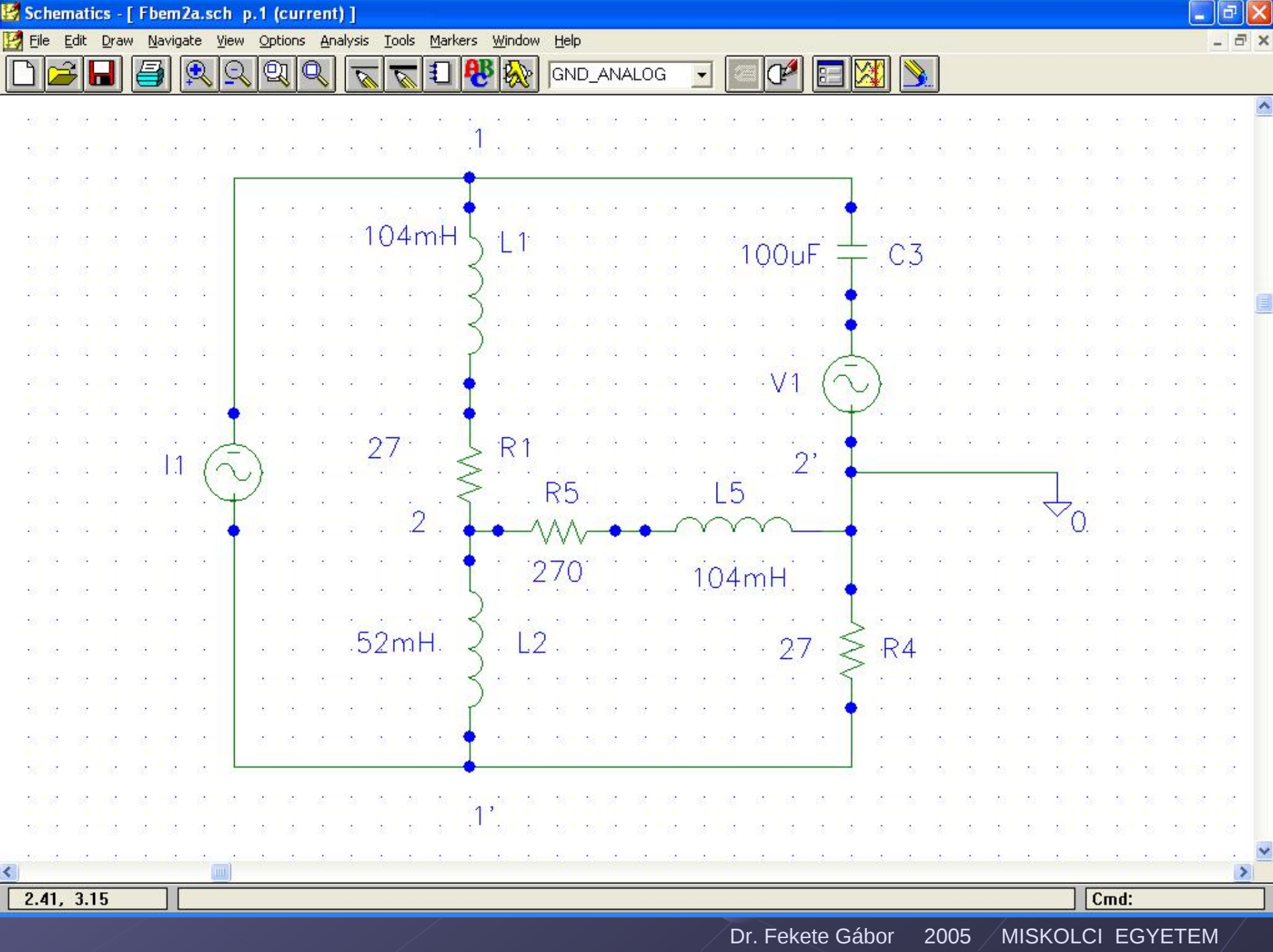
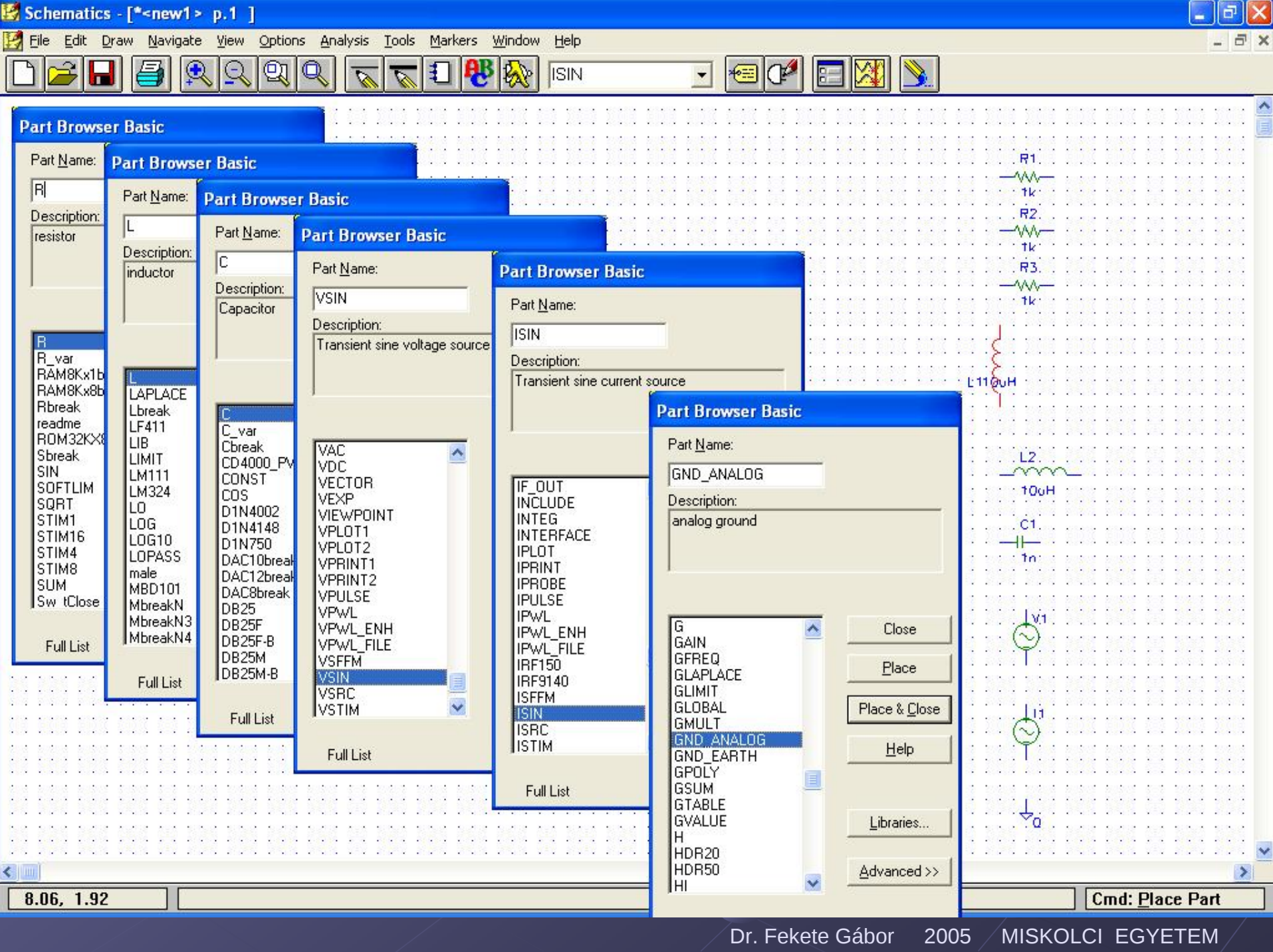


VILLAMOSSÁGTAN

III

LABOR





Place Text

Text: 2

Text Size: 100 %

OK Cancel

Set Attribute Value

VALUE

100uF

OK Cancel

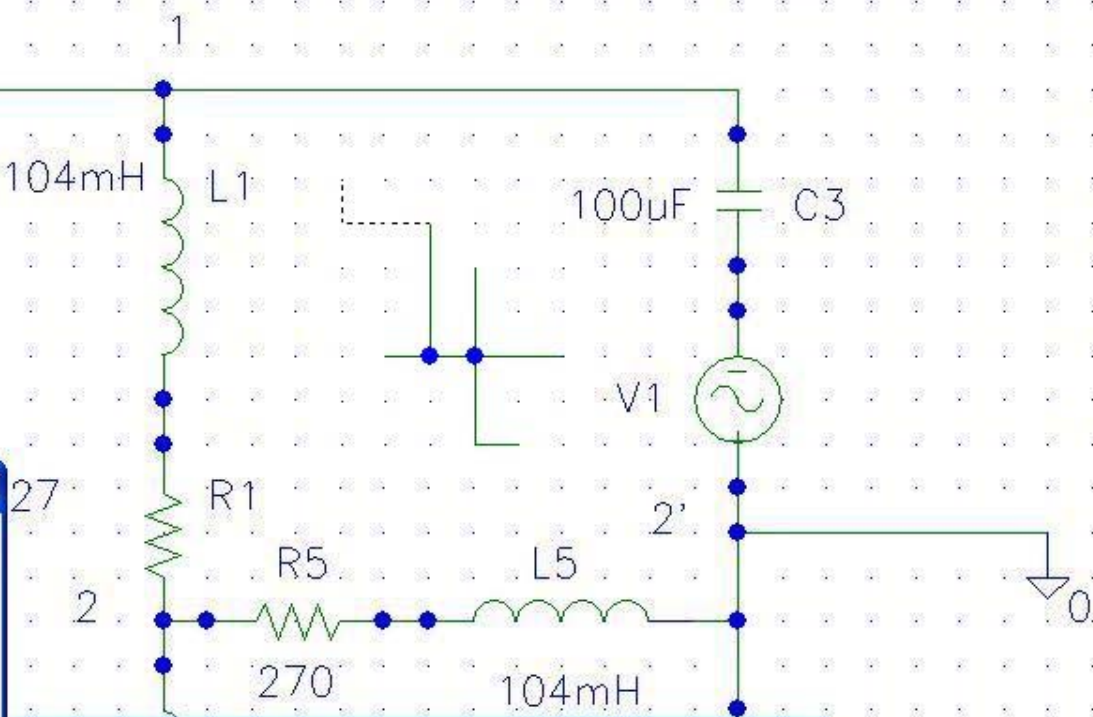
Edit Reference Designator

Package Reference Designator: C3

Gate:

Package Type: CK05

OK Cancel



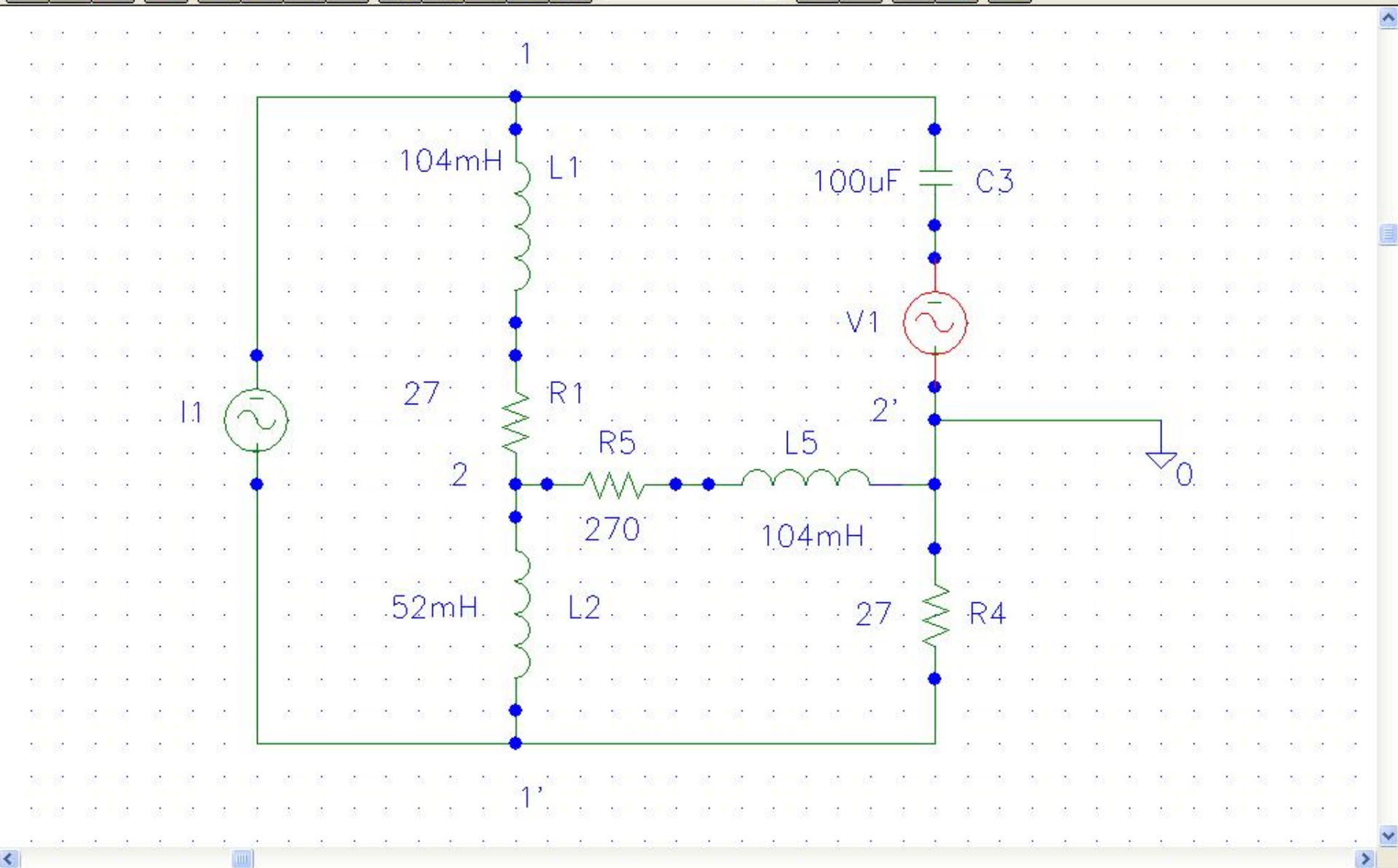
C3 PartName: C

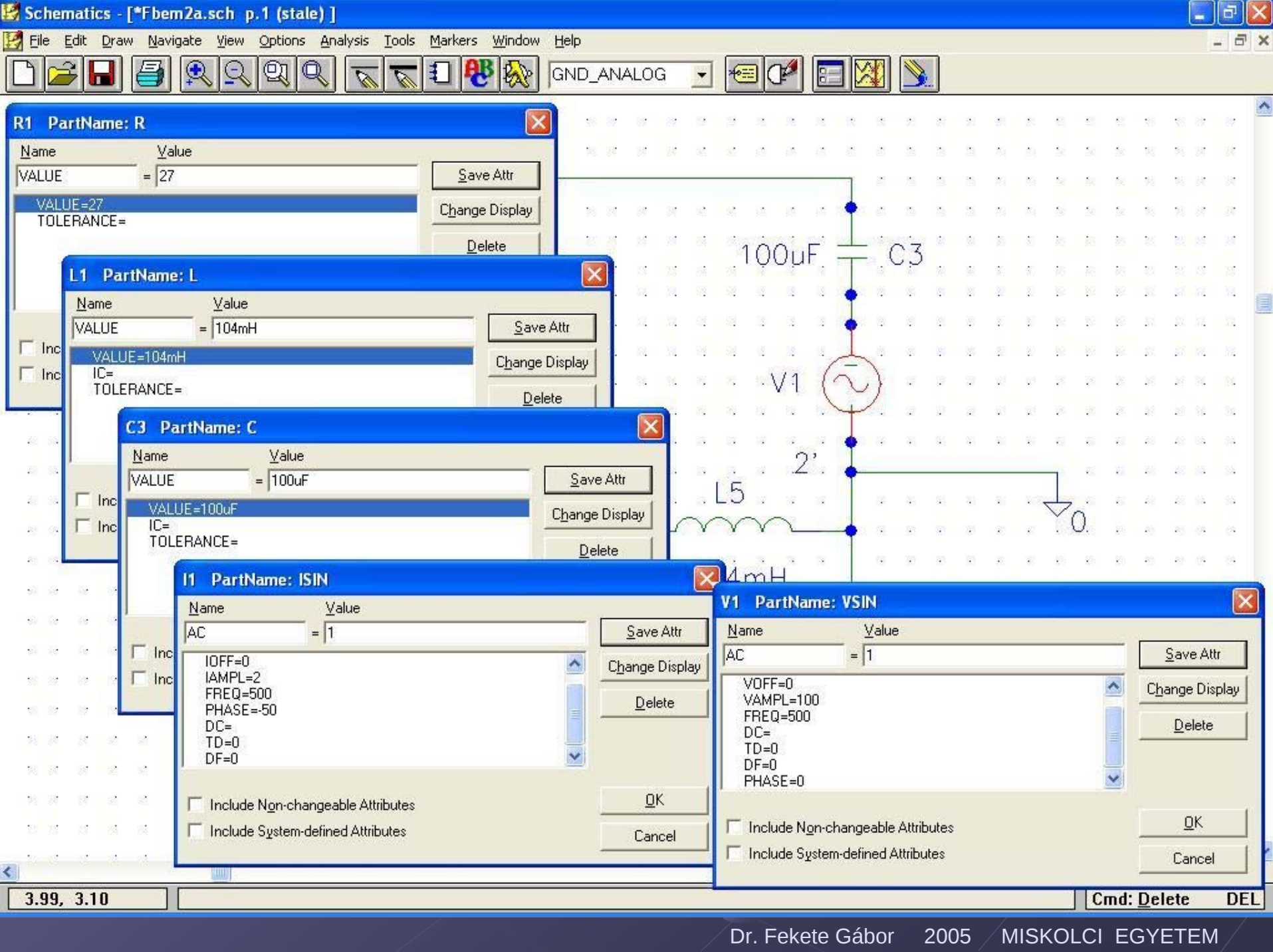
Name	Value
VALUE	= 100uF

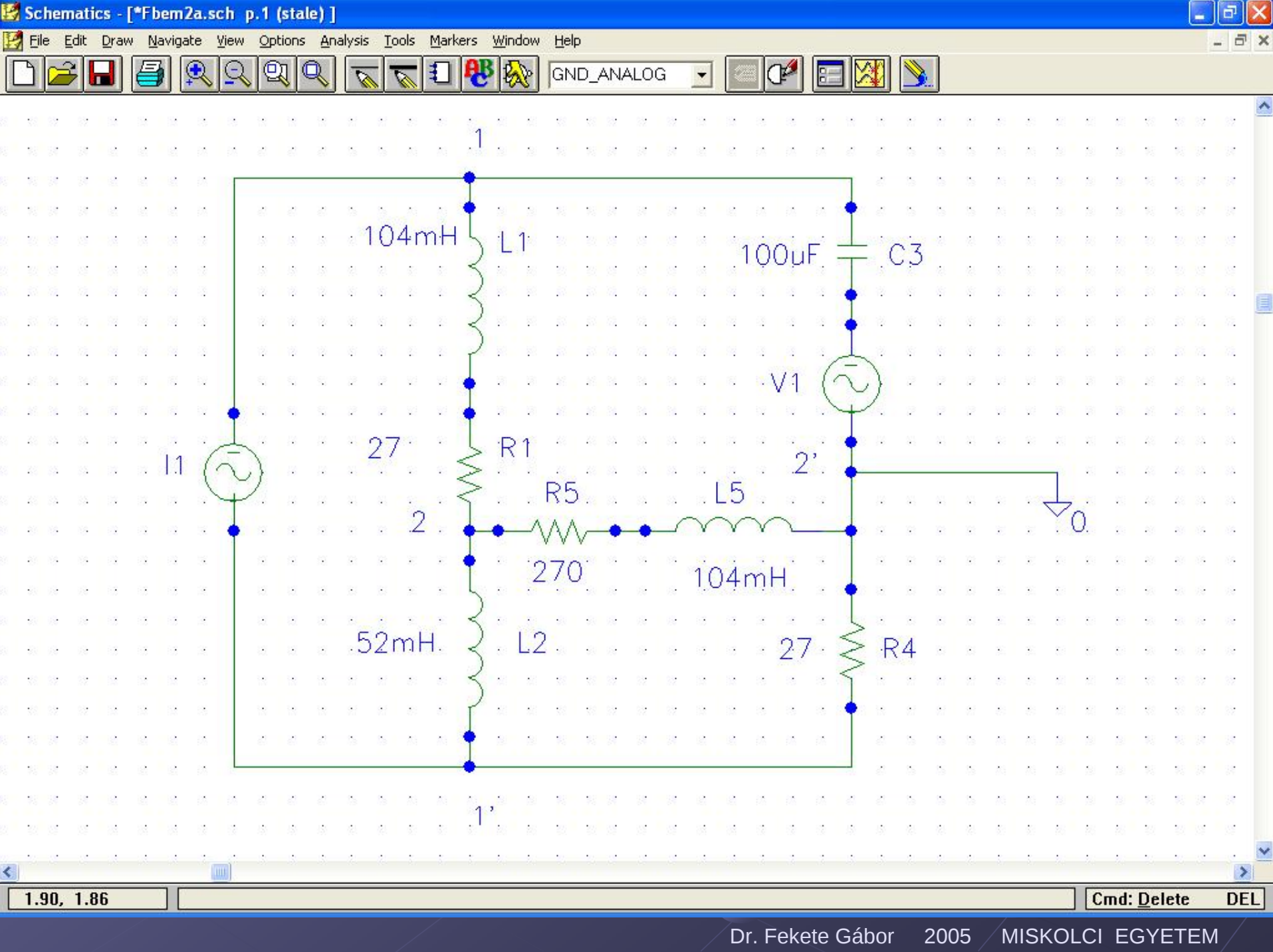
VALUE=100uF
IC=
TOLERANCE=

☐ Include Non-changeable Attributes
☐ Include System-defined Attributes

Save Attr
Change Display
Delete
OK
Cancel







Analysis Setup

Enabled		Enabled	
☐	AC Sweep...	☐	Options...
☐	Load Bias Point...	☐	Parametric...
☐	Save Bias Point...	☐	Sensitivity...
☐	DC Sweep...	☐	Temperature...
☐	Monte Carlo/Worst Case...	☐	Transfer Function...
☒	Bias Point Detail	☒	Transient...
	Digital Setup...		

Close

Transient

Transient Analysis

Print Step: 20us

Final Time: 30ms

No-Print Delay:

Step Ceiling: 2us

☐ Detailed Bias Pt.

