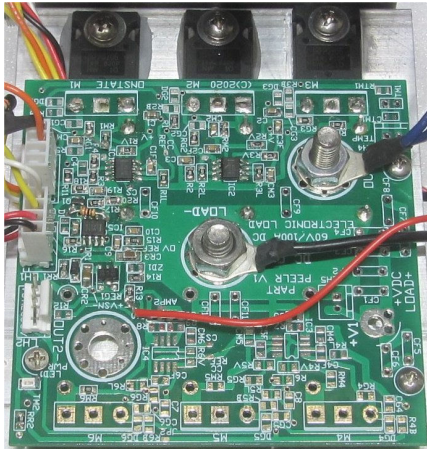


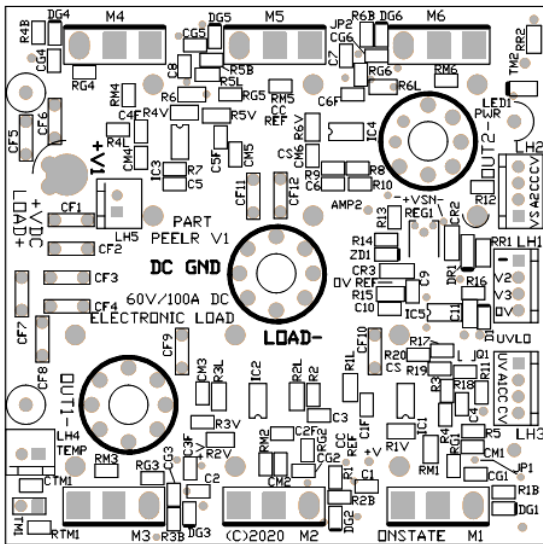


Multi-Purpose Electronic Load Regulator



Onstate PEELR is a multi-purpose electronic load regulator for power loading. It could be setup as a basic power switch, battery discharge load, dummy load or programmable (uC required) electronic load. The dual channel design allows for switchable low or high current loading at high accuracy and power. 6 individual op-amps control individual N-Channel MOSFETs improves current load sharing and accuracy. Extra safety features include under and over-voltage sensing and thermister temperature sensing.

Features:	Applications:
- Up to 60V DC input	- High-power, high-current electronic load
- 0805 SMD or larger components	- LED current driver
- Separate power input for control circuit	- Battery discharge testing
- 6 op-amp CC load circuits	- PWM dimmer/controller
- Adjustable controls inputs, CC, OV, UV	- Solar/wind/hydro load dump/regulator
- Easy-to-use integrated design	- DC motor speed controller
- Dual output and control	- HHO electrolysis PWM controller
- High-power TO-247 N-CH MOSFETs (60A)	- High-current switch
- Op-amp input for various signals	
- Analog voltage in for microcontroller control	



PCB Specifications:

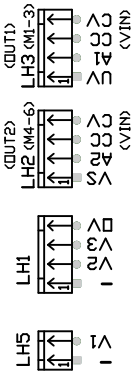
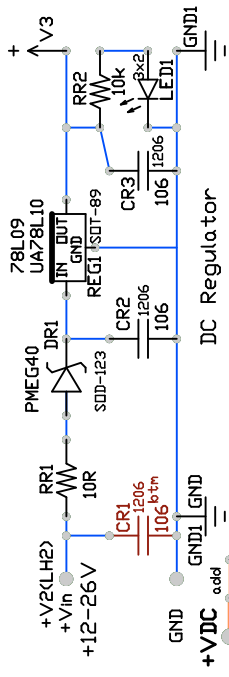
- PCB: 1/16" FR4, 2oz Cu, Lead-free, HASL, SMOBC
- Plating: 2 layers PCB with through hole plating
- PCB Size: 3.30"x3.28"
- Mt Holes: 4x0.125" (3.2mm)
- Power: 3x 1/4" /6mm power GND in/out.
- Layout: Double-sided traces with silkscreen
- Weight: 25g

Module Applications:

