3.C2) (A)	-0.001f		577.094f	577.095f	2.708f
<input type="checkbox"/> V(X3.V1) (V)	0.000		0.000	0.000	0.000
<input type="checkbox"/> I(X3.V1) (A)	4.489E-20		-195.845n	-195.845n	-918.840p
<input type="checkbox"/> V(X3.G1) (V)	-75.978p		-19.391	-19.391	-90.974m
<input type="checkbox"/> I(X3.G1) (A)	-0.001f		-193.906n	-193.906n	-909.740p
T (Secs)	856.000m		214.000	213.144	1.000

FIG. 56

ammann\_macro\_v11e\_X4\_outputs.CIR

	428.00	85.60	128.40	171.20	214.00
	428.000m,2.833E-41				214.000,1.010E-31
	42.80	85.60	128.40	171.20	214.00
		Left	Right	Delta	Slope
<input checked="" type="checkbox"/> V(X4.R1)I(X4.R1)		2.833E-41	1.010E-31	1.010E-31	4.728E-34
<input type="checkbox"/> V(X4.R2)I(X4.R2)		0.004f	1.005m	1.005m	4.704u
<input type="checkbox"/> V(X4.R3)I(X4.R3)		-5.369E-28	-817.499f	-817.499f	-3.828f
<input type="checkbox"/> V(X4.R4)I(X4.R4)		0.048f	801.391n	801.391n	3.752n
<input type="checkbox"/> V(X4.D1)I(X4.D1)		11.599p	9.257u	9.257u	43.344n
<input type="checkbox"/> V(X4.D2)I(X4.D2)		11.247p	428.417n	428.406n	2.006n
<input type="checkbox"/> V(X4.L1)I(X4.L1)		5.515E-33	1.285E-20	1.285E-20	6.016E-23
<input type="checkbox"/> V(X4.C1)I(X4.C1)		0.015f	649.916p	649.916p	3.043p
<input type="checkbox"/> V(X4.C2)I(X4.C2)		-4.826f	120.466f	125.292f	0.587f
<input type="checkbox"/> V(X4.V1)I(X4.V1)		0.000	0.000	0.000	0.000
<input type="checkbox"/> V(X4.G1)I(X4.G1)		4.840f	80.139u	80.139u	375.232n
<input type="checkbox"/> V(X4.I0)(V)		10.000n	10.000n	0.074f	3.482E-19
<input type="checkbox"/> V(X4.R1)(V)		-2.380E-19	-14.211f	-14.211f	-0.067f
<input type="checkbox"/> I(X4.R1)(A)		-1.190E-22	-0.007f	-0.007f	-3.327E-20
<input type="checkbox"/> V(X4.R2)(V)		-6.611u	-100.233	-100.233	-469.315m
<input type="checkbox"/> I(X4.R2)(A)		-661.148f	-10.023u	-10.023u	-46.931n
<input type="checkbox"/> V(X4.R3)(V)		23.170f	904.156n	904.156n	4.233n
<input type="checkbox"/> I(X4.R3)(A)		-23.170f	-904.156n	-904.156n	-4.233n
<input type="checkbox"/> V(X4.R4)(V)		695.689u	89.520	89.520	419.155m
<input type="checkbox"/> I(X4.R4)(A)		69.569f	8.952n	8.952n	41.915p
<input type="checkbox"/> V(X4.D1)(V)		198.294m	-10.238	-10.437	-48.867m
<input type="checkbox"/> I(X4.D1)(A)		58.492p	-904.157n	-904.216n	-4.234n
<input type="checkbox"/> V(X4.D2)(V)		197.605m	473.830m	276.225m	1.293m
<input type="checkbox"/> I(X4.D2)(A)		56.917p	904.157n	904.100n	4.233n
<input type="checkbox"/> V(X4.L1)(V)		2.380E-19	14.211f	14.211f	0.067f
<input type="checkbox"/> I(X4.L1)(A)		23.170f	904.156n	904.156n	4.233n
<input type="checkbox"/> V(X4.C1)(V)		6.611u	100.233	100.233	469.315m
<input type="checkbox"/> I(X4.C1)(A)		2.336p	6.484p	4.148p	19.421f
<input type="checkbox"/> V(X4.C2)(V)		-689.077u	10.712	10.713	50.160m
<input type="checkbox"/> I(X4.C2)(A)		7.003p	11.246f	-6.992p	-32.739f
<input type="checkbox"/> V(X4.V1)(V)		0.000	0.000	0.000	0.000
<input type="checkbox"/> I(X4.V1)(A)		23.170f	904.156n	904.156n	4.233n
<input type="checkbox"/> V(X4.G1)(V)		695.689u	89.520	89.520	419.155m
<input type="checkbox"/> I(X4.G1)(A)		6.957p	895.204n	895.197n	4.192n
T (Secs)	428.000m		214.000	213.572	1.000

FIG. 57

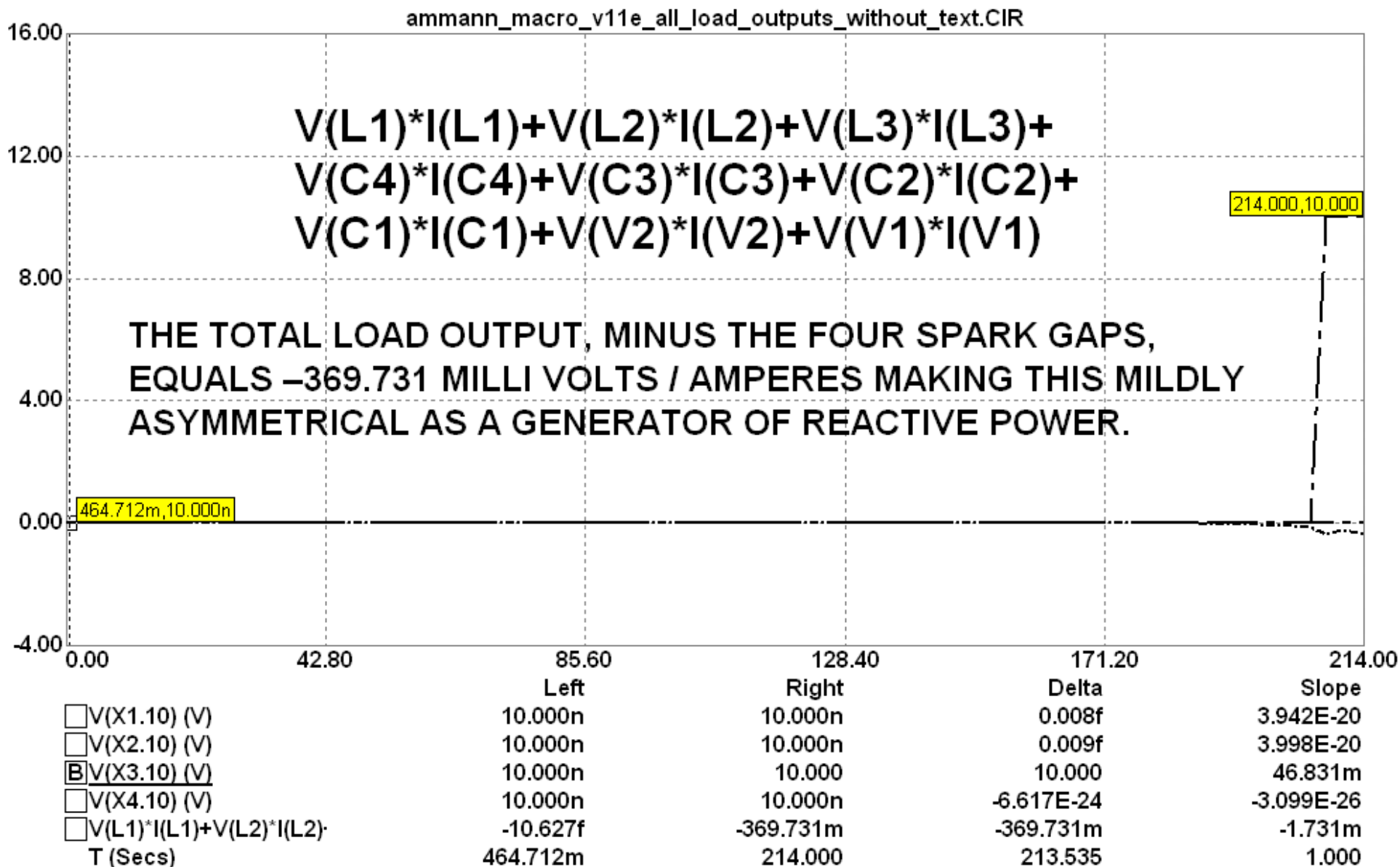
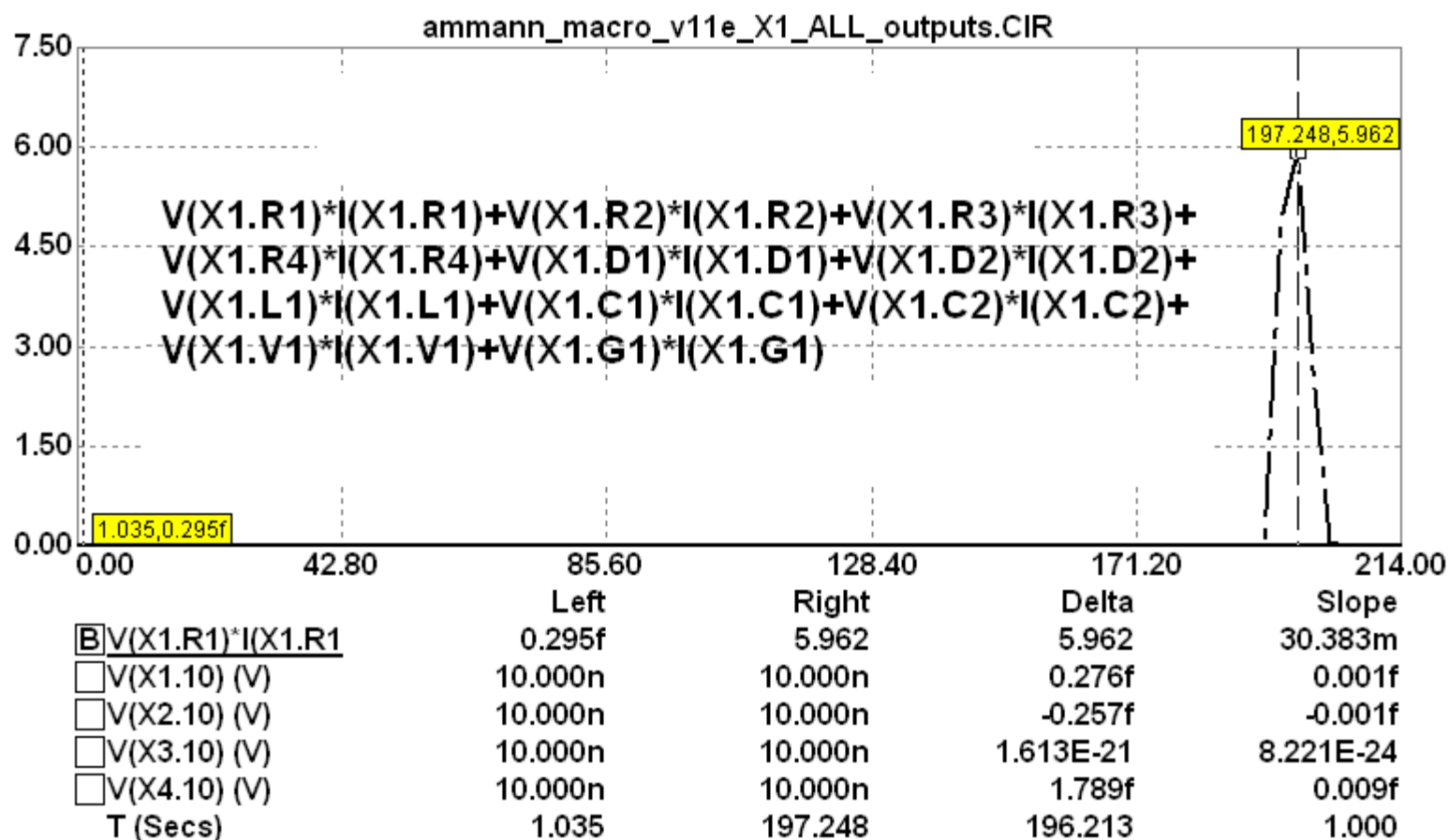
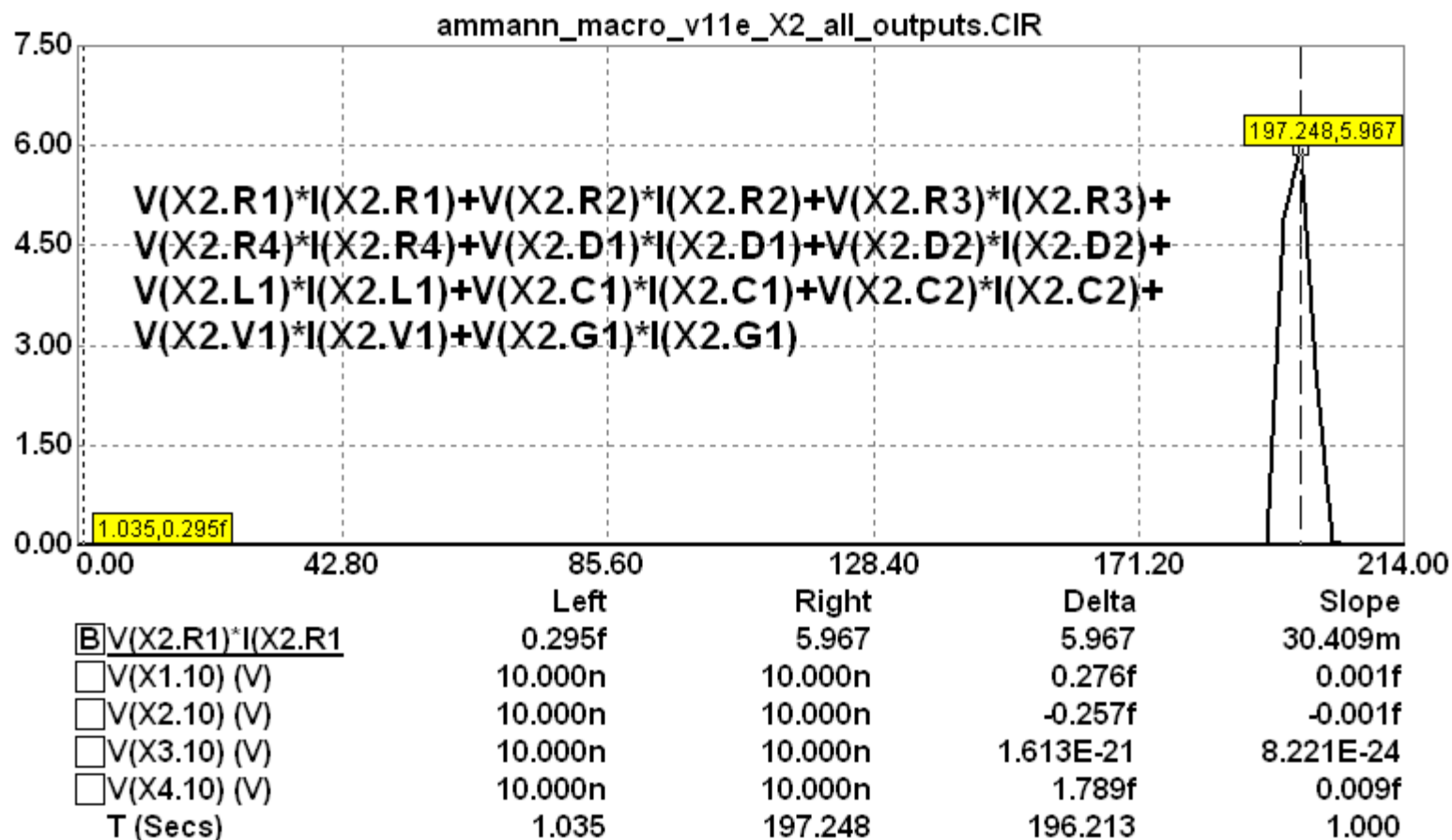