☐ Skip initial transient solution

Fourier Analysis

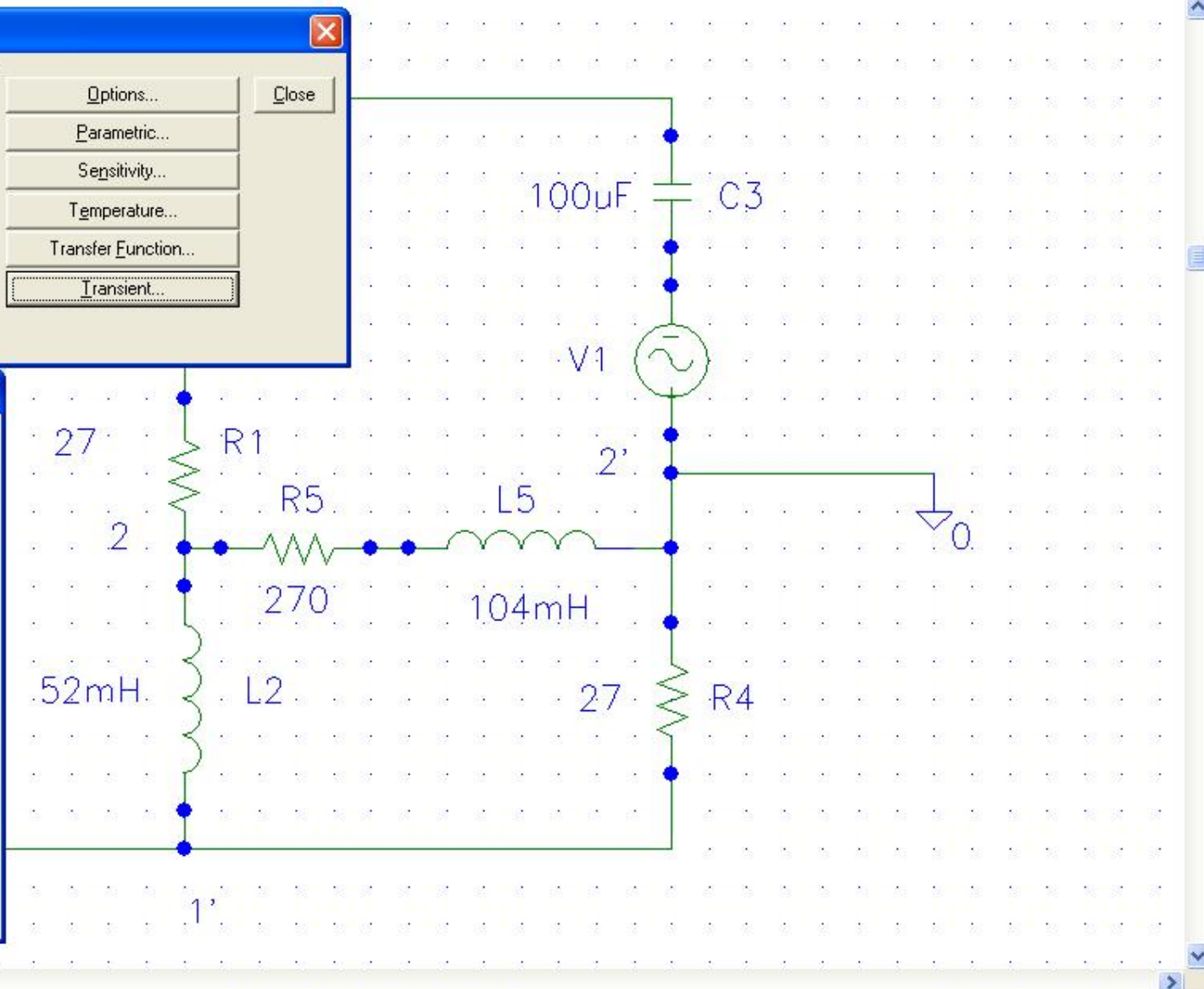
☐ Enable Fourier

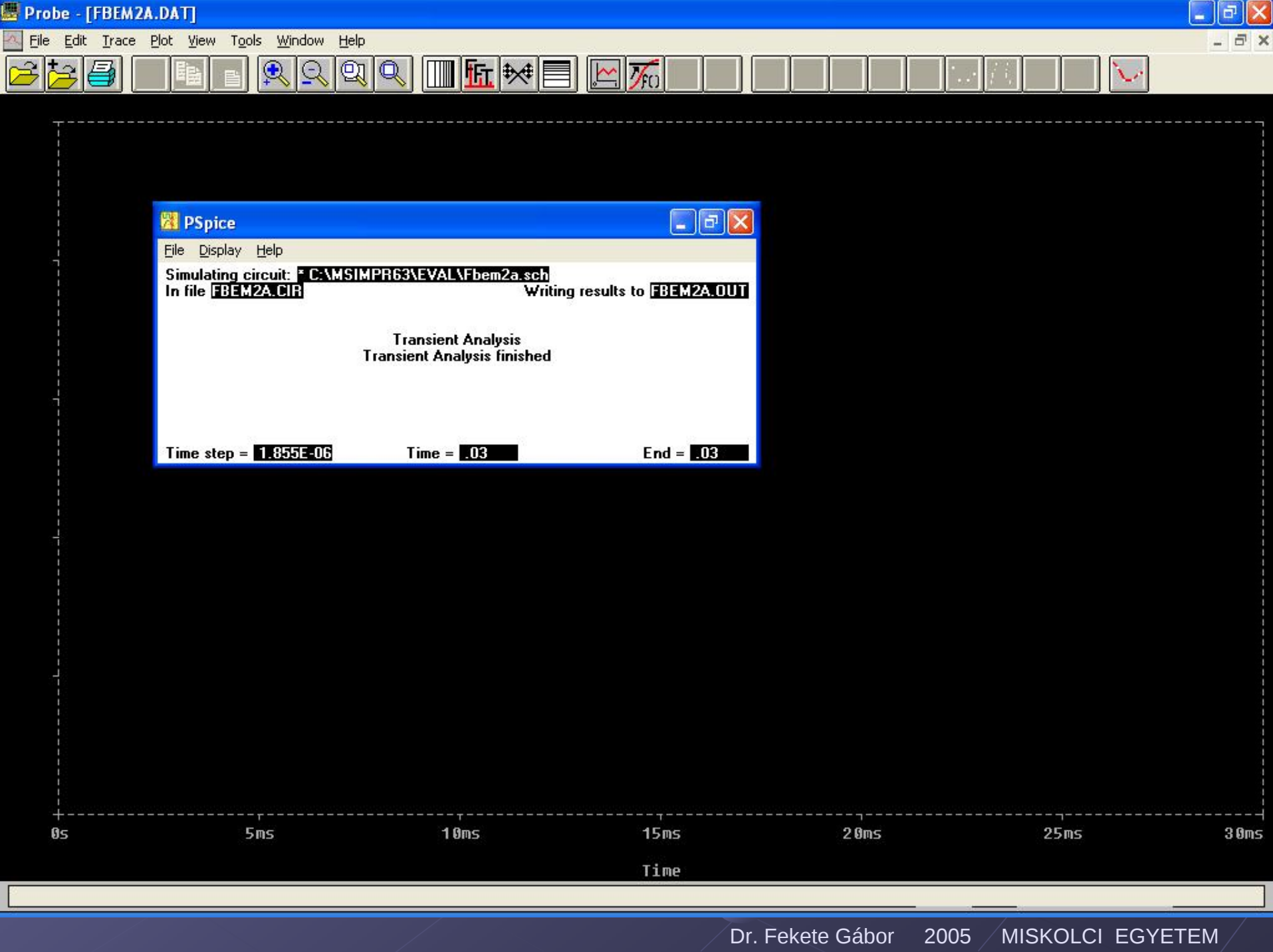
Center Frequency:

Number of harmonics:

Output Vars.:

OK Cancel





Schematics - [*Fbem2a.sch p.1 (current)]

File Edit Draw Navigate View Options Analysis Tools Markers Window Help

GND_ANALOG

Fbem2a.net - MicroSim Text Editor

File Edit Search View Insert Help

* Schematics Netlist *

```

R_R1      $N_0002 $N_0001 27
L_L1      $N_0003 $N_0002 104mH
R_R4      0 $N_0004 27
V_V1      0 $N_0005 AC 1
+SIN 0 100 500 0 0 0
C_C3      $N_0003 $N_0005 100uF
L_L2      $N_0001 $N_0004 52mH
I_I1      $N_0004 $N_0003 AC 1
+SIN 0 2 500 0 0 -50
R_R5      $N_0001 $N_0006 270
L_L5      $N_0006 0 104mH
  
```

For Help, press F1

Fbem2a - MicroSim Text Editor

File Edit Search View Insert Help

```

**** 09/22/105 22:04:40 ***** NT Evaluation PSpice (April 1996) *****

* C:\MSIMPR63\EVAL\Fbem2a.sch

****      CIRCUIT DESCRIPTION

*****

* Schematics Version 6.3 - April 1996
* Thu Sep 22 21:53:36 2005

** Analysis setup **
.tran 20us 30ms 0 2us
.OP

* From [SCHEMATICS NETLIST] section of msim.ini:
.lib nom.lib

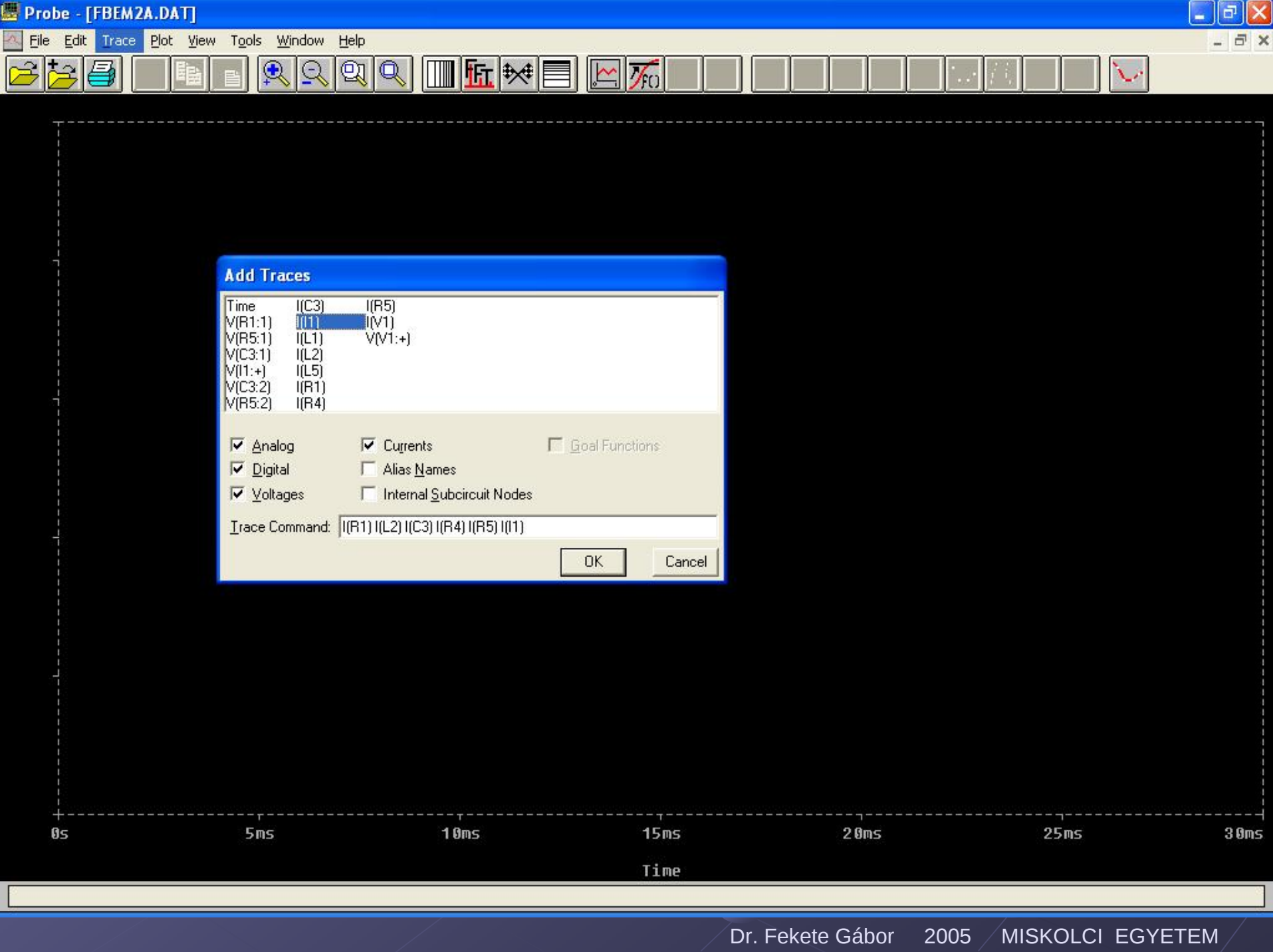
.INC "Fbem2a.net"

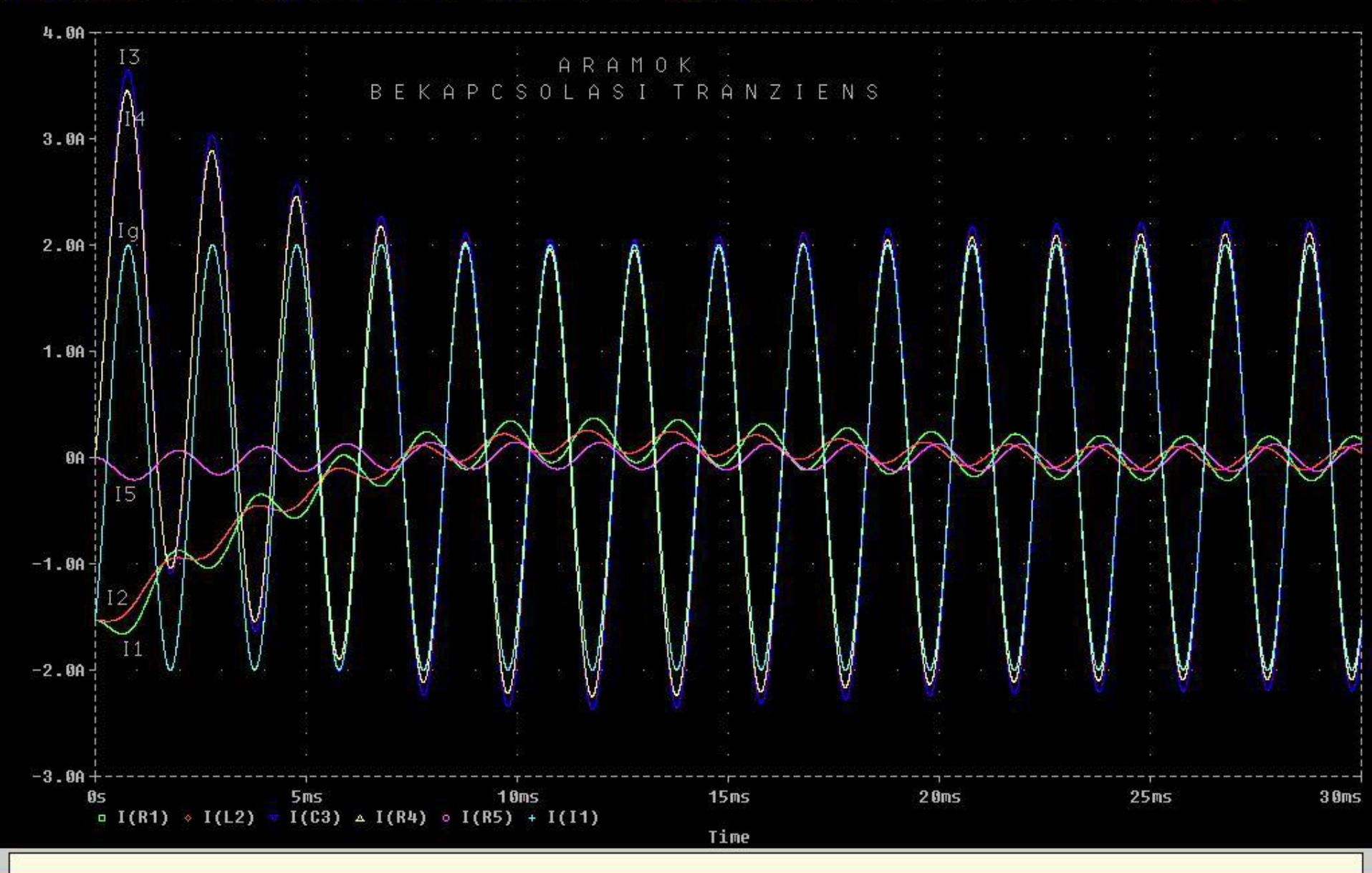
**** INCLUDING Fbem2a.net ****
* Schematics Netlist *
  
