

| LTspice HotKeys |                          |                           |                             |                                                  |
|-----------------|--------------------------|---------------------------|-----------------------------|--------------------------------------------------|
|                 | Schematic                | Symbol                    | Waveform                    | Netlist                                          |
| Modes           | ESC – Exit Mode          | ESC – Exit Mode           |                             |                                                  |
|                 | F3 – Draw Wire           |                           |                             |                                                  |
|                 | F5 – Delete              | F5 – Delete               | F5 – Delete                 |                                                  |
|                 | 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                                  |
| View            | 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 #                             |
|                 | U – Mark Unncon. Pins    | Ctrl+W – Attribute Window | 'O' – 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                         |
| Place           | R – Resistor             | R – Rectangle             | Command Line Switches       |                                                  |
|                 | C – Capacitor            | C – Circle                |                             |                                                  |
|                 | L – Inductor             | L – Line                  | Flag                        | Short Description                                |
|                 | D – Diode                | A – Arc                   | -ascii                      | Use ASCII .raw files. (Degrades performance!)    |
|                 | G – GND                  |                           | -b                          | Run in batch mode.                               |
|                 | S – Spice Directive      |                           | -big or -max                | Start as a maximized window                      |
|                 | T – Text                 | T – Text                  | -encrypt                    | Encrypt a model library                          |
|                 | F2 – Component           |                           | -FastAccess                 | Convert a binary .raw file to Fast Access Format |
|                 | F4 – Label Net           |                           | -netlist                    | Convert a schematic to a netlist                 |
|                 | Ctrl+E – Mirror          | Ctrl+E – Mirror           | -nowine                     | Prevent use of WINE(Linux) workarounds           |
|                 | Ctrl+R – Rotate          | Ctrl+R – Rotate           | -PCBnetlist                 | Convert a schematic to a PCB netlist             |

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| Simulator Directives – Dot Commands |                                                |
|-------------------------------------|------------------------------------------------|
| Command                             | Short Description                              |
| .AC                                 | Perform a Small Signal AC Analysis             |
| .BACKANNO                           | Annotate 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                       |
| .OP                                 | 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 |         | Constants |                        |
|--------|------|--------|---------|-----------|------------------------|
|        |      | f      | 1e-15   | E         | 2.7182818284590452354  |
| T      | 1e12 | p      | 1e-12   | Pi        | 3.14159265358979323846 |
| G      | 1e9  | n      | 1e-9    | K         | 1.3806503e-23          |
| Meg    | 1e6  | u      | 1e-6    | Q         | 1.602176462e-19        |
| K      | 1e3  | M      | 1e-3    | TRUE      | 1                      |
|        |      | Mil    | 25.4e-6 | FALSE     | 0                      |