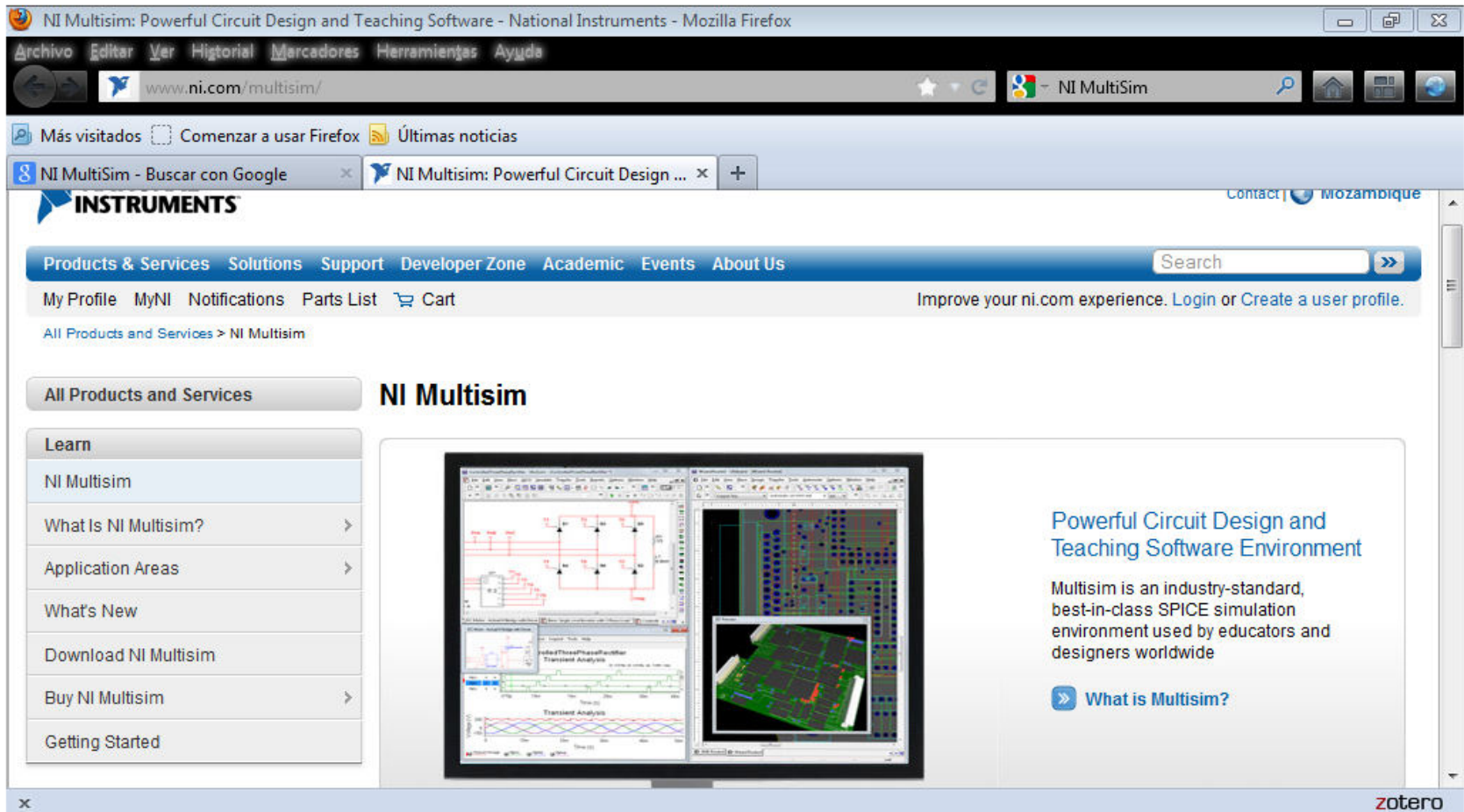


# Clase teórica: “MultiSim” (T1b)

Dr. José A. Chaljub Duarte

# http://www.ni.com/multisim/



# <http://www.ni.com/multisim/>

---

## Multisim for Educators

Multisim builds student expertise through practical application in designing, prototyping, and testing electrical circuits.

[Browse academic applications](#)

### Students, Get Your Copy of Multisim

Purchase Multisim Student Edition for homework and design projects.

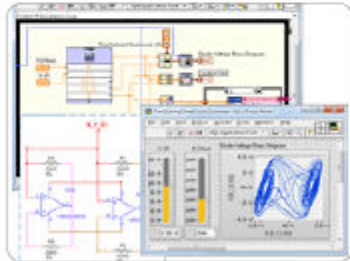
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## Multisim for Professionals

With Multisim, you can optimize your circuit design performance with powerful SPICE simulation and intuitive analyses. You can reduce design errors, prototype faster, and improve productivity. Save prototype iterations and optimize printed circuit board (PCB) designs earlier in the design process by using the Multisim design approach.

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## Featured Resources



### New Features in Multisim 12.0

Learn about new features to improve design productivity and circuits teaching.

[Explore new features](#)



### Evaluate Multisim Now

Download a free 30-day trial or try the interactive demo.

[Try Multisim](#)



### NI Multisim and Ultiboard Self-Paced Online Training

On-demand videos available for free for all customers that have an up-to-date NI

# <http://www.ni.com/multisim/applications/edu/>

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## Teaching Applications: Where Is NI Multisim Used?

Multisim is used for a variety of application areas for educators. Below you will find resources to learn how Multisim is used in each of the following application areas.

[Education Benefits](#)

[Circuit Design Benefits](#)

[OS Support and System Requirements](#)

Technical environment of Multisim gives students the ability to quickly place basic components to experimental circuit concepts and theory. These components, including resistors, capacitors, voltage sources, switches, oscilloscopes, and probes, help to enhance learning of the following concepts:

- Resistive, capacitive, and inductive circuits
- Steady-state and transient circuit analysis techniques
- AC analysis and frequency response
- Operational amplifier and filter circuits

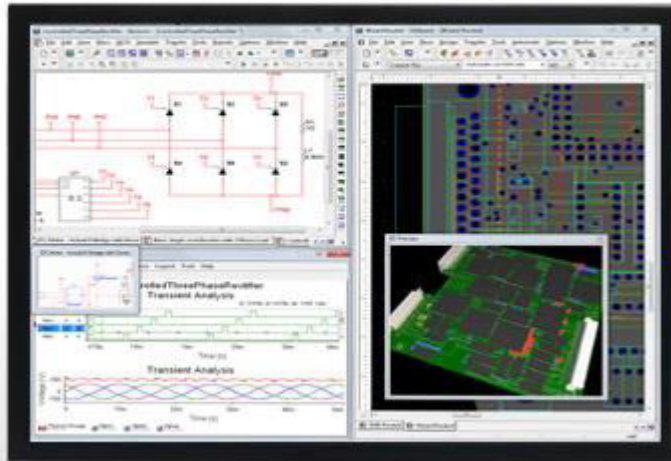
[Teach superposition with Multisim and NI LabVIEW](#)

[Understand active RC filters with Multisim and NI ELVIS](#)

### Digital Circuits

# Powerful circuit design

## NI Multisim



### Powerful Circuit Design and Teaching Software Environment

Multisim is an industry-standard, best-in-class SPICE simulation environment used by educators and designers worldwide

» [What is Multisim?](#)

# <http://www.ni.com/multisim/>

## **Multisim for Professionals**

With Multisim, you can optimize your circuit design performance with powerful SPICE simulation and intuitive analyses. You can reduce design errors, prototype faster, and improve productivity. Save prototype iterations and optimize printed circuit board (PCB) designs earlier in the design process by using the Multisim design approach.

[Browse design applications](#)



# http://multisim.softonic.com/



The screenshot shows the website <http://multisim.softonic.com/> in a web browser. The browser's address bar and tabs are visible at the top. The page features a large green button labeled "Descargar" (Download) with the text "Descarga Segura" (Safe Download) and a download icon. Below this, there are two columns of user ratings: "Usuario" (User) with a rating of 7.1 and "Softonic" with a rating of 9. The main content area is titled "Análisis Softonic" (Softonic Analysis) and "Opinión usuarios" (User Opinion). The text describes NI Multisim (formerly Electronic Workbench) as a tool for designing and simulating electronic circuits. A screenshot of the NI Multisim software interface is shown. To the right, there is a large advertisement for "net empregos" (net jobs) with the text "Procuras Emprego?" (Looking for a job?), "Visita o maior site de emprego de Portugal" (Visit the largest job site in Portugal), and a button "Ver Ofertas >" (View Offers >). The bottom of the page shows a "Top Downloads" section.

**Descargar**  
Descarga Segura

**Usuario**  
7,1  
★★★★☆  
87 👤

**Softonic**  
9  
★★★★★  
Excelente

**Tu nota:**  
★★★★☆

**Licencia:**  
De prueba

**Idioma:**  
Inalés

**Análisis Softonic** **Opinión usuarios**

**El entorno por excelencia para el diseño y la simulación de circuitos electrónicos**  
Jordi Bonet

NI Multisim (antes conocido como Electronic Workbench) es el entorno por excelencia para diseñar circuitos electrónicos y realizar simulaciones.

Con NI Multisim podrás diseñar un circuito electrónico desde cero. Permite crear un circuito utilizando todo tipo de componentes, simular su funcionamiento y analizar cada una de sus secciones.

**Procuras Emprego?**  
*Visita o maior site de emprego de Portugal*

**net empregos**

**Ver Ofertas >**

Top Downloads:

# ORCAD

The screenshot shows a Mozilla Firefox browser window displaying the Cadence OrCAD Solutions website. The browser's address bar shows the URL [www.cadence.com/products/orcad/pages/default.aspx](http://www.cadence.com/products/orcad/pages/default.aspx). The website's header features the Cadence logo and navigation links: Solutions, Products, Services, Support & Training, Alliances, Community, and About Cadence. A search bar is also present. The main content area highlights 'Cadence OrCAD Solutions' with a large orange banner for 'OrCAD 16.6—New Signal Integrity Flow, Advances in Simulation, and Extended Tcl Programming'. Below this, there are sections for 'New OrCAD Capture Marketplace' and 'OrCAD Quicklinks'. A sidebar on the right contains 'Highlights' and 'Recent Blog Posts'. The browser's tab bar shows several open tabs, including 'NI MultiSim - Buscar con Google', 'orcad - Buscar con Google', 'Cadence OrCAD Solutions', and 'Cadence OrCAD Downloads'.

Cadence OrCAD Solutions - Mozilla Firefox

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www.cadence.com/products/orcad/pages/default.aspx

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## Cadence OrCAD Solutions

**OrCAD 16.6—New Signal Integrity Flow, Advances in Simulation, and Extended Tcl Programming**

[Learn more](#)

**OrCAD 16.6—Find out what's new**

[Learn more](#)

### New OrCAD Capture Marketplace

Josh Moore, Senior Product Manager for OrCAD, shares how the new OrCAD Capture Marketplace – with online apps – transforms the way PCB designers access information.

### OrCAD Quicklinks

- Why Cadence OrCAD for PCB?
- Design Suites Datasheet

### Highlights

- Webinar: PCB Library Development – Build OrCAD Symbols and IPC-7351 compliant footprints in a fraction of the time with EDABuilder
- Allegro and OrCAD Users Day at CDNLive! Silicon Valley
- What's Good About OrCAD Apps? You Can Try Them for Free!
- FPGA-PCB codesign; a 21st Century approach to integrating fpgas into the pcb design process