FIG. 58



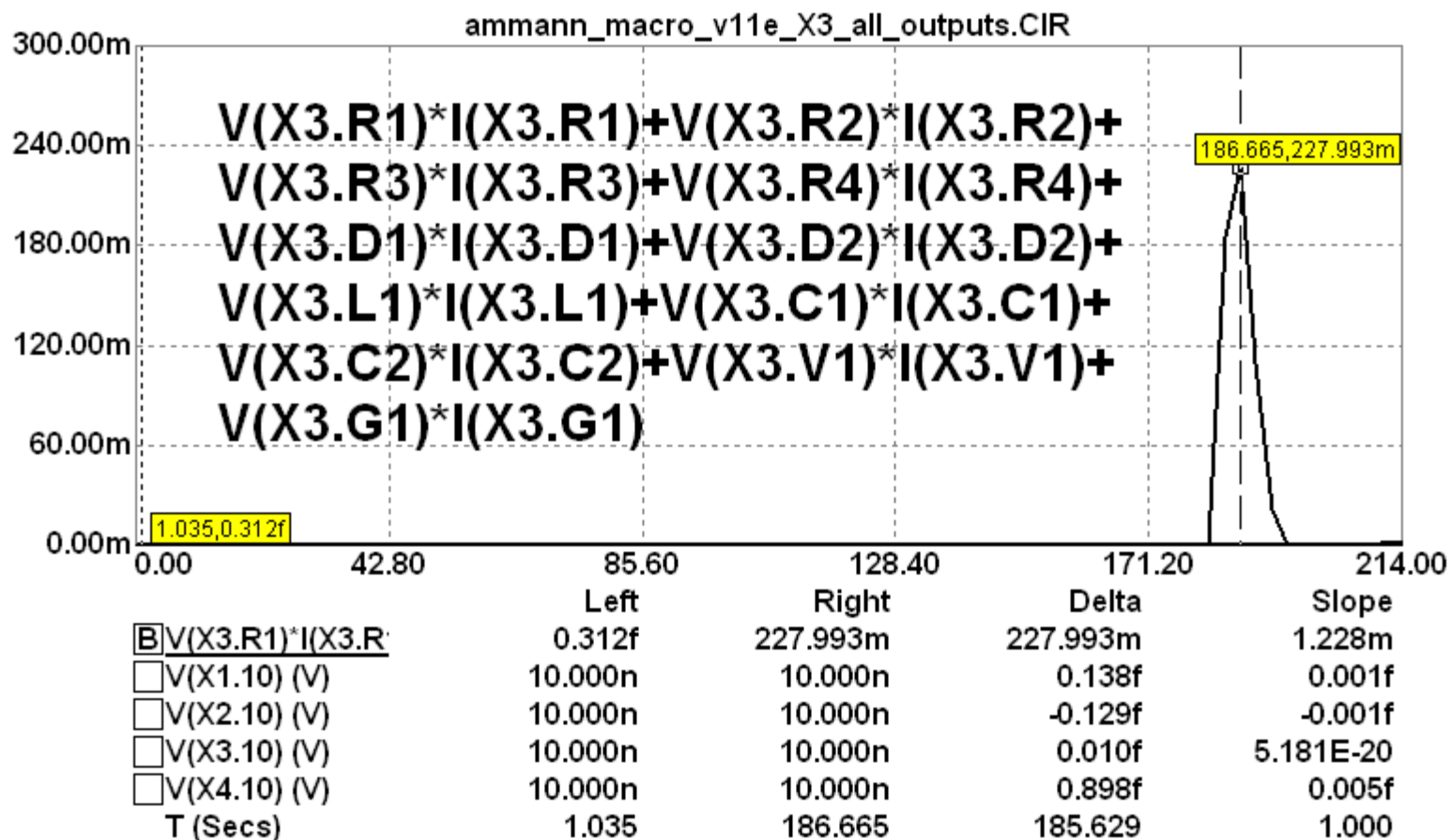
**A spark gap of mild absorption / consumption spiking at 198 seconds and absorbing +6 watts of real power.**

**FIG. 59**



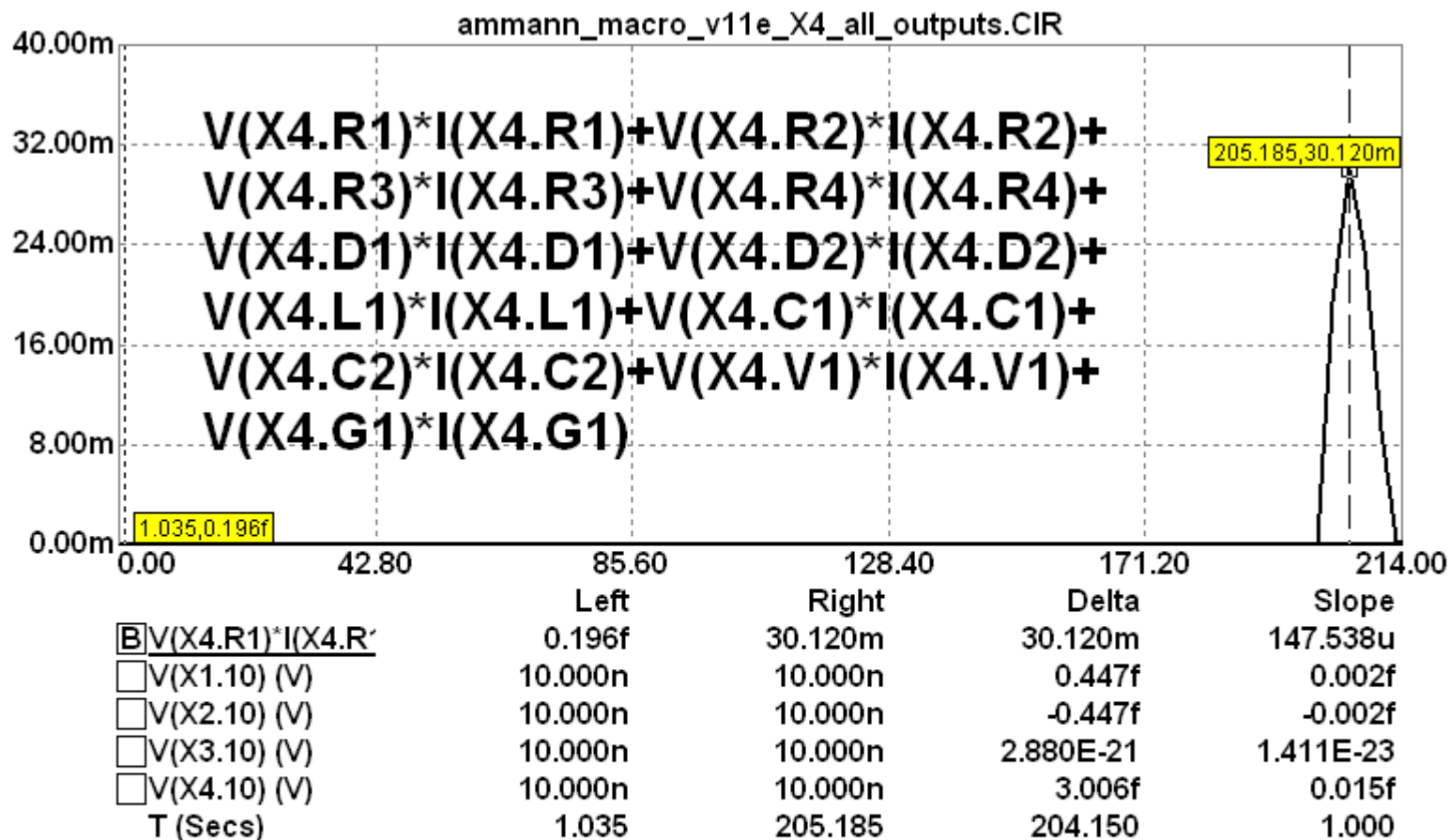
**A spark gap of mild absorption / consumption spiking at 197 seconds and absorbing +6 watts of real power.**

**FIG. 60**



A spark gap of mild absorption / consumption spiking at nearly 187 seconds and absorbing +228 milli watts of real power.

