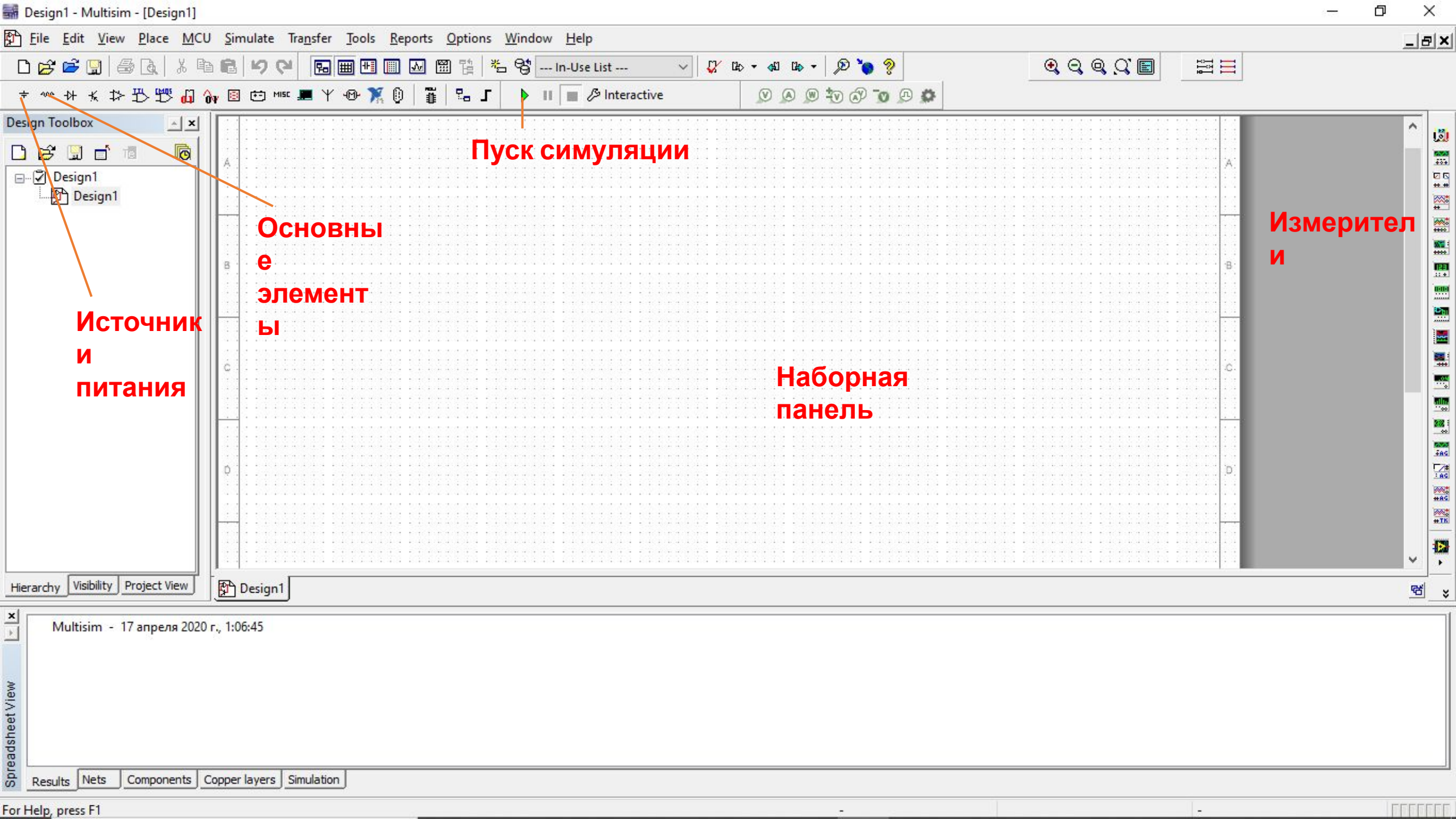


Лабораторная работа 1

Разветвлённая цепь постоянного тока



Источник
и
питания

Основны
е
элемент
ы

Пуск симуляции

Наборная
панель

Измерител
и

Multisim - 17 апреля 2020 г., 1:06:45

Results Nets Components Copper layers Simulation

File Edit View Place MCU Simulate Transfer

Full screen F11

Parent sheet

Design Toolbox

- Zoom in Ctrl+Num +
- Zoom out Ctrl+Num -
- Zoom area F10
- Zoom sheet F7
- Zoom to magnification... Ctrl+F11
- Zoom selection F12

Grid

Border

Print page bounds

Ruler bars

Status bar

Design Toolbox

Spreadsheet View

SPICE Netlist Viewer

LabVIEW Co-simulation Terminals

Circuit Parameters

Description Box Ctrl+D

Toolbars

Show comment/probe

Grapher

- Standard
- View
- Main
 - Graphic Annotation
 - 3D components
 - Analog components
 - Basic
 - Diodes
 - Transistor components
 - Measurement components
 - Miscellaneous components
- Components
- Ladder diagram
- Power source components
- Rated virtual components
- Signal source components
- Virtual
- Simulation
- Instruments
 - Description Editor
- MCU
- LabVIEW instruments
- NI ELVISmx instruments
- PLD
- PLD components
- Place probe