```

For Help, press F1

2.81, 1.82 Autosaving complete.

Ln 1, Col 1





Analysis Setup

Enabled	
☐	AC Sweep...
☐	Load Bias Point...
☐	Save Bias Point...
☐	DC Sweep...
☐	Monte Carlo/Worst Case...
☒	Bias Point Detail
☐	Digital Setup...

Enabled	
☐	Options...
☐	Parametric...
☐	Sensitivity...
☐	Temperature...
☐	Transfer Function...
☒	Transient...

Close

Transient

Transient Analysis

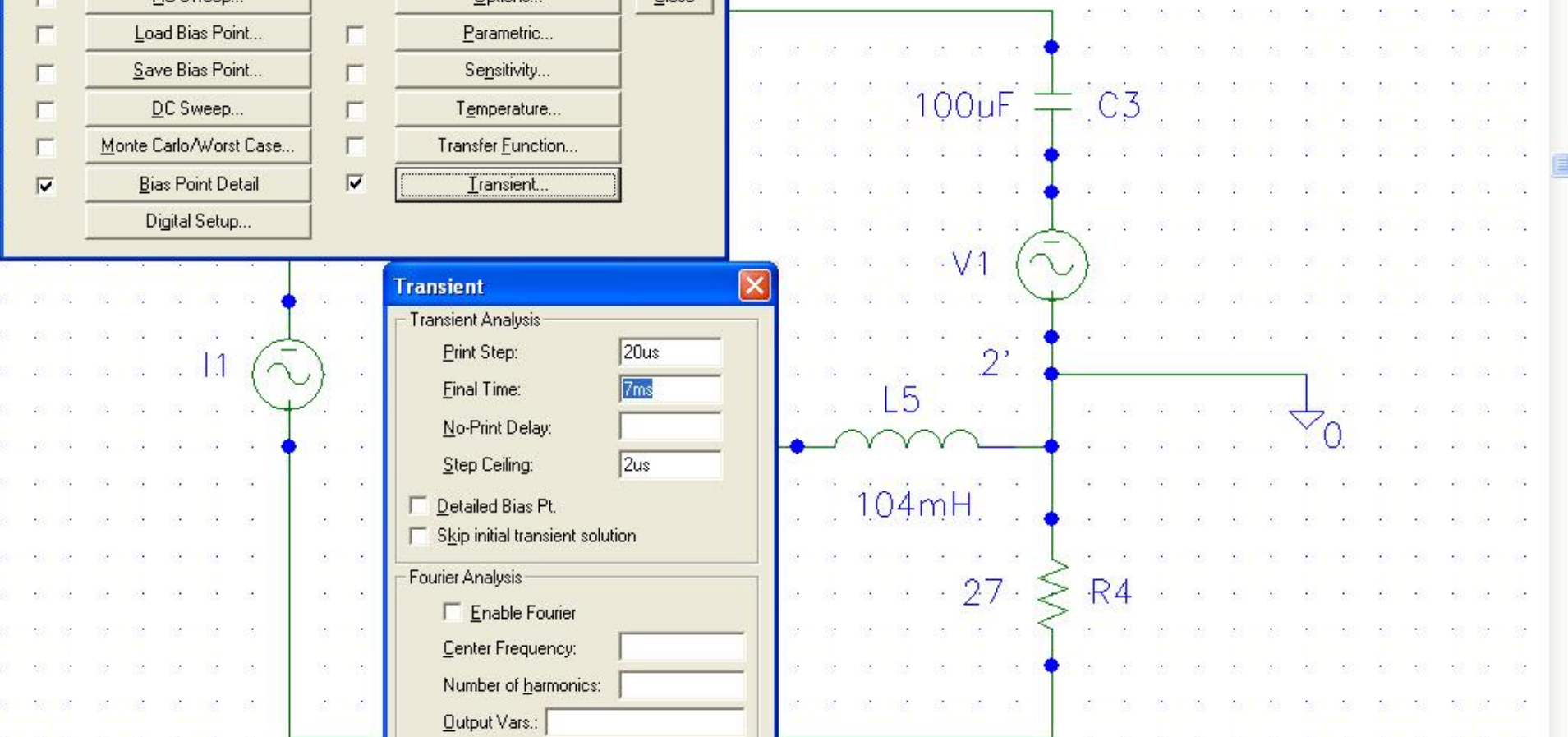
Print Step: 20us
Final Time: 7ms
No-Print Delay:
Step Ceiling: 2us

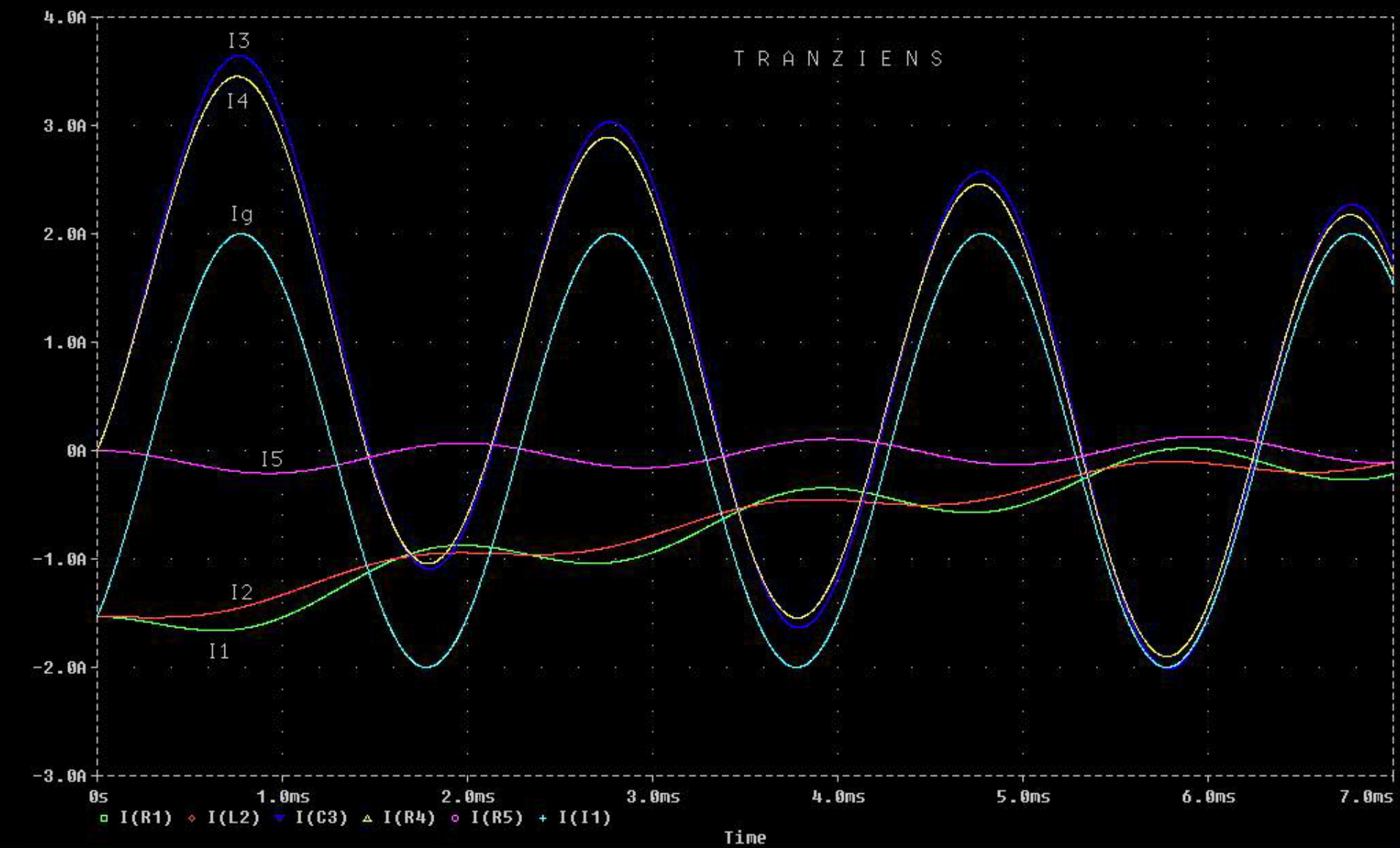
☐ Detailed Bias Pt.
☐ Skip initial transient solution

Fourier Analysis

☐ Enable Fourier

Center Frequency:
Number of harmonics:
Output Vars.:
OK Cancel





Analysis Setup

Enabled	
☐	AC Sweep...
☐	Load Bias Point...
☐	Save Bias Point...
☐	DC Sweep...
☐	Monte Carlo/Worst Case...
☒	Bias Point Detail
☐	Digital Setup...