FIG. 61



**A spark gap of mild absorption / consumption of real power spiking at 205 seconds and absorbing +30 milli watts.**

**FIG. 62**

CIRCUIT (LOAD)	X1 OUTPUTS	X2 OUTPUTS	X3 OUTPUTS	X4 OUTPUTS
10.000n <input checked="" type="checkbox"/> V(X1.10)(V)	10.000n <input type="checkbox"/> V(X1.10)(V)	10.000n <input type="checkbox"/> V(X2.10)(V)	10.000n <input type="checkbox"/> V(X3.10)(V)	10.000n <input type="checkbox"/> V(X4.10)(V)
10.000n <input type="checkbox"/> V(X2.10)(V)	4.251f <input type="checkbox"/> V(X1.R1)(V)	-4.303f <input type="checkbox"/> V(X2.R1)(V)	-56.843f <input type="checkbox"/> V(X3.R1)(V)	-14.211f <input type="checkbox"/> V(X4.R1)(V)
10.000n <input type="checkbox"/> V(X3.10)(V)	0.002f <input type="checkbox"/> I(X1.R1)(A)	-0.002f <input type="checkbox"/> I(X2.R1)(A)	-0.028f <input type="checkbox"/> I(X3.R1)(A)	-0.007f <input type="checkbox"/> I(X4.R1)(A)
10.000 <input type="checkbox"/> V(X4.10)(V)	50.116 <input type="checkbox"/> V(X1.R2)(V)	-50.116 <input type="checkbox"/> V(X2.R2)(V)	30.047 <input type="checkbox"/> V(X3.R2)(V)	-100.233 <input type="checkbox"/> V(X4.R2)(V)
770.513n <input type="checkbox"/> V(V1)(V)	5.012u <input type="checkbox"/> I(X1.R2)(A)	-5.012u <input type="checkbox"/> I(X2.R2)(A)	3.005u <input type="checkbox"/> I(X3.R2)(A)	-10.023u <input type="checkbox"/> I(X4.R2)(A)
76.990u <input type="checkbox"/> I(V1)(A)	-398.410n <input type="checkbox"/> V(X1.R3)(V)	398.342n <input type="checkbox"/> V(X2.R3)(V)	-195.845n <input type="checkbox"/> V(X3.R3)(V)	904.156n <input type="checkbox"/> V(X4.R3)(V)
849.009n <input type="checkbox"/> V(V2)(V)	398.410n <input type="checkbox"/> I(X1.R3)(A)	-398.342n <input type="checkbox"/> I(X2.R3)(A)	195.845n <input type="checkbox"/> I(X3.R3)(A)	-904.156n <input type="checkbox"/> I(X4.R3)(A)
-76.223u <input type="checkbox"/> I(V2)(A)	-39.447 <input type="checkbox"/> V(X1.R4)(V)	39.440 <input type="checkbox"/> V(X2.R4)(V)	-19.391 <input type="checkbox"/> V(X3.R4)(V)	89.520 <input type="checkbox"/> V(X4.R4)(V)
-1.524K <input type="checkbox"/> V(L1)(V)	-3.945n <input type="checkbox"/> I(X1.R4)(A)	3.944n <input type="checkbox"/> I(X2.R4)(A)	-1.939n <input type="checkbox"/> I(X3.R4)(A)	8.952n <input type="checkbox"/> I(X4.R4)(A)
-364.551u <input type="checkbox"/> I(L1)(A)	452.634m <input type="checkbox"/> V(X1.D1)(V)	-10.224 <input type="checkbox"/> V(X2.D1)(V)	439.245m <input type="checkbox"/> V(X3.D1)(V)	-10.238 <input type="checkbox"/> V(X4.D1)(V)
1.524K <input type="checkbox"/> V(L2)(V)	398.412n <input type="checkbox"/> I(X1.D1)(A)	-904.700n <input type="checkbox"/> I(X2.D1)(A)	391.177n <input type="checkbox"/> I(X3.D1)(A)	-904.157n <input type="checkbox"/> I(X4.D1)(A)
-593.212u <input type="checkbox"/> I(L2)(A)	-10.217 <input type="checkbox"/> V(X1.D2)(V)	452.629m <input type="checkbox"/> V(X2.D2)(V)	-10.218 <input type="checkbox"/> V(X3.D2)(V)	473.830m <input type="checkbox"/> V(X4.D2)(V)
-1.524K <input type="checkbox"/> V(C1)(V)	-398.412n <input type="checkbox"/> I(X1.D2)(A)	398.640n <input type="checkbox"/> I(X2.D2)(A)	-882.500n <input type="checkbox"/> I(X3.D2)(A)	904.157n <input type="checkbox"/> I(X4.D2)(A)
-98.642p <input type="checkbox"/> I(C1)(A)	-4.251f <input type="checkbox"/> V(X1.L1)(V)	4.303f <input type="checkbox"/> V(X2.L1)(V)	56.843f <input type="checkbox"/> V(X3.L1)(V)	14.211f <input type="checkbox"/> V(X4.L1)(V)
459.958 <input type="checkbox"/> V(C2)(V)	-398.410n <input type="checkbox"/> I(X1.L1)(A)	398.342n <input type="checkbox"/> I(X2.L1)(A)	-195.845n <input type="checkbox"/> I(X3.L1)(A)	904.156n <input type="checkbox"/> I(X4.L1)(A)
150.730 <input type="checkbox"/> I(C2)(A)	-50.116 <input type="checkbox"/> V(X1.C1)(V)	50.116 <input type="checkbox"/> V(X2.C1)(V)	-30.047 <input type="checkbox"/> V(X3.C1)(V)	100.233 <input type="checkbox"/> V(X4.C1)(V)
-762.192 <input type="checkbox"/> V(C3)(V)	-3.242p <input type="checkbox"/> I(X1.C1)(A)	3.242p <input type="checkbox"/> I(X2.C1)(A)	-1.944p <input type="checkbox"/> I(X3.C1)(A)	6.484p <input type="checkbox"/> I(X4.C1)(A)
-47.130f <input type="checkbox"/> I(C3)(A)	-10.670 <input type="checkbox"/> V(X1.C2)(V)	10.676 <input type="checkbox"/> V(X2.C2)(V)	-10.657 <input type="checkbox"/> V(X3.C2)(V)	10.712 <input type="checkbox"/> V(X4.C2)(V)
762.216 <input type="checkbox"/> V(C4)(V)	-12.746f <input type="checkbox"/> I(X1.C2)(A)	-105.788f <input type="checkbox"/> I(X2.C2)(A)	577.094f <input type="checkbox"/> I(X3.C2)(A)	11.246f <input type="checkbox"/> I(X4.C2)(A)
51.490f <input type="checkbox"/> I(C4)(A)	0.000 <input type="checkbox"/> V(X1.V1)(V)	0.000 <input type="checkbox"/> V(X2.V1)(V)	0.000 <input type="checkbox"/> V(X3.V1)(V)	0.000 <input type="checkbox"/> V(X4.V1)(V)
-459.958 <input type="checkbox"/> V(L3)(V)	-398.410n <input type="checkbox"/> I(X1.V1)(A)	398.342n <input type="checkbox"/> I(X2.V1)(A)	-195.845n <input type="checkbox"/> I(X3.V1)(A)	904.156n <input type="checkbox"/> I(X4.V1)(A)
150.731 <input type="checkbox"/> I(L3)(A)	-39.447 <input type="checkbox"/> V(X1.G1)(V)	39.440 <input type="checkbox"/> V(X2.G1)(V)	-19.391 <input type="checkbox"/> V(X3.G1)(V)	89.520 <input type="checkbox"/> V(X4.G1)(V)
59.322p <input type="checkbox"/> V(V1)I(V1)	-394.466n <input type="checkbox"/> I(X1.G1)(A)	394.398n <input type="checkbox"/> I(X2.G1)(A)	-193.906n <input type="checkbox"/> I(X3.G1)(A)	895.204n <input type="checkbox"/> I(X4.G1)(A)
-64.714p <input type="checkbox"/> V(V2)I(V2)				
150.371n <input type="checkbox"/> V(C1)I(C1)	9.036E-33 <input checked="" type="checkbox"/> V(X1.R1)I(X1.R1)	9.258E-33 <input checked="" type="checkbox"/> V(X2.R1)I(X2.R1)	1.616E-30 <input checked="" type="checkbox"/> V(X3.R1)I(X3.R1)	1.010E-31 <input checked="" type="checkbox"/> V(X4.R1)I(X4.R1)
69.330K <input type="checkbox"/> V(C2)I(C2)	251.164u <input type="checkbox"/> V(X1.R2)I(X1.R2)	251.164u <input type="checkbox"/> V(X2.R2)I(X2.R2)	90.284u <input type="checkbox"/> V(X3.R2)I(X3.R2)	1.005m <input type="checkbox"/> V(X4.R2)I(X4.R2)
35.922p <input type="checkbox"/> V(C3)I(C3)	-158.731f <input type="checkbox"/> V(X1.R3)I(X1.R3)	-158.677f <input type="checkbox"/> V(X2.R3)I(X2.R3)	-38.355f <input type="checkbox"/> V(X3.R3)I(X3.R3)	-817.499f <input type="checkbox"/> V(X4.R3)I(X4.R3)
39.246p <input type="checkbox"/> V(C4)I(C4)	155.603n <input type="checkbox"/> V(X1.R4)I(X1.R4)	155.550n <input type="checkbox"/> V(X2.R4)I(X2.R4)	37.599n <input type="checkbox"/> V(X3.R4)I(X3.R4)	801.391n <input type="checkbox"/> V(X4.R4)I(X4.R4)
555.724m <input type="checkbox"/> V(L1)I(L1)	180.335n <input type="checkbox"/> V(X1.D1)I(X1.D1)	9.249u <input type="checkbox"/> V(X2.D1)I(X2.D1)	171.823n <input type="checkbox"/> V(X3.D1)I(X3.D1)	9.257u <input type="checkbox"/> V(X4.D1)I(X4.D1)
-904.297m <input type="checkbox"/> V(L2)I(L2)	4.071u <input type="checkbox"/> V(X1.D2)I(X1.D2)	180.436n <input type="checkbox"/> V(X2.D2)I(X2.D2)	9.017u <input type="checkbox"/> V(X3.D2)I(X3.D2)	428.417n <input type="checkbox"/> V(X4.D2)I(X4.D2)
-69.330K <input type="checkbox"/> V(L3)I(L3)	1.694E-21 <input type="checkbox"/> V(X1.L1)I(X1.L1)	1.714E-21 <input type="checkbox"/> V(X2.L1)I(X2.L1)	-1.113E-20 <input type="checkbox"/> V(X3.L1)I(X3.L1)	1.285E-20 <input type="checkbox"/> V(X4.L1)I(X4.L1)
	162.479p <input type="checkbox"/> V(X1.C1)I(X1.C1)	162.478p <input type="checkbox"/> V(X2.C1)I(X2.C1)	58.409p <input type="checkbox"/> V(X3.C1)I(X3.C1)	649.916p <input type="checkbox"/> V(X4.C1)I(X4.C1)
	135.994f <input type="checkbox"/> V(X1.C2)I(X1.C2)	-1.129p <input type="checkbox"/> V(X2.C2)I(X2.C2)	-6.150p <input type="checkbox"/> V(X3.C2)I(X3.C2)	120.466f <input type="checkbox"/> V(X4.C2)I(X4.C2)
	0.000 <input type="checkbox"/> V(X1.V1)I(X1.V1)	0.000 <input type="checkbox"/> V(X2.V1)I(X2.V1)	0.000 <input type="checkbox"/> V(X3.V1)I(X3.V1)	0.000 <input type="checkbox"/> V(X4.V1)I(X4.V1)
	15.560u <input type="checkbox"/> V(X1.G1)I(X1.G1)	15.555u <input type="checkbox"/> V(X2.G1)I(X2.G1)	3.760u <input type="checkbox"/> V(X3.G1)I(X3.G1)	80.139u <input type="checkbox"/> V(X4.G1)I(X4.G1)

-348.573m VA

+ 271.131μ WATTS

+ 276.304μ WATTS

+ 103.27μ WATTS

+ 1.0956m WATTS

+ 1.0956m WATTS  
 + 276.304μ WATTS  
 + 271.131μ WATTS  
 + 103.27μ WATTS  
 -369.731mVA

**-346.8267m**  
**Volts/Amperes** IN 214 SECONDS

A SLIGHT ASYMMETRIC GAIN OVER LOSS. WHERE DID THIS EXCESS COME FROM? IT HAS LASTED TOO LONG AFTER THE INITIAL INPUT OF CAPACITOR, C1, WAS PRECHARGED WITH 1V.