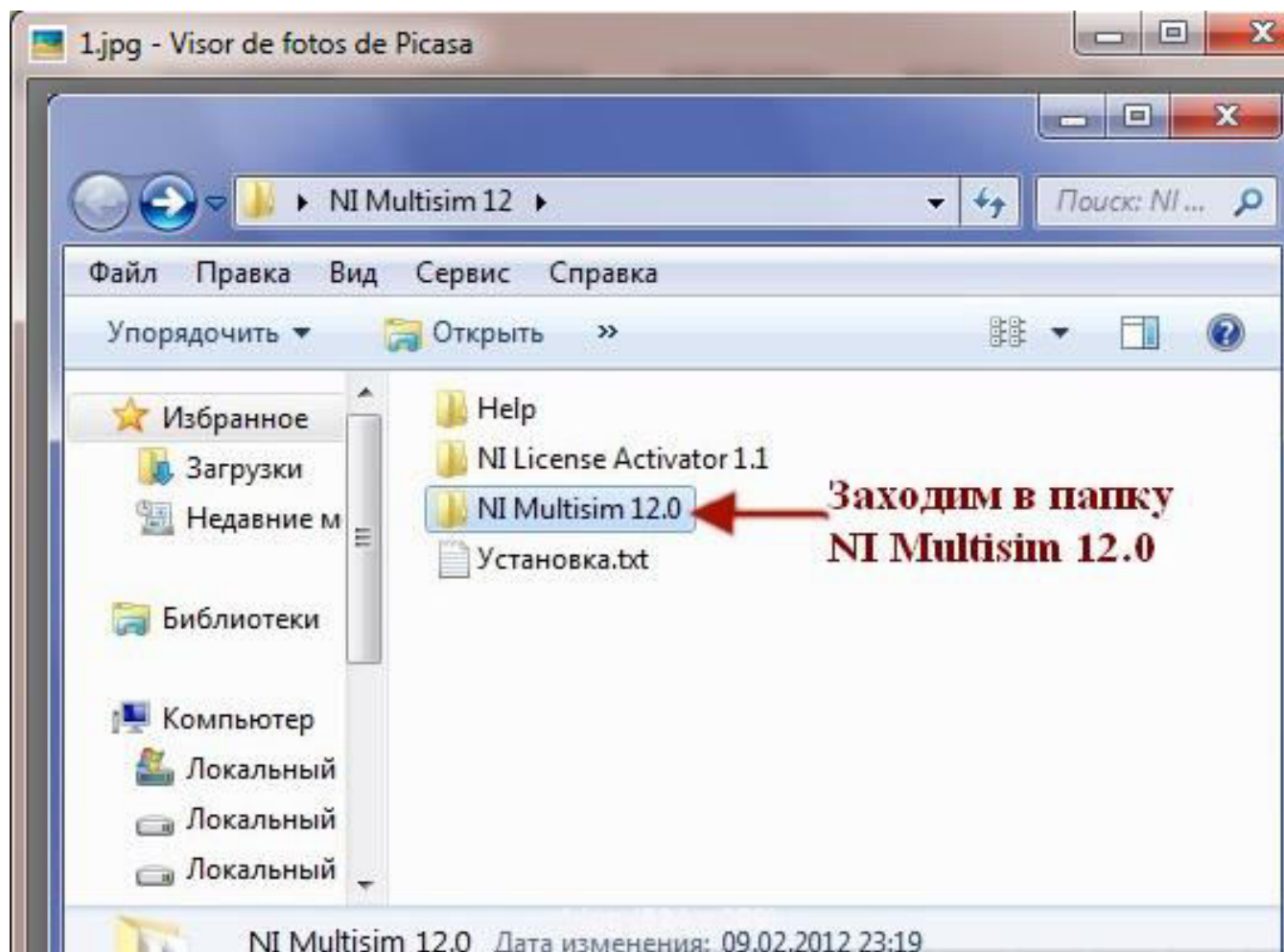
### Recent Blog Posts

- What's Good About DEHDL's Constraints Comparison? The

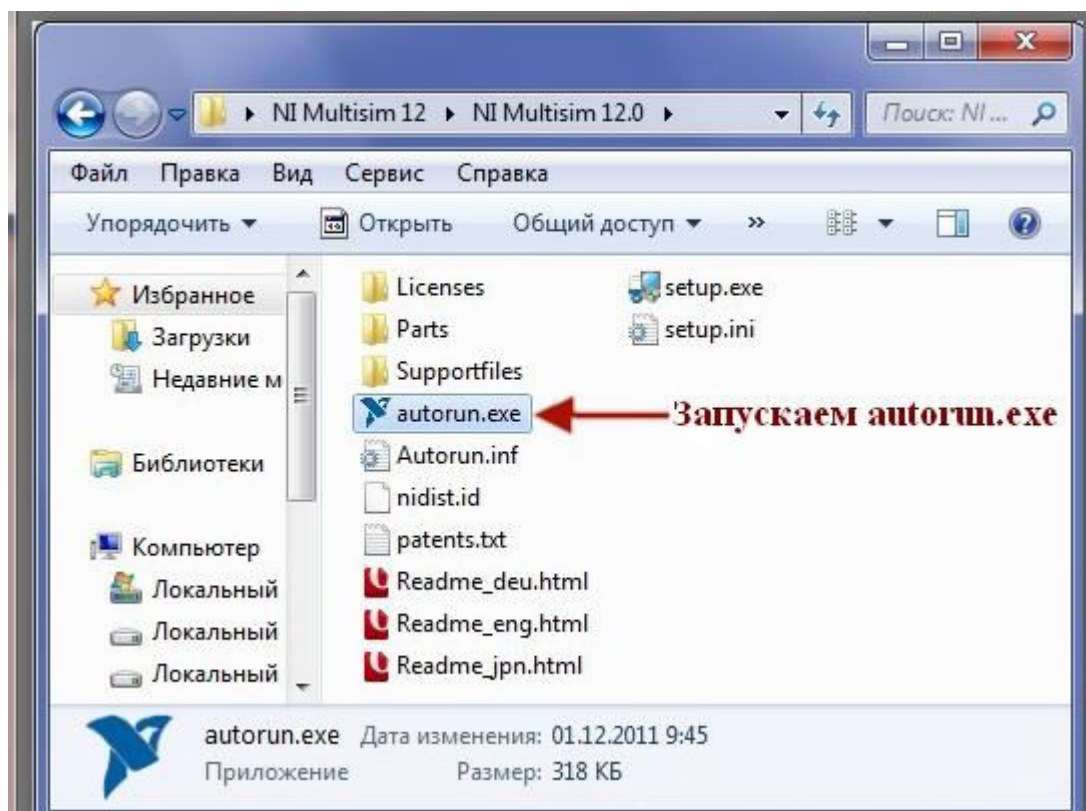
zotero



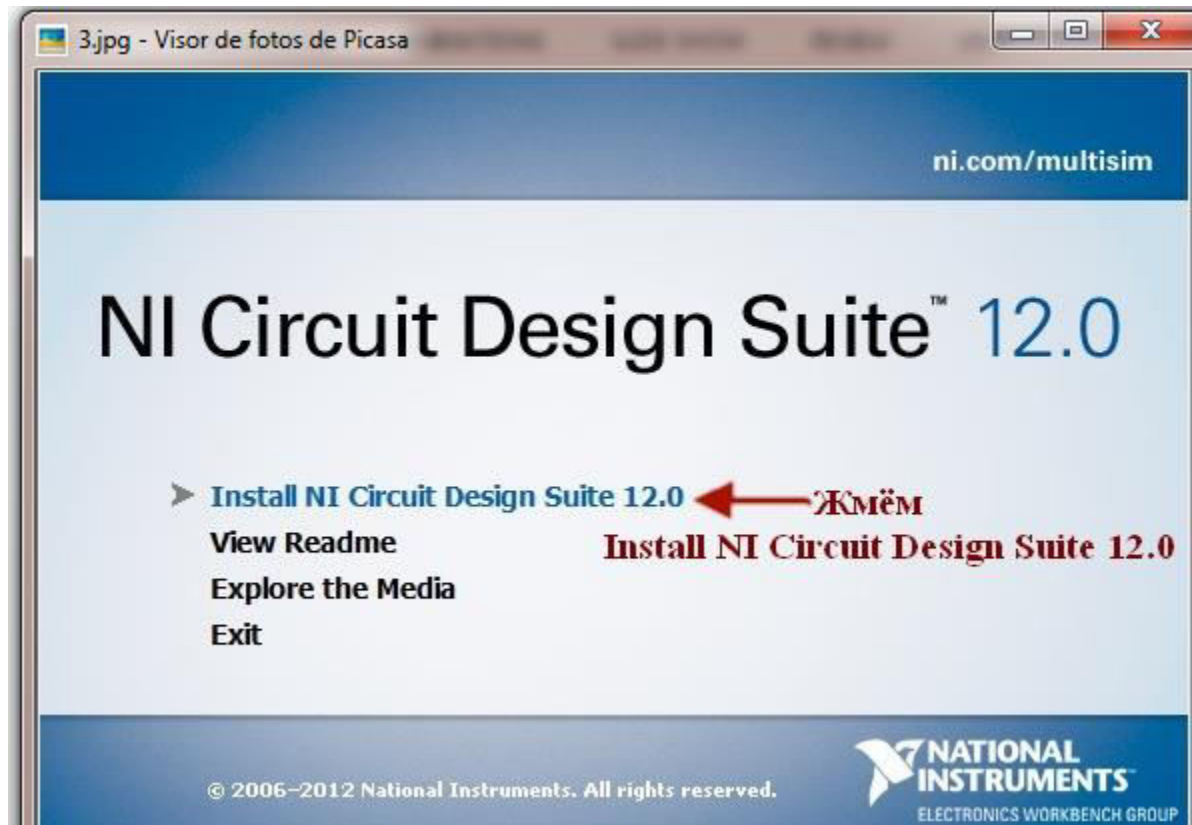
# Instalação



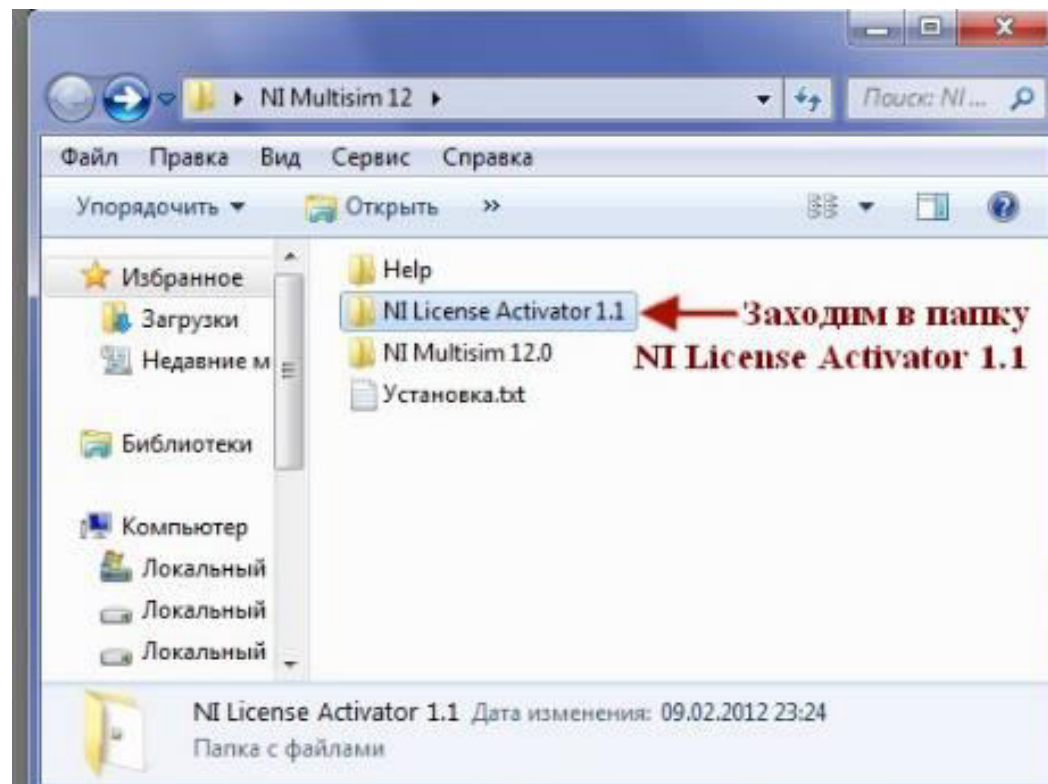
# Instalação



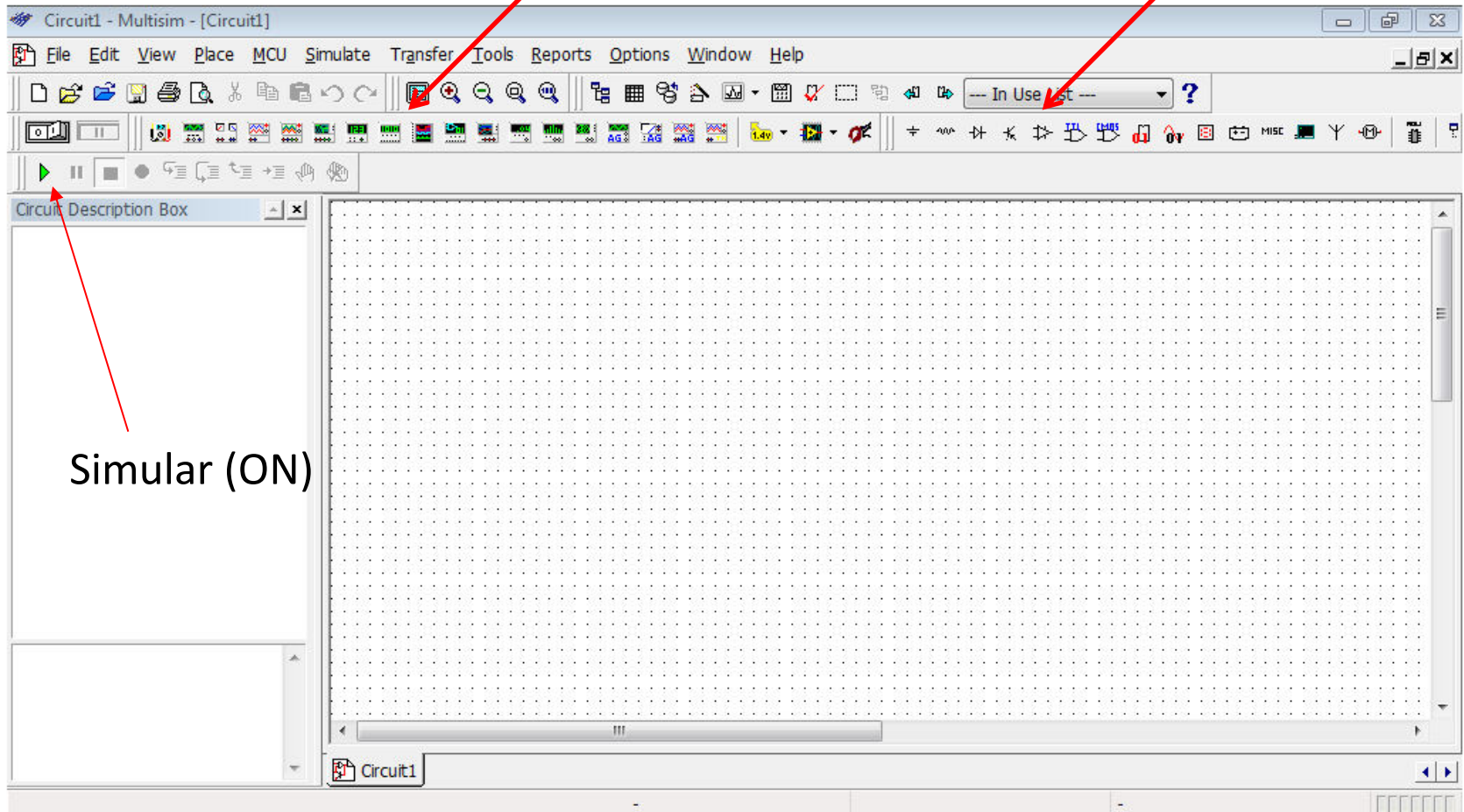
# Instalação



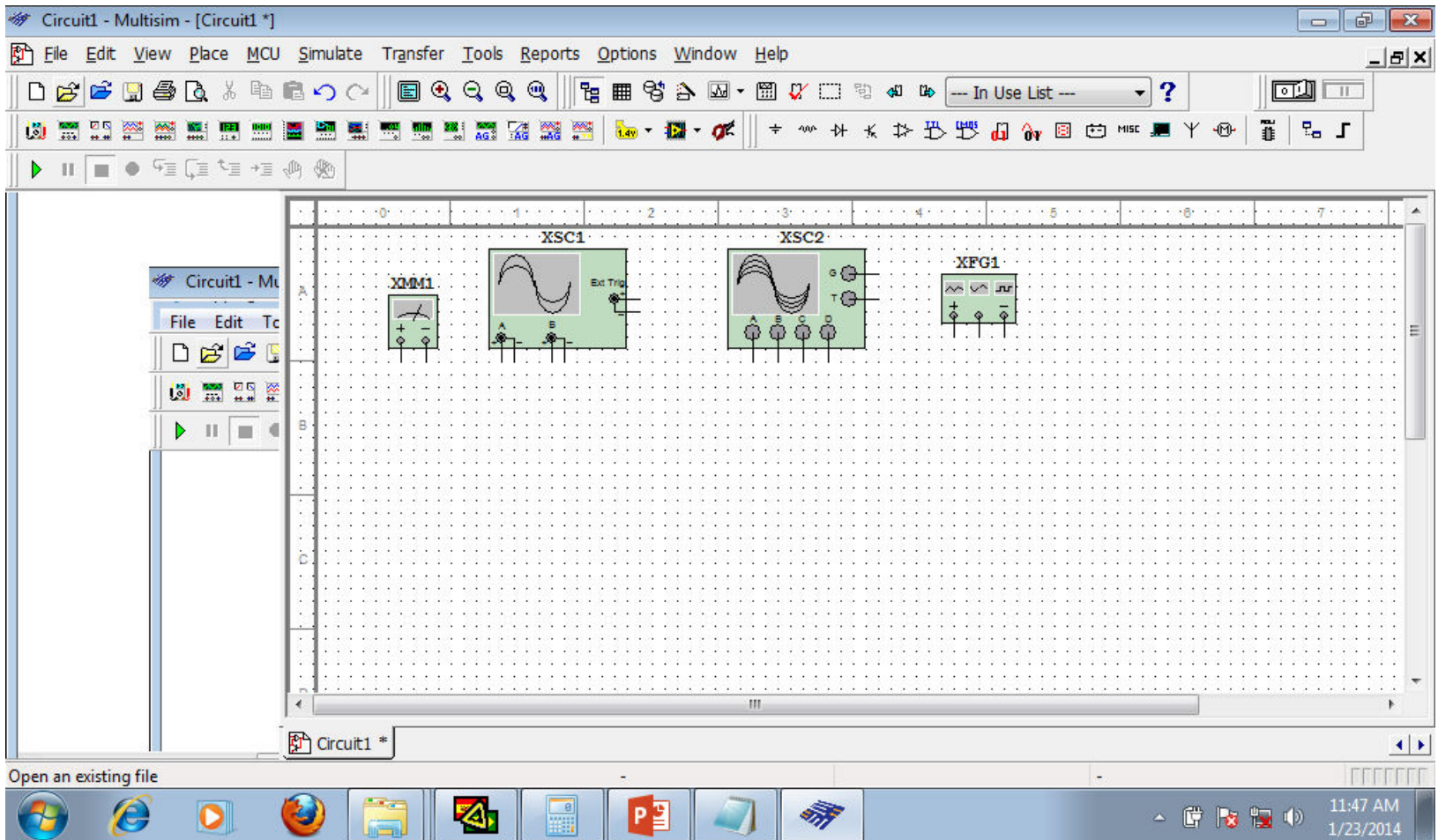
# Instalação



# Instrumentos & componentes

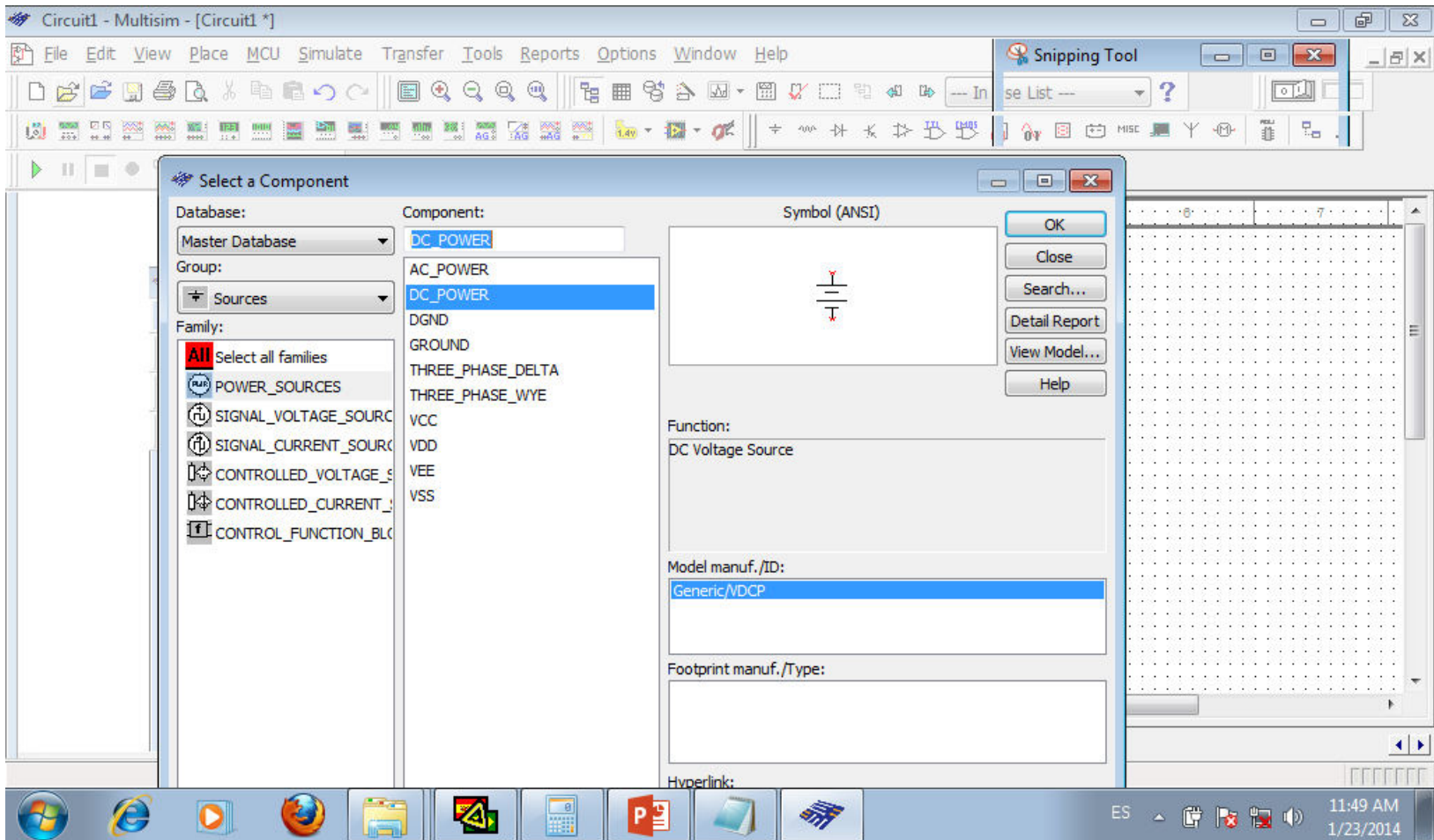


# Instrumentos

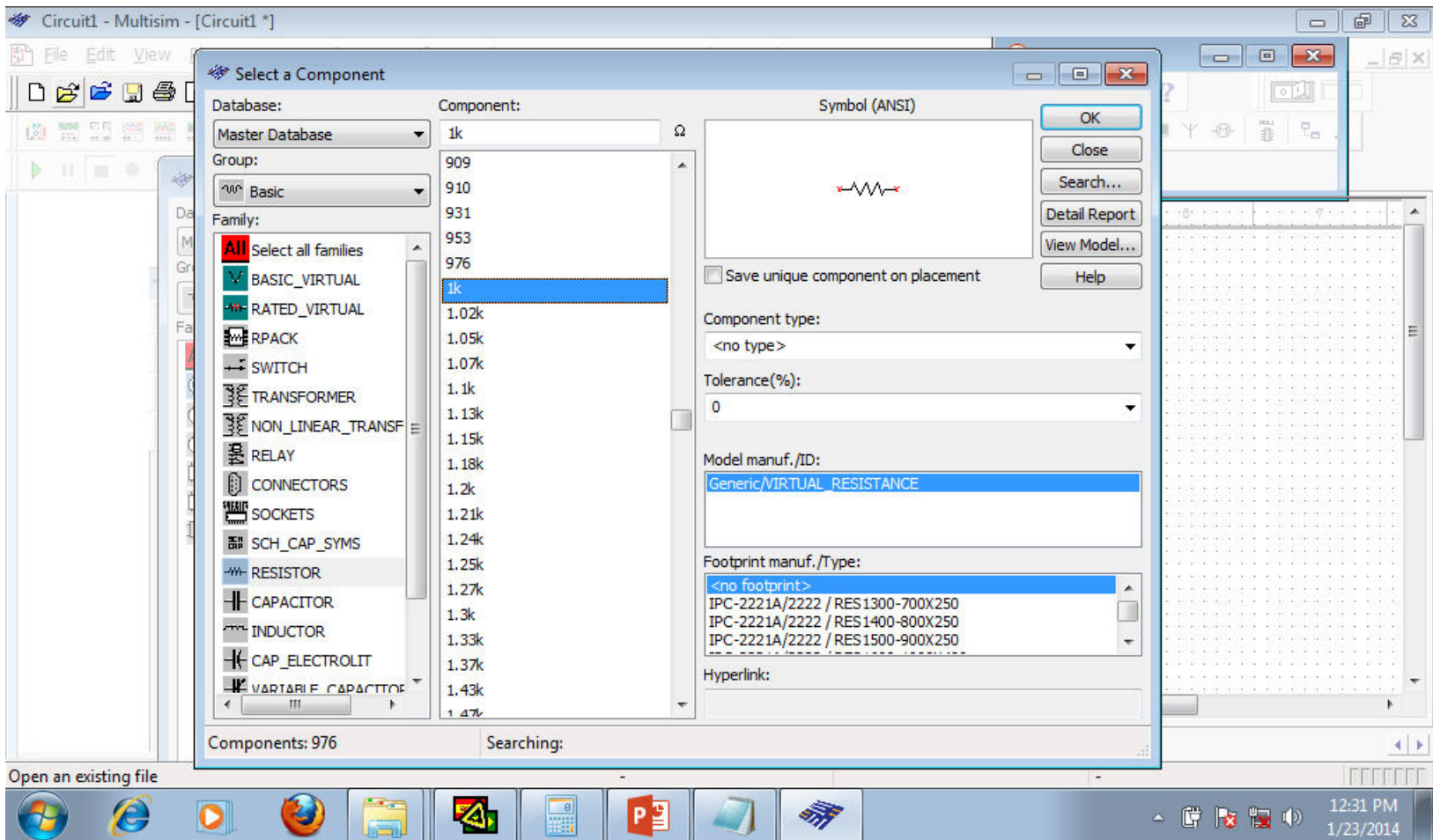