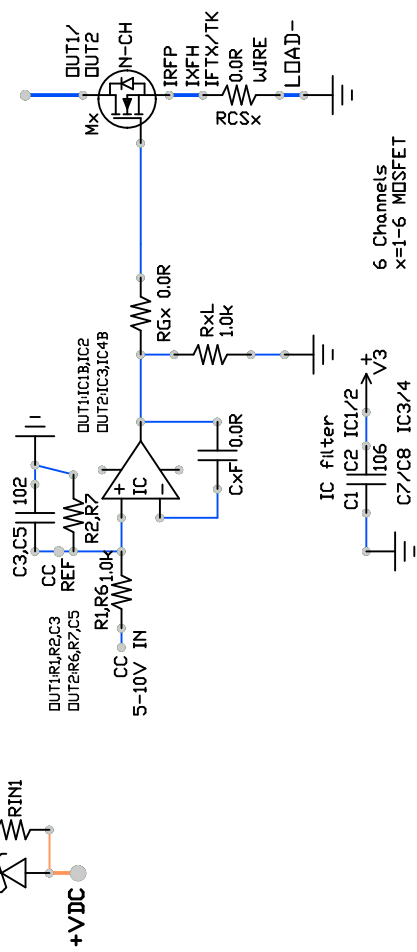
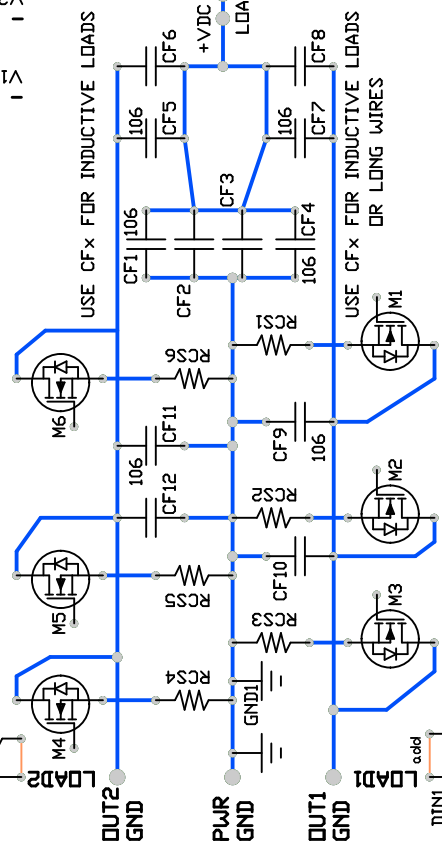
See schematic and parts list for component selection.

1. High current ON/OFF switch or low frequency PWM switch.
2. High current PWM motor speed controller with current limiting.
3. High power load for battery discharge or load burn-in testing.
4. High power over-voltage load regulator/load.
5. High power programmable electronic load regulator