FIG. 63

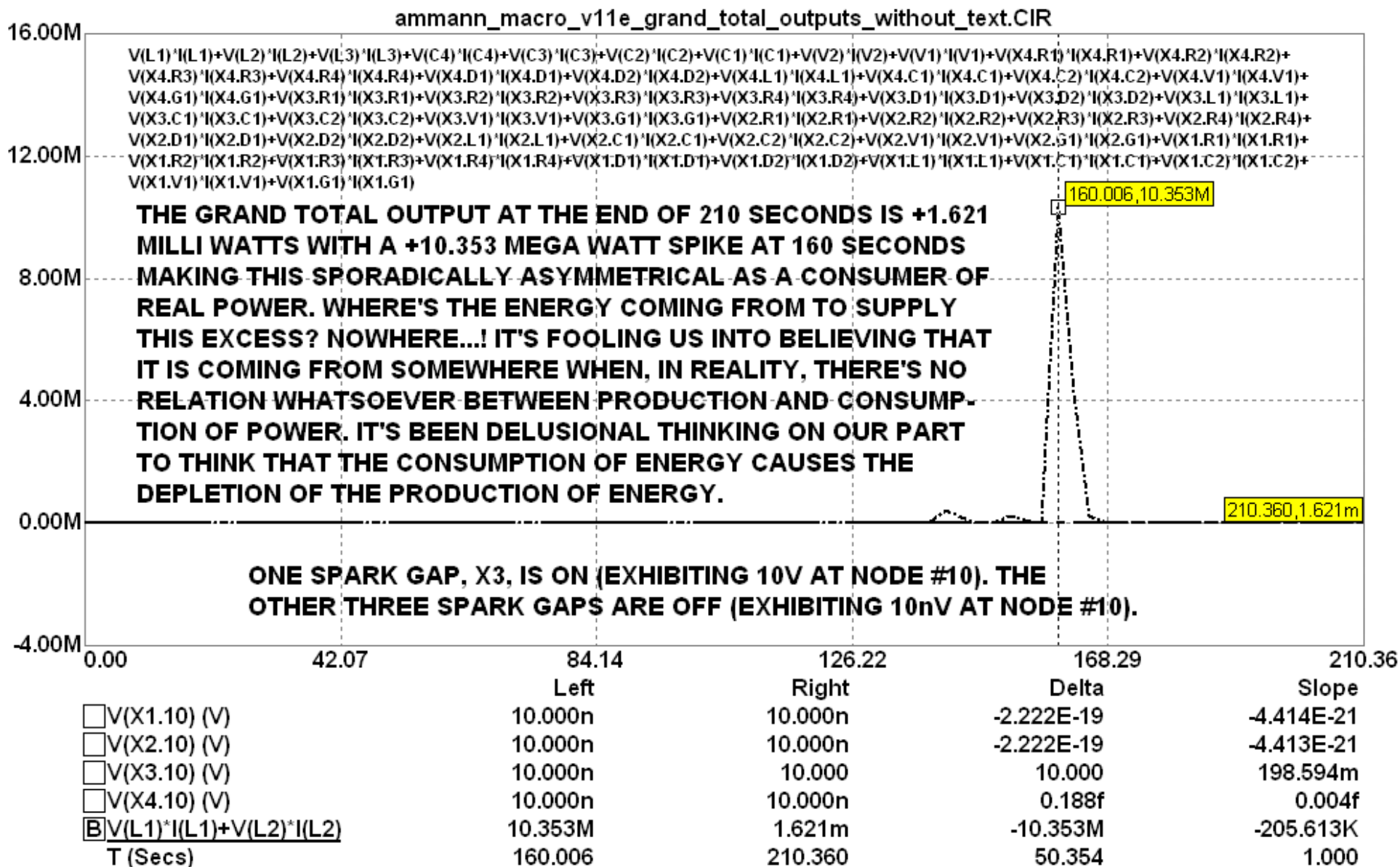
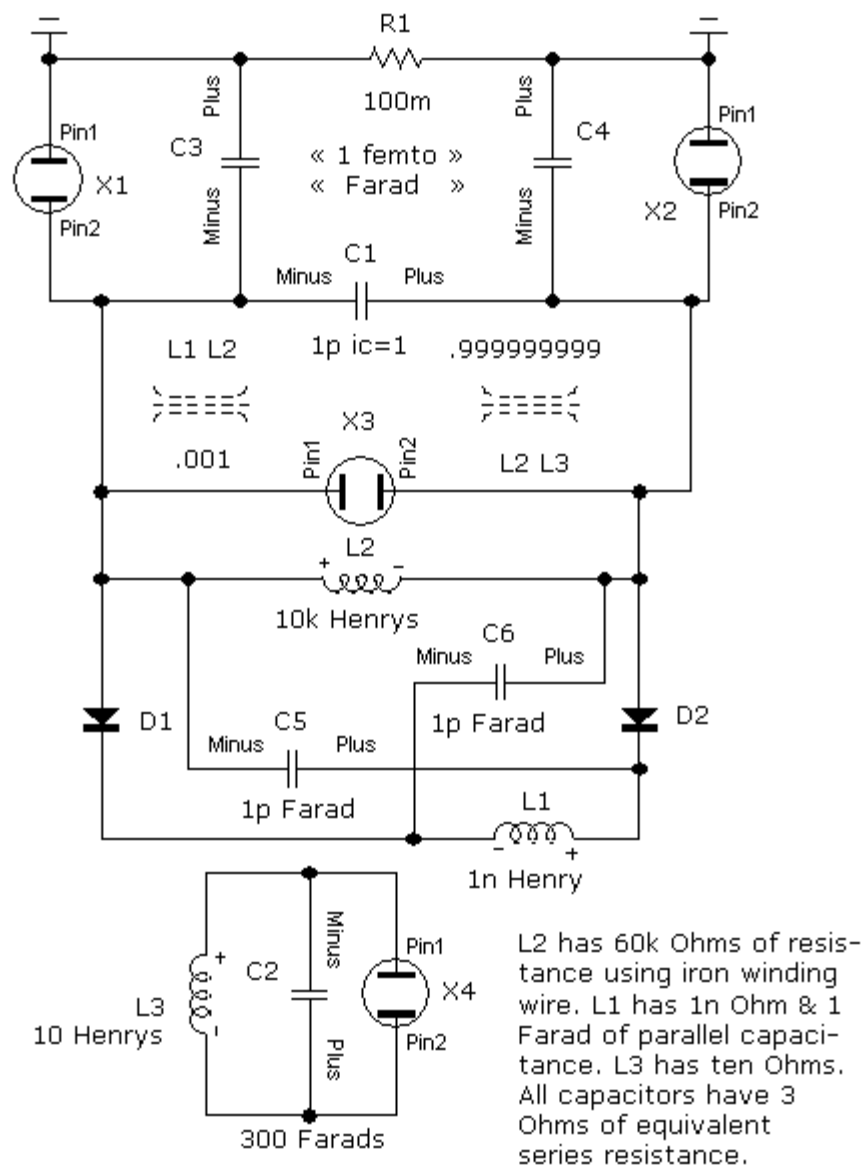


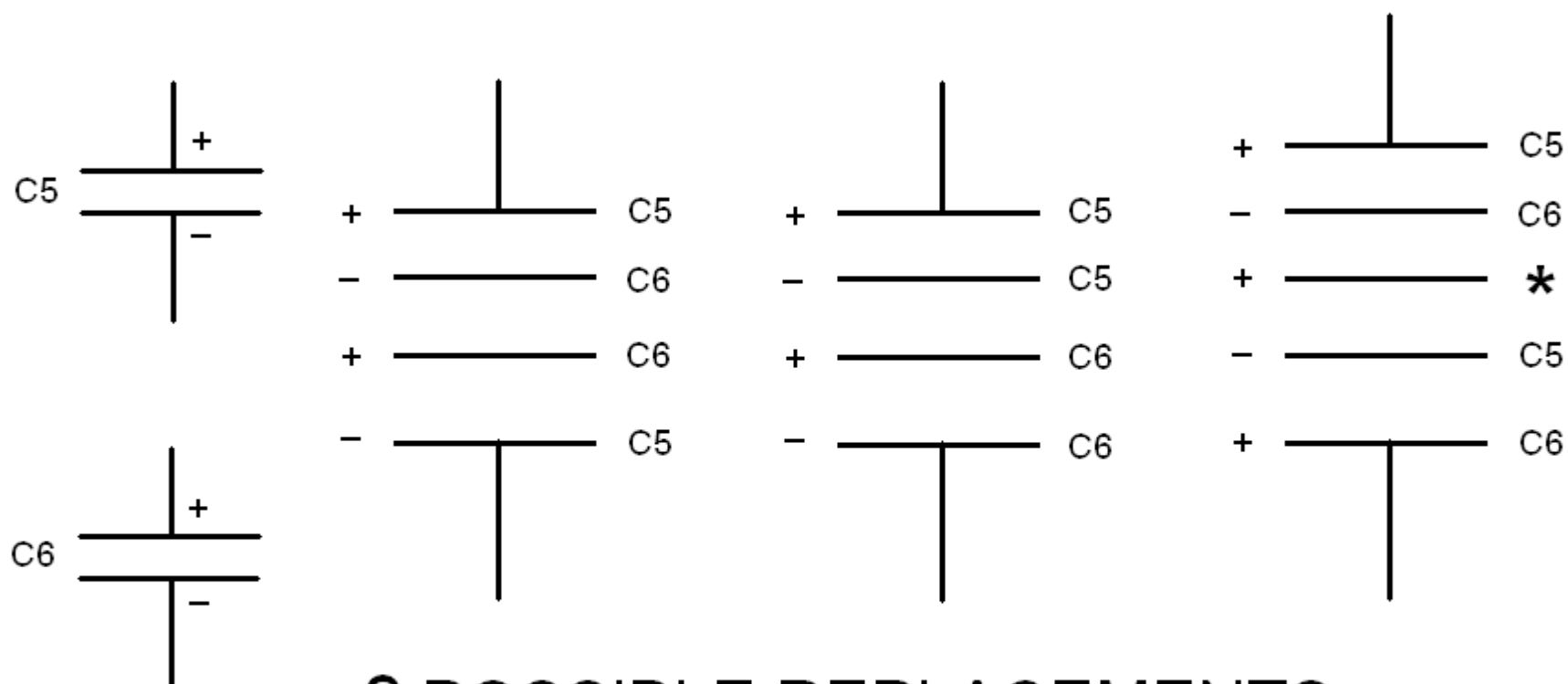
FIG. 64

FIG. 65



Interleave two or more capacitors in order to increase the likelihood that they will charge, discharge or reflect at the same time.

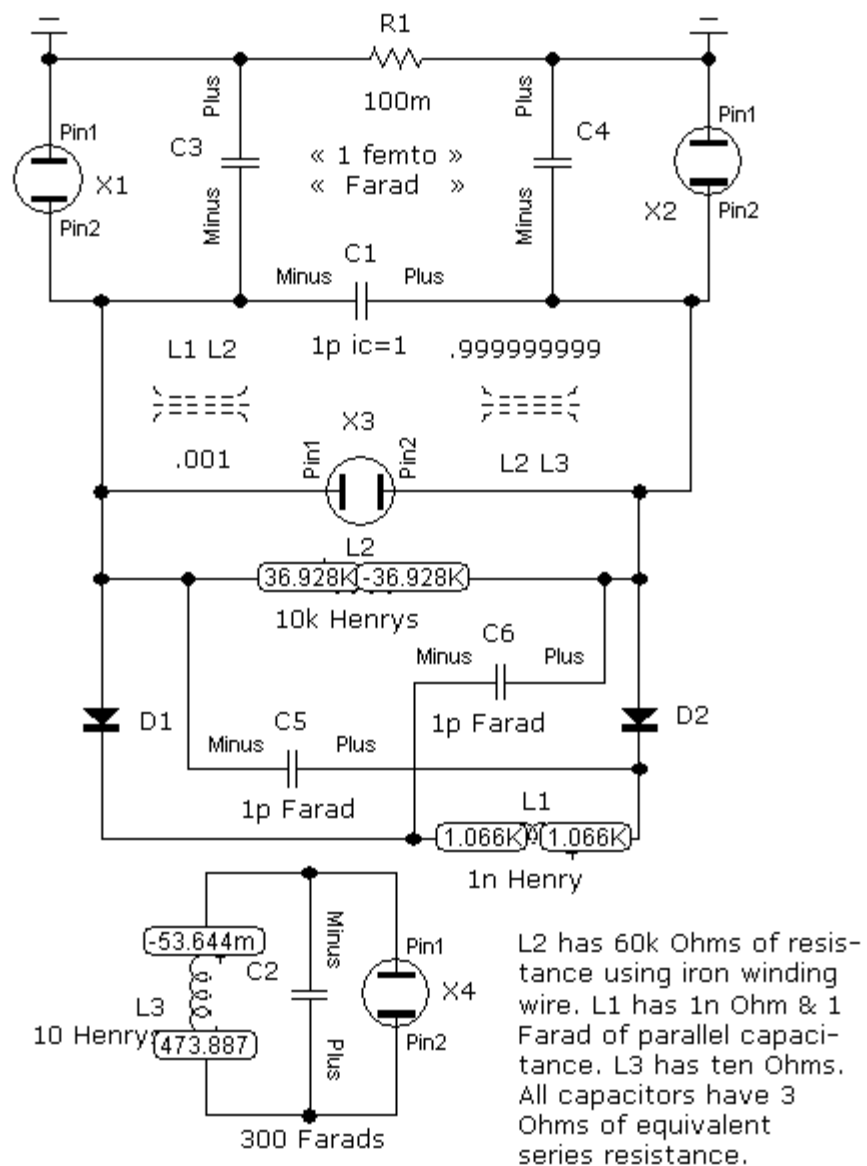
\* A FLOATING PLATE NOT CONNECTED TO ANYTHING