Enabled	
☐	Options...
☐	Parametric...
☐	Sensitivity...
☐	Temperature...
☐	Transfer Function...
☒	Transient...

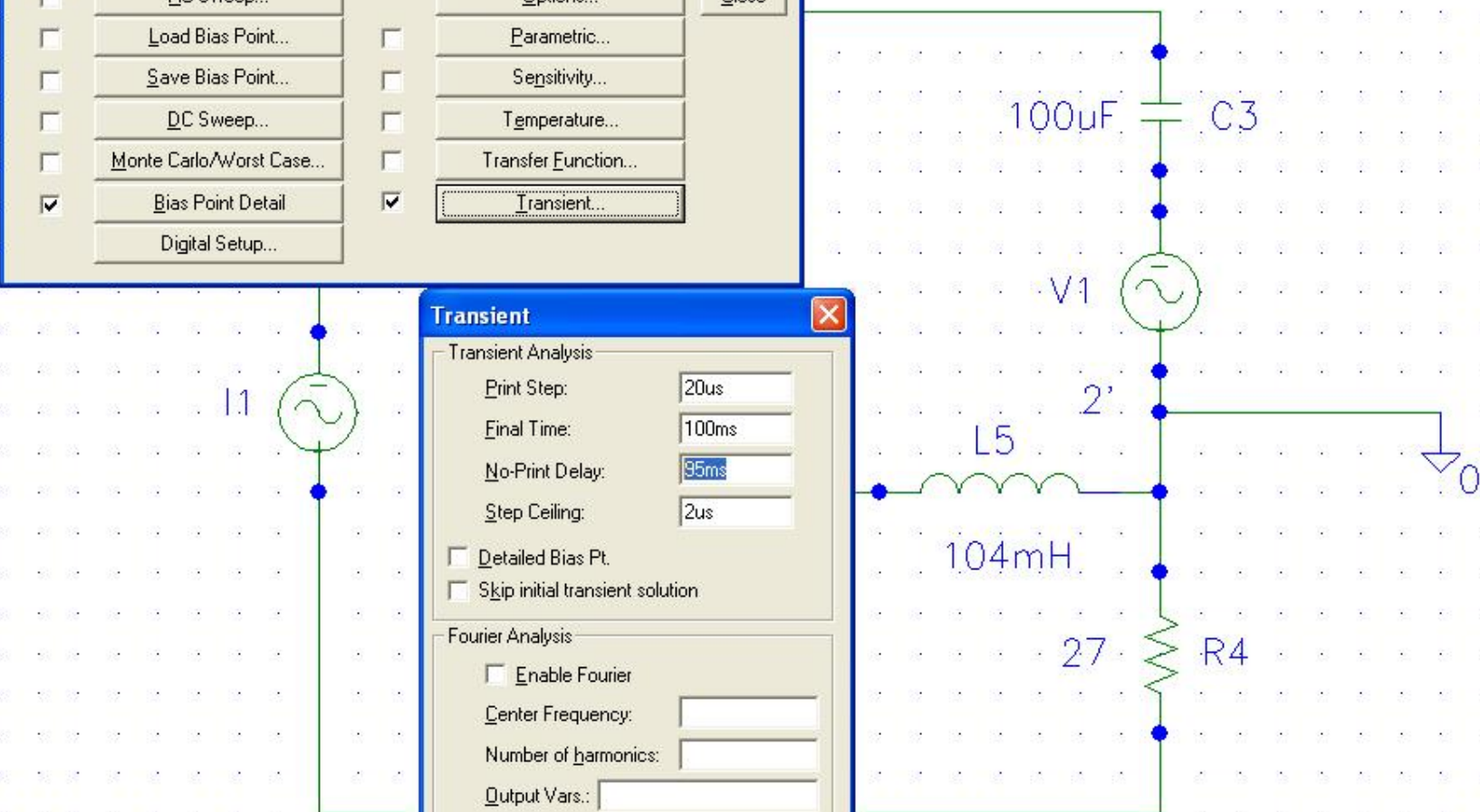
Close

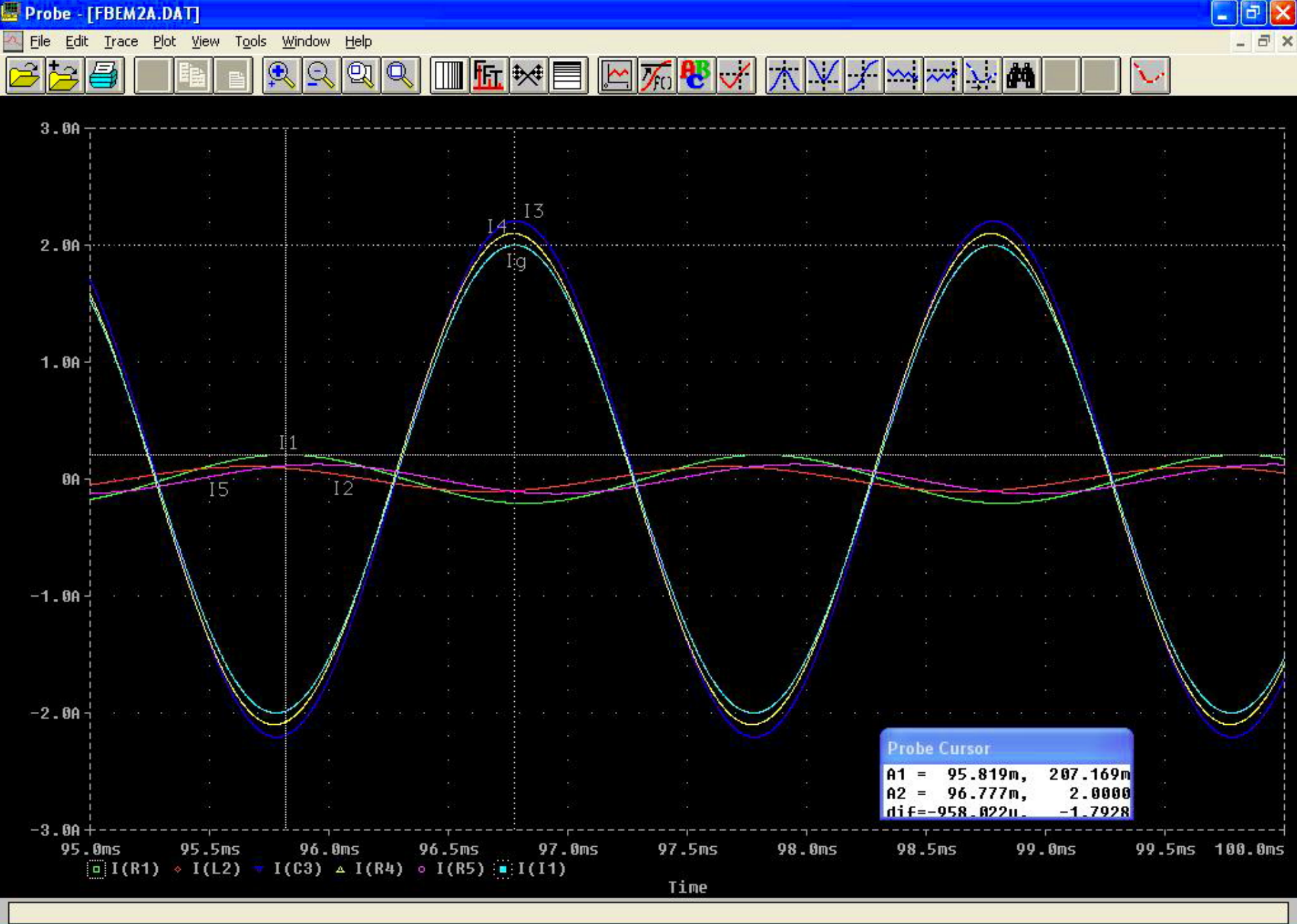
Transient

Transient Analysis	
Print Step:	20us
Final Time:	100ms
No-Print Delay:	95ms
Step Ceiling:	2us
☐	Detailed Bias Pt.
☐	Skip initial transient solution

Fourier Analysis	
☐	Enable Fourier
Center Frequency:	
Number of harmonics:	
Output Vars.:	

OK Cancel





Fbem2a - Jegyzetömb

Éjl Szerkesztés Formátum Nézet Súgó

```
clear;clc; format compact; close all; % Minden törlése
```

```
% Bemenő adatok
```

```
R=27;L=52e-3;C=100e-6;
Ug=100;Ig=2*exp(-j*5*pi/18);
f=500; w=2*pi*f;
Z1=R+j*w*L; Z2=j*w*L;
Z3=1/(j*w*C); Z4=R;
Z5=10*R+j*w*L;
```

```
% Kirchhoff egyenletekkel
```

```
Z=[ 1 0 1 0 0
    -1 1 0 0 1
     0 -1 0 -1 0
    -Z1 0 Z3 0 -Z5
     0 -Z2 0 Z4 Z5];
```

```
G=[Ig
    0
    -Ig
    Ug
    0];
```

```
I=inv(Z)*G
```

```
Iabs=abs(I)'
```

```
% VIGYÁZZ !!! A tranzponálás ' komplex vektornál conjugálást is eredményez!
```

```
% Hurokáramokkal
```

```
ZH=[Z1+Z3+Z5 -Z5
    -Z5 Z2+Z4+Z5];
```

```
GH=[Z1*Ig+Ug
    Z2*Ig];
```

```
HA=inv(ZH)*GH;
```

```
IH=[Ig-HA(1)
```

```
    Ig-HA(2)
```

```
    HA(1)
```

```
    HA(2)
```

```
    HA(2)-HA(1)]
```

```
IHabs=abs(IH)'
```

```
% Csomoponti potenciálokkal
```

Fbem2a - Jegyzetömb

Éjl Szerkesztés Formátum Nézet Súgó

% VIGYÁZZ !!! A transzponálás ' komplex vektornál conjugálást is eredményez!

