

ATX POWER CONNECTOR

Diagram showing the ATX power connector (J10) and its connection to various voltage rails (+12V, +5V, +3.3V, -12V, -5V) and a PS_ON signal. The connector is labeled with pins 1 through 24. The power rails are connected to the following pins: +12V (1, 10, 11, 12), +5V (4, 5, 6, 7, 8, 9), +3.3V (2, 3, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24), -12V (13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24), and -5V (13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24). The PS_ON signal is connected to pin 16.

ATX POWER ON CIRCUIT

Diagram showing the power-on circuit (J11, J12, J13, J14) and a power LED (PWR_LED). The circuit includes a 74HCT14 Schmitt trigger, a 74HCT14 Schmitt trigger, a 74HCT14 Schmitt trigger, and a 74HCT14 Schmitt trigger. The power LED is connected to the output of the 74HCT14 Schmitt trigger.

BYPASS CAPACITORS

Diagram showing the bypass capacitors (C1 through C36) connected to the power rails (+5V, +3.3V, +12V, -12V). The capacitors are connected to the power rails and ground (GND). The capacitors are labeled with their values: C1, C2, C3, C4, C5, C6, C7, C8, C9, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36.

ALTERNATE POWER SOURCE WITH SOFT ON CIRCUIT

Diagram showing the alternate power source with a soft on circuit (J15, Q1, Q2, Q3, U2, C37, C41, C42). The circuit includes a 5V DC (CP) source, a 74HCT14 Schmitt trigger, a 74HCT14 Schmitt trigger, a 74HCT14 Schmitt trigger, and a 74HCT14 Schmitt trigger. The power LED is connected to the output of the 74HCT14 Schmitt trigger.

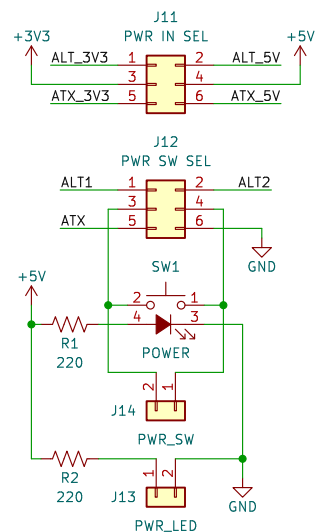
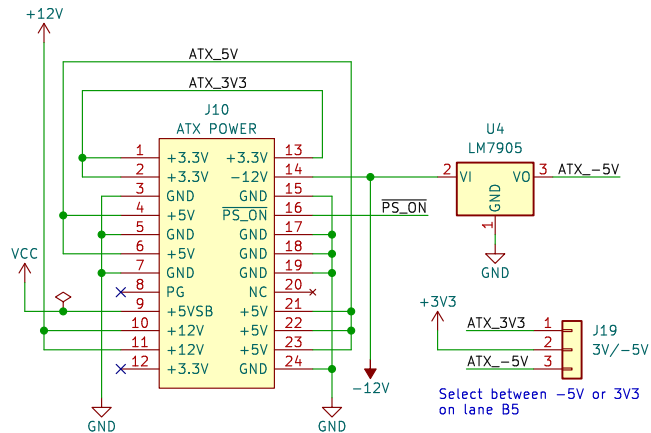
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Title: Power on circuit and BUS bypass capacitors

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This is a basic active low Power-On-Reset with a small RC delay.

The circuit consists of the following components and connections:

- U1B (74HC14):** Inverter with input connected to VCC through resistor R4 (10K) and to GND through capacitor C38 (1μF). Its output (pin 4) is connected to the input of U1C.
- U1C (74HC14):** Inverter with input connected to the output of U1B (pin 4). Its output (pin 6) is labeled **PWR_UP** and connected to the D input (pin 2) of U3A.
- U1A (74HC14):** Inverter with input connected to ATX through resistor R9 (20K) and to GND through capacitor C39 (1μF). Its output (pin 2) is connected to the clock input (pin 3) of U3A.
- U3A (74HC74):** D flip-flop with:
 - Pin 1 (GND) connected to GND.
 - Pin 4 (VCC) connected to VCC.
 - Pin 5 (Q) connected to the **PS_ON** output.
 - Pin 6 (Q-bar) connected to VCC.

This is a basic switch debounce.

The diagram shows a 5V DC to 3V3 DC converter circuit. It starts with a 5V DC input (J15) connected to a 10µF capacitor (C37). The input is then connected to a 100K resistor (R3) and a MOSFET (Q1, IRF4905 PBF). The MOSFET's gate is connected to a 100K resistor (R6) and a 100K resistor (R7). The MOSFET's drain is connected to a 2N3904 transistor (Q2) and a 1K resistor (R5). The 2N3904 transistor (Q2) is connected to a 2N3904 transistor (Q3) and a 22µF capacitor (C41). The 2N3904 transistor (Q3) is connected to a 1µF capacitor (C42) and a 3V3 DC output. The circuit also includes a voltage regulator (U2, LD1117V33) and a 3V3 DC output (ALT_3V3).

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The DS1813 maintains reset for 150ms after stabilized power, or reset button has been pressed.