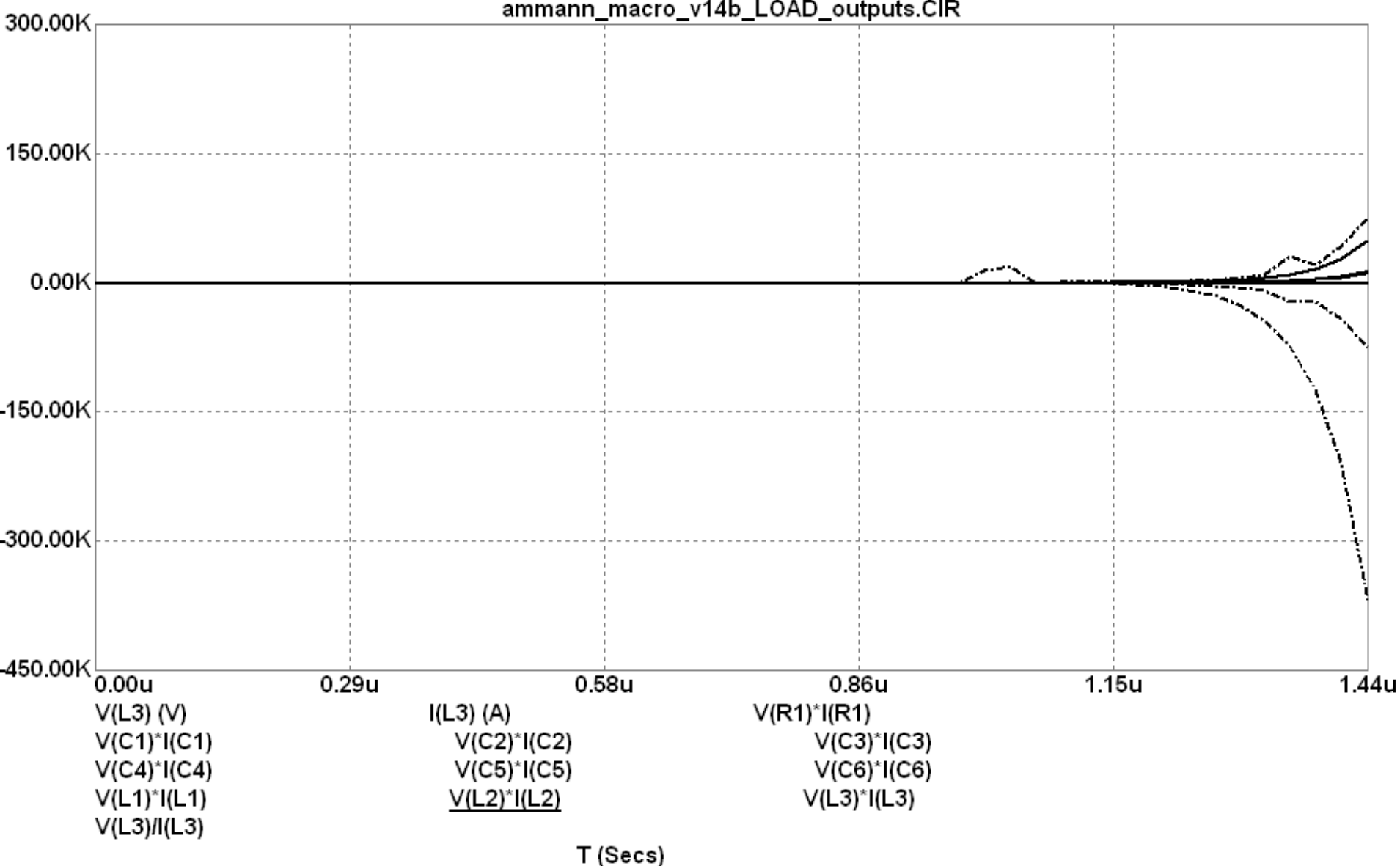


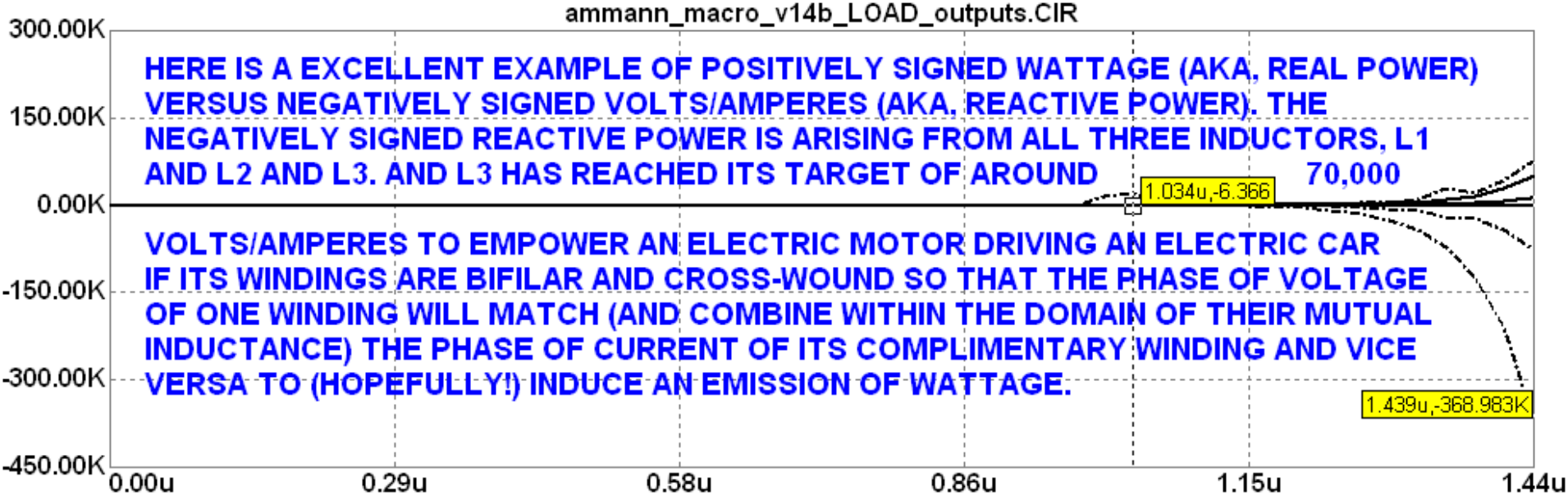
3 POSSIBLE REPLACEMENTS  
FOR HAVING TWO SEPARATE  
CAPACITORS, C5 AND C6.

FIG. 66

FIG. 67







	Left	TIMES A POSI- VOLTS / AM-	Right	TIVE AMPERAGE PERES, AKA:	Delta	Slope
<input type="checkbox"/> V(L3) (V)	242.113		-473.941		-716.053	-1.766G
<input type="checkbox"/> I(L3) (A)	4.989		157.985		152.995	377.358M
<input type="checkbox"/> V(R1)*I(R1)	0.000		0.000	WATTS	0.000	0.000
<input type="checkbox"/> V(C1)*I(C1)	332.501m		49.084K	WATTS	49.084K	121.064G
<input type="checkbox"/> V(C2)*I(C2)	19.540K	REAL POWER	74.873K	WATTS	55.334K	136.479G
<input type="checkbox"/> V(C3)*I(C3)	83.268u		12.271	WATTS	12.271	30.267M
<input type="checkbox"/> V(C4)*I(C4)	83.113u		12.272	WATTS	12.271	30.267M
<input type="checkbox"/> V(C5)*I(C5)	-4.302		11.917K	WATTS	11.921K	29.403G
<input type="checkbox"/> V(C6)*I(C6)	4.469		12.625K	WATTS	12.621K	31.129G
<input type="checkbox"/> V(L1)*I(L1)	-237.243n	REACTIVE POWER	-604.321u	V.A.	-604.083u	-1.490K
<input checked="" type="checkbox"/> V(L2)*I(L2)	-6.366		-368.983K	V.A.	-368.976K	-910.068G
<input type="checkbox"/> V(L3)*I(L3)	1.208K		-74.875K	V.A.	-76.083K	-187.657G
<input type="checkbox"/> V(L3)/I(L3)	48.529		-3.000		-51.529	-127.093M
T (Secs)	1.034u		1.439u		405.438n	1.000

