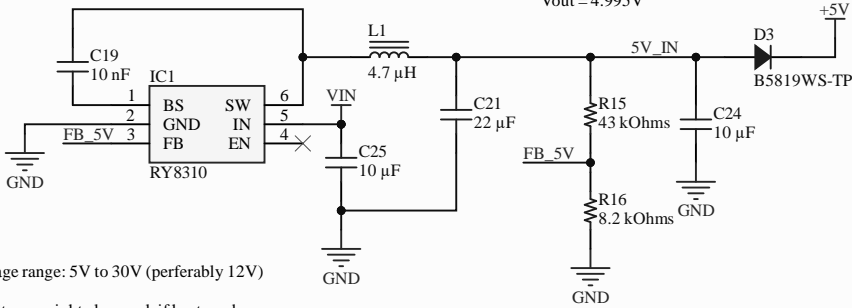


5V Buck Switching Voltage Regulator

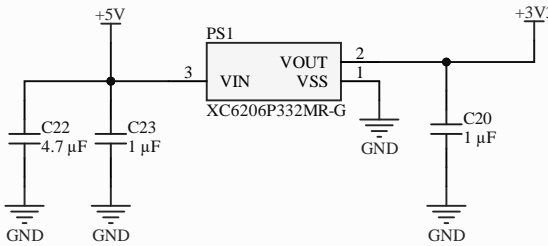
Output voltage:
 $V_{out} = V_{FB} * (1 + R_{FB1}/R_{FB2})$
 $V_{out} = 0.8 * (1 + 43k/8.2k)$
 $V_{out} = 4.995V$



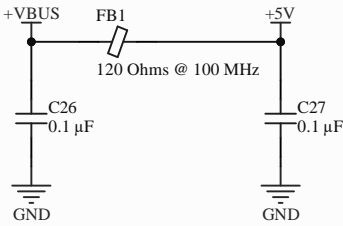
Input voltage range: 5V to 30V (perferably 12V)

higher voltages might also work if heat can be dissipated well

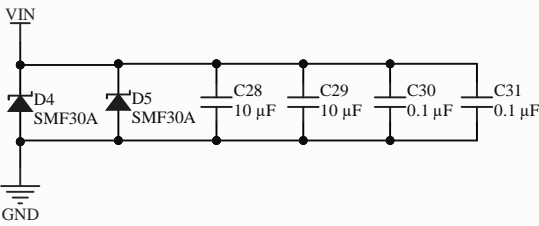
LDO Voltage Regulator



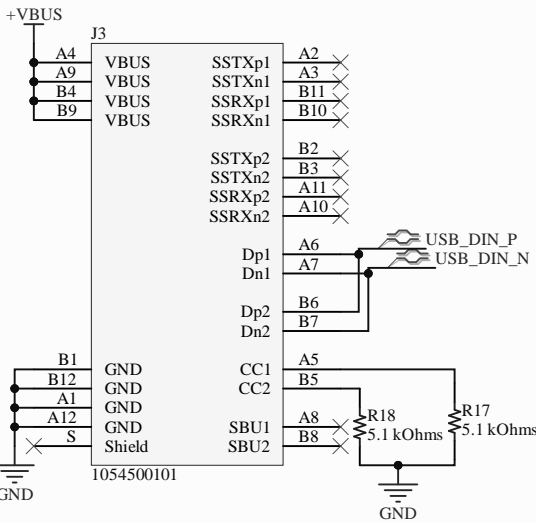
USB VBUS Filtering



Surge and Noise Protection



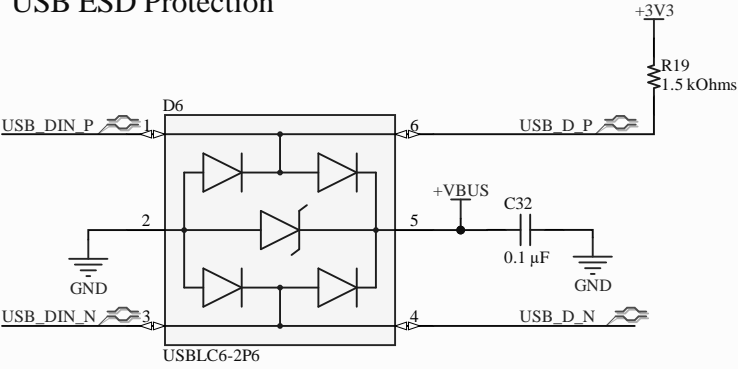
USB-C Port



Off-sheet Ports



USB ESD Protection



Title		
Schematic_PWR		
Size	Number	Revision
A3	NEMA17-PWR	A
Date:	10/22/2025	Sheet 2of 2
File:	D:\Users\...\schematic_PWR.SchDoc	Drawn By: Vincent Vong