	LTspice HotKeys				
LT	Schematic	Symbol	Waveform	Netlist	
	ESC - Exit Mode	ESC - Exit Mode			
	F3 – Draw Wire				
S	F5 – Delete	F5 – Delete	F5 – Delete		
d e;	F6 – Duplicate	F6 – Duplicate			
	F7 – Move	F7 – Move			
	F8 – Drag	F8 – Drag			
	F9 – Undo	F9 – Undo	F9 – Undo	F9 – Undo	
	Shift+F9 – Redo	Shift+F9 – Redo	Shift+F9 – Redo	Shift+F9 – Redo	
	Ctrl+Z – Zoom Area	Ctrl+Z – Zoom Area	Ctrl+Z – Zoom Area		
	Ctrl+B – Zoom Back	Ctrl+B – Zoom Back	Ctrl+B – Zoom Back		
	Space – Zoom Fit		Ctrl+E – Zoom Extents		
	Ctrl+G – Toggle Grid		Ctrl+G – Toggle Grid	Ctrl+G – Goto Line #	
View	U – Mark Unncon. Pins	Ctrl+W – Attribute Window	'0' - Clear		
>	A – Mark Text Anchors	Ctrl+A – Attribute Editor	Ctrl+A – Add Trace		
	Atl+Click - Power		Ctrl+Y – Vertical Autorange	Ctrl+R – Run Simulation	
	Ctrl+Click - Attr. Edit		Ctrl+Click - Average		
	Ctrl+H – Halt Simulation		Ctrl+H – Halt Simulation	Ctrl+H – Halt Simulation	
	R – Resistor	R – Rectangle	Command	Line Switches	
	C – Capacitor	C – Circle	Flan Short Description		
			I FIAIL SOOR DESCRIP	11111	

Command Line Switches				
Flag	Short Description			
-ascii	Use ASCII .raw files. (Degrades performance!)			
-b	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.			
-SOI	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) worksrounds			

## LTspice IV

L - Inductor

S – Spice Directive

F2 - Component F4 - Label Net Ctrl+E - Mirror

Ctrl+R - Rotate

D – Diode

G – GND

T – Text



See Demo

L – Line

A – Arc

T - Text

Ctrl+E - Mirror

Ctrl+R - Rotate

CUIIIIIaliu Liile Switches				
Flag	Short Description			
-ascii	Use ASCII .raw files. (Degrades performance!)			
-b 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.			
-SOI	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.			

Simulator Directives - Dot Commands			
Command	Short Description		
.AC	Perform a Small Signal AC Analysis		
.BACKANNO	Annotate the Subcircuit Pin Names on Port currents		
.DC	Perform a DC Source Sweep Analysis		
.END	End of Netlist		
.ENDS	End of Subcircuit Definition		
.FOUR	Compute a Fourier Component		
.FUNC	User Defined Functions		
.FERRET	Download a File Given the URL		
.GLOBAL	Declare Global Nodes		
.IC	Set Initial Conditions		
.INCLUDE	Include another File		
.LIB	Include a Library		
.LOADBIAS	Load a Previously Solved DC Solution		
.MEASURE	Evaluate User-Defined Electrical Quantities		
.MODEL	Define a SPICE Model		
.NET	Compute Network Parameters in a .AC Analysis		
.NODESET	Supply Hints for Initial DC Solution		
.NOISE	Perform a Noise Analysis		
.0P	Find the DC Operating Point		
.OPTIONS	Set Simulator Options		
.PARAM	User-Defined Parameters		
.SAVE	Limit the Quantity of Saved Data		
.SAVEBIAS	Save Operating Point to Disk		
.STEP	Parameter Sweeps		
.SUBCKT	Define a Subcircuit		
.TEMP	Temperature Sweeps		
.TF	Find the DC Small-Signal Transfer Function		
.TRAN	Do a Nonlinear Transient Analysis		
.WAVE	Write Selected Nodes to a .WAV file		

	Suffix		Suffix	
			f	1e-15
ı	T	1e12	p	1e-12
	G	1e9	n	1e-9
	Meg	1e6	u	1e-6
	K	1e3	M	1e-3
			Mil	25.4e-6

Constants		
E	2.7182818284590452354	
Pi	3.14159265358979323846	
K	1.3806503e-23	
Q	1.602176462e-19	
TRUE	1	
FALSE	0	