ON/OFF POWER/PWM SWITCH



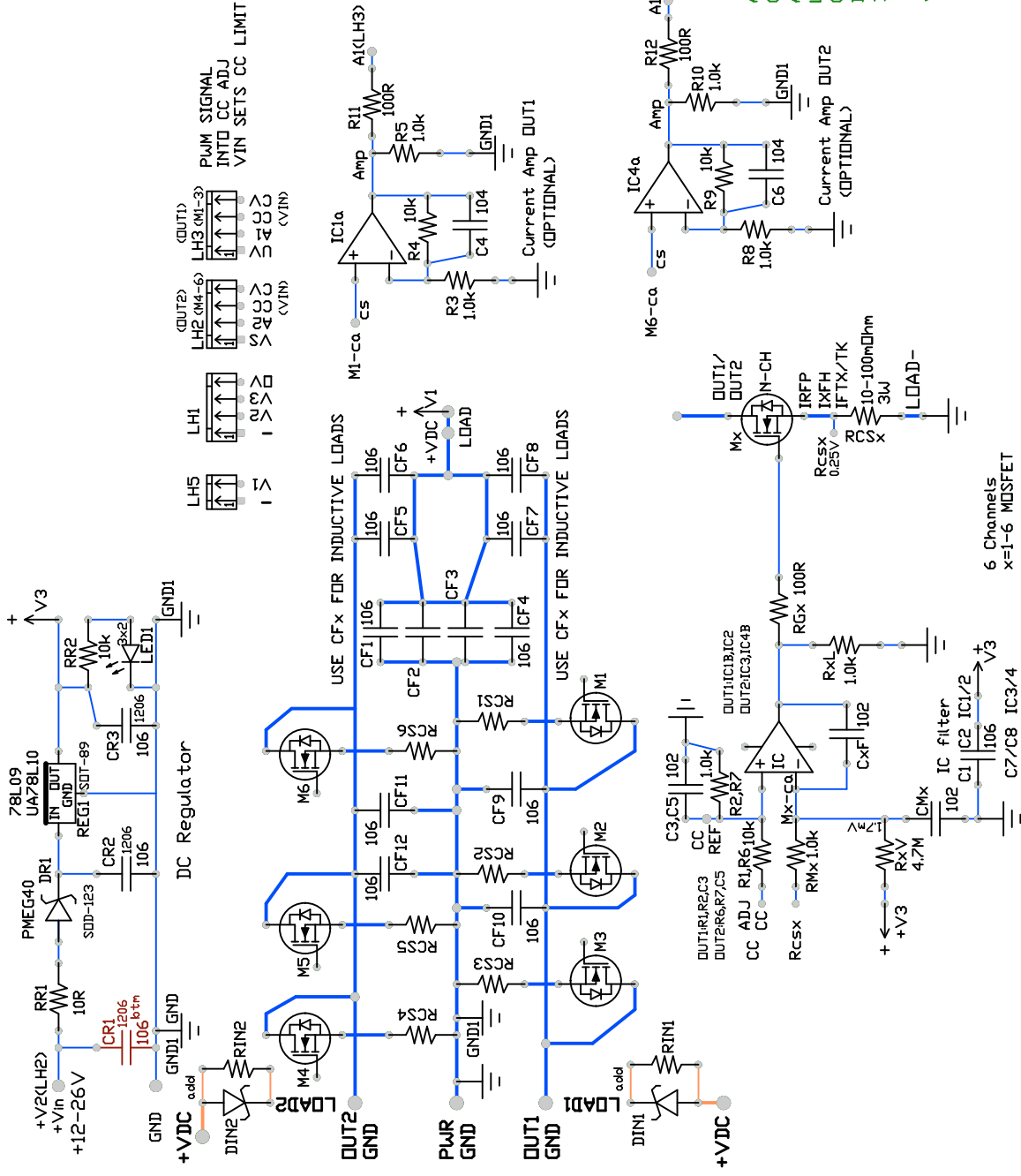
ON/OFF SIGNAL
5-10V INTO CC PIN



All resistors except RCS are 0805 SMD
 Current sense R (RCS) are 3W/5W, 0.8"
 All caps (C*) are 0805 except CR* (1206), CF* 0.2"
 LH* = 4-PQS 0.1"
 GND/DUT1/2 = 6mm or 1/4" screws
 IC* = LM258, N-CH MOS=TD-247
 BOTTOM SIDE (btm) CR1, R21, R13A, RTM2, CTM2

(C)2021	Onstate Technologies
Onstate Tech CC/CV LOAD 60V 100A CC load circuit	
Date: May 21/21	Drawn By: D. H.
Rev. 1	File: Schematic ELR load circuit V1
Description: ON/OFF POWER/PWM Switch	Page: 1 of 1
Part Code: PCB-PEELR-1	

PWM motor speed controller with current limiting



All resistors except RCS are 0805 SMD
 Current sense R (RCS) are 3W/5W, 0.8"
 All caps (C*) are 0805 except CR* (1206), CF* 0.2"
 LHM= 4-PDS 0.1"
 GND/OUT1/2= 6mm or 1/4" screws
 IC*=LM258, N-CH MOS=TD-247
 BOTTOM SIDE (btm) CR1, R21, R13A, RTM2, CTM2