% Hurok áramokkal

ZH=[Z1+Z3+Z5 -Z5
 -Z5 Z2+Z4+Z5];

GH=[Z1*Ig+Ug
 Z2*Ig];

HA=inv(ZH)*GH;

IH=[Ig-HA(1)
 Ig-HA(2)
 HA(1)
 HA(2)
 HA(2)-HA(1)]

IHabs=abs(IH)'

% Csomoponti potenciálokkal

YP=[1/Z1+1/Z3 -1/Z1 0
 -1/Z1 1/Z1+1/Z2+1/Z5 -1/Z2
 0 -1/Z2 1/Z2+1/Z4];

GP=[-Ug/Z3+Ig
 0
 -Ig];

P=inv(YP)*GP;

IP=[(P(1)-P(2))/Z1
 (P(2)-P(3))/Z2
 (P(1)+Ug)/Z3
 -P(3)/Z4
 P(2)/Z5]

IPabs=abs(IP)'

% Az áramok megjelenítése

figure;

IP(6)=Ig;

compass(IP,'m');

text(real(IP(1)),imag(IP(1)),'i1');

text(real(IP(2)),imag(IP(2)),'i2');

text(real(IP(3)),imag(IP(3)),'i3');

text(real(IP(4)),imag(IP(4)),'i4');

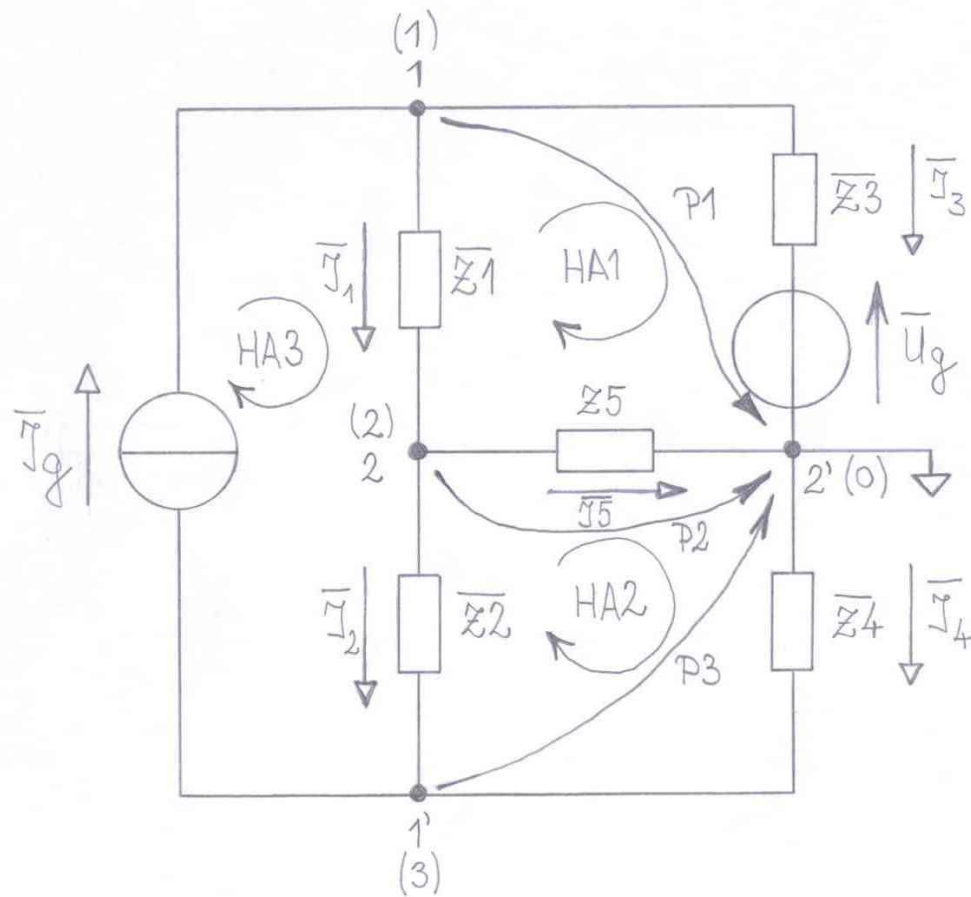
text(real(IP(5)),imag(IP(5)),'i5');

text(real(Ig),imag(Ig),'Ig');

title('Az egyes ágak áramai');

zoom on;

grid on;



Plánomhoz meg az egyes áramokat!

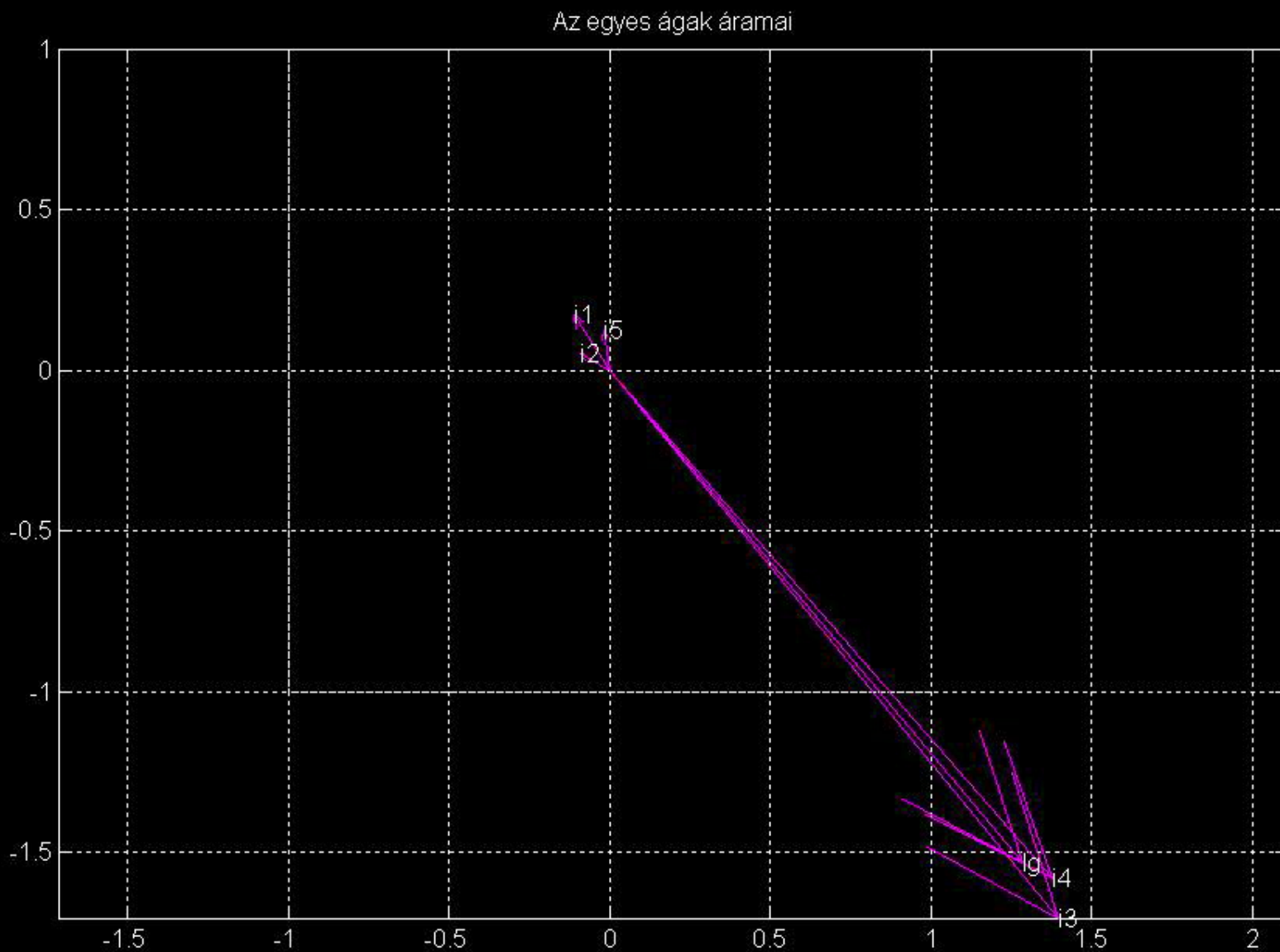
- Kirchhoff egyenletekkel
- Áramok számításával
- Csomóponti potenciálokkal

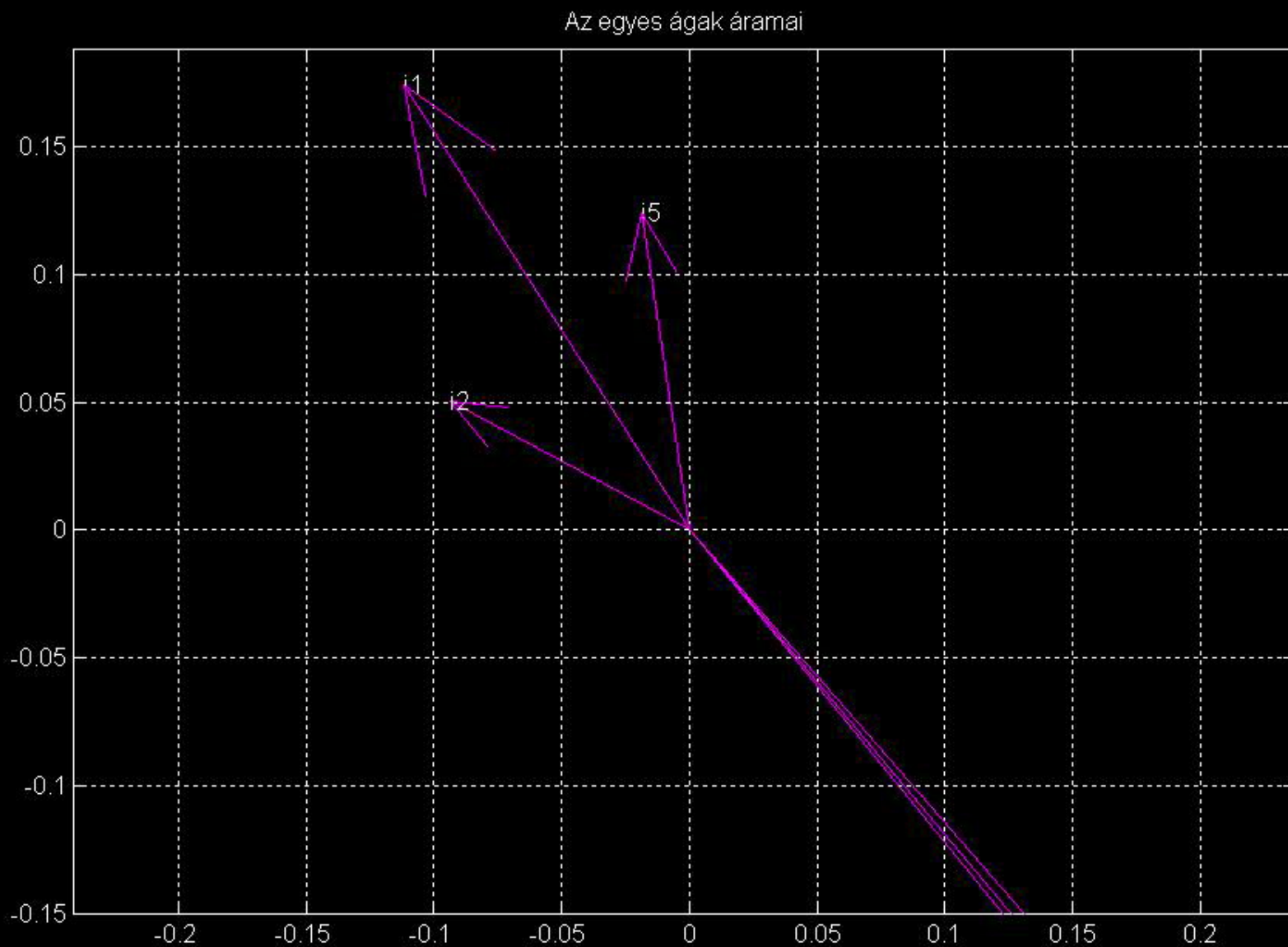
A megoldáshoz a bemutatott MATLAB PROGRAM nyújt segítséget!