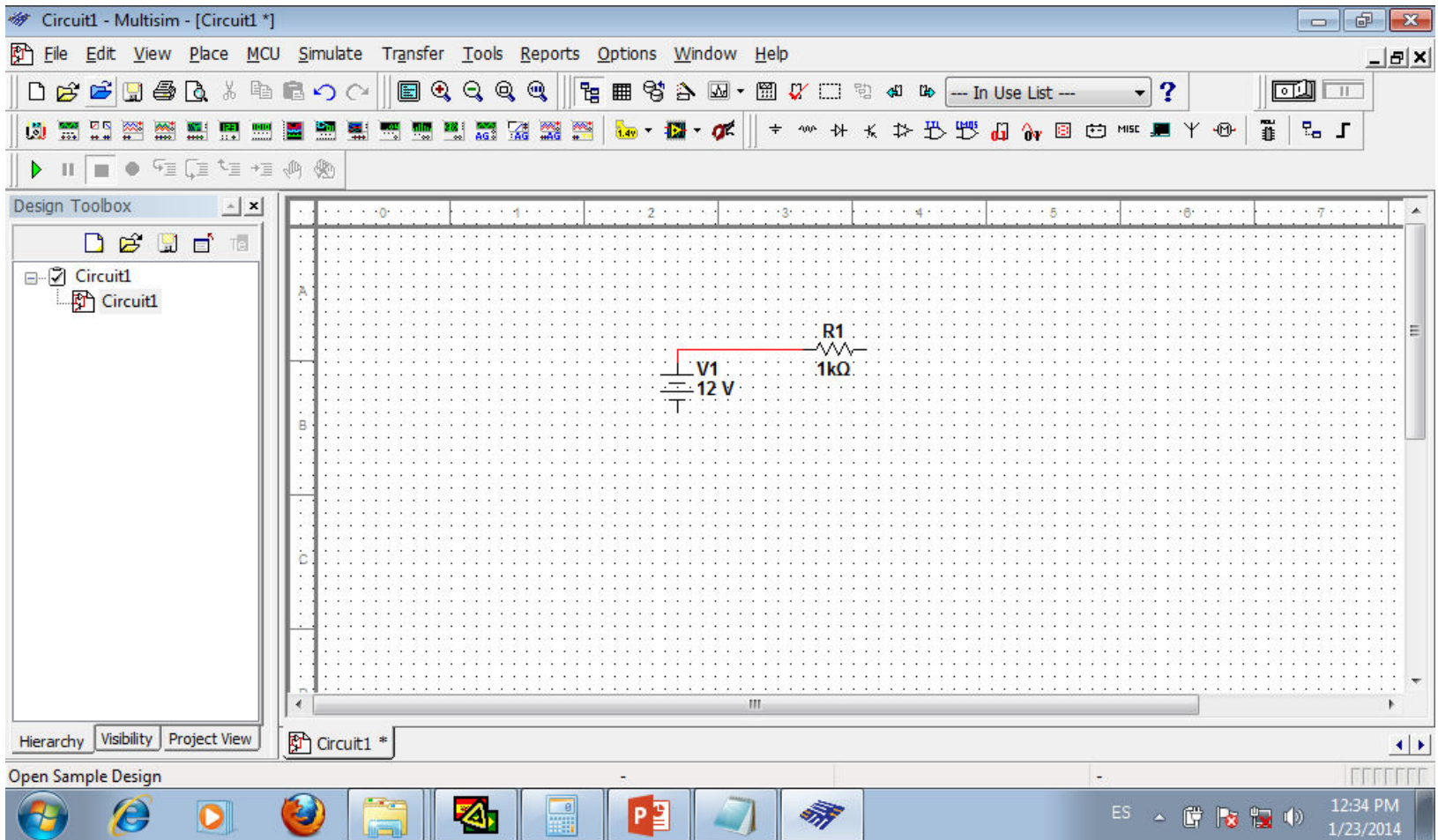
# Componentes



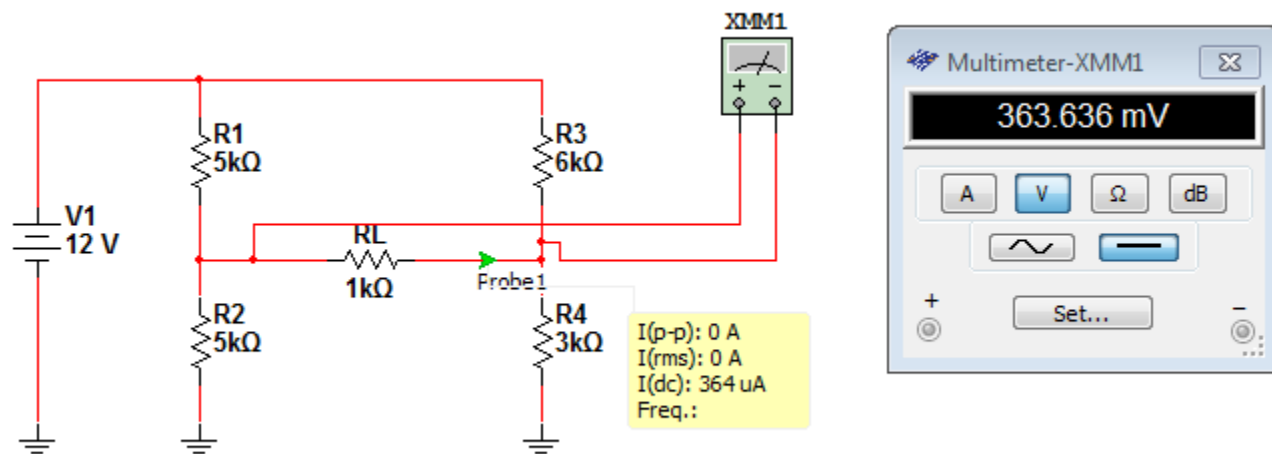
# Resistência



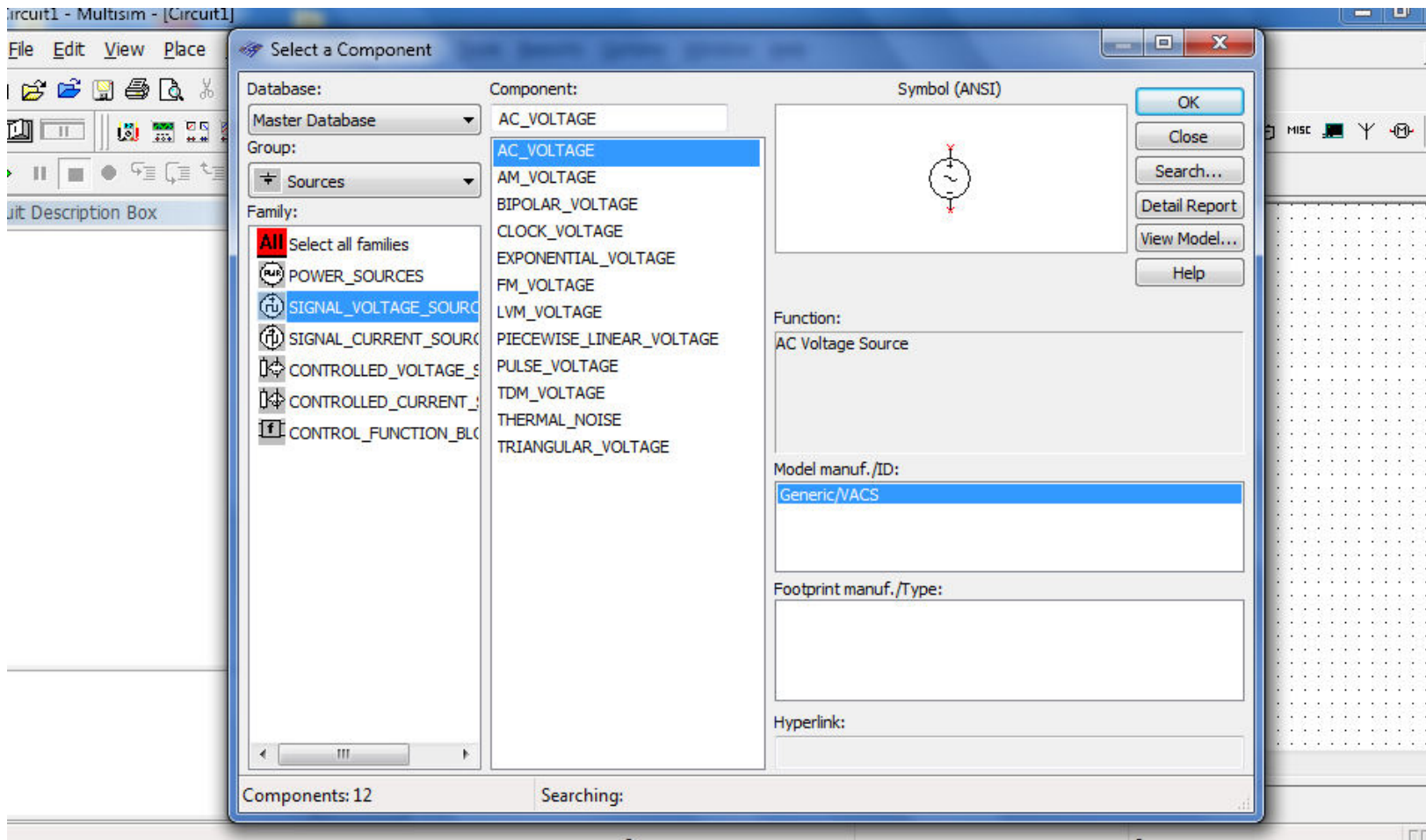
# Conectando



# Circuito

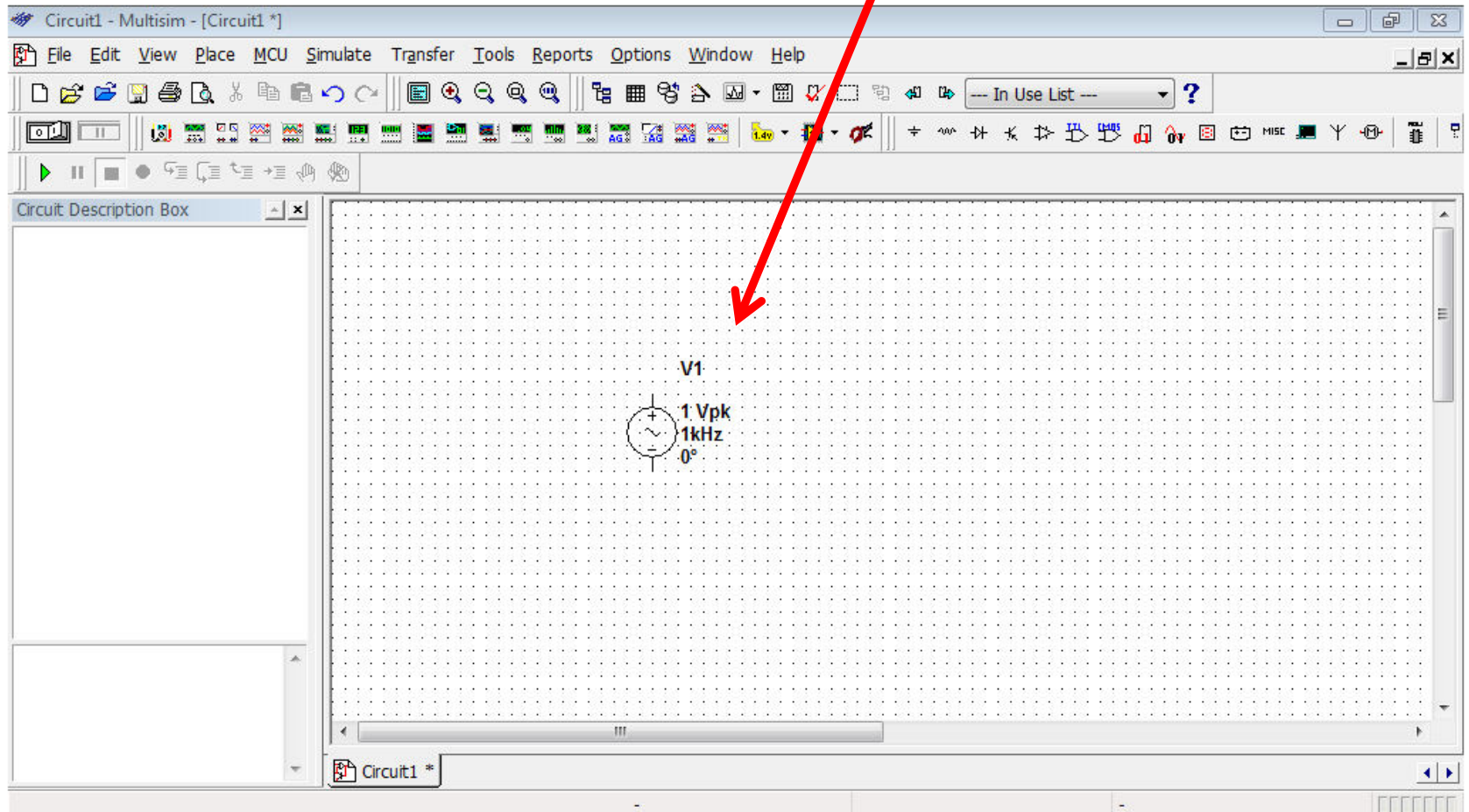


# Place source (fonte)



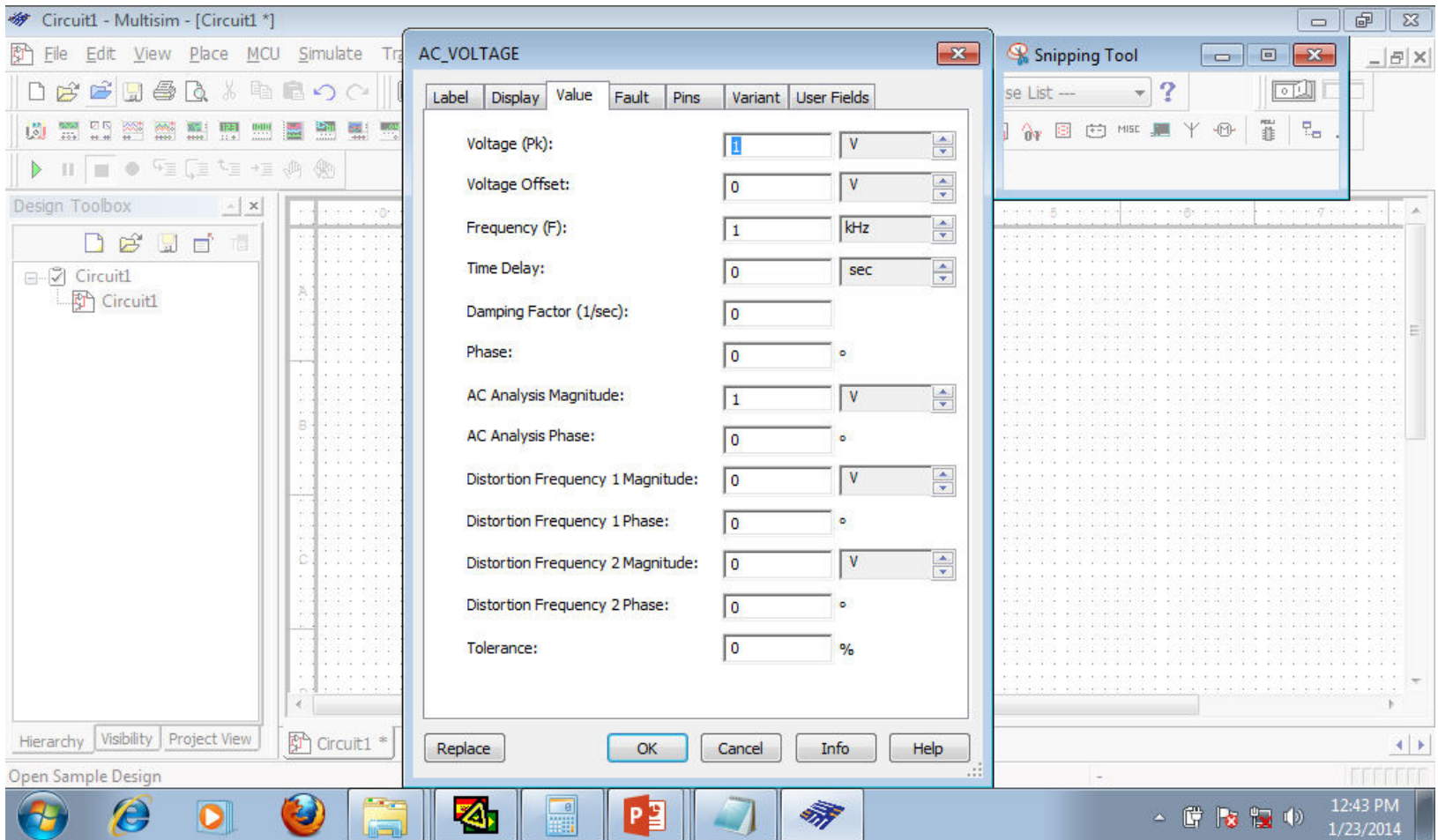


# desenhar fonte

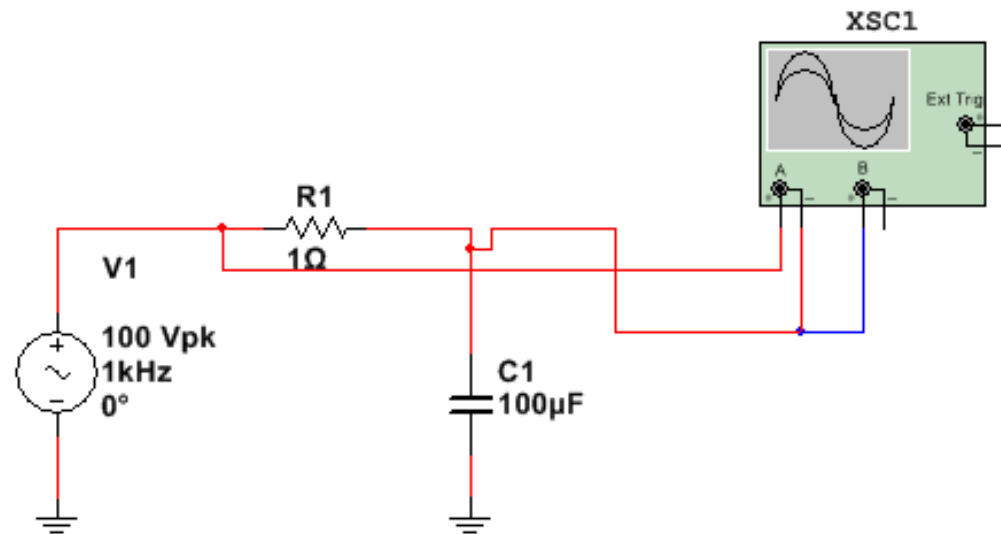




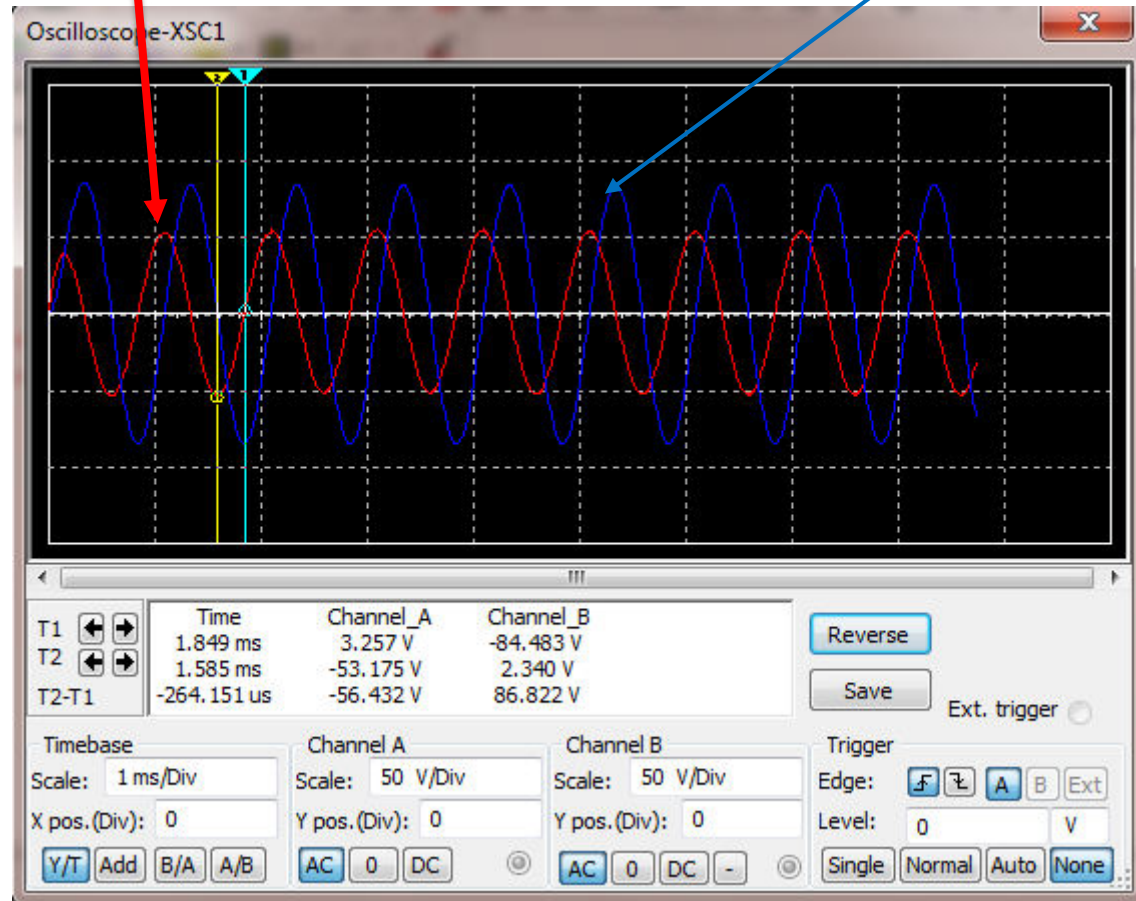
# Ajustar a fonte



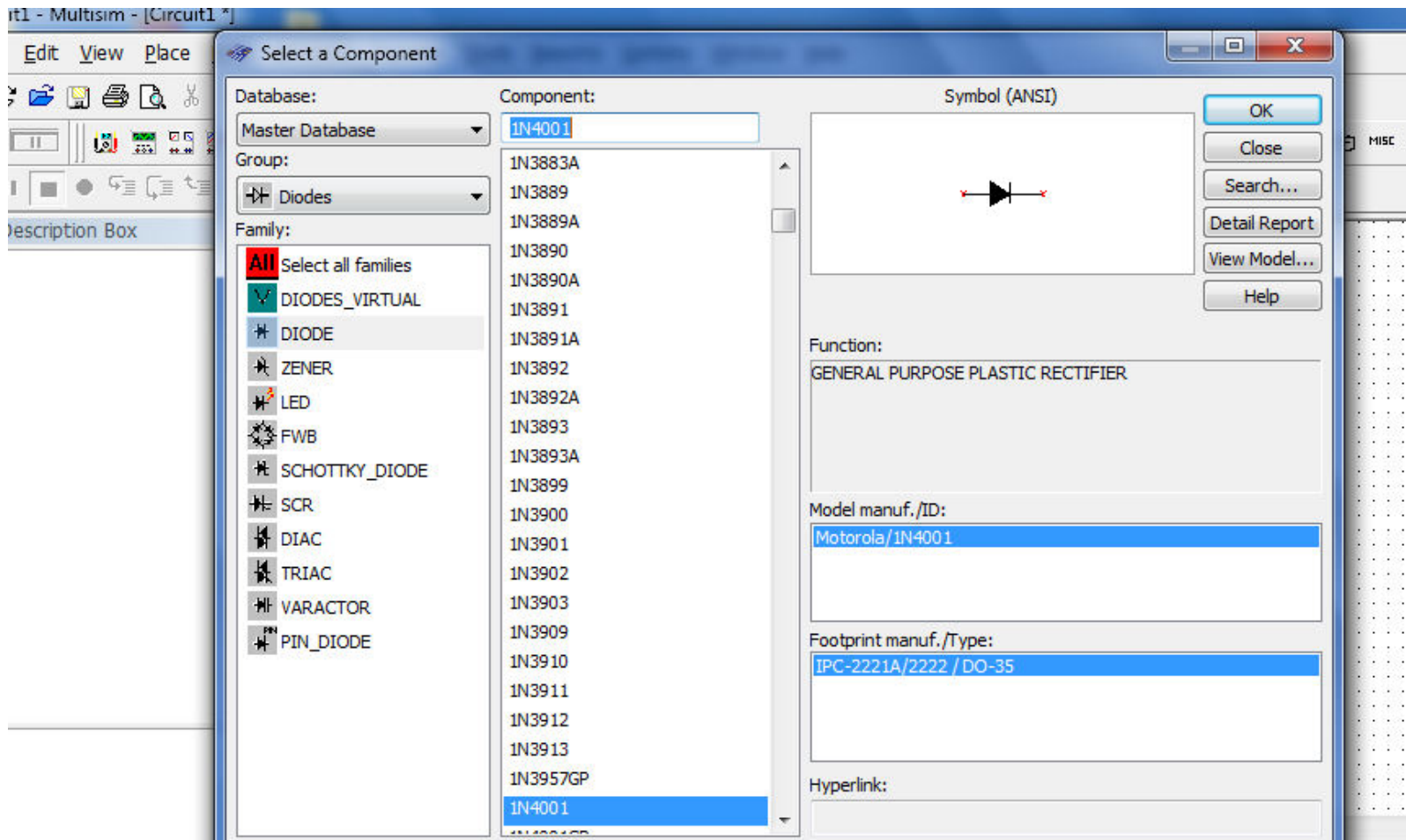
