



for input voltages below 18 V the MOSFET gates can be pulled directly to the supply voltage and the LDO is not required
 limit gate voltage below 20V, pick MOSFETs with ± 20V Gate-Source max. voltage

This configuration is for controlling the actuators with a continuous current.
 It can be used for peak and hold current profile to control the actuators. For this the current shunt resistor should be changed for the current source to output peak current and using a PWM signal from the microcontroller on PDIM to lower the output current by changing the duty cycle.
 While at least one actuator needs peak current, the current source needs to output it. To still only apply the hold current to other actuators, the MOSFETs need to be toggled with a PWM using the shift register. A PWM frequency of 200 Hz is enough.
 The required duty cycle is calculated as $d = (I_{Hold} / I_{Peak})^2$

SPI: SRCK & SER_IN
 to microcontroller
 G
 RCK
 CLR
 open drain shift register, can be replaced with multiple signal NFET (for example 2N7002) and microcontroller GPIO pins
 the shift registers can be daisy chained to control more actuators using SER OUT pin

the MP2341 current source has an minimum output voltage depending on input voltage.
 To allow powering a single actuator an additional load resistor is required. The value needs to be tested at maximum supply voltage, minimum actuator current and minimum number of actuators active.



Title: **Controlling Multiple Actuators in Series**

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