VALUES SET FOR <2kHz CC CONTROL

<C>2021 Onstate Technologies

Onstate Tech
 CC/CV LOAD
 60V/100A

CC load circuit

Date: May 21/21

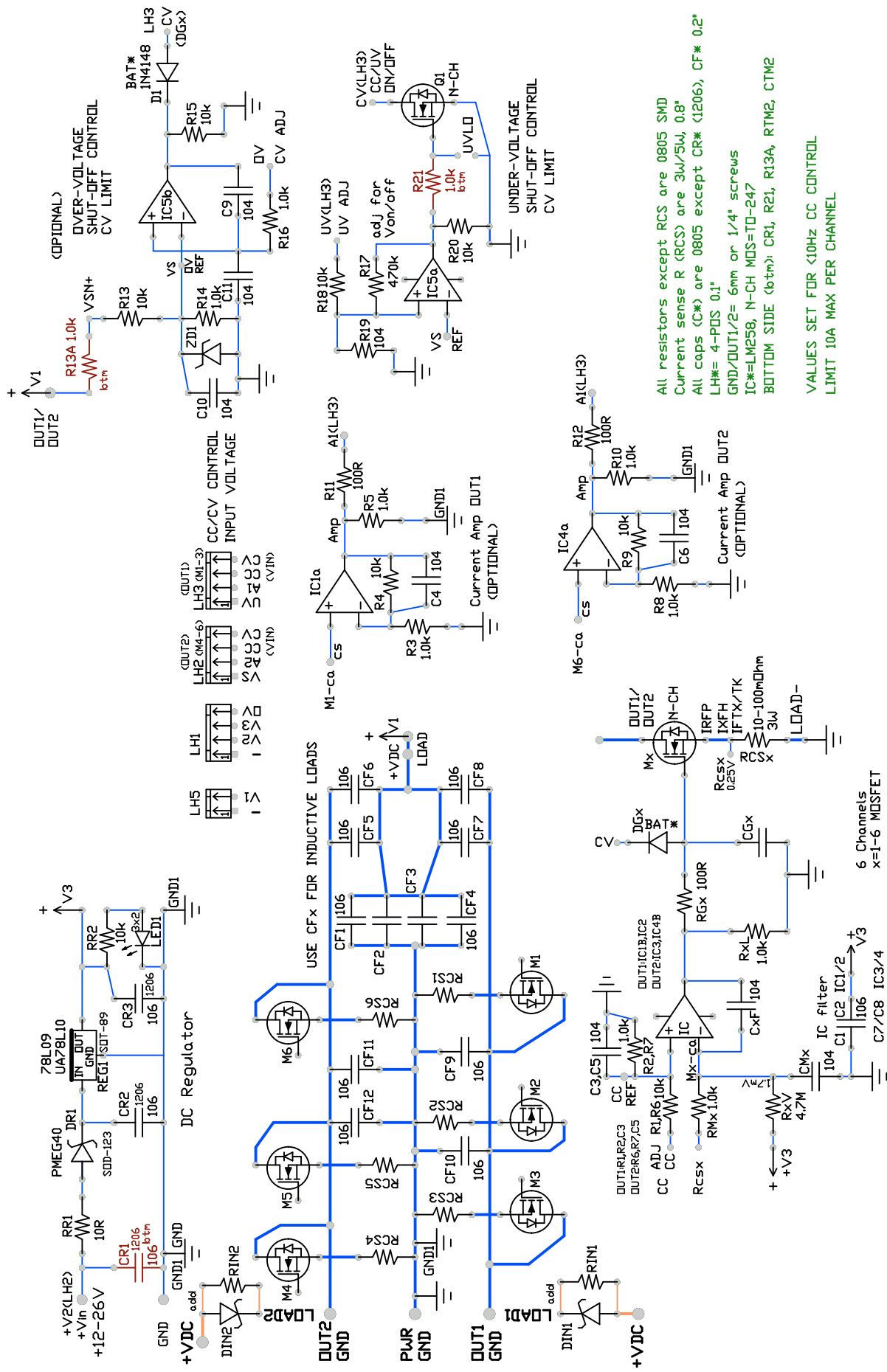
Rev. 1 File:Schematic ELR load circuit V2