FIG. 69

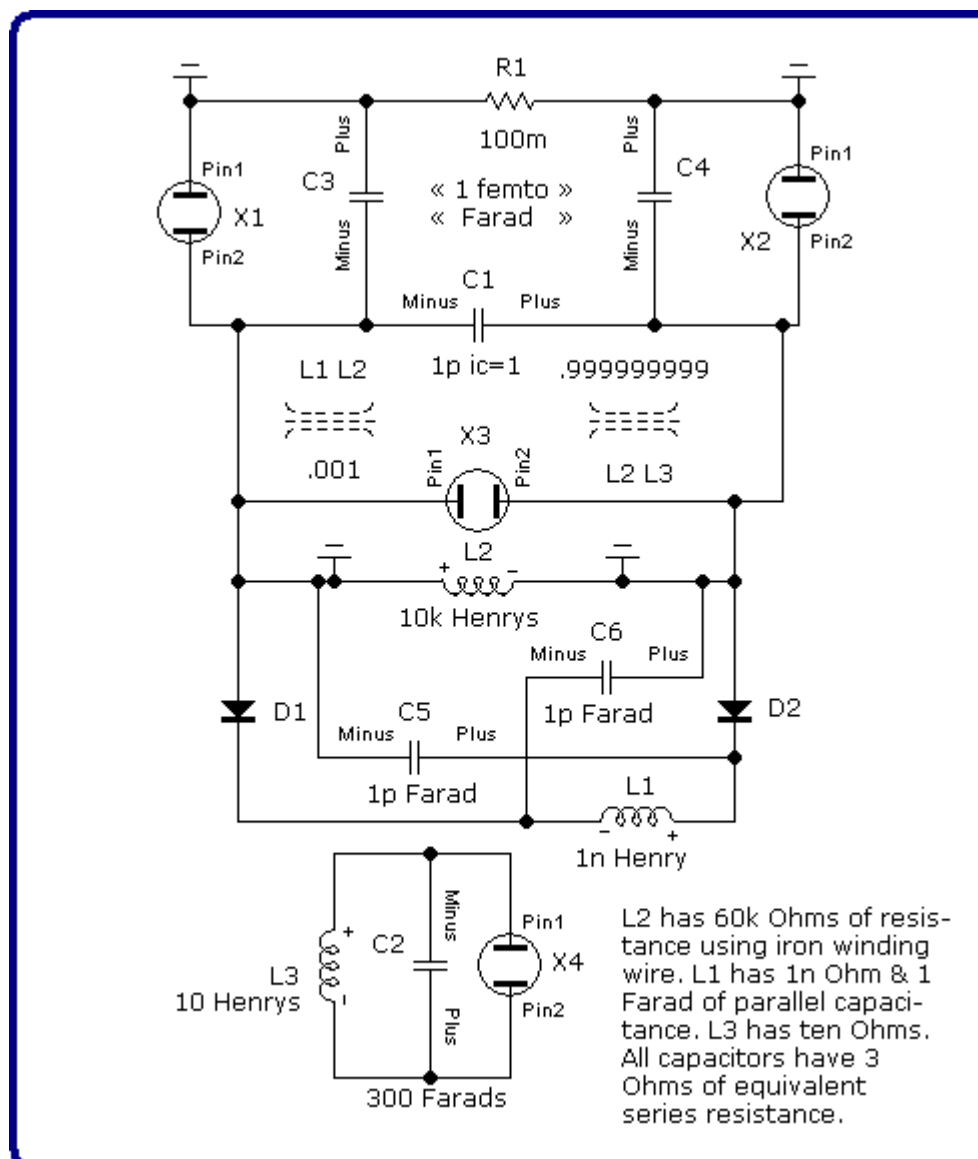


FIG. 70

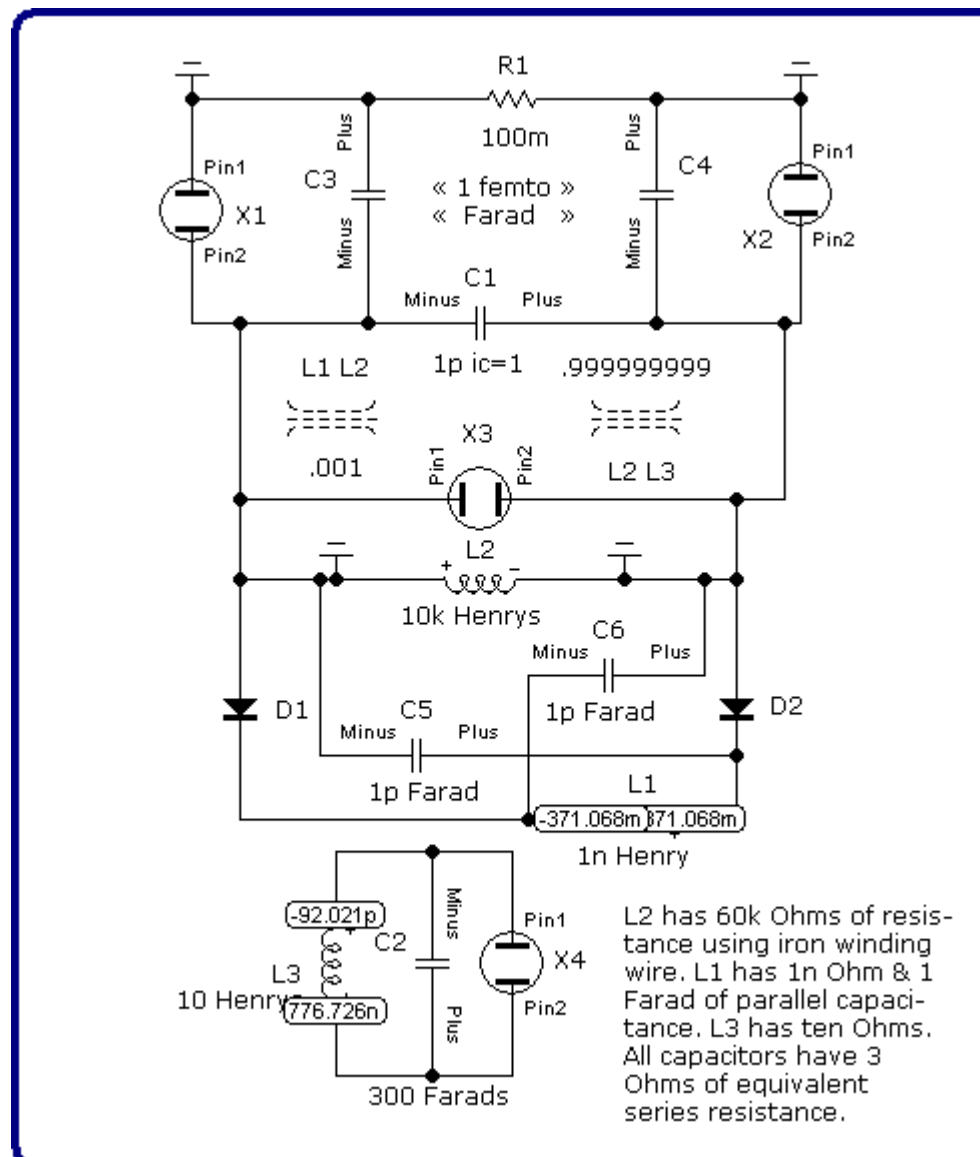
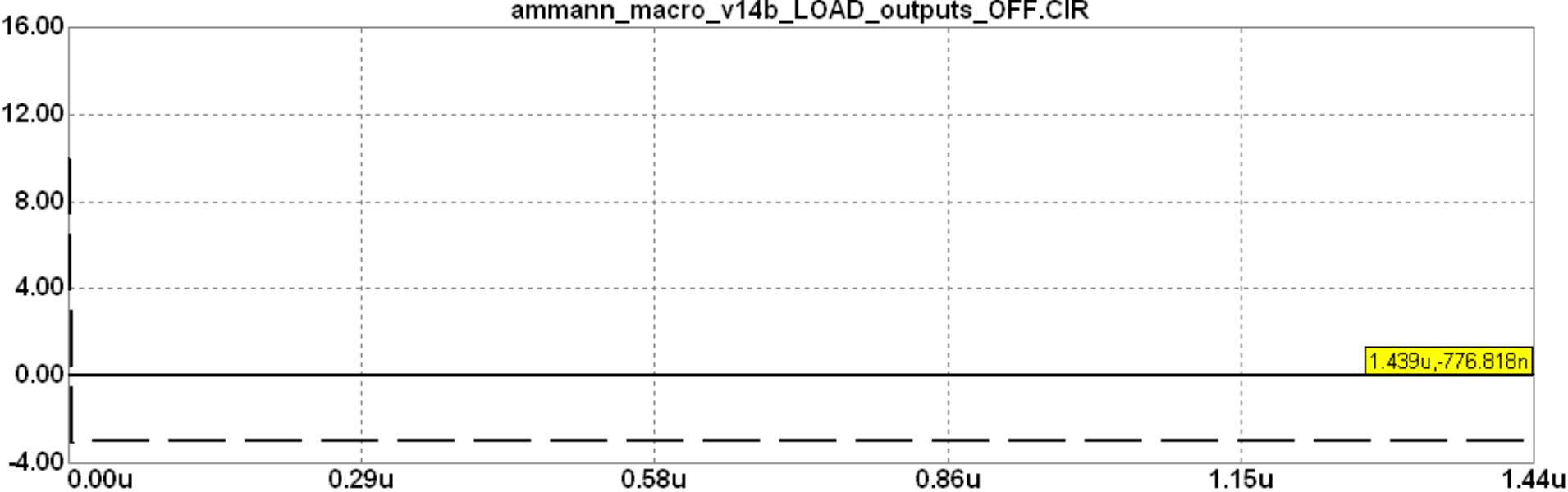
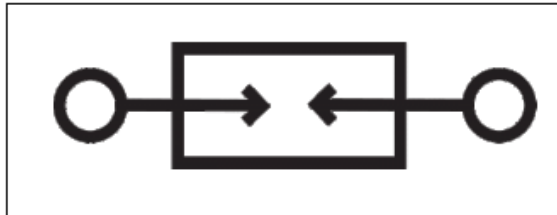
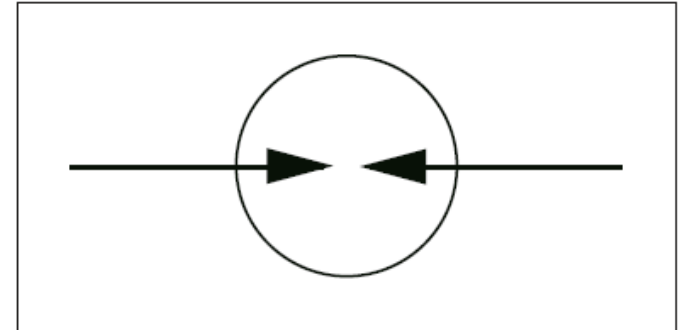
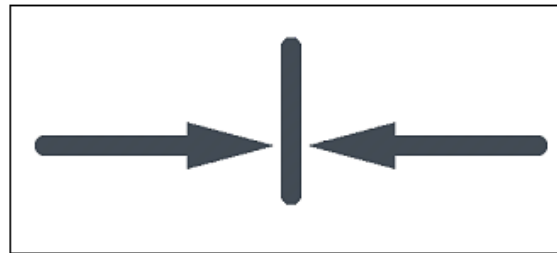
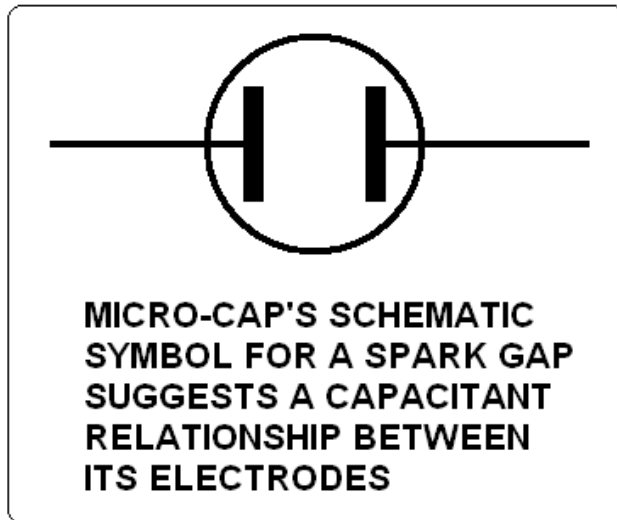


FIG. 71



	Left	Right	Delta	Slope
<input checked="" type="checkbox"/> V(L3) (V)	-776.818n	-776.818n	0.000	INF
<input type="checkbox"/> I(L3) (A)	258.945n	258.945n	0.000	INF
<input type="checkbox"/> V(R1)*I(R1)	0.000	0.000	0.000	INF
<input type="checkbox"/> V(C1)*I(C1)	0.000	0.000	0.000	INF
<input type="checkbox"/> V(C2)*I(C2)	201.149f	201.149f	0.000	INF
<input type="checkbox"/> V(C3)*I(C3)	0.000	0.000	0.000	INF
<input type="checkbox"/> V(C4)*I(C4)	0.000	0.000	0.000	INF
<input type="checkbox"/> V(C5)*I(C5)	-6.830n	-6.830n	0.000	INF
<input type="checkbox"/> V(C6)*I(C6)	-6.830n	-6.830n	0.000	INF
<input type="checkbox"/> V(L1)*I(L1)	4.939E-21	4.939E-21	0.000	INF
<input type="checkbox"/> V(L2)*I(L2)	0.000	0.000	0.000	INF
<input type="checkbox"/> V(L3)*I(L3)	-201.153f	-201.153f	0.000	INF
<input type="checkbox"/> V(L3)/I(L3)	-3.000	-3.000	0.000	INF
T (Secs)	1.439u	1.439u	0.000	1.000