Help

In-Use List ---

Interactive

Grid

Columns: A, B, C, D

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Spreadsheet View

Results Nets Components Copper layers Simulation

Measurement components

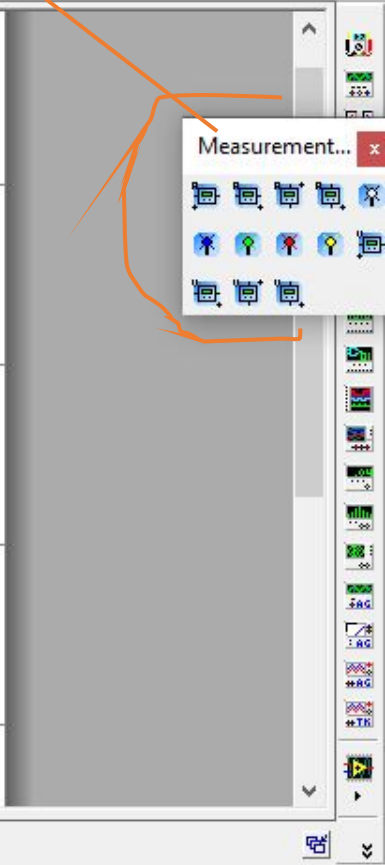
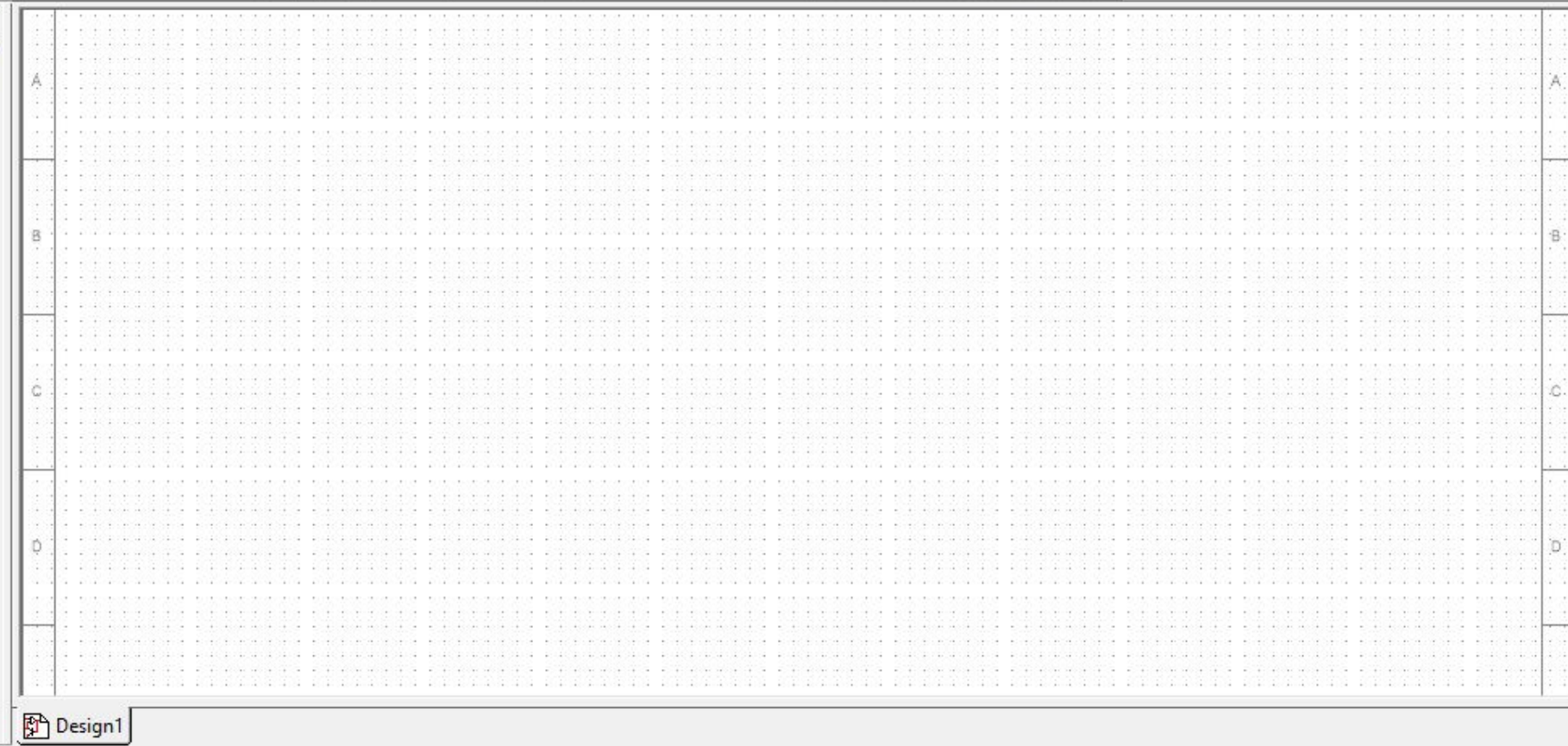
--- In-Use List ---



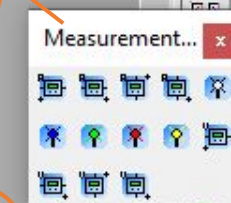
Design Toolbox

- Design1
 - Design1

Hierarchy Visibility Project View



Measurement...



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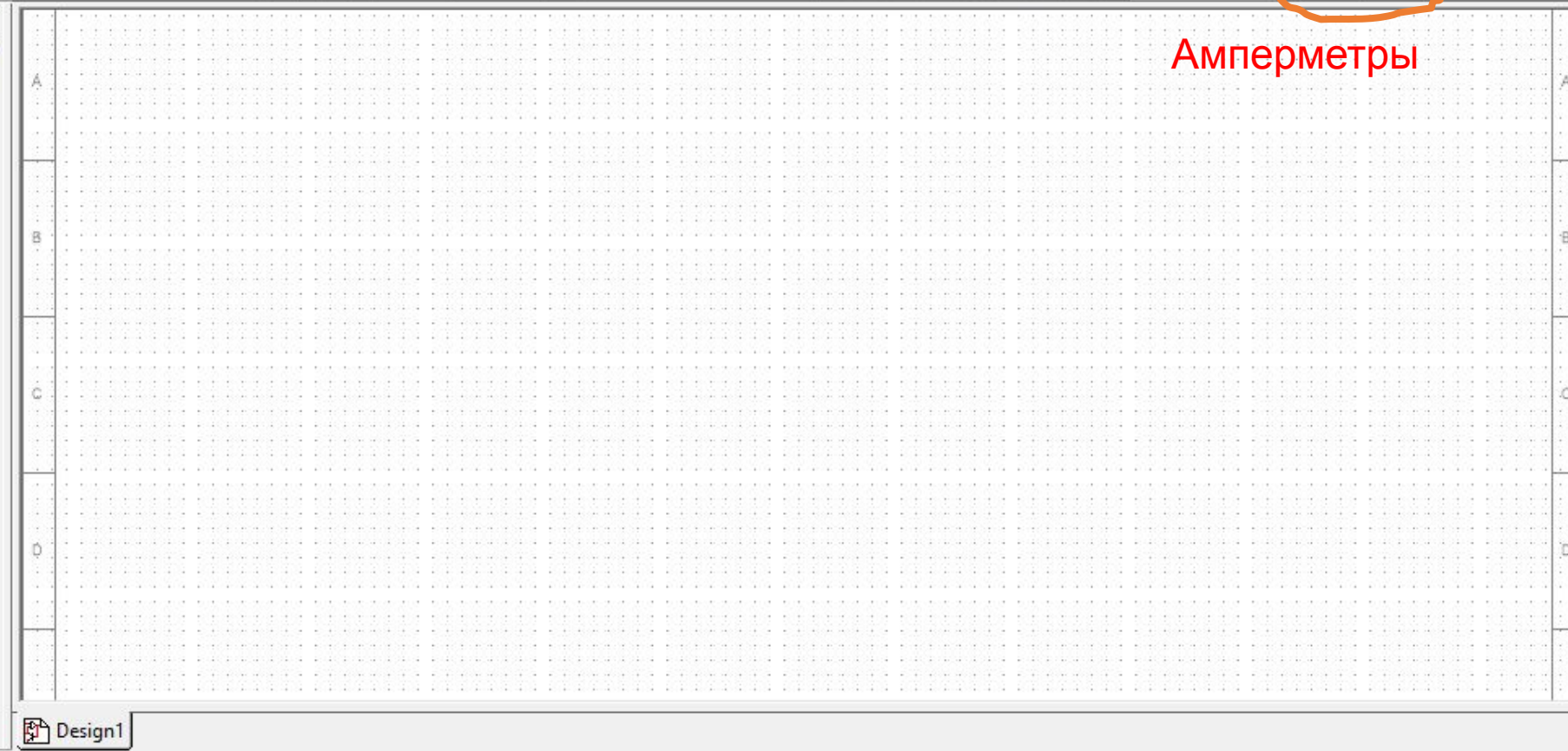
Results Nets Components Copper layers Simulation