Description: PWM motor speed controller
 Part Code: PCB-PEELR-1

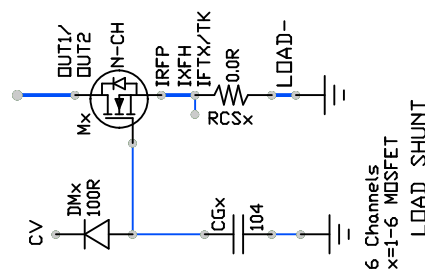
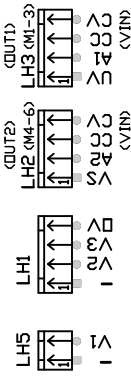
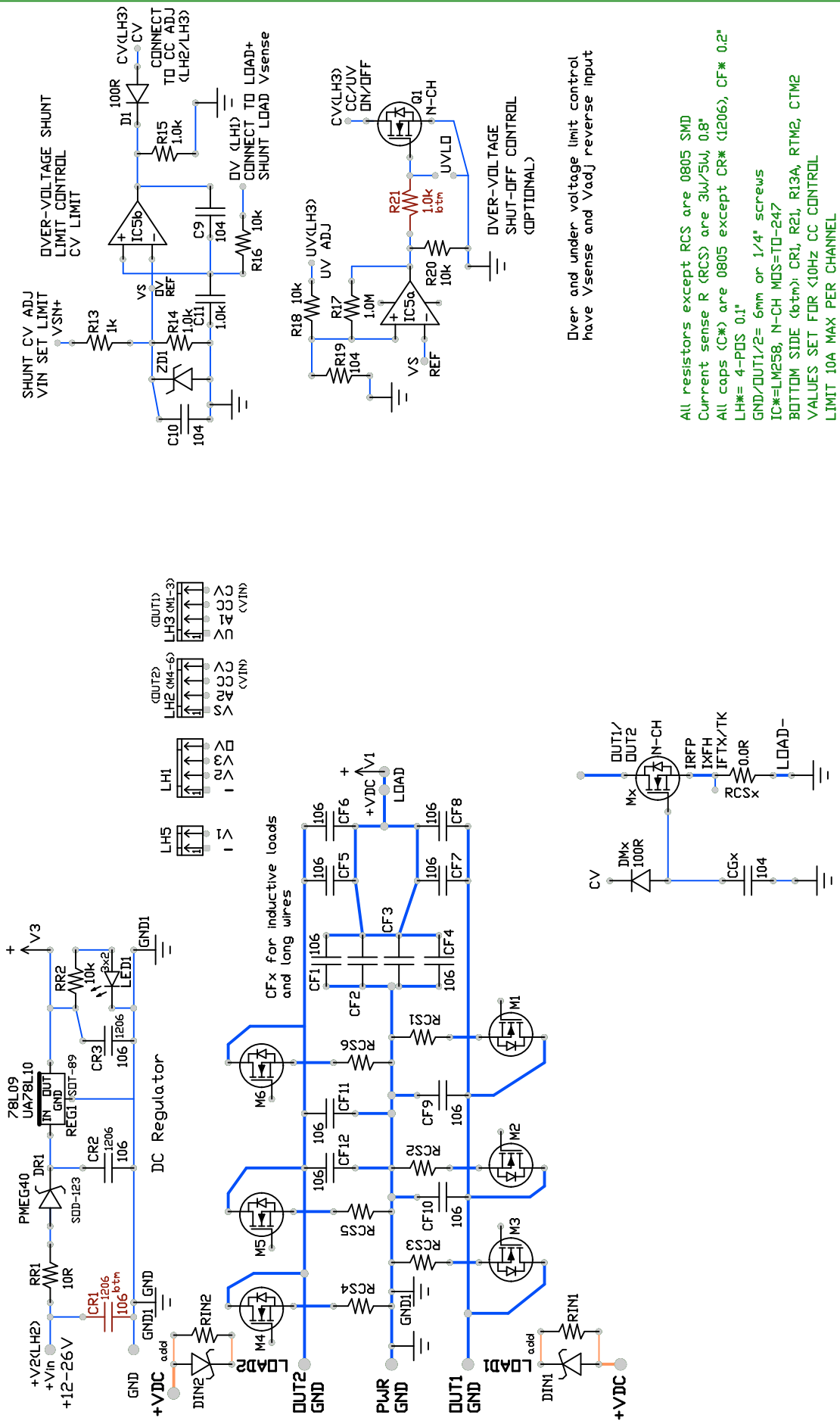
Drawn By: D. H.

