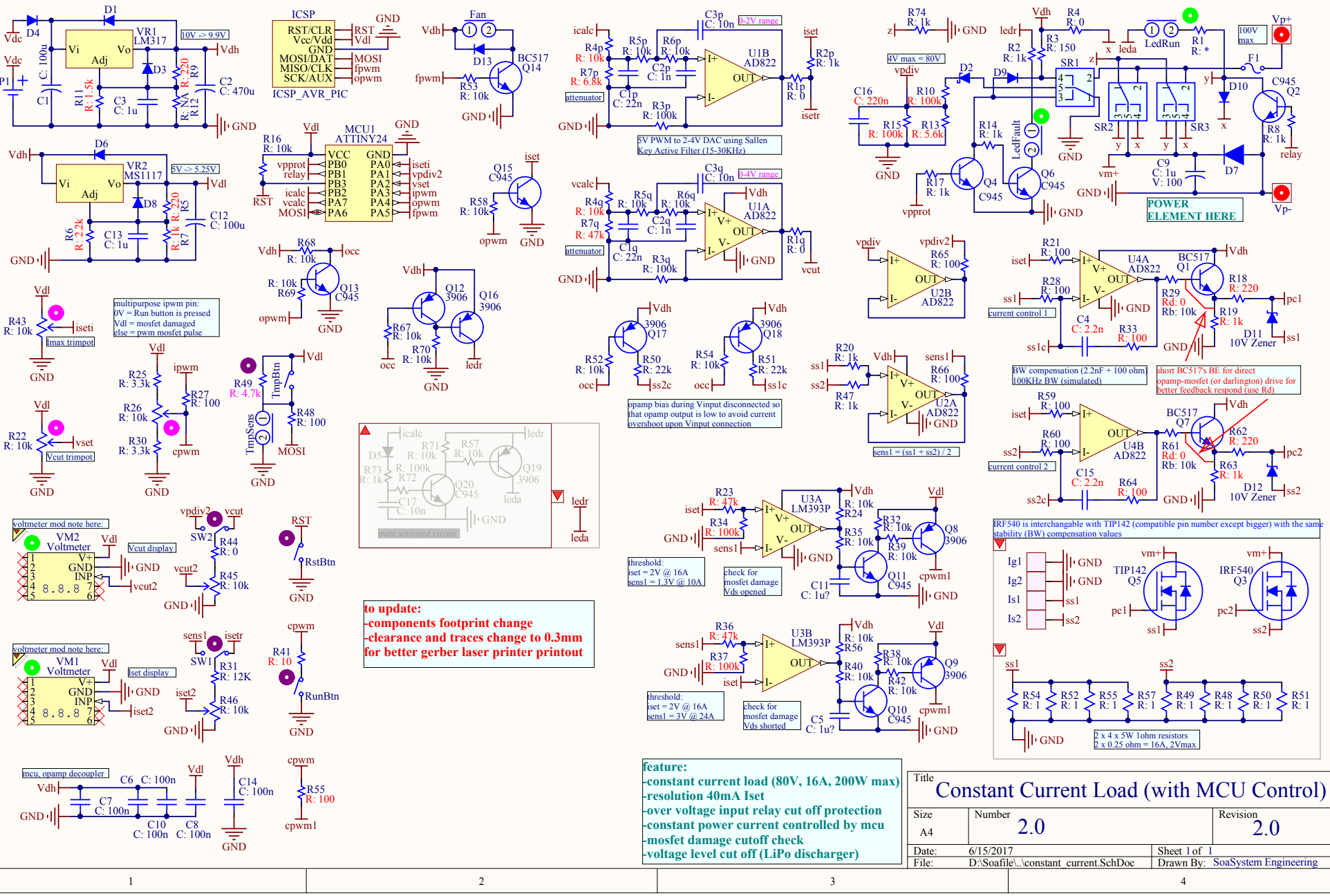
multipurpose ipwm pin:
0V = Run button is pressed
Vdl = mosfet damaged
else = pwm mosfet pulse
5V PWM to 2-4V DAC using Sallen Key Active Filter (15-30KHz)
opamp bias during Vinput disconnected so that opamp output is low to avoid current overshoot upon Vinput connection
sens1 = (ss1 + ss2) / 2
BW compensation (2.2nF + 100 ohm 100KHz BW (simulated)
short BC517's BE for direct opamp-mosfet (or darlington) drive for better feedback respond (use Rd)
IRF540 is interchangable with TIP142 (compatible pin number except bigger) with the same stability (BW) compensation values
2 x 4 x 5W 1ohm resistors
2 x 0.25 ohm = 16A, 2Vmax
POWER ELEMENT HERE
threshold: iset = 2V @ 16A sens1 = 1.3V @ 10A
check for mosfet damage Vds opened
threshold: iset = 2V @ 16A sens1 = 3V @ 24A
check for mosfet damage Vds shorted
to update:
-components footprint change
-clearance and traces change to 0.3mm for better gerber laser printer printout
feature:
-constant current load (80V, 16A, 200W max)
-resolution 40mA Iset
-over voltage input relay cut off protection
-constant power current controlled by mcu
-mosfet damage cutoff check
-voltage level cut off (LiPo discharger)
Title
Constant Current Load (with MCU Control)
Size A4
Number 2.0
Revision 2.0
Date: 6/15/2017
Sheet 1 of 1
File: D:\Soafile\..\constant_current.SchDoc
Drawn By: SoaSystem Engineering