# A corrente se adianta à tensão



# A corrente se adianta à tensão



# seleccionar diodo



# Diodo 1n4000

1n4002.pdf - Adobe Acrobat Pro Extended

Archivo Edición Ver Documento Comentarios Formularios Herramientas Avanzadas Ventana Ayuda


Crear Combinar Colaborar Proteger Firmar Formularios Multimedia Comentario

1 / 4 102% Buscar

Nota Ediciones del texto

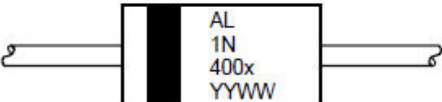
- Case: Epoxy, Molded
- Weight: 0.4 gram (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 220°C Max. for 10 Seconds, 1/16" from case
- Shipped in plastic bags, 1000 per bag.
- Available Tape and Reeled, 5000 per reel, by adding a "RL" suffix to the part number
- Available in Fan-Fold Packaging, 3000 per box, by adding a "FF" suffix to the part number
- Polarity: Cathode Indicated by Polarity Band
- Marking: 1N4001, 1N4002, 1N4003, 1N4004, 1N4005, 1N4006, 1N4007

**DIFFUSED JUNCTION**



CASE 59-03  
AXIAL LEAD  
PLASTIC

**MARKING DIAGRAM**

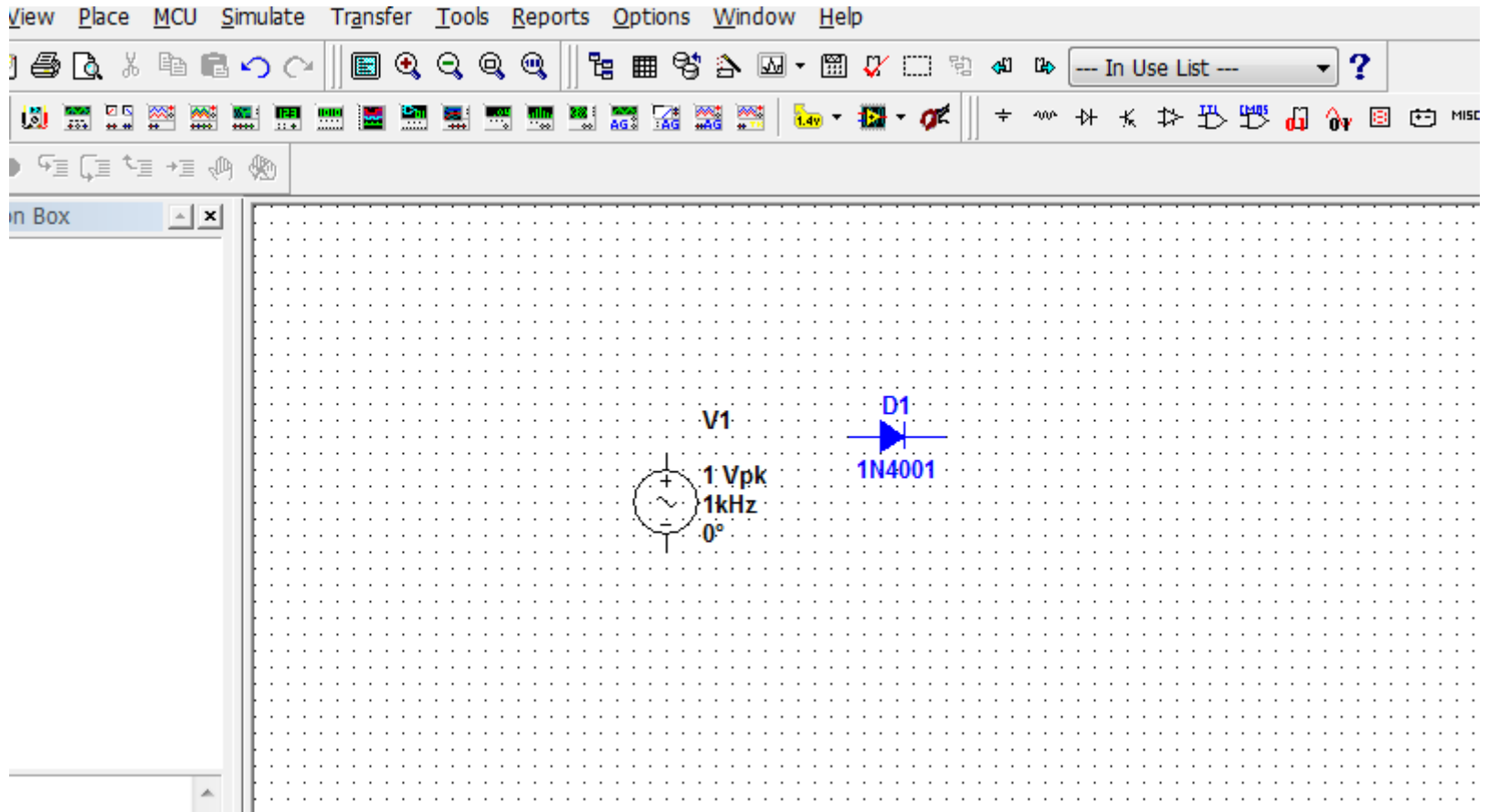


AL = Assembly Location  
1N400x = Device Number  
x = 1, 2, 3, 4, 5, 6 or 7  
YY = Year  
WW = Work Week