FIG. 72



COMMON ALTERNATIVE SCHEMATIC SYMBOLS FOR A SPARK GAP RESEMBLING TWO DIODES WHOSE CATHODES APPEAR TO BE FACING EACH OTHER

FIG. 73

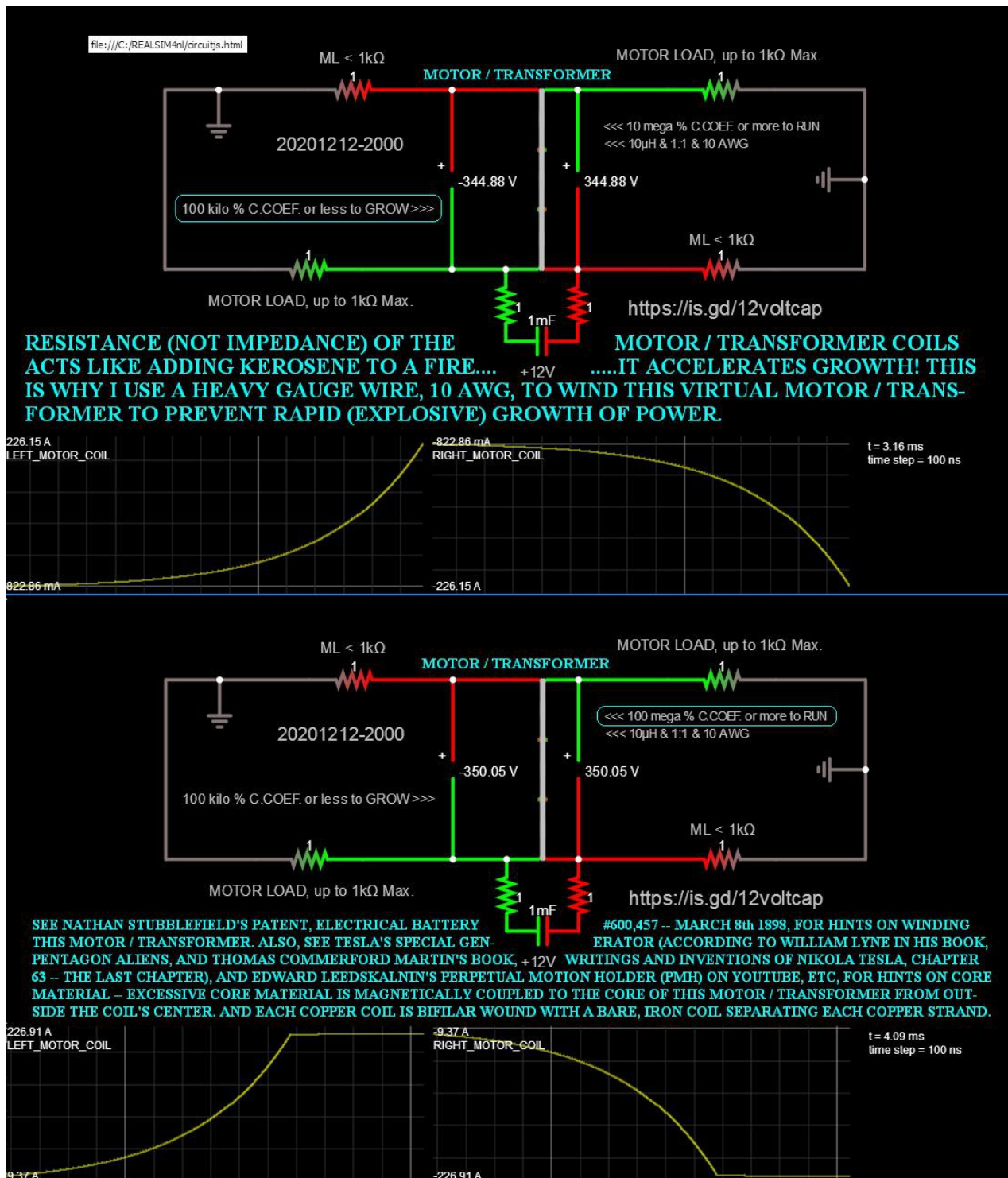


FIG. 74

This is as close as I can get to simulating Tesla's Special Generator for an EV!

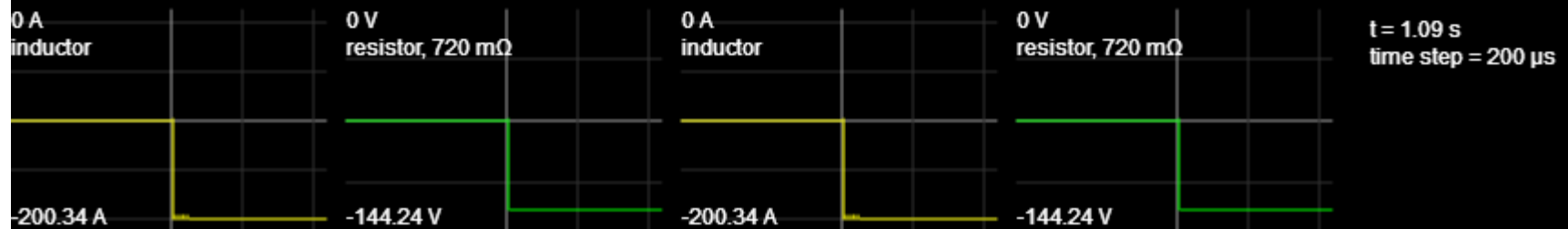
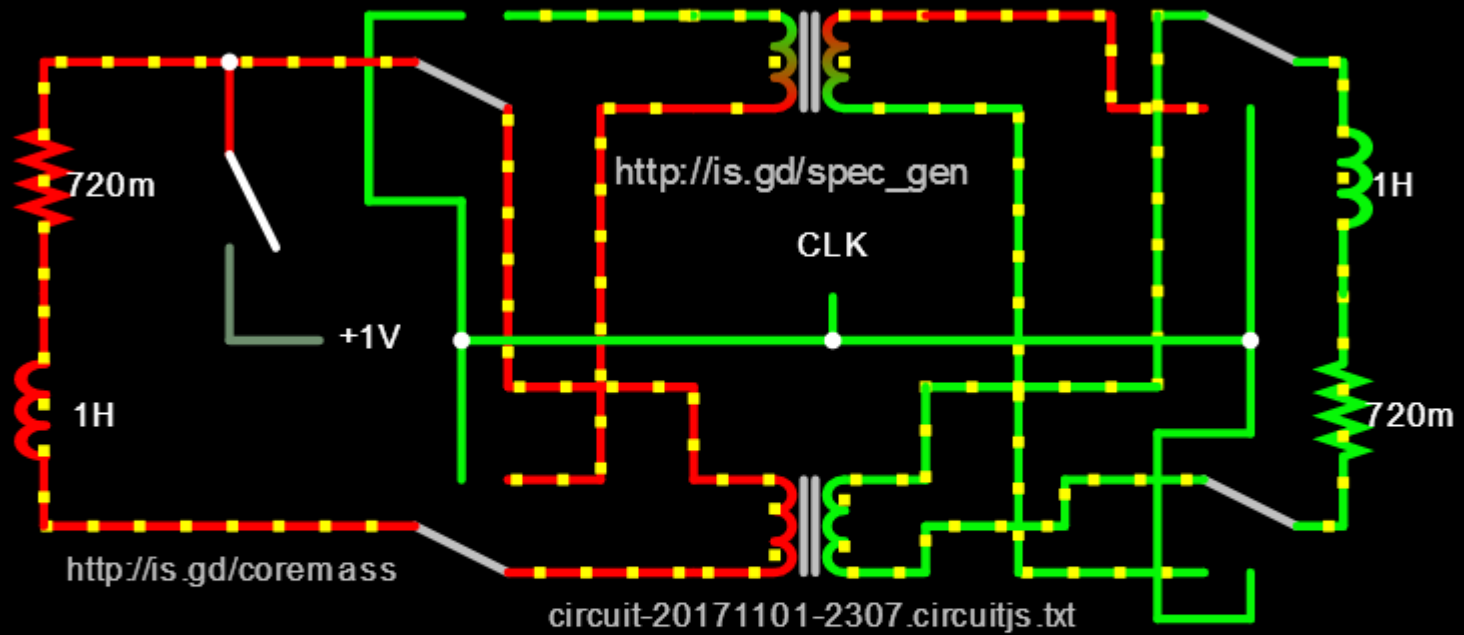


FIG. 75

Gradually add more Henrys to the top Transformer to slow its growth towards infinity until it has 100E Henrys equivalent to 100 Exa Henrys =  $100 \cdot 1e18$ .

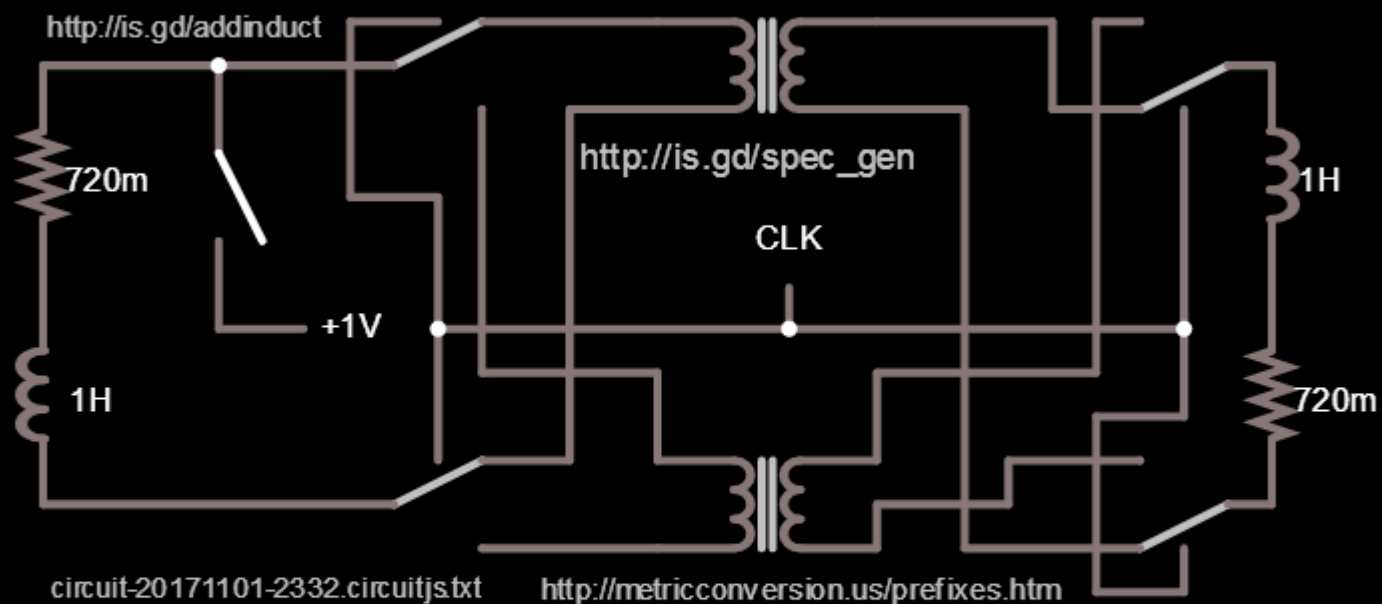
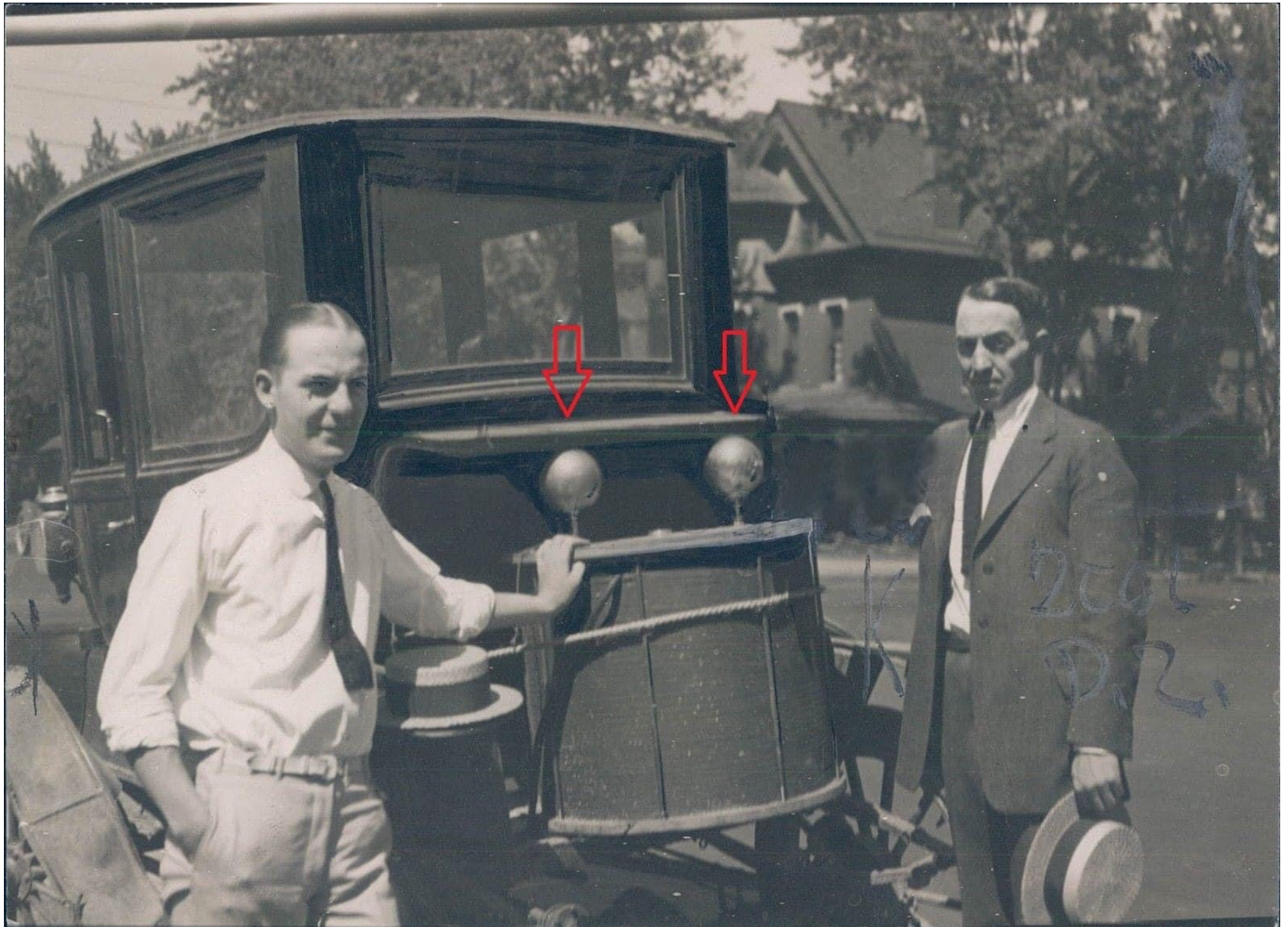


FIG. 76

FIG. 77

77/80



# SUBSTANTIAL CUT IN PIERCE-ARROW PRICE ANNOUNCED

A substantial reduction in the prices of its touring car models effective after September 1, and a reduction on the prices of its truck models, effective immediately, has been announced by George W. Mixer, president of the Pierce-Arrow Motor Car company.