Design Toolbox

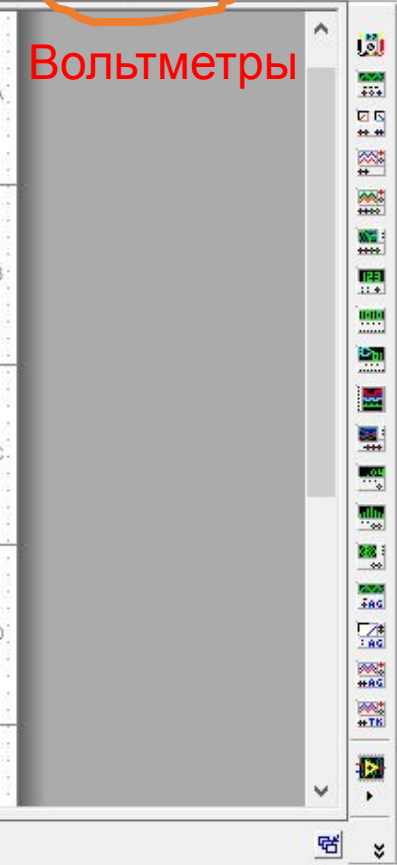
- Design1
 - Design1

Hierarchy Visibility Project View



Амперметры

Вольтметры



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Design Toolbox

- Design1
 - Design1

Hierarchy Visibility Project View

Select a Component

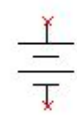
Database: Master Database

Group: Sources

Family: POWER_SOURCES

Component: DC_POWER

Symbol (ANSI Y32.2)



Function: DC voltage source.

Model manufacturer/ID: Generic / VDCP

Package manufacturer/type:

Hyperlink:

Components: 21 Searching: Filter: off

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Spreadsheet View

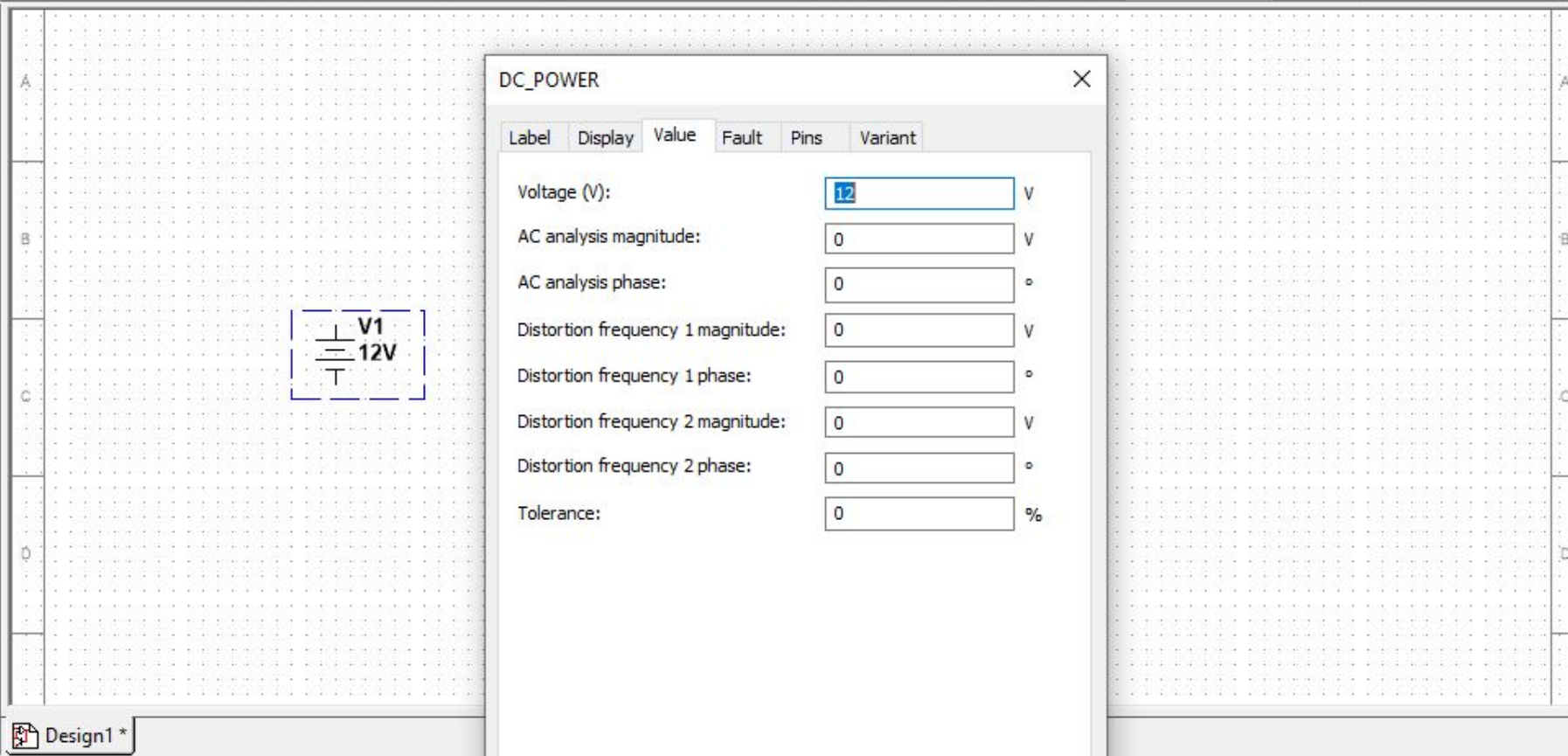
Results Nets Components Copper layers Simulation



Design Toolbox

- Design1
- Design1

Hierarchy Visibility Project View



DC_POWER

Label Display Value Fault Pins Variant

Voltage (V): V

AC analysis magnitude: V

AC analysis phase: °

Distortion frequency 1 magnitude: V

Distortion frequency 1 phase: °

Distortion frequency 2 magnitude: V

Distortion frequency 2 phase: °

Tolerance: %

Replace... OK Cancel Help

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Results Nets Components Copper layers Simulation



Design Toolbox

- Design1
 - Design1

Hierarchy Visibility Project View

Select a Component

Database: Master Database

Group: Sources

Family: All <All families>

- POWER_SOURCES
- SIGNAL_VOLTAGE_SOURCES
- SIGNAL_CURRENT_SOURCES
- CONTROLLED_VOLTAGE_SOUR
- CONTROLLED_CURRENT_SOUF
- CONTROL_FUNCTION_BLOCKS
- DIGITAL_SOURCES

