# Mostly Generic Schematic Checklist

v2017-10-19
From github.com/andrewgreenberg

- Visual Design
  - Power supplies use supply symbols, not wires
  - Positive supplies point up, and negative supplies/ground point down
  - Optional: Groups of nets above about ≥ 4 nets collected into buses
  - Component symbols are symbols, not the physical package's order and arrangement
  - All nets descriptively named
  - Net "stubs" use an off-sheet type of label ("XREF" in EAGLE)
  - Blocks in your schematic clearly labeled
  - There's a frame around the schematic
  - It's clear where your power is coming from
  - It's clear what your power input requirements are
  - Data flow (inputs, outputs) are clear and labeled
- Part values
  - Special case capacitors marked with power and tolerance
  - Capacitors have the appropriate voltage
  - Power dissipation checked in all of your resistors
  - Special case resistors marked with power and tolerance
  - Check that your specialized parts are in stock at a distributor
- Electrical Rule checks
  - All of your components have values (including "NP" for "No Place")
  - All inputs have the correct voltage levels
  - All outputs have the correct load impedance
  - MOSFETs oriented correctly, including the body diode
  - No unapproved errors OR warnings in the ERC
  - Your schematic is peer reviewed by at least two different people not involved in the design.
  - Double check your approved errors, looking for anomalies and possible errors.
- Best Practices
  - Small, low ESR (e.g., ceramic) bypass capacitors on ALL IC supplies
  - Large bypass (e.g., electrolytic) capacitors on your board at the power connector and regulator IC.
  - Design for Test
    - Place test points on critical signals
    - Add debugging hardware (e.g., test switches, LEDs, scope probe points, etc)
  - Design for Fail
    - Group components in separable modular blocks, use zero ohm resistors as jumpers
  - Design for Manufacturing
    - Place programming connectors and DOUBLE CHECK their pinouts
    - Double check your part numbers and the actual package names and dimensions.