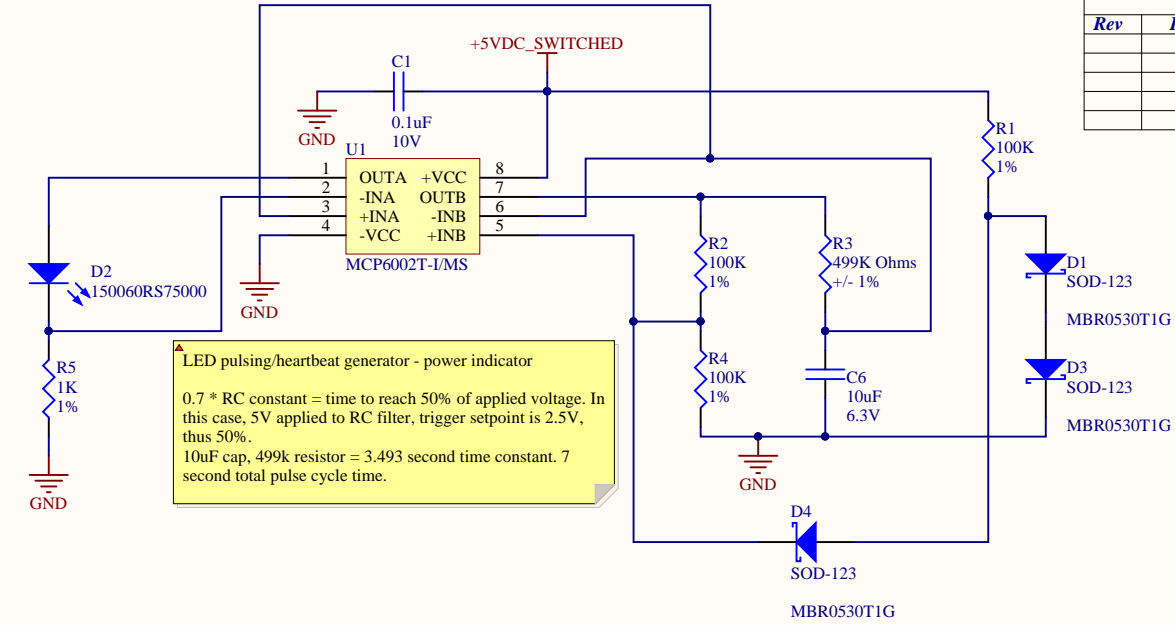
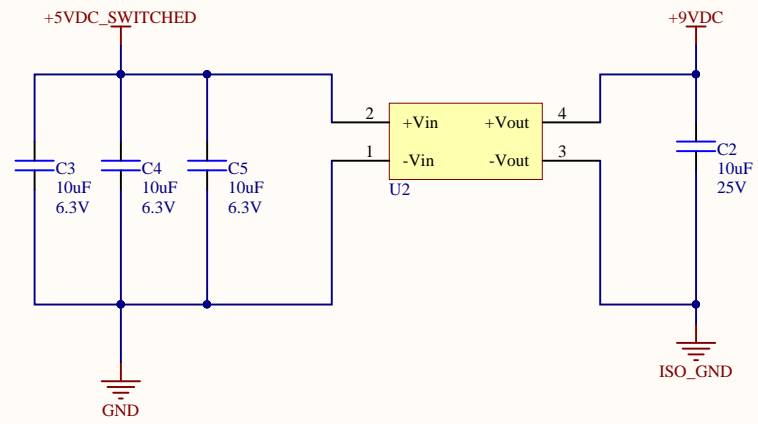


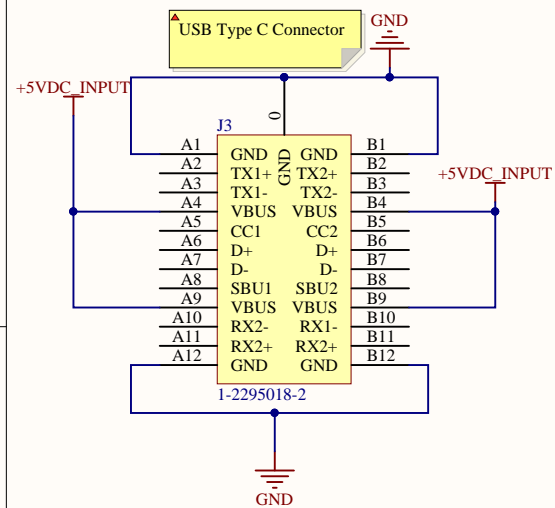
Revision History

Rev	Date	Approver	Description



This diode network keeps the positive feedback pin slightly above ground during the discharge phase. This avoids having to wait long periods of time for random interference to pull the negative feedback pin below the positive since they are at the exact same potential.

LED pulsing/heartbeat generator - power indicator
 $0.7 * RC$ constant = time to reach 50% of applied voltage. In this case, 5V applied to RC filter, trigger setpoint is 2.5V, thus 50%.
 10uF cap, 499k resistor = 3.493 second time constant. 7 second total pulse cycle time.



Ground Explanation
 'GND' - USB 5V input ground, initial power input to the circuit. This is used for the power indicator LED circuit and to create the 9V rail
 'ISO_GND' - Since the 5V to 9V setup converter is isolated, this ground is created on its output to isolate between the 5V input. Since there could possibly be weird ground loops between the audio input if its powered from the same source as the 5V rail this isolation avoids this situation. This is especially important because 'FAKE_GND' is really just a voltage reference and there is no guarantee what reference the audio input will use relative to this. The isolation takes this out of the equation.
 'FAKE_GND' - Created locally by dividing the 9V rail in two and creating a buffered voltage reference used as a ground for the opamps rather than creating two rails. This ground is derived from the 'ISO_GND' so it is also isolated from the 5V input ground.