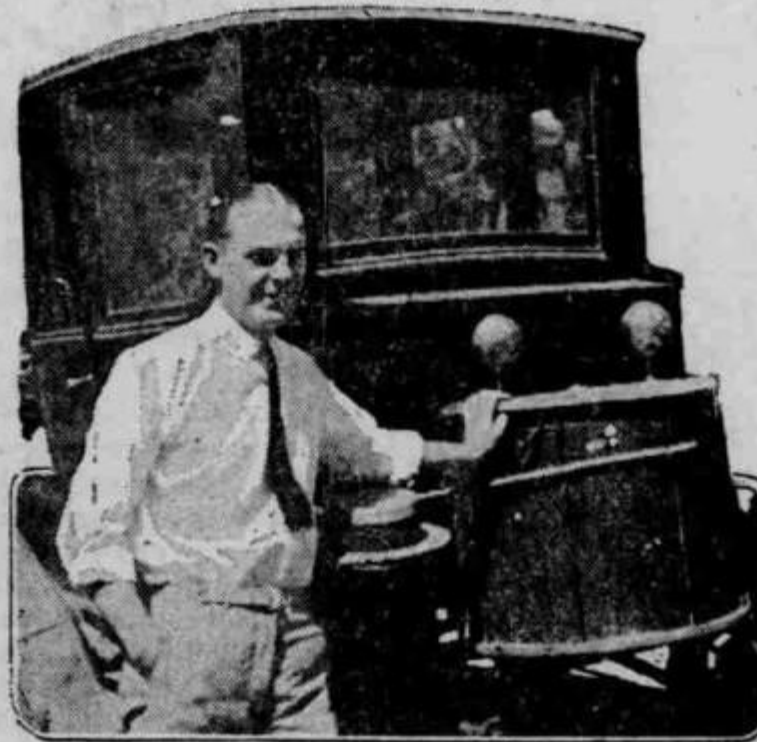
The new price of the standard seven-passenger touring car is \$6,500 at the factory, the inclosed car prices being graded proportionately.

The new prices of its truck models are: \$4,950 for the five-ton size; \$4,350 for the 3½-ton and \$3,200 for the 2-ton.



## This Tire

# ELECTRICITY "TAKEN FROM AIR" DRIVES AUTOMOBILE



C. E. AMMANN AND HIS "ATMOSPHERIC GENERATOR" ATTACHED TO AN ELECTRIC AUTOMOBILE

DENVER, Colo., Aug. 28.—Demonstrations are being made on the streets of Denver of a new electric generator that is claimed by the inventors to take electricity from the air.

The inventors are J. E. Ammann of Denver, and his brother, C. E. Ammann of Spokane, Wash.

To demonstrate, the brothers borrowed an old electric auto, took out the batteries, and after roping their new "atmospheric generator" fast, they got in and rode off at high speed.

"There is nothing inside the drum that moves; the contents consists only of iron, wire and minerals," says C. E. Ammann.

"It can be used to drive any electrical apparatus and can be made in any size."

The brothers are closely guarding their secret, and even take their "brain-child" when it is not in use, to their room in the Argonaut hotel.

So far the brothers have not offered to sell their proposition.

Electrical men in Denver are waiting "to be shown," but they grant the thing works.

AUTO INSURANCE

balance bodies was the highlight of

# "New C

Buys a brand new s  
\$1,625.00 f. o. b. P  
automobile. The fa  
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cost of re-shipment  
make special terms  
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## NEW 1

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- \$2,500.00 truck cha
- \$2,700.00 truck cha
- curtains . . . . .
- \$3,000.00 truck cha
- open express bod

All of the al  
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few days only. If  
given to ship them

## "TWO REAL

Dodge Coupe  
car for private use  
1921 Nash 7  
extra equipment. I  
covers and will m  
Special terms on e

Then we hav  
Dodge Com  
Ford Coupe  
Hudson Sup  
1921 Essex

FIG. 78

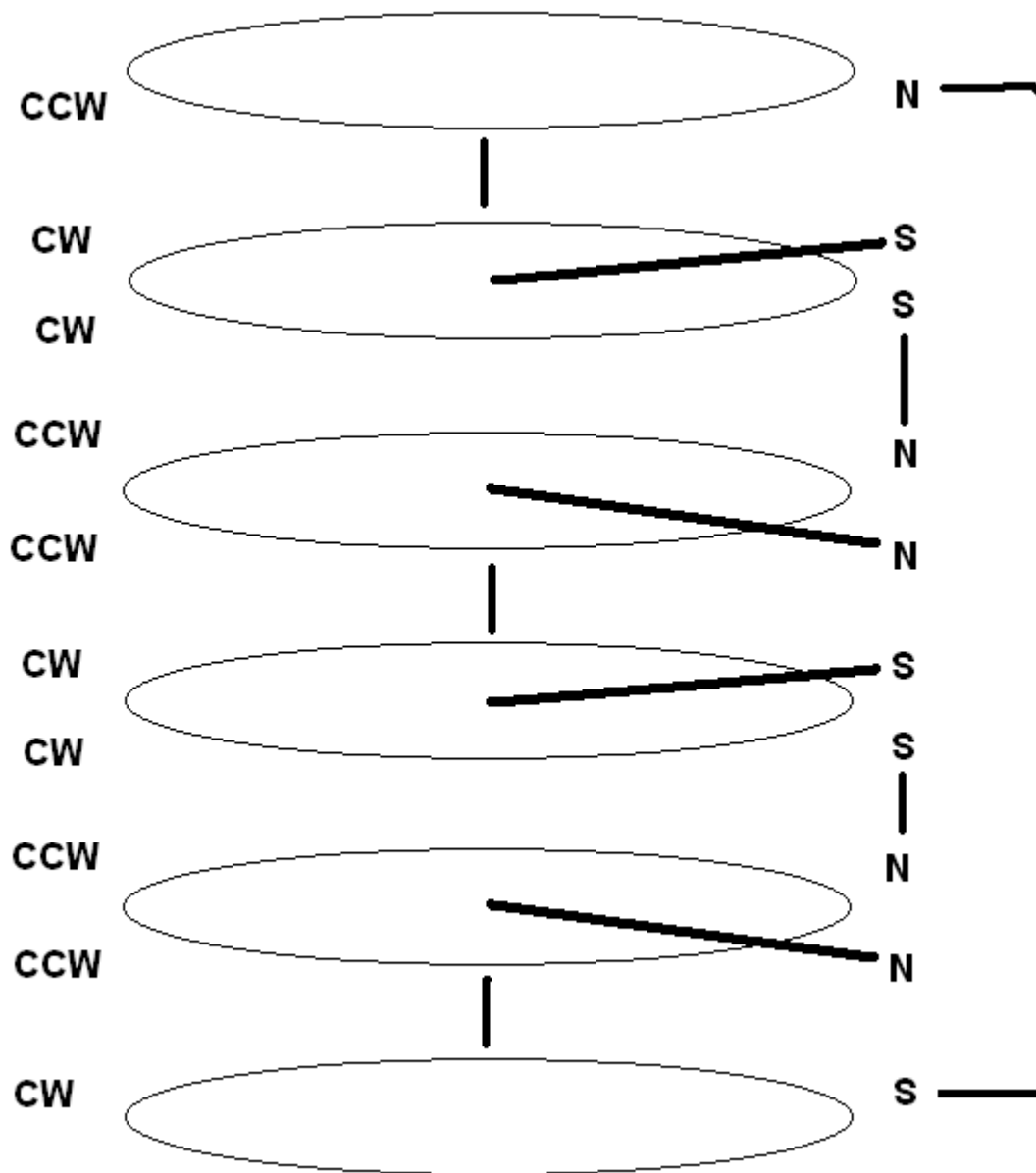


FIG. 79

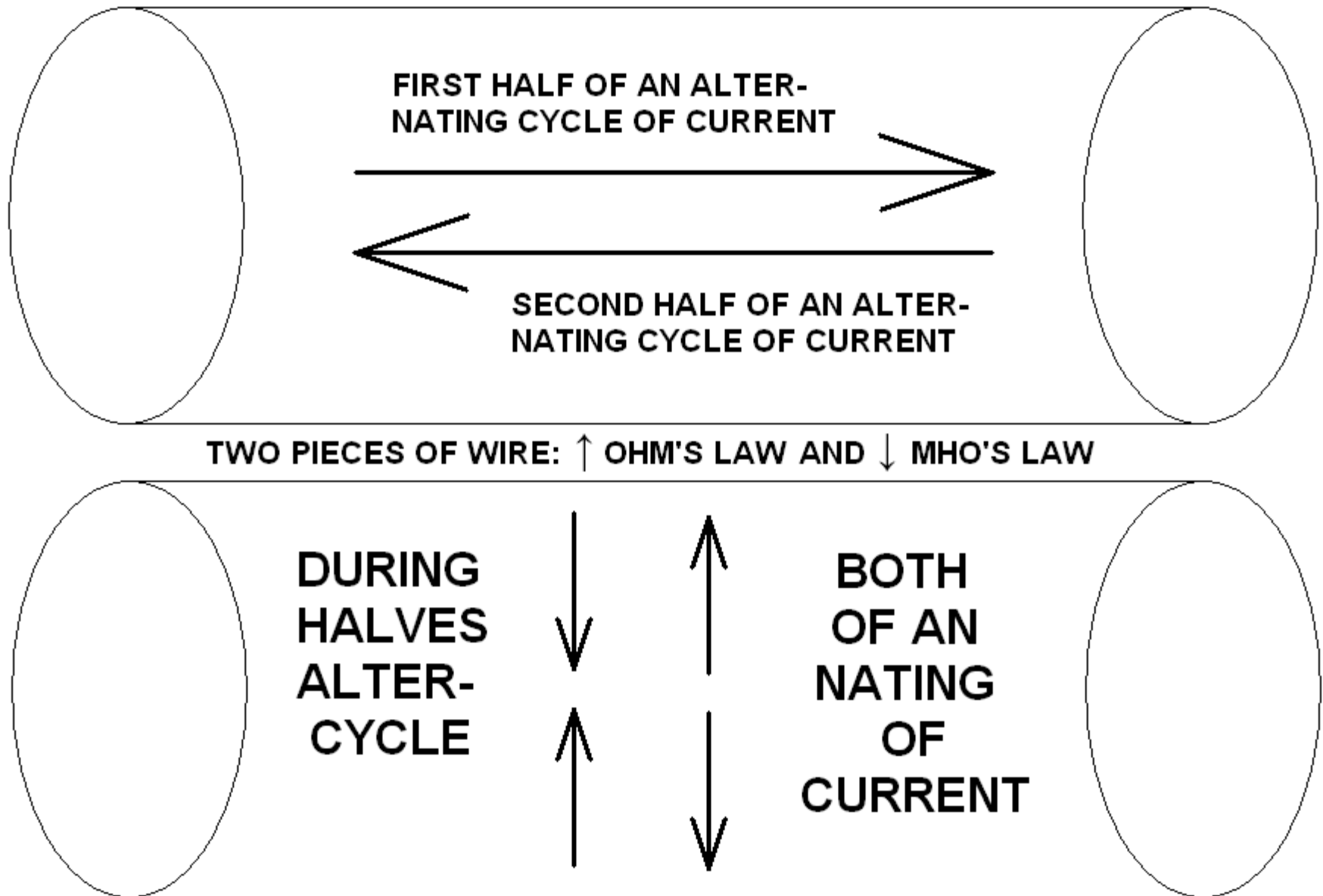


FIG. 80