Component: GROUND

- AC_POWER
- DC_POWER
- DGND
- GROUND**
- GROUND_REF1
- GROUND_REF2
- GROUND_REF3
- GROUND_REF4
- GROUND_REF5
- NON_IDEAL_BATTERY
- THREE_PHASE_DELTA
- THREE_PHASE_WYE
- V_REF1
- V_REF2
- V_REF3
- V_REF4
- V_REF5
- VCC
- VDD
- VEE
- VSS

Symbol (ANSI Y32.2)

Function: Analog Ground

Model manufacturer/ID: Generic / EMPTY

Package manufacturer/type:

Hyperlink:

OK Close Search... Detail report View model Help

Spreadsheet View

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Results Nets Components Copper layers Simulation

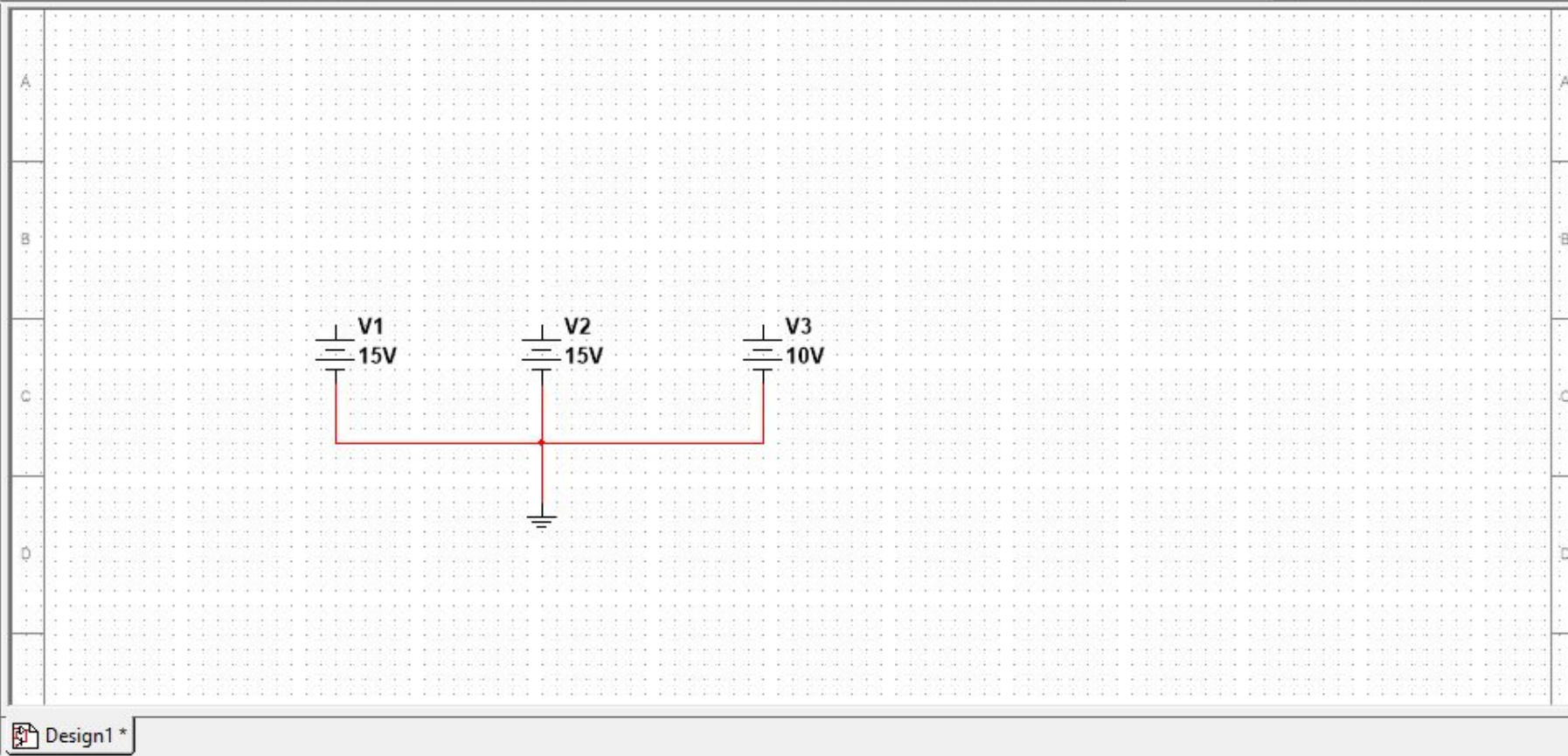
Components: 21 Searching: Filter: off

--- In-Use List ---

Design Toolbox

- Design1
 - Design1

Hierarchy Visibility Project View



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Results Nets Components Copper layers Simulation



Design Toolbox

- Design1
 - Design1

Hierarchy Visibility Project View

Select a Component

Database: Master Database

Component: 1k

Group: Basic

Family:

- <All families>
- BASIC_VIRTUAL
- RATED_VIRTUAL
- 3D_VIRTUAL
- RPACK
- SWITCH
- TRANSFORMER
- NON_IDEAL_RLC
- Z_LOAD
- RELAY
- SOCKETS
- SCHEMATIC_SYMBOLS
- RESISTOR**
- CAPACITOR
- INDUCTOR
- CAP_ELECTROLIT
- VARIABLE_RESISTOR
- VARIABLE_CAPACITOR

| |
|-----------|
| 698 |
| 700 |
| 715 |
| 732 |
| 750 |
| 768 |
| 769 |
| 787 |
| 800 |
| 806 |
| 820 |
| 825 |
| 845 |
| 866 |
| 887 |
| 900 |
| 909 |
| 910 |
| 931 |
| 953 |
| 976 |
| 1k |
| 1.0k |

Symbol (ANSI Y32.2)

Component type: <no type>

Tolerance(%): 0

Model manufacturer/ID: IIT / VIRTUAL_RESISTANCE

Package manufacturer/type: <no package>
IPC-2221A/2222 / RES1300-700X250
IPC-2221A/2222 / RES1400-800X250

Hyperlink:

Components: 1090 Searching: Filter: off

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Spreadsheet View

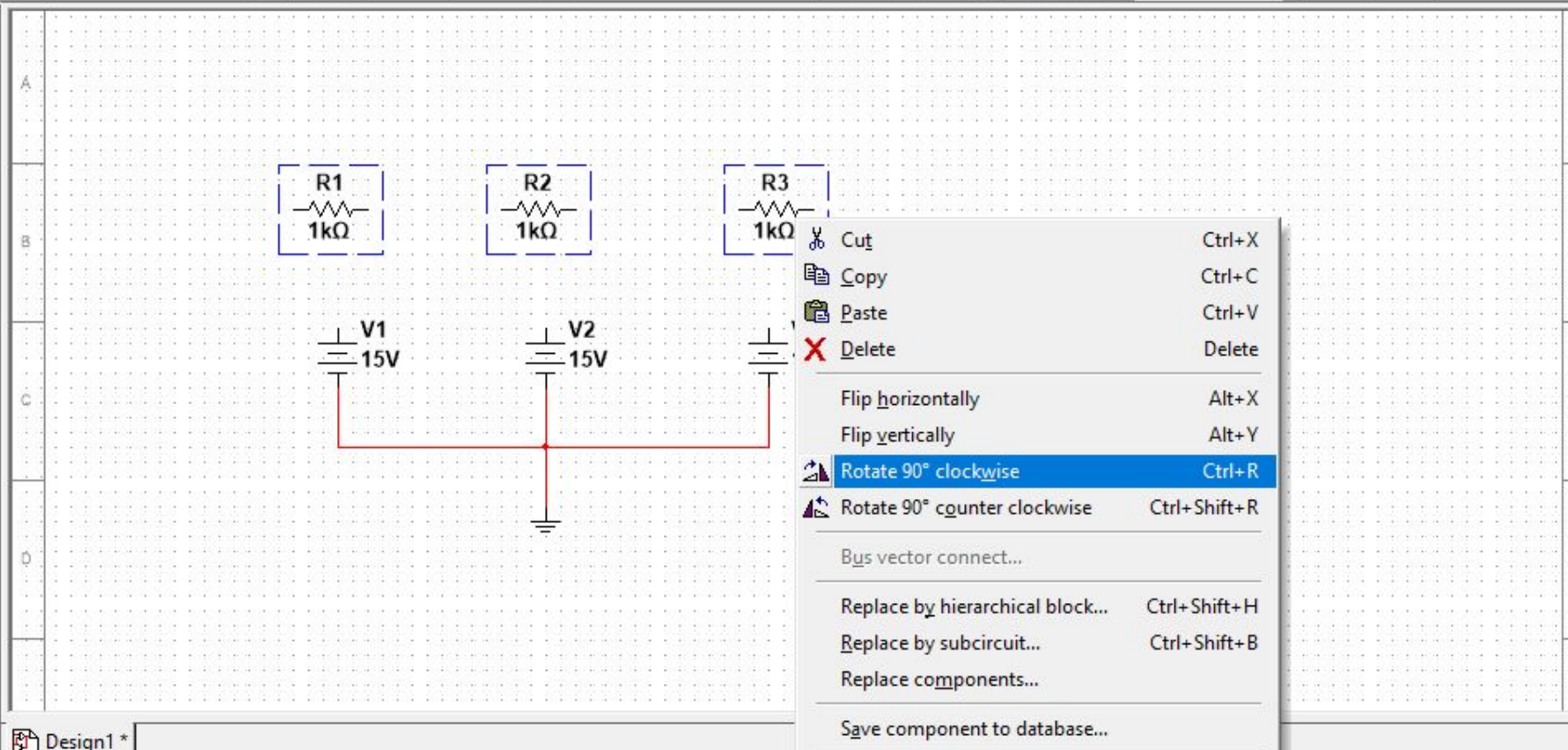
Results Nets Components Copper layers Simulation



Design Toolbox

Design1
Design1

Hierarchy Visibility Project View



- Cut Ctrl+X
- Copy Ctrl+C
- Paste Ctrl+V
- Delete Delete
- Flip horizontally Alt+X
- Flip vertically Alt+Y
- Rotate 90° clockwise Ctrl+R**
- Rotate 90° counter clockwise Ctrl+Shift+R
- Bus vector connect...
- Replace by hierarchical block... Ctrl+Shift+H
- Replace by subcircuit... Ctrl+Shift+B
- Replace components...
- Save component to database...
- Edit symbol/title block
- Lock name position
- Reverse probe direction
- Save selection as snippet...
- Color
- Font
- Properties Ctrl+M

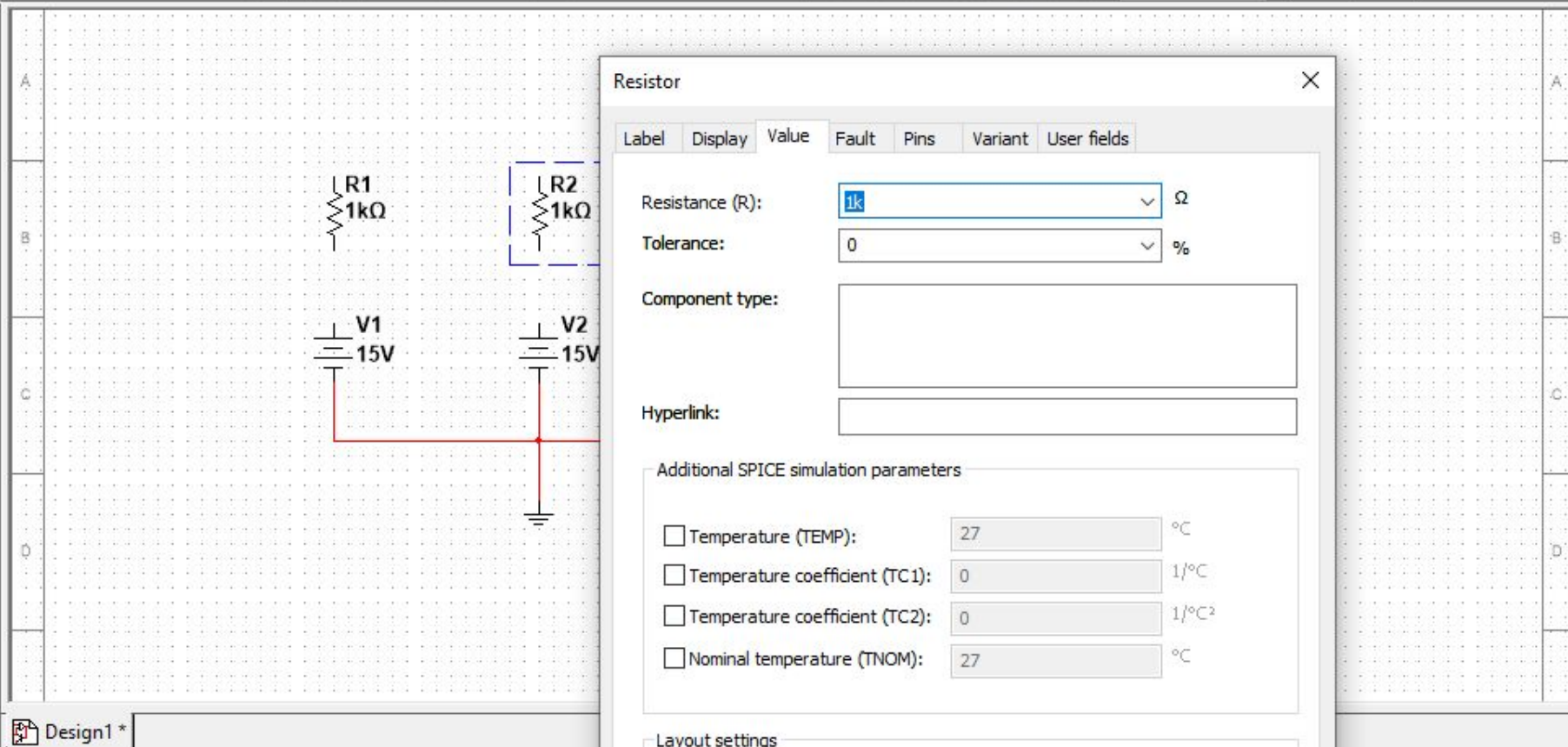
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Spreadsheet View

Results Nets Components Copper layers Simulation



Design Toolbox

Design1
Design1

Hierarchy Visibility Project View

Design1 *

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Spreadsheet View

Results Nets Components Copper layers Simulation

Resistor

Label Display Value Fault Pins Variant User fields

Resistance (R): 1k Ω

Tolerance: 0 %

Component type:

Hyperlink:

Additional SPICE simulation parameters

 Temperature (TEMP): 27 °C Temperature coefficient (TC1): 0 1/°C Temperature coefficient (TC2): 0 1/°C² Nominal temperature (TNOM): 27 °C

Layout settings

Package: Edit package...

