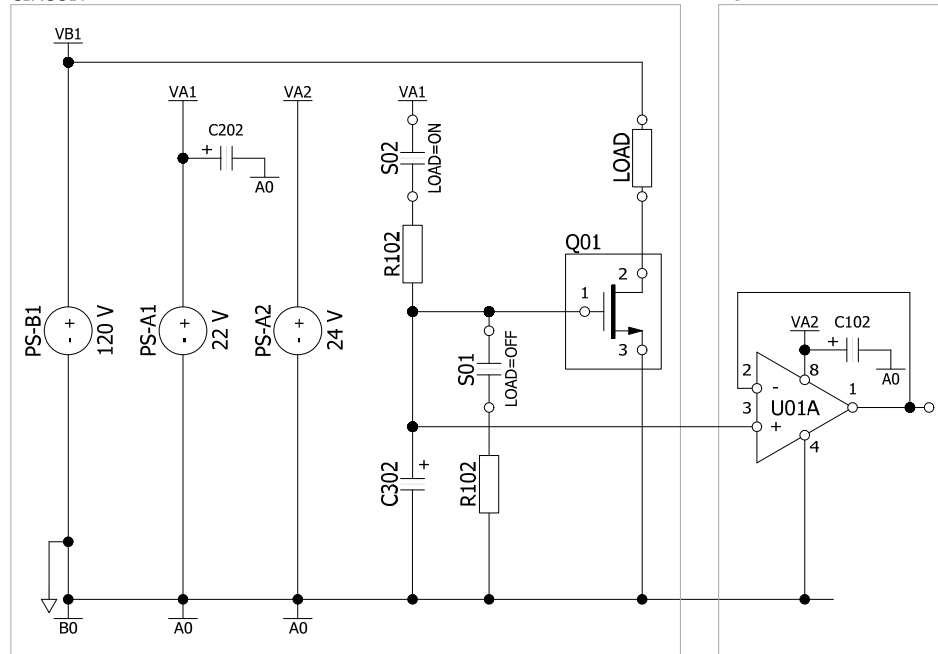


CIRCUIT



Description of Circuit. The circuit inside the rectangle labeled CIRCUIT is a latching soft switch for a DC load. Q01, an N-Chan MOSFET, switches the low side of the load. When the user pushes S01 for $t \geq 1$ s, C302 is charged, so Q01:VGS = 22 V. This causes State(Q01) = On. When the user pushes S02 for $t \geq 1$ s, C302 is discharged, so Q01:VGS = 0 V. This causes State(Q01) = Off.

Description of Buffer. The buffer inside the rectangle labeled BUFFER is a non-inverting op amp buffer; with Gain = 1, and $Z_{IN} \sim \text{Infinity}$. If the user connects a voltmeter to its output, he'll measure Q01:VGS.

C102 100 uF, 35 V, pol, Al. 860040573004.
 C202 200 uF, 35 V, pol, Al. 2*(860040573004).
 C302 300 uF, 35 V, pol, Al. 3*(860040573004).
 RXYZ Resistor. $R = (X.Y) \cdot 10^Z \Omega$. 5%.
 Eg: $R(R682) = (6.8) \cdot 10^2 = 680 \Omega$. 5%.

PS-A1 DC power supply. VOUT = 0 ~ 24 V. Max(ICont) = 500 mA. BK Precision.
 PS-A2 DC power supply. VOUT = 0 ~ 24 V. Max(ICont) = 500 mA. BK Precision.
 PS-B1 DC power supply. VOUT = 0 ~ 126 V. Max(ICont) = 3 A. Mode = Serial. GW Instek.
 LOAD Load.
 Q01 MOSFET. N-Chan, 200 V, 19 A, |Max(VGS)| = 30 V. On Semi FQP19N20C.
 S01, S02 Switch. 1P1T, OFF-(ON), push button, PCB mount. Omron B3F-4000.
 U01A Op amp. $\Delta V_{CC} = 3 \sim 30$ V, Max(IOUT) = 30 mA. TI LM358P.

Latching DC Soft Switch With Buffer
1-NMOS, 2-SW, 1-OPA
P01: Circuit Diagram

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