

KiCad General Information

→ JUNE 2, 2024

- Library maintainer rules + guidelines

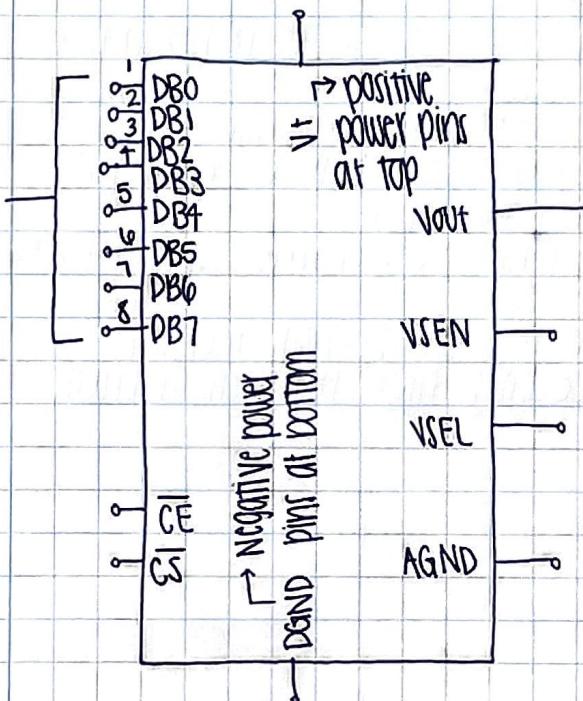
↳ Pins should be grouped by function:

1. pins with similar functions should be grouped together
2. parts should be ordered from top to bottom
3. positive power pins should be placed at the top of a symbol
4. Negative power + ground pins should be placed at the bottom of a symbol

5. input / control / logic pins should be placed on the left of a symbol

6. output / controlled / driver pins should be placed on the right of a symbol

ports ordered
TOP TO BOTTOM



- Pin electrical type:

1. power + ground pins should be set to either power input + power output.
2. Logic pins should be set according to datasheet requirements
3. pins with programmable functionality should be set to bidirectional
4. pins must not be "double inverted" be assigning the inverting graphical symbol + also having a bar above the name of the pin

- When arranging parts:

1. Components that are functionally similar should stay close together
2. shorter traces are better
3. consider how the placement will affect assembly
4. consider component manufacturer specifications

- When drawing Traces:

1. start with any critical traces - include signal traces that have specific shape + length requirements.
2. continue with power traces
3. finish the rest of the traces

- Silkscreen artwork involves:

1. description of pads (using text characters)
2. A name + version number of the board, text characters.
3. YOUR logo + other graphics
4. OTHER instructions that may assist the end user

- Electrical pin Types:

- input → unidirectional input
- output → unidirectional output that can drive high or low
- bidirectional → act as input or output
- tristate → output that can drive high OR low, but can also be placed in a high-impedance state where it floats
- passive → unpowered connection (capacitor, resistor, transistor)
- power input → pin where power comes into a chip ; both VCC + GND pins of chips would be classified as power inputs
- power output → power comes out of a chip (most common: output or voltage regulators)
- open collector → outputs that can be driven low, but float otherwise
- open emitter → outputs that can be driven high, but float otherwise
- Not connected → no function