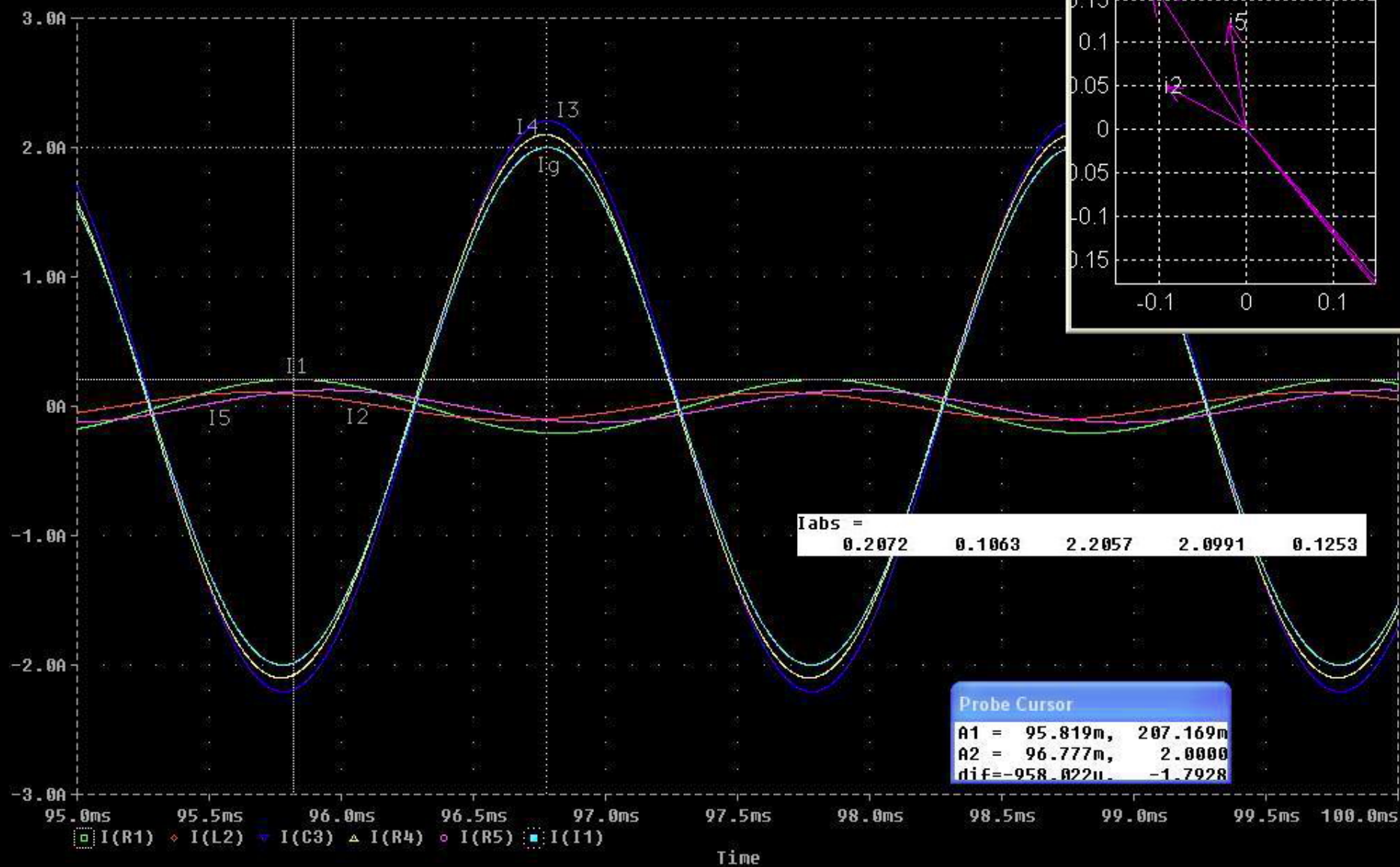
A hibáidat a programozás során elcsúszások miatt lehet elkerülni!

Commands to get started: intro, demo, help help
 Commands for more information: help, whatsnew, info, subscribe

```
>> fbem2a
I =
-0.1120 + 0.1743i
-0.0936 + 0.0504i
 1.3976 - 1.7064i
 1.3792 - 1.5824i
-0.0184 + 0.1239i
Iabs =
    0.2072    0.1063    2.2057    2.0991    0.1253
IH =
-0.1120 + 0.1743i
-0.0936 + 0.0504i
 1.3976 - 1.7064i
 1.3792 - 1.5824i
-0.0184 + 0.1239i
IHabs =
    0.2072    0.1063    2.2057    2.0991    0.1253
IP =
-0.1120 + 0.1743i
-0.0936 + 0.0504i
 1.3976 - 1.7064i
 1.3792 - 1.5824i
-0.0184 + 0.1239i
IPabs =
    0.2072    0.1063    2.2057    2.0991    0.1253
>>
```





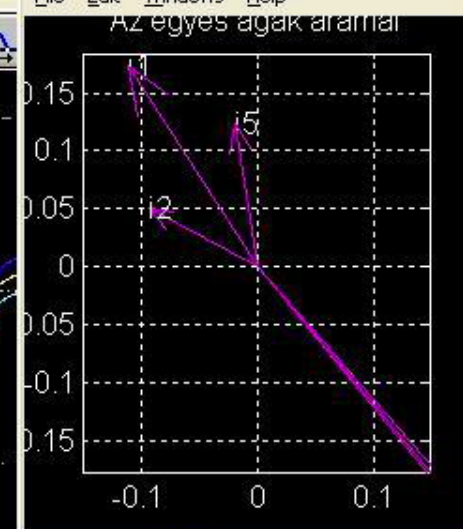


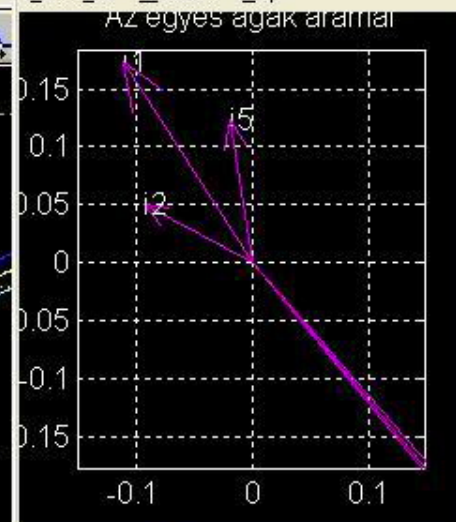
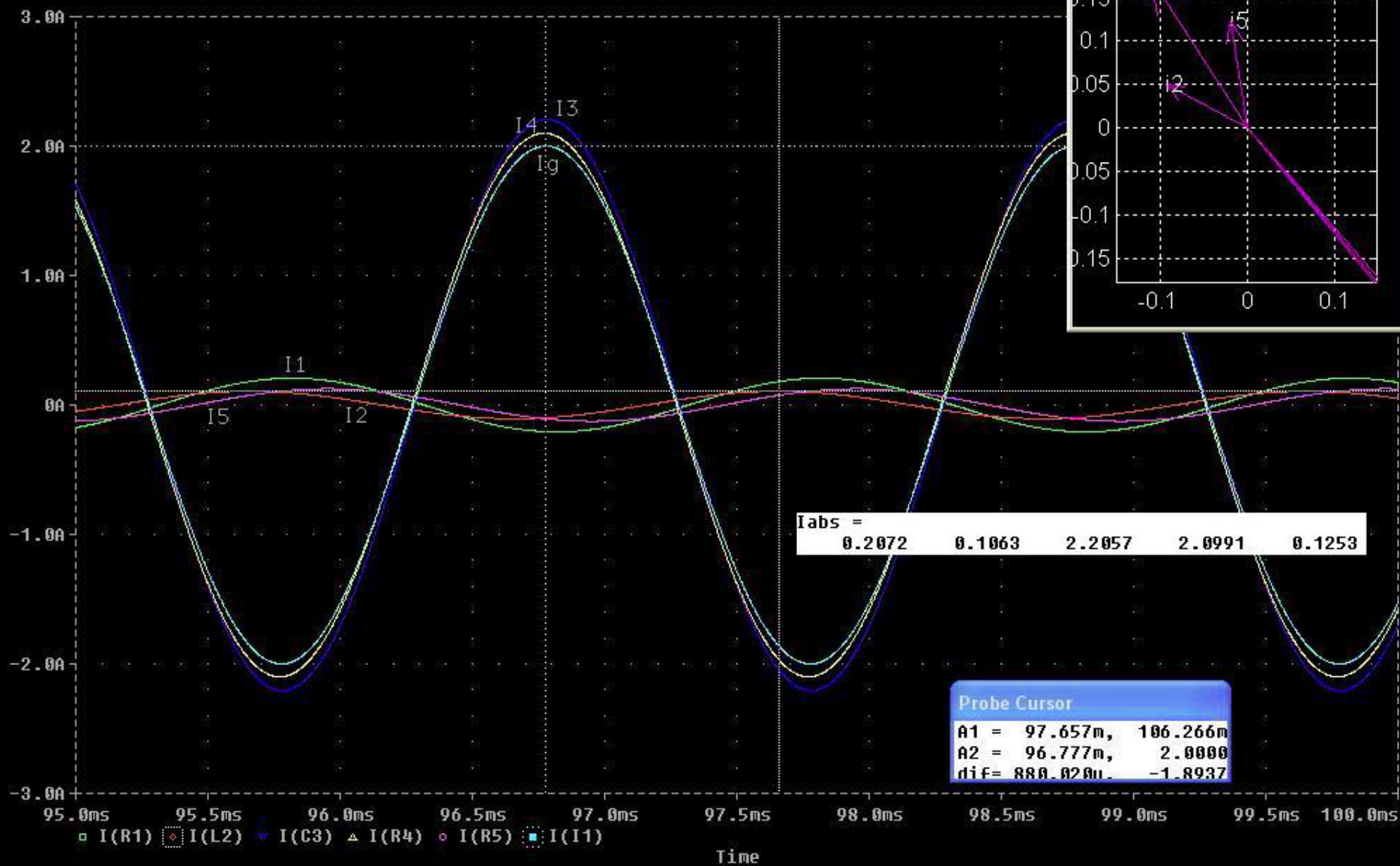
Iabs =

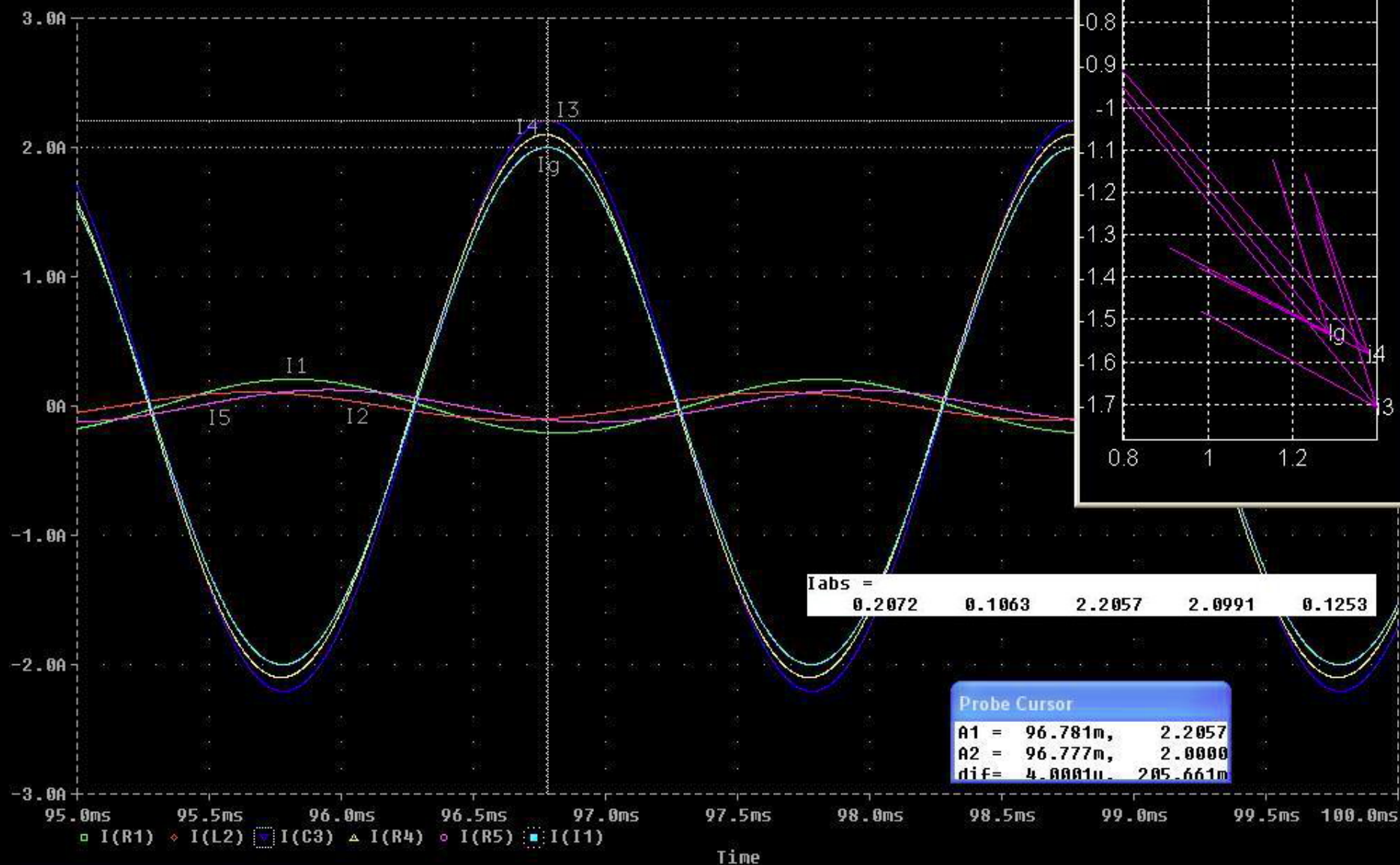
0.2072	0.1063	2.2057	2.0991	0.1253
--------	--------	--------	--------	--------