Manufacturer:

Replace...

OK

Cancel

Help

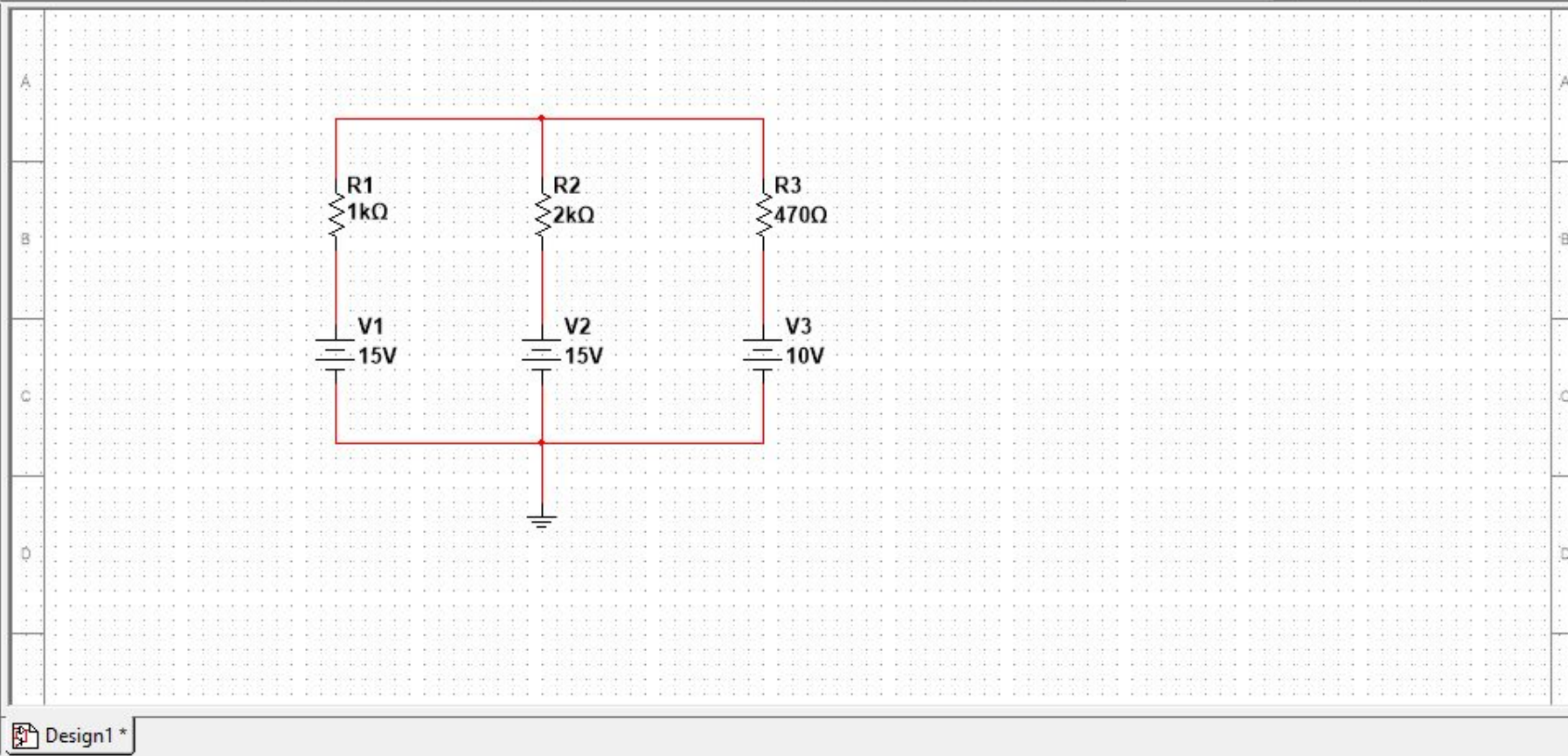
--- In-Use List ---



Design Toolbox

- Design1
- Design1

Hierarchy Visibility Project View



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Results Nets Components Copper layers Simulation

