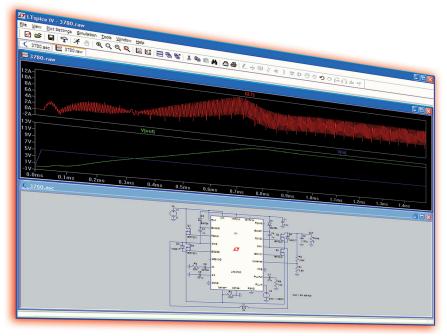
LTspice



- Free Analog Circuit Simulator
- Unlimited Nodes/Nets
- Fast Simulations

LTspice® is a high performance SPICE simulator, schematic capture and waveform viewer designed to speed the process of power supply design. LTspice adds enhancements and models to SPICE, significantly reducing simulation time compared to typical SPICE simulators, allowing one to view waveforms for most switching regulators in minutes compared to hours for other SPICE simulators.



www.twitter.com/ltspice

Follow @ LTspice on Twitter for up-to-date information on models, demo circuits, events and user tips.



www.linear.com/ltspice

Included in the download is a complete and fully functional SPICE program, help files, macro models for Linear Technology's power products, over 200 op amp models, as well as models for resistors, transistors and MOSFETs.



Sign up for the Linear Insider email newsletter to receive LTspice updates @ www.linear.com/mylinear









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	F3 – Draw Wire					DC.
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e p	F6 – Duplicate	F6 – Duplicate				ENDS.
0 [/	F7 – Move	F7 – Move				FOUR.
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	F9 – Undo	F9 – Undo	F9 – Undo		F9 – Undo	.FERRET
	Shift+F9 – Redo	Shift+F9 – Redo	Shift+F9 – Redo		Shift+F9 – Redo	.GLOBAL
	Ctrl+Z – Zoom Area	Ctrl+Z – Zoom Area	Ctrl+Z – Zoom Area	rea		<u>S</u> :
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٨	A – Mark Text Anchors	Ctrl+A – Attribute Editor	Ctrl+A - Add Trace	eo.		.MODEL
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	R – Resistor	R – Rectangle		ommand	Command Line Switches	.0P
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	Command Line Switches
Flag	Short Description
-ascii	Use ASCII .raw files. (Degrades performance!)
q-	Run in batch mode.
-big or -max	Start as a maximized window.
-encrypt	Encrypt a model library.
-FastAccess	Convert a binary .raw file to Fast Access Format.
-netlist	Convert a schematic to a netlist.
-nowine	Prevent use of WINE(Linux) workarounds.
-PCBnetlist	Convert a schematic to a PCB netlist.
-registry	Store user preferences in the registry.
-Run	Start simulating the schematic on open.
-801	Allow MOSFET's to have up to 7 nodes in subcircuit.
-uninstall	Executes one step of the uninstallation process.
-wine	Force use of WINE(Linux) workarounds.



Ctrl+R - Rotate Ctrl+E - Mirror

Ctrl+R - Rotate

F4 - Label Net Ctrl+E - Mirror





CommandShort Description.ACPerform a Small Signa.BACKANNOAnnotate the Subcircu.DCPerform a DC Source.ENDEnd of Netlist.ENDEnd of Subcircuit Defi.FOURCompute a Fourier Co.FUNCUser Defined Function.FERRETDownload a File Given.ICSet Initial Conditions.ICSet Initial Conditions.ICSet Initial Conditions.INCLUDEInclude another File.LOADBIASLoad a Previously Sol.MODELDefine a SPICE Model.MODELDefine a SPICE Model.NODESETSupply Hints for Initia.NOISEPerform a Noise Analy.OPFind the DC Operating.OPSet Simulator Ontions	Short Description Perform a Small Signal AC Analysis Annotate the Subcircuit Pin Names on Port currents Perform a DC Source Sweep Analysis End of Netlist End of Netlist End of Subcircuit Definition Compute a Fourier Component User Defined Functions Download a File Given the URL Declare Global Nodes Set Initial Conditions Include another File Include a Library Load a Previously Solved DC Solution
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ET SIN	Evaluate User-Defined Electrical Quantities
THE SE	SPICE Model
ET SE	Compute Network Parameters in a .AC Analysis
SN	Supply Hints for Initial DC Solution
SNOIL	Perform a Noise Analysis
	Find the DC Operating Point
	Set Simulator Options
.PARAM User-Defined	User-Defined Parameters
SAVE Limit the Qua	Limit the Quantity of Saved Data
SAVEBIAS Save Operatin	Save Operating Point to Disk
STEP Parameter Sweeps	er Sweeps
SUBCKT Define a Subcircuit	Subcircuit
Temperature Sweeps	ure Sweeps
.TF Find the DC S	Find the DC Small-Signal Transfer Function
.TRAN Do a Nonlinea	Do a Nonlinear Transient Analysis
.WAVE Write Selected	Write Selected Nodes to a .WAV file

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