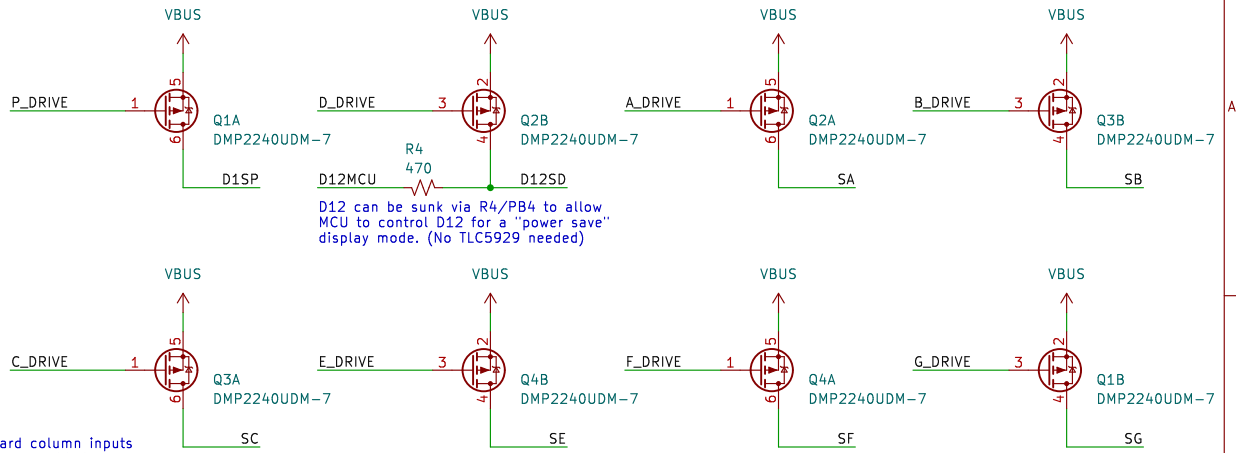
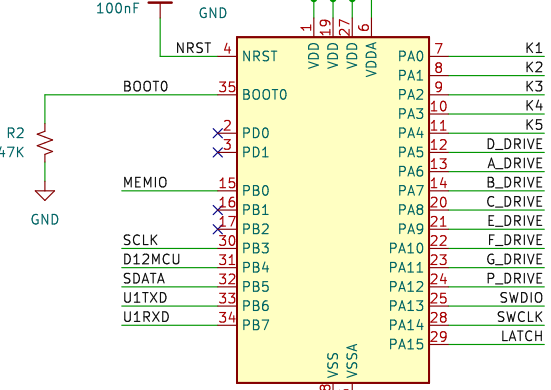


P-MOS segment drivers. S is at VBAT-0.3V to ensure that they are OFF when MCU GPIO pins are driven high (3.3V). No need to pull LED segment currents through the 3.3V low-dropout regulator U3!



D12 can be sunk via R4/PB4 to allow MCU to control D12 for a "power save" display mode. (No TLC5929 needed)

MCU clock can be run at less than full speed (eg 24MHz) and still yield 4x over TMC1500.

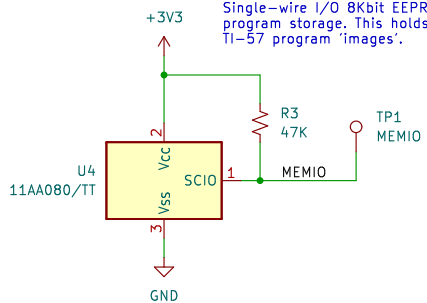


Note: K1-K5 keyboard column inputs should have pulldowns enabled.

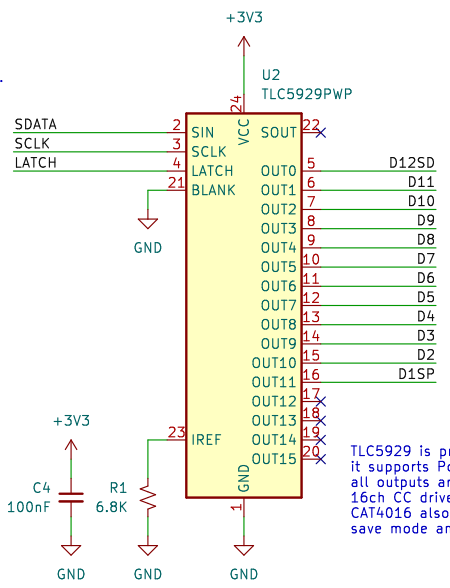
Note: x_DRIVE active-low segment drive outputs should be set as PP.

Note: SWD is always left enabled!

- Debug/Serial Access
- J3
 - 1 SWDIO
 - 2 SWCLK
 - 3 U1TXD
 - 4 U1RXD
 - 5 BOOT0
 - 6 NRST
 - 7 +3V3
 - 8 GND



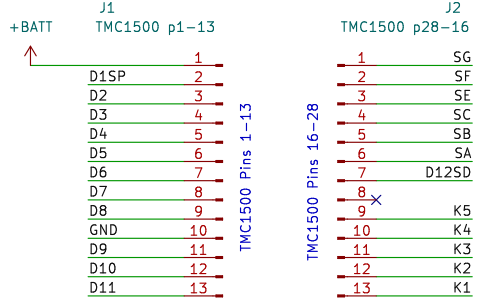
Single-wire I/O 8Kbit EEPROM for user program storage. This holds 19x 53B TI-57 program 'images'.



R1 value of 6.8K yields 10mA Iout(max) for each of the digit outputs.

TLC5929 is preferred because it supports Power-Save mode when all outputs are disabled. Other 16ch CC drivers do not have this. CAT4016 also works, but no power save mode and different software!

ORIGINAL TI-57 MCU PINS (pins 14 and 15 are not used by this daughterboard)



tomcircuit@gmail.com

Sheet: /
File: rcl57_mcu.kicad_sch

Title: RCL-57 Retrofit MCU

Size: A4 | Date: 2024-02-26
KiCad E.D.A. | kicad 7.0.8

Rev: 0.2
Id: 1/1