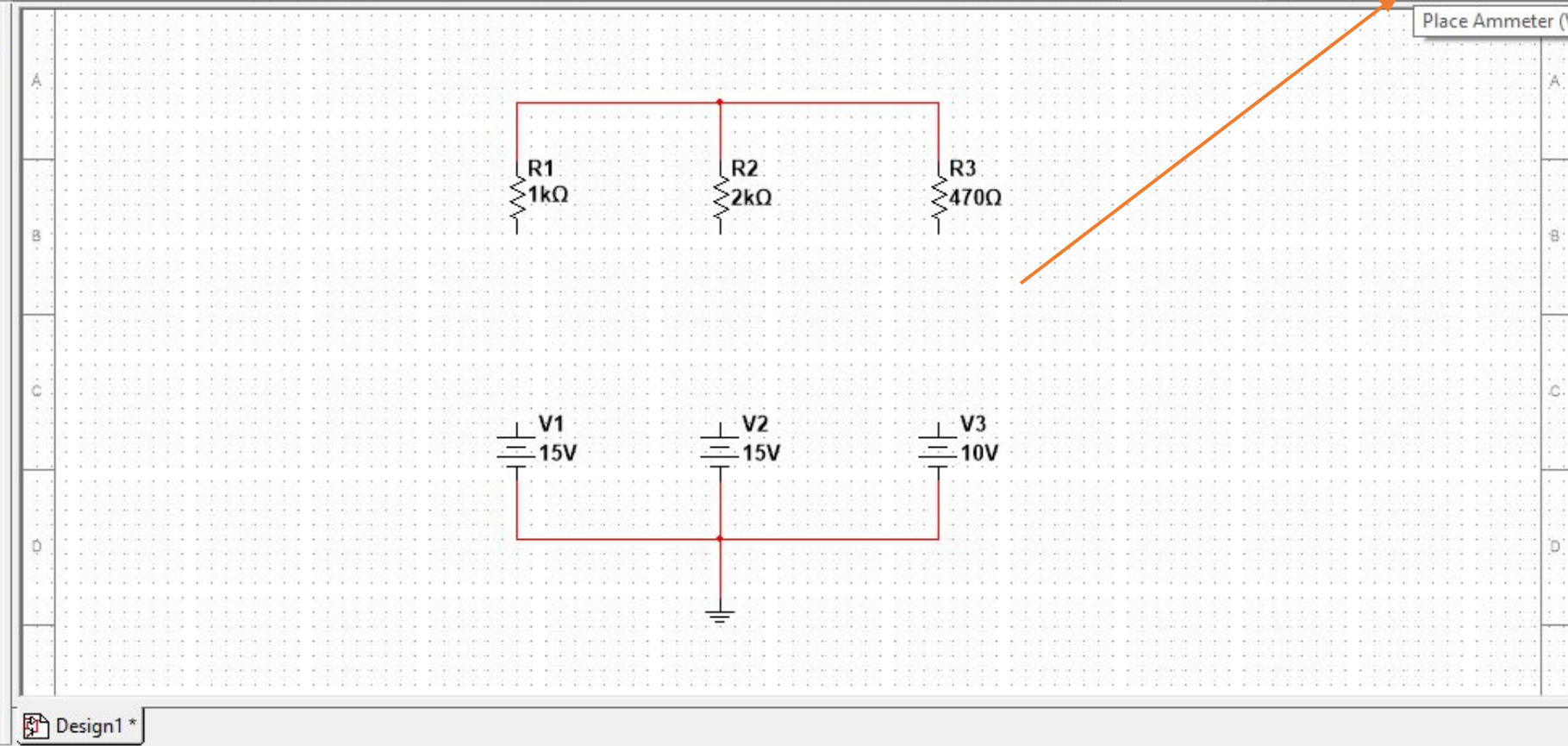
--- In-Use List ---



Design Toolbox

- Design1
- Design1

Hierarchy Visibility Project View



Place Ammeter (Vertically Rotated)

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Results Nets Components Copper layers Simulation

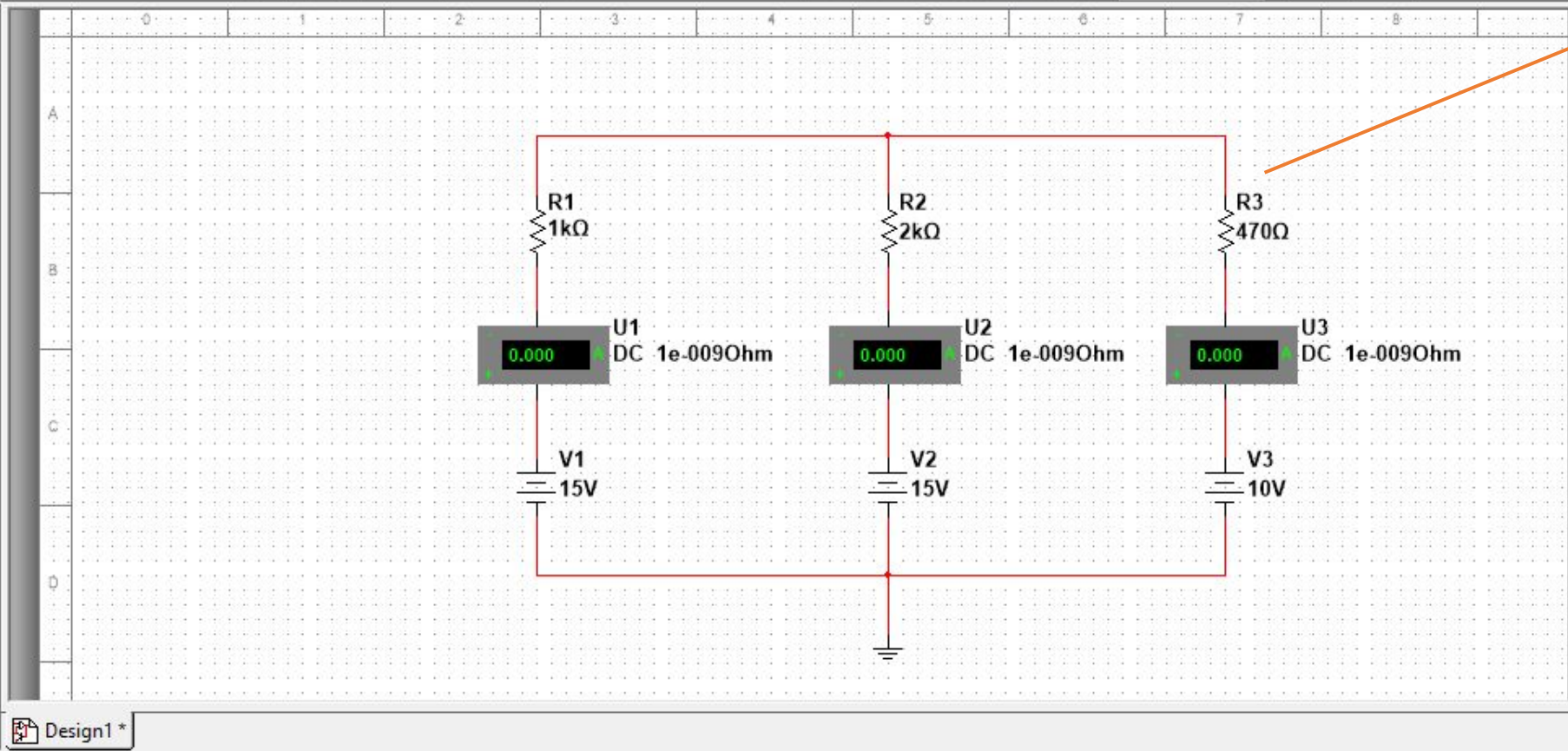
--- In-Use List ---



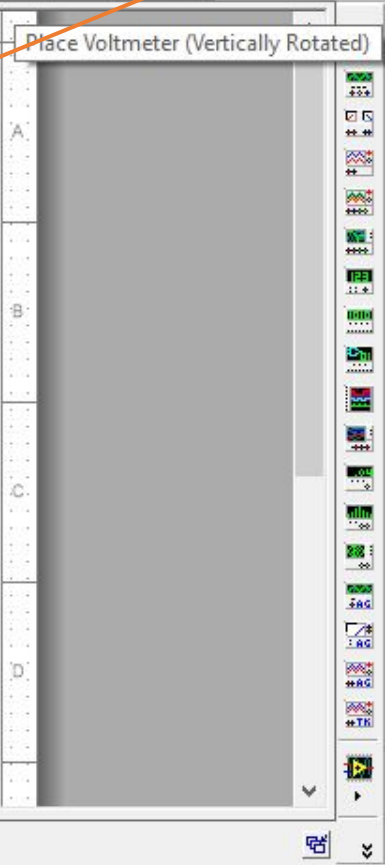
Design1

- Design1

Hierarchy Visibility Project View



Place Voltmeter (Vertically Rotated)



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Results Nets Components Copper layers Simulation