Probe Cursor

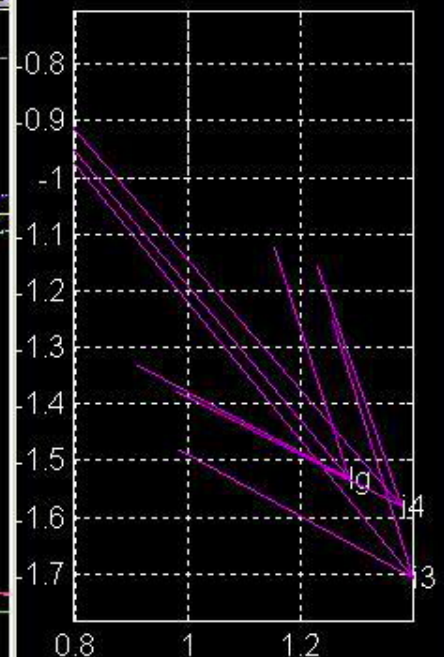
A1 = 95.819m, 207.169m
 A2 = 96.777m, 2.0000
 dif = -958.022u, -1.7928

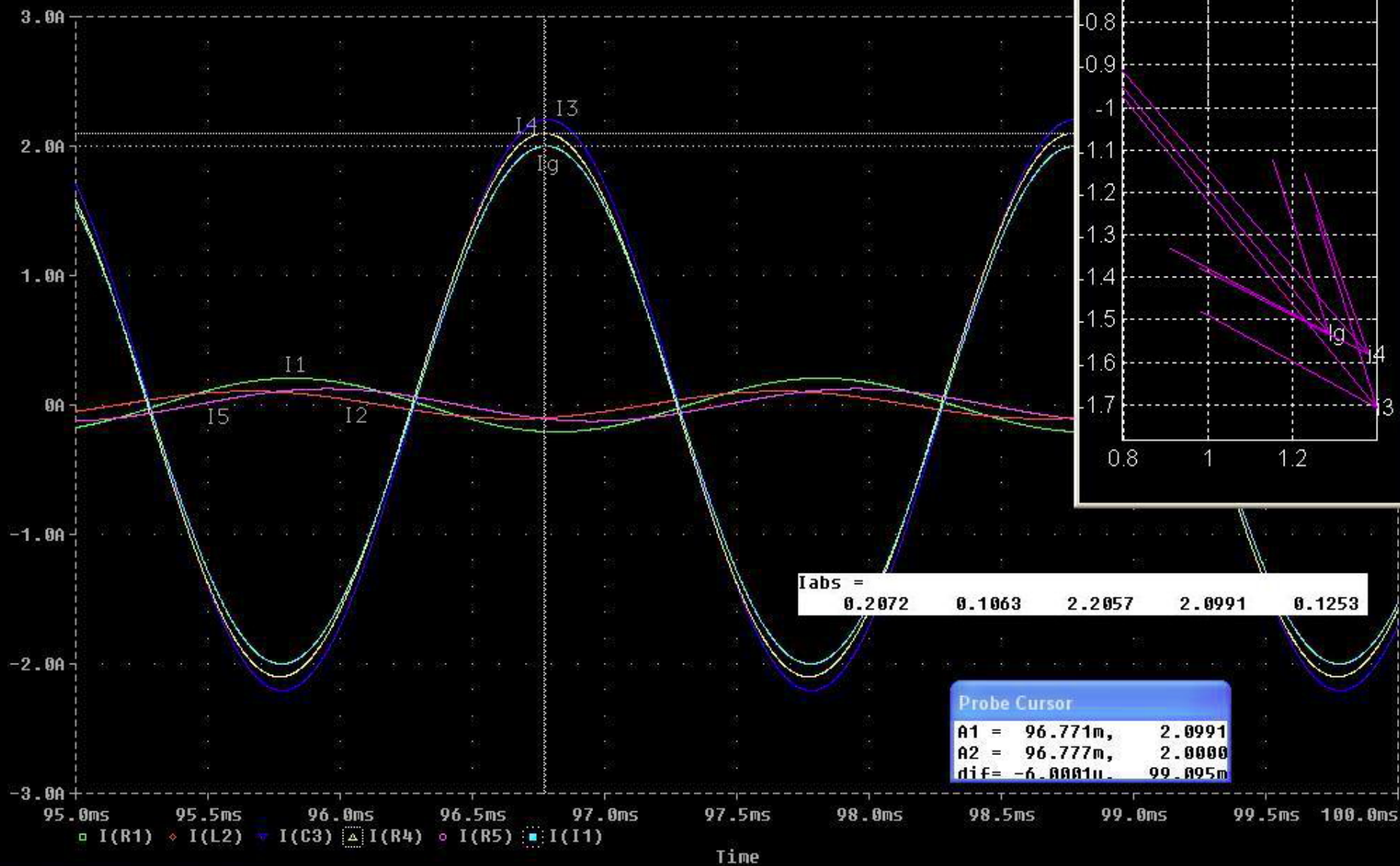




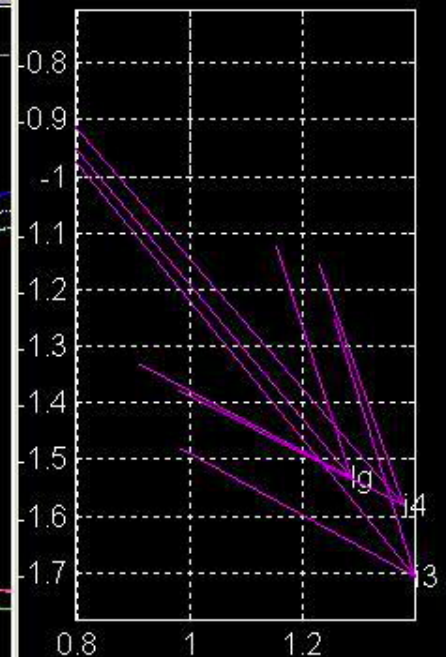


Az egyes ágak áramai

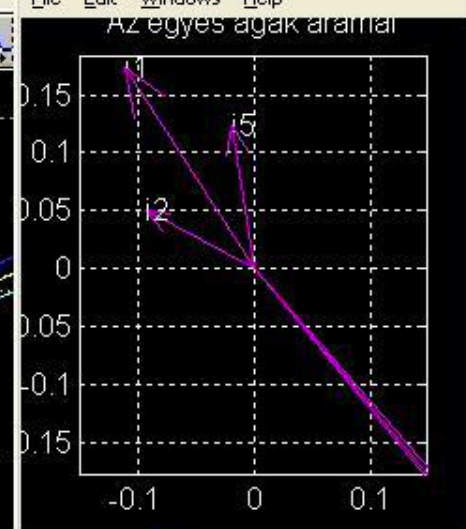
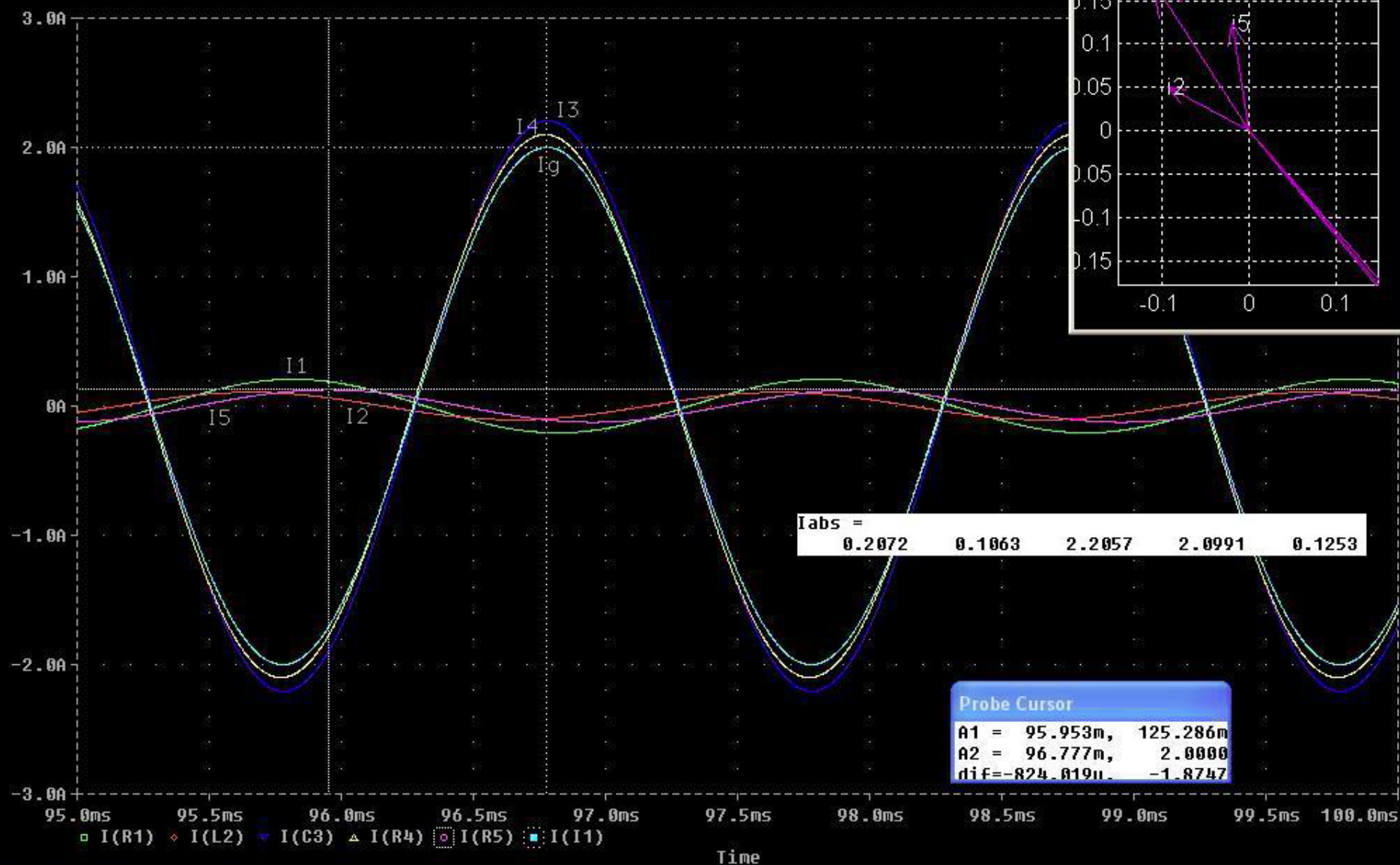




Az egyes ágak áramai



Could not find specified point



The background is a dark blue gradient with a subtle, isometric grid of dots and lines that recede into the distance, creating a sense of depth.

VÉGE