**MAXIMUM RATINGS**

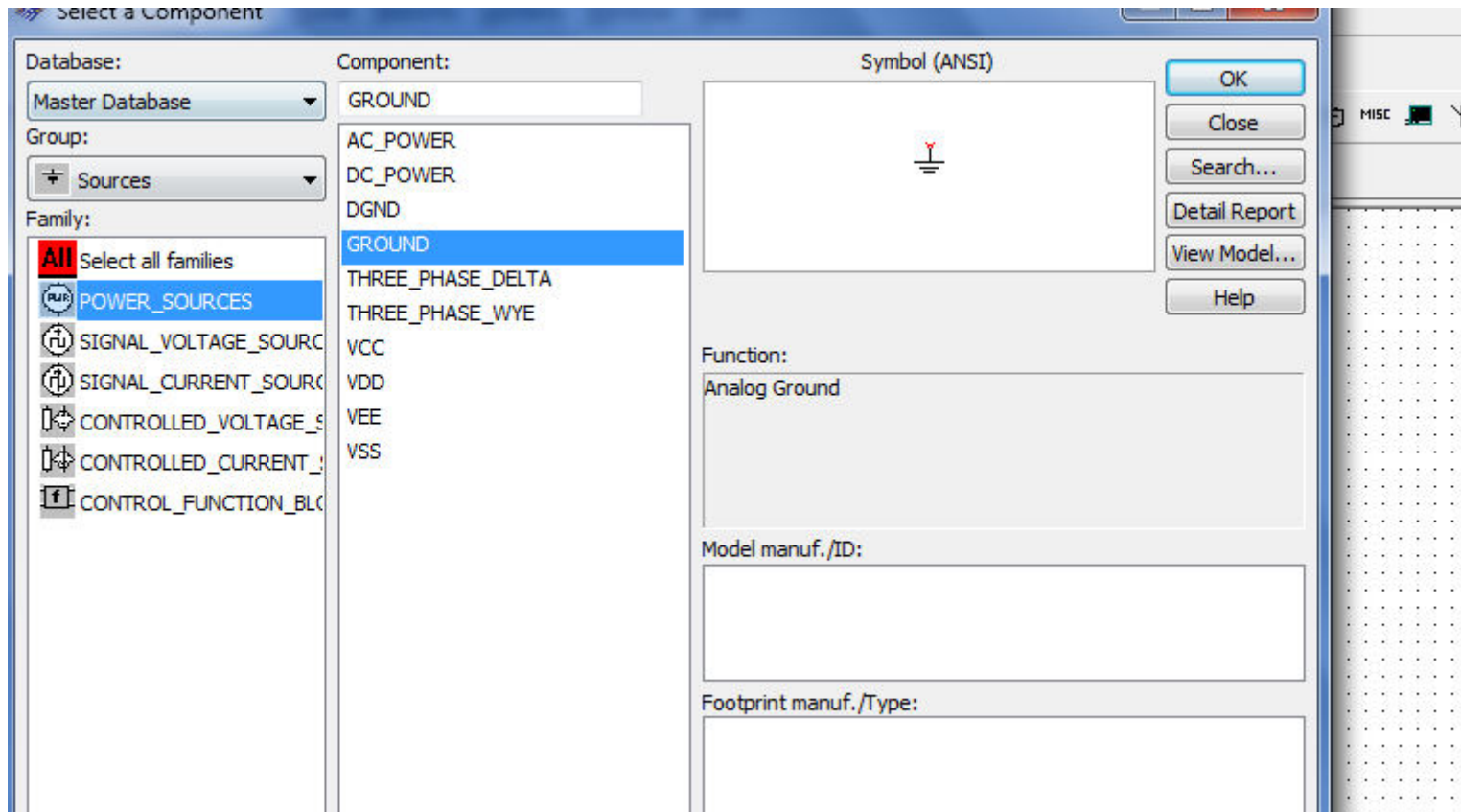
Rating	Symbol	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	Unit
*Peak Repetitive Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	Volts
Working Peak Reverse Voltage	$V_{RWM}$								
DC Blocking Voltage	V								