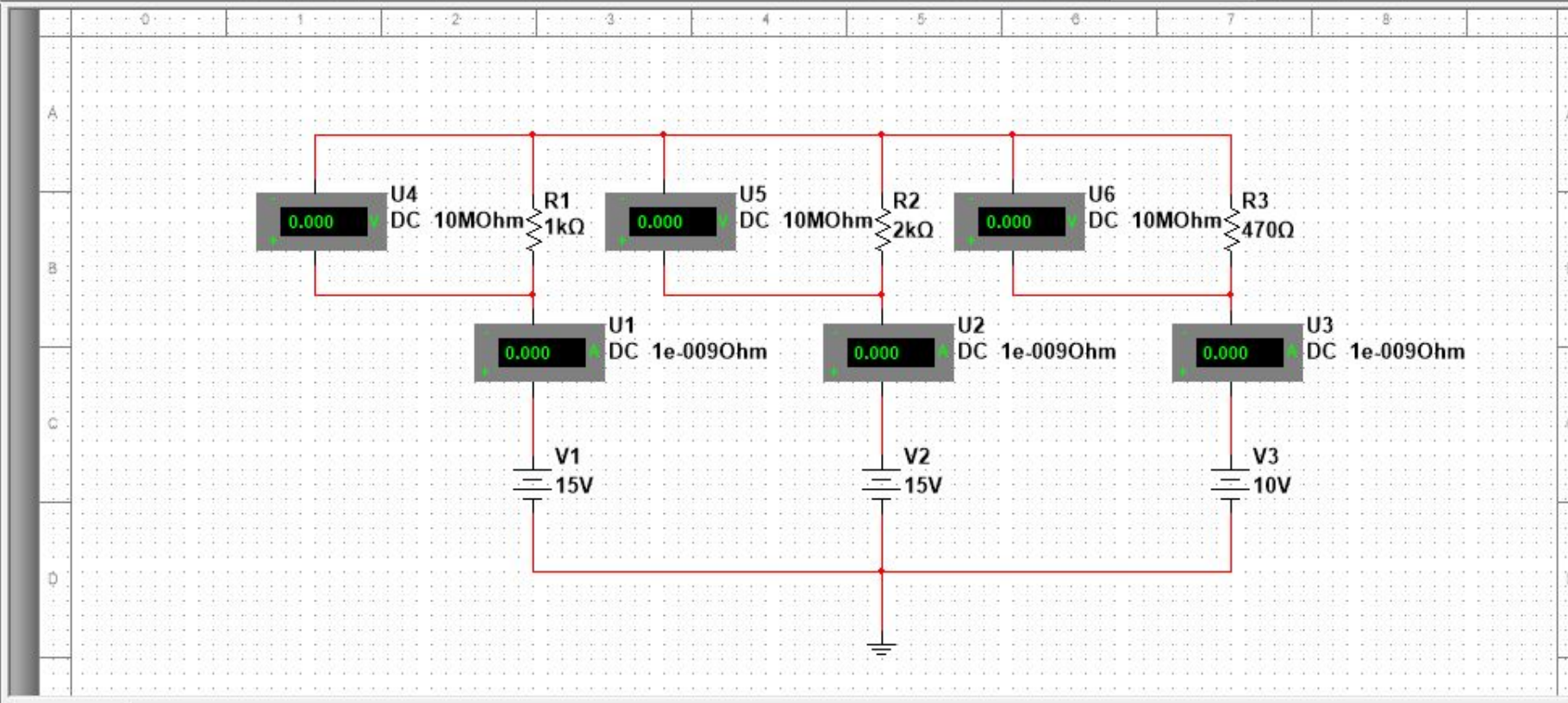
--- In-Use List ---

Interactive

Design1

Design1

Hierarchy Visibility Project View



Design1 *

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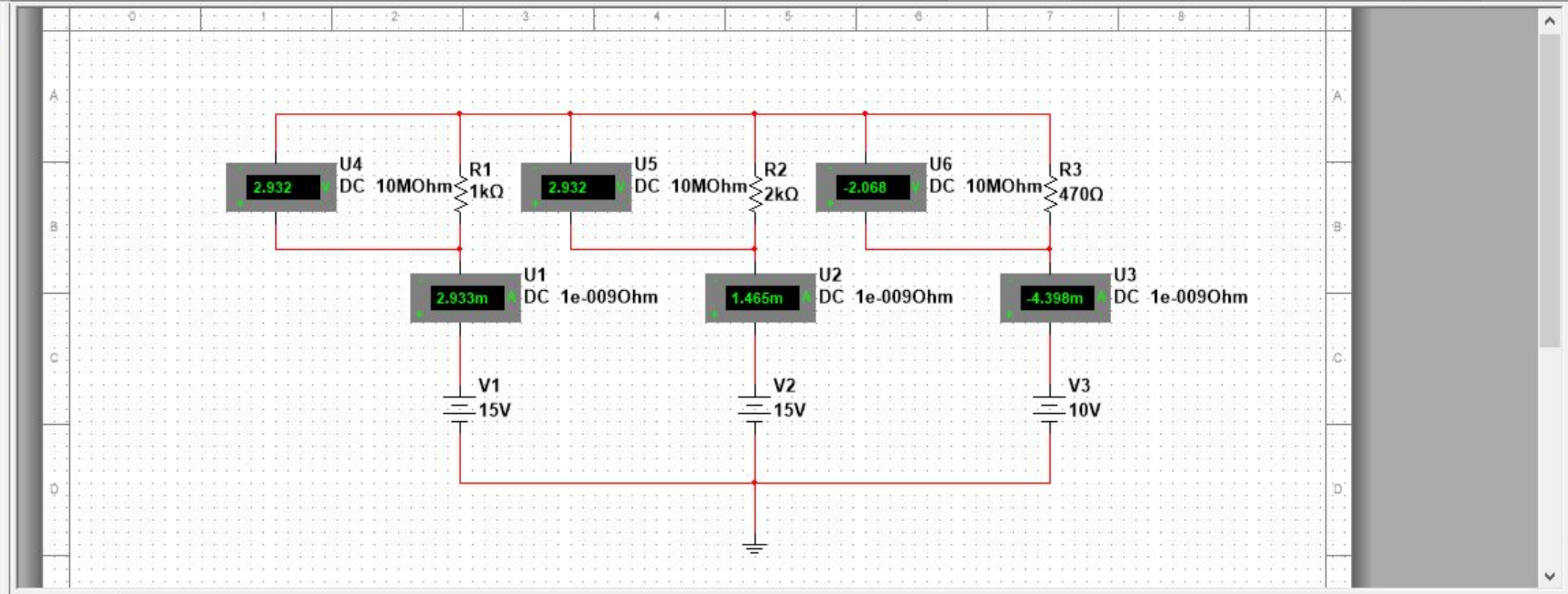
Results Nets Components Copper layers Simulation

--- In-Use List ---

Design1

- Design1

Hierarchy Visibility Project View



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Probes do not plot to the Grapher for interactive simulation. Connect an oscilloscope or run a transient simulation to see Grapher data.