Page: 1 of 1

Battery discharge load



Over-voltage shunt load regulator

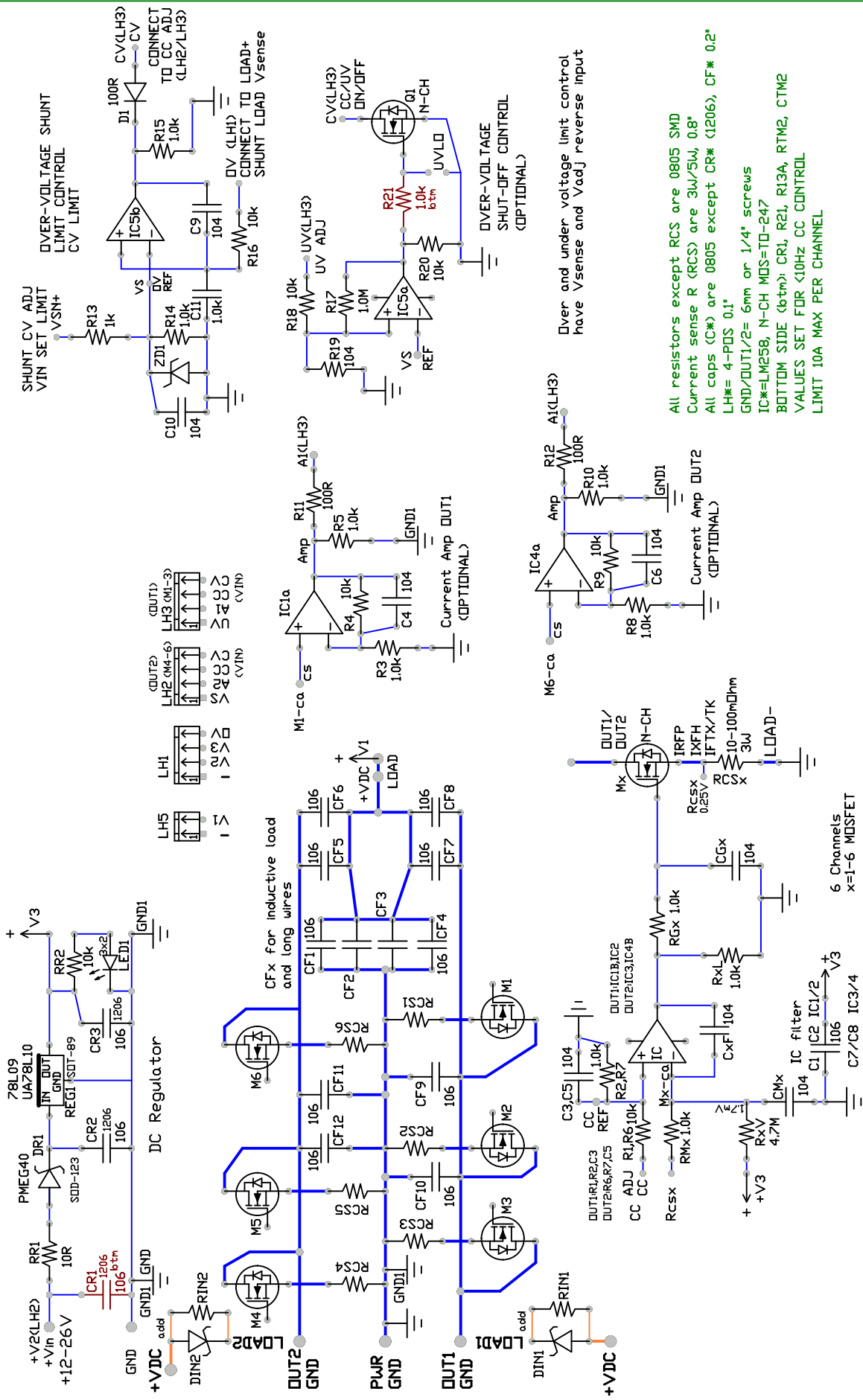


6 Channels
x=1-6 MOSFET
LOAD SHUNT

All resistors except RCS are 0805 SMD
Current sense R (RCS) are 3W/5W, 0.8"
All caps (C*) are 0805 except CR* (1206), CF* 0.2"
LH* = 4-PDS 0.1"
GND/OUT1/2 = 6mm or 1/4" screws
IC* = LM258, N-CH MOS=TO-247
BOTTOM SIDE (btm); CR1, R21, R13A, RTM2, CTM2
VALUES SET FOR <10Hz CC CONTROL
LIMIT 10A MAX PER CHANNEL

Over and under voltage limit control have V_{sense} and V_{adj} reverse input

Over-voltage shunt load regulator



SHUNT CV ADJ
VIN SET LIMIT
VSN+
R13 1k
VS
IC5b
D1 100R CV(LH3)
R15 1.0k
CONNECT TO CC ADJ
(LH2/LH3)
C9 104
R16 10k
OV (LH1)
CONNECT TO LOAD+
SHUNT LOAD V_{sense}

UV ADJ
R18 10k UV(LH3)
R17 1.0M
R19 104
VS
IC5a
R20 10k
R21 1.0k
G1
N-CH
UVL0
OVER-VOLTAGE
SHUT-OFF CONTROL
(OPTIONAL)

Over and under voltage limit control
have V_{sense} and V_{adj} reverse input

All resistors except RCS are 0805 SMD
Current sense R (RCS) are 3W/5W, 0.8"
All caps (C*) are 0805 except CR* (1206), CF* 0.2"
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