# desenhar diodo

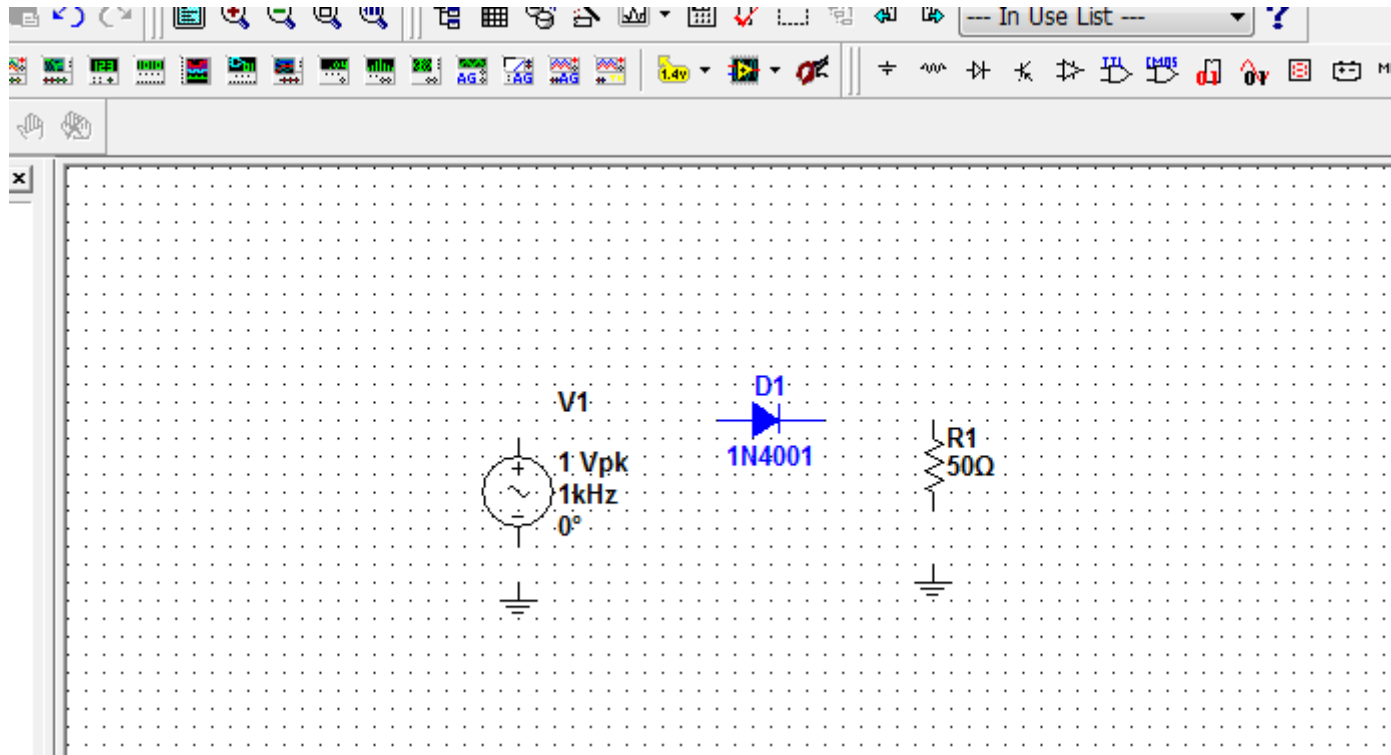




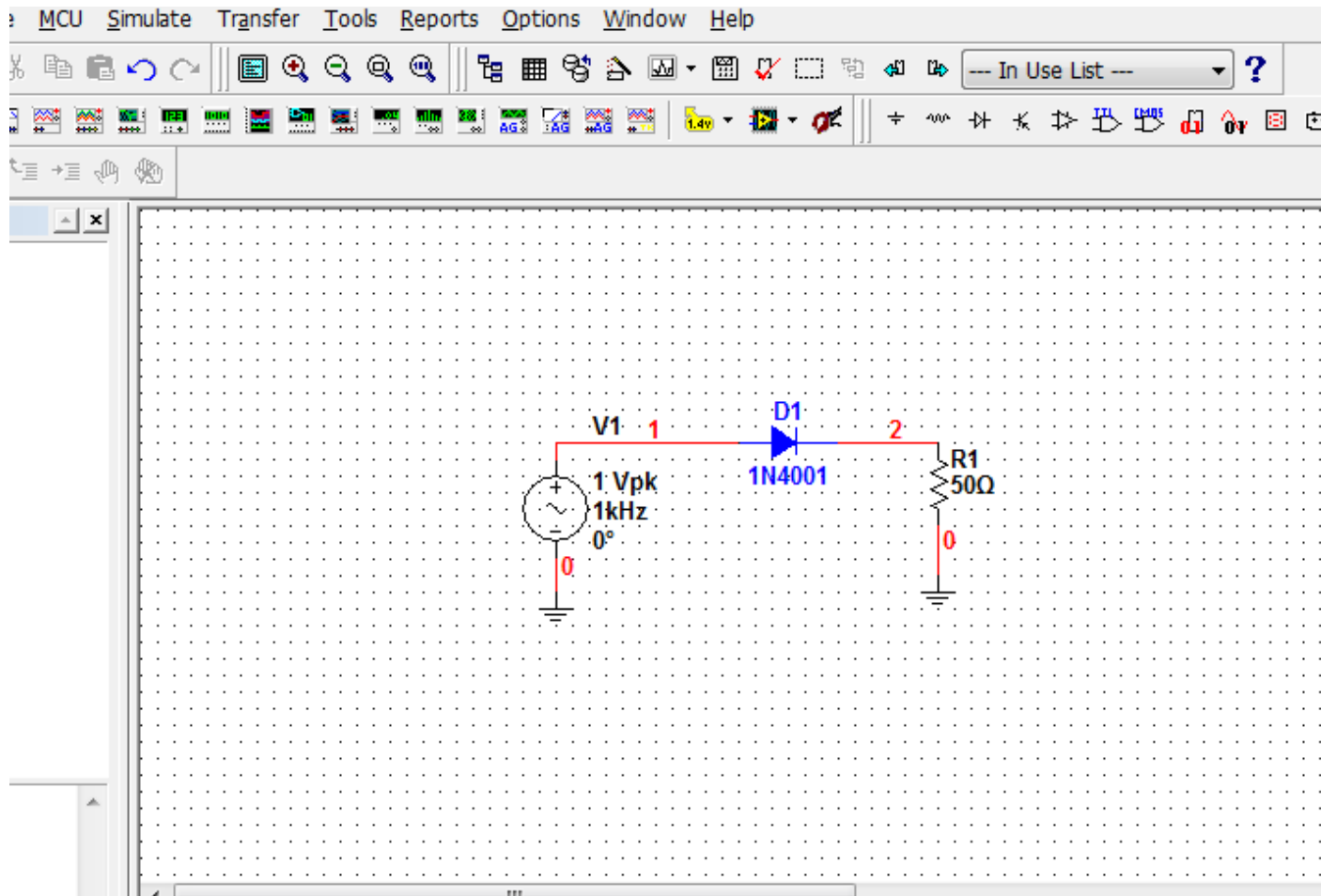
# seleccionar terra



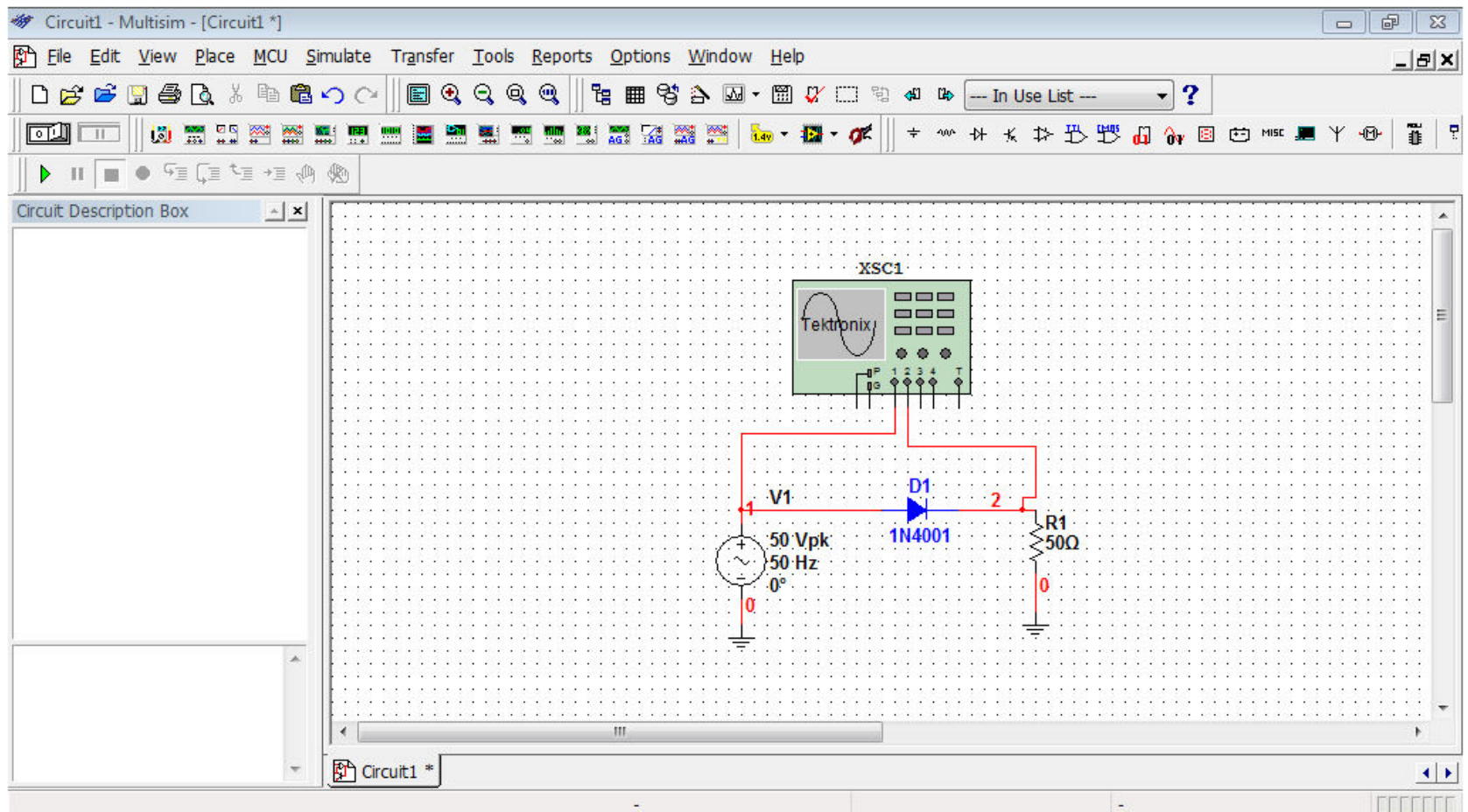
# desenhar terra



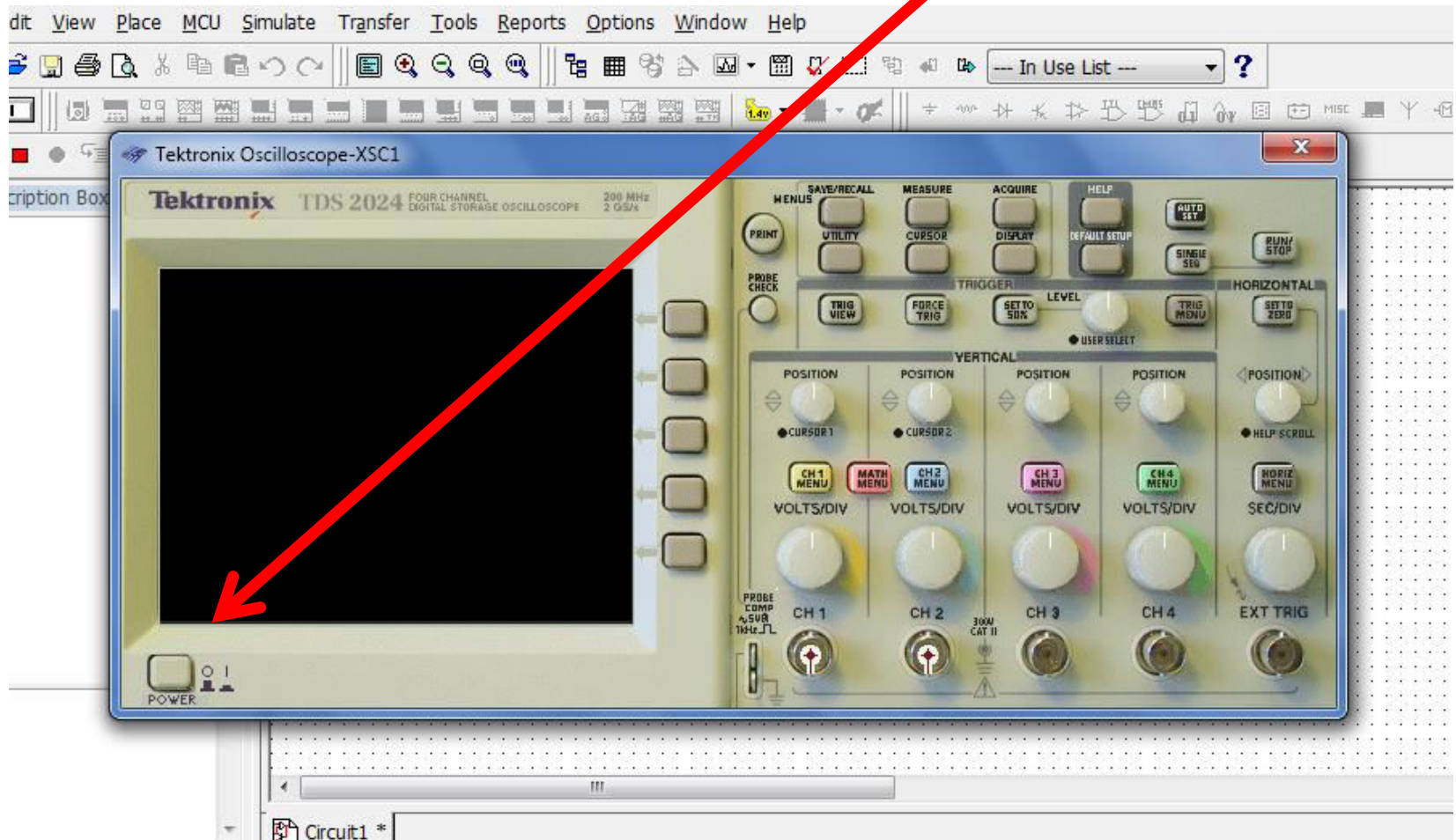
# desenhar circuito



# osciloscopio

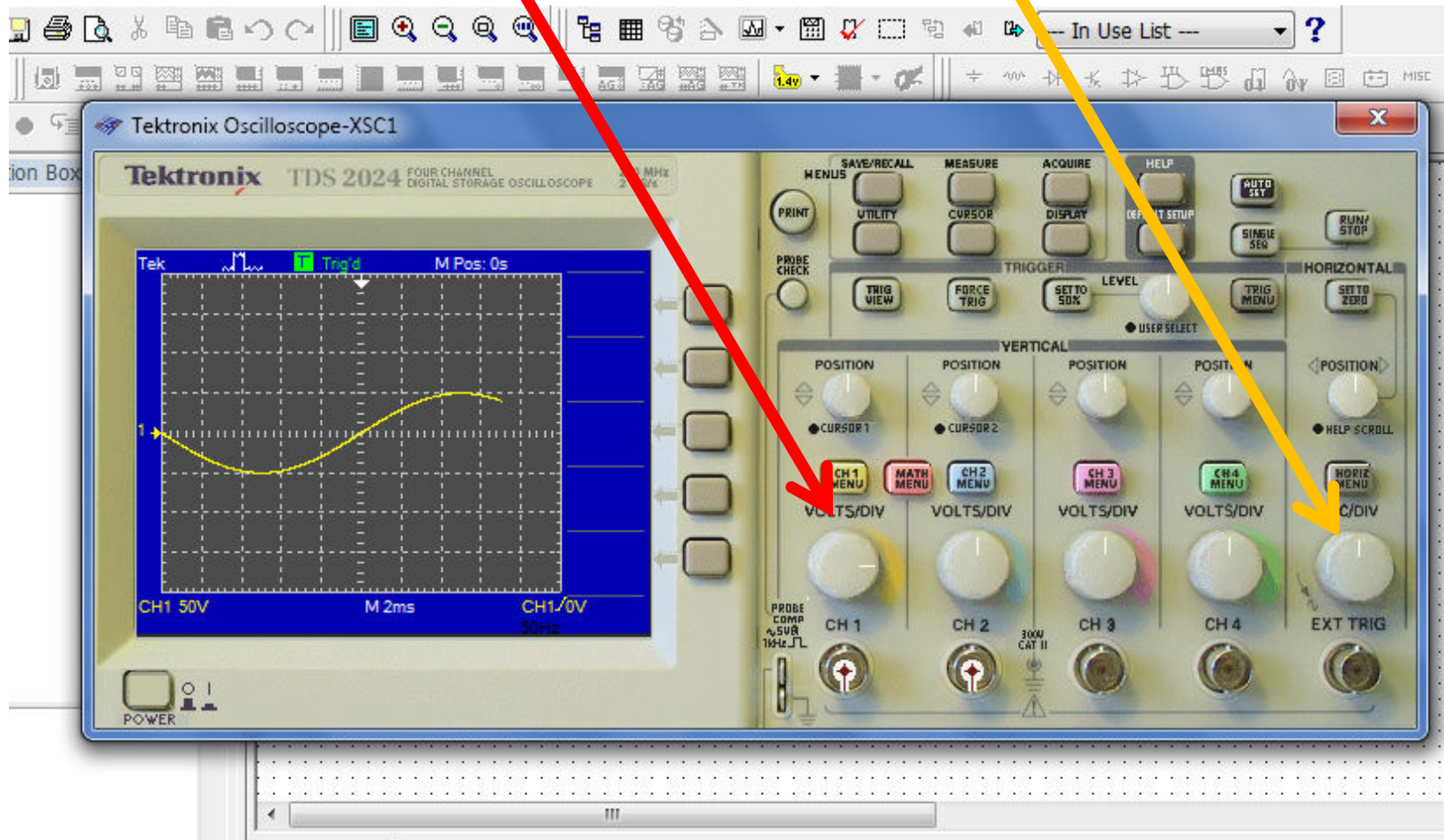


# Osciloscopio conectar



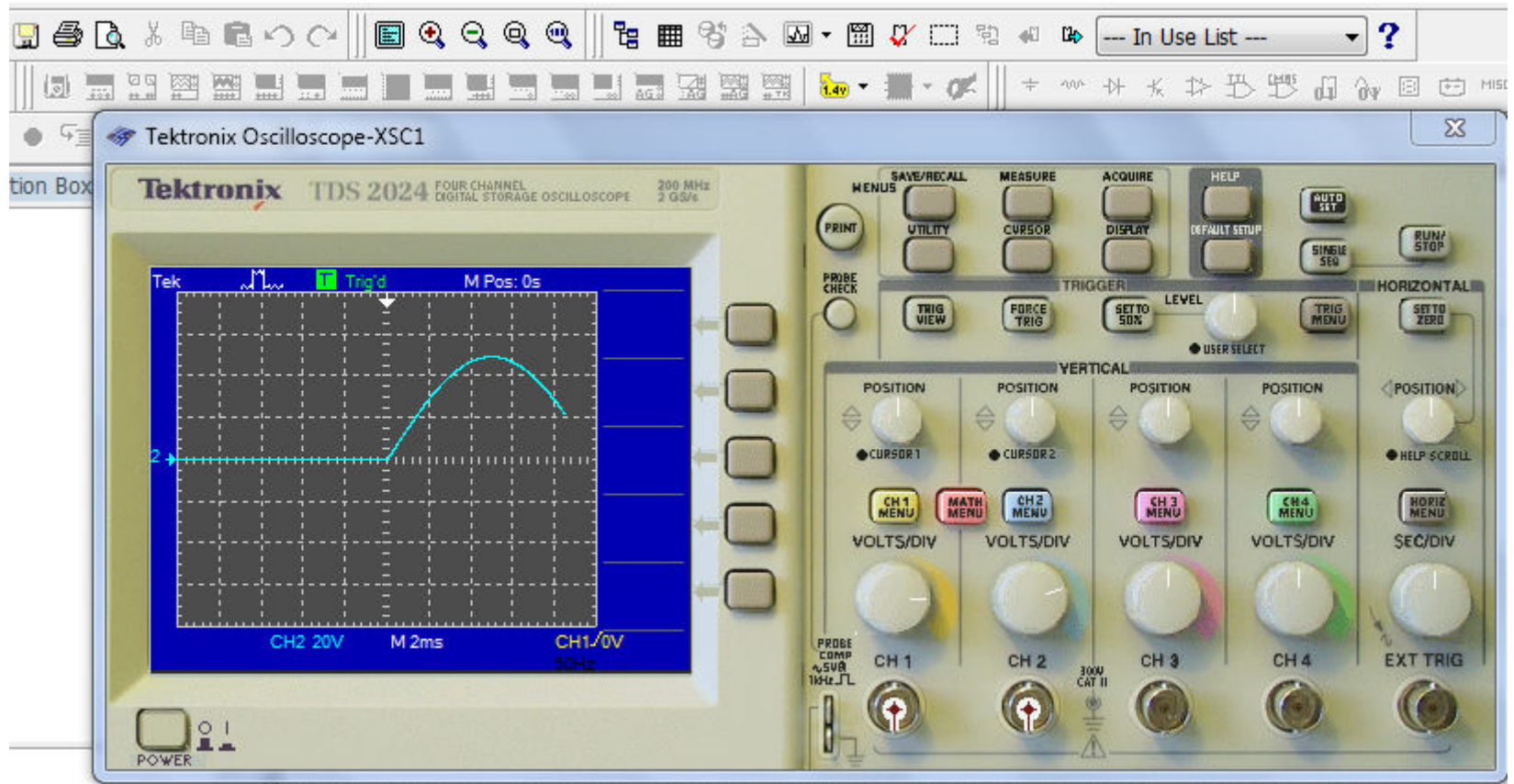


# Amplitude & freqüência

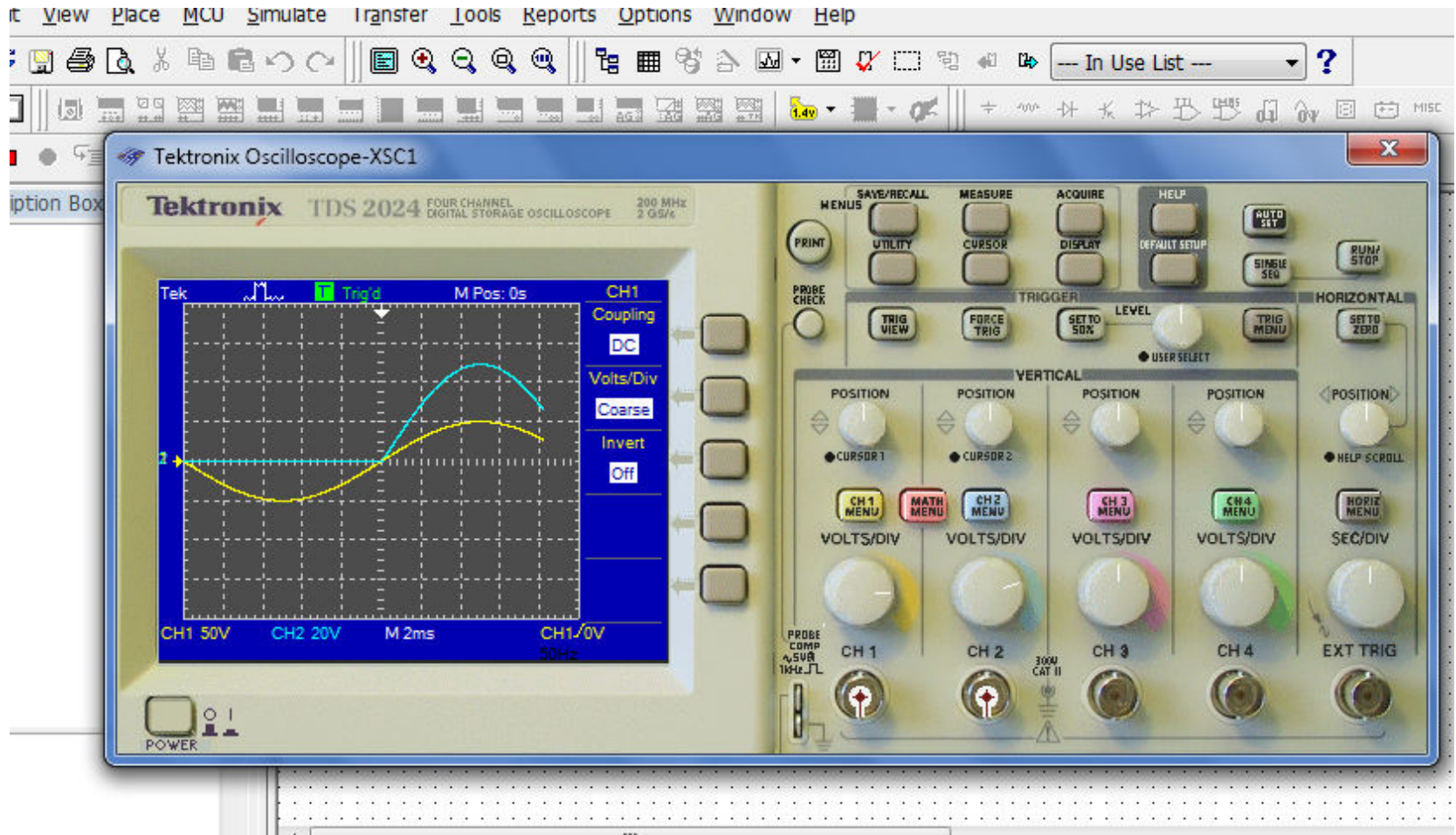




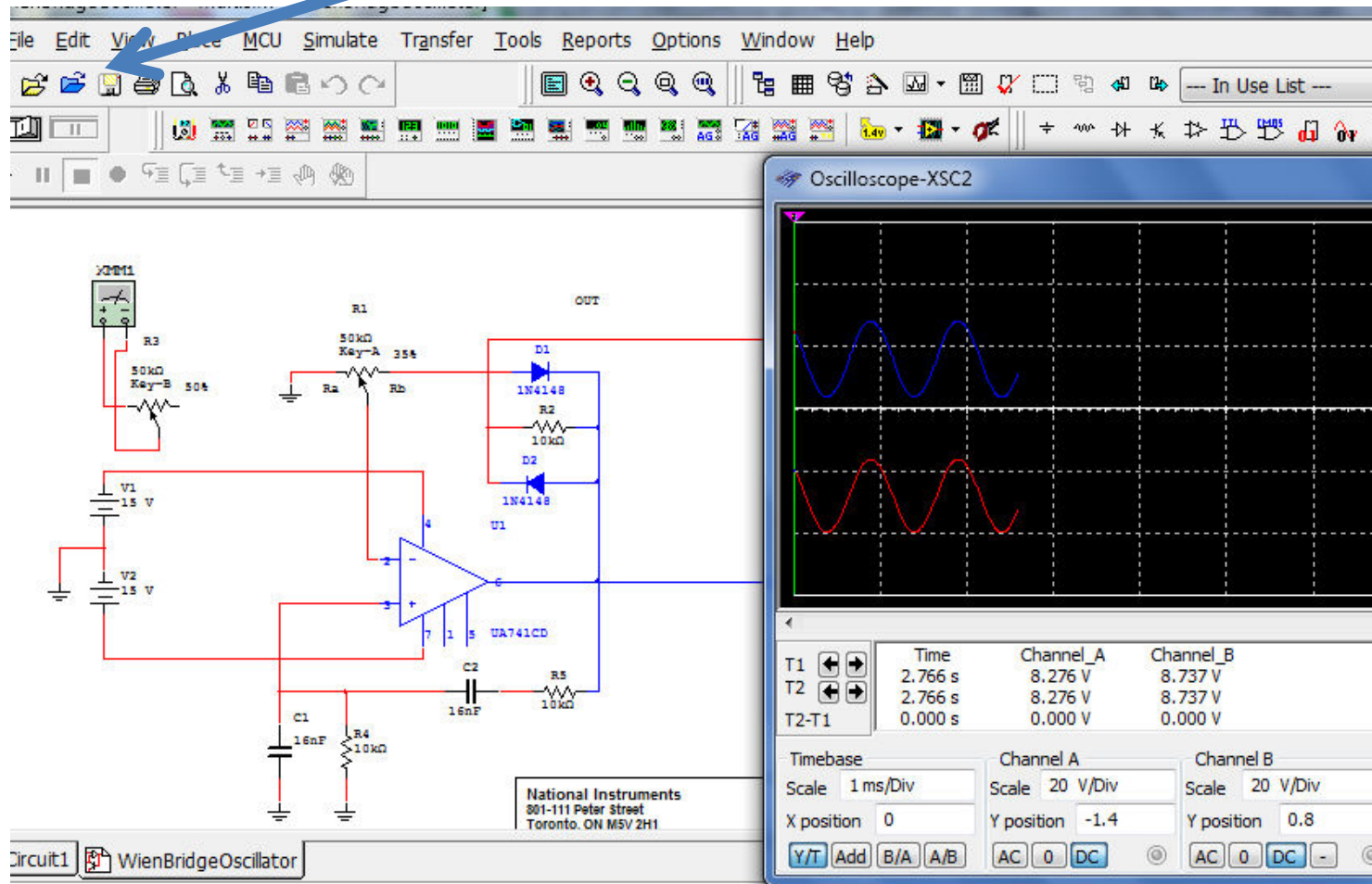
# Forma de onda de saída



# ingresso e saída

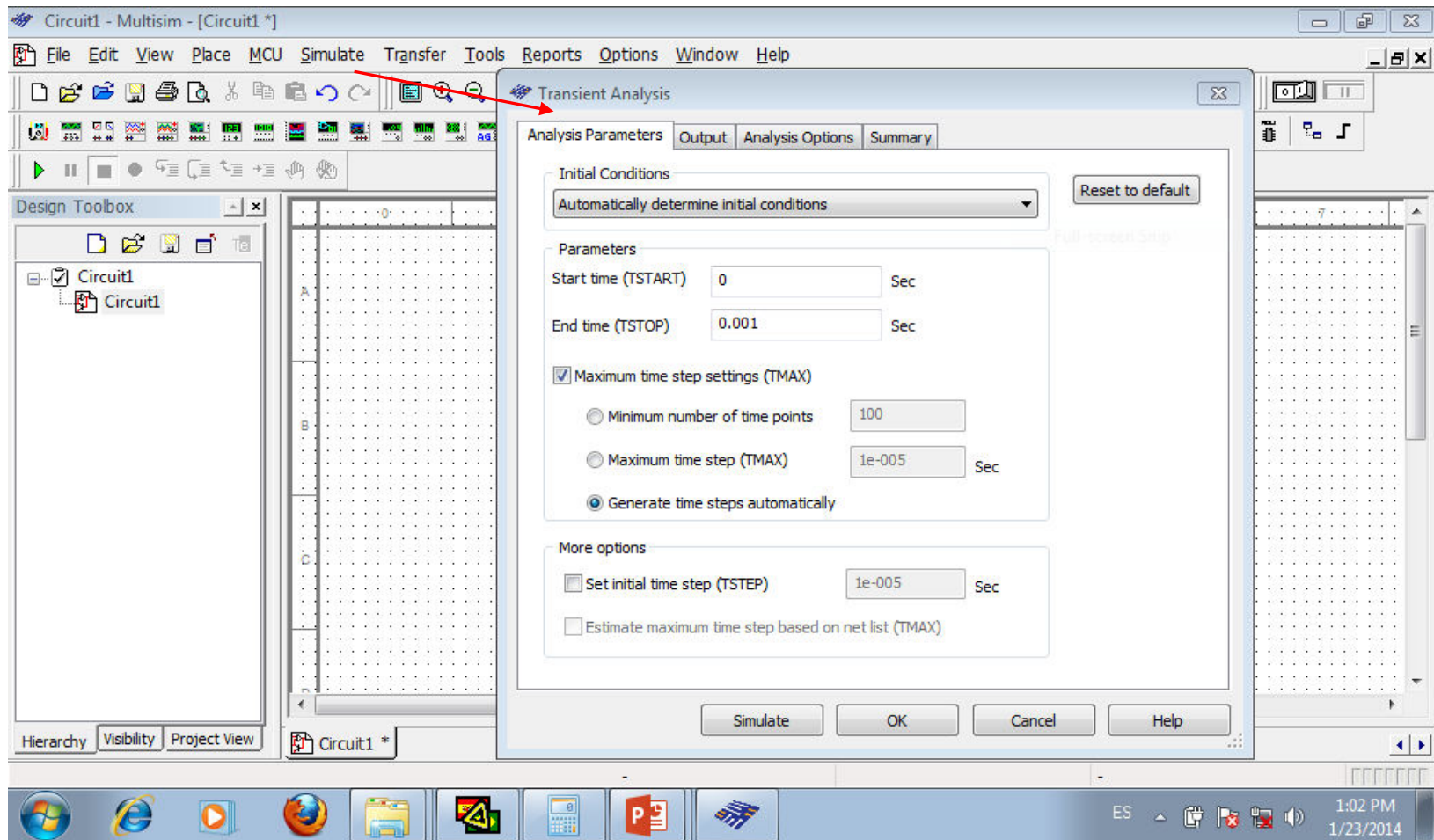


# Oscilador

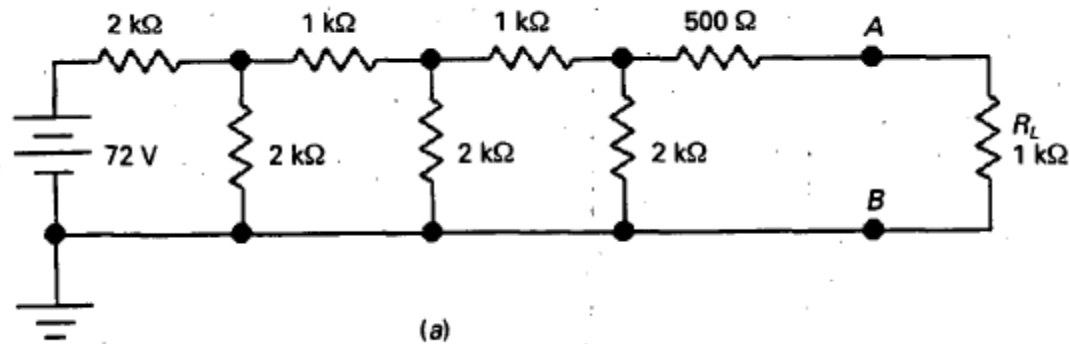




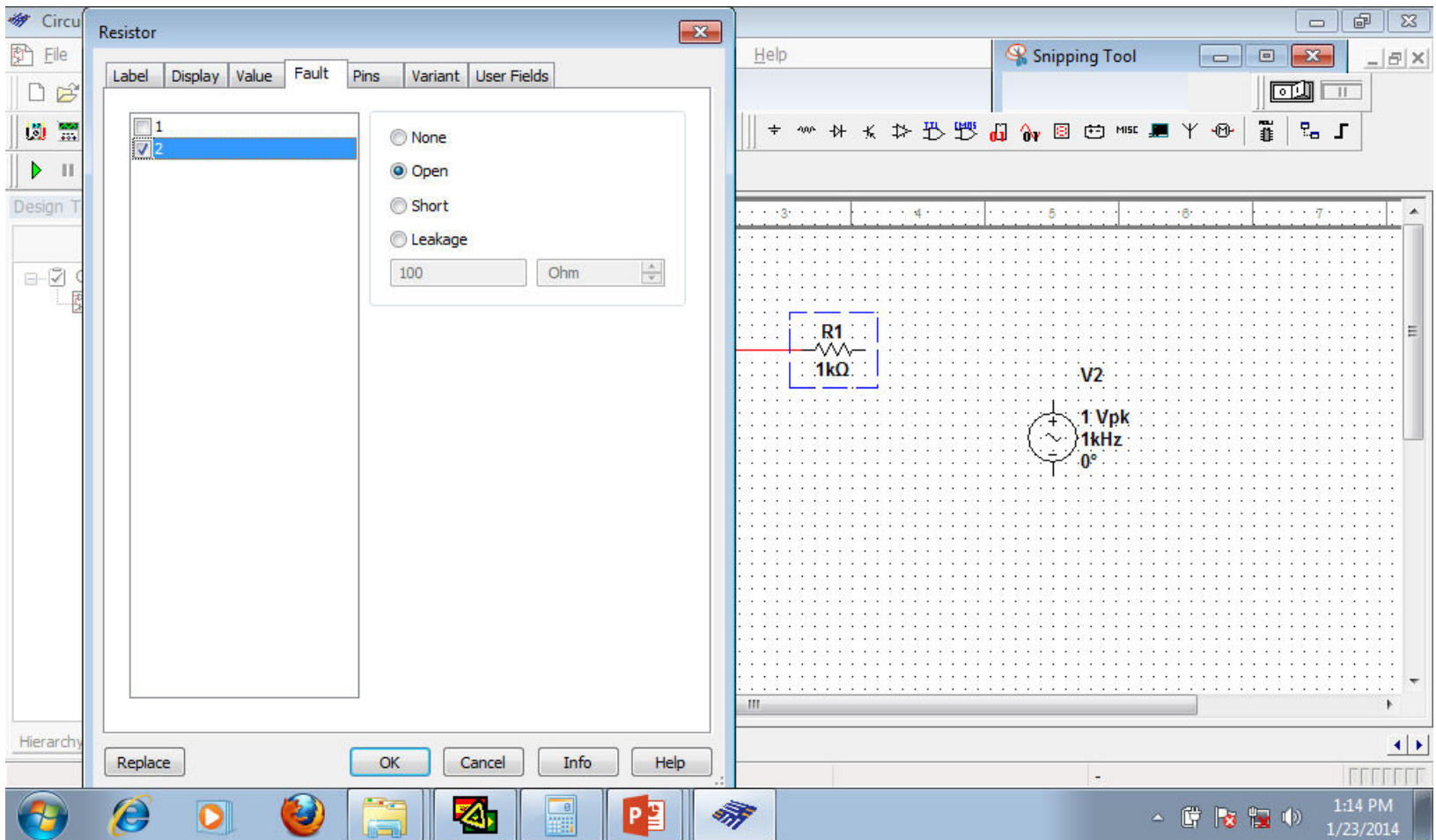
# Análise no domínio do tempo



# Exercício



# Defeitos





# Verificação de defeitos (exercício, R4 aberto)

