

All resistors 1/8 to 1/4W 5%.

R1 = 1M Mouser:
 R2/R4/R6 = 220R Mouser:
 R3 = 39 R Mouser:
 R5, R6 = 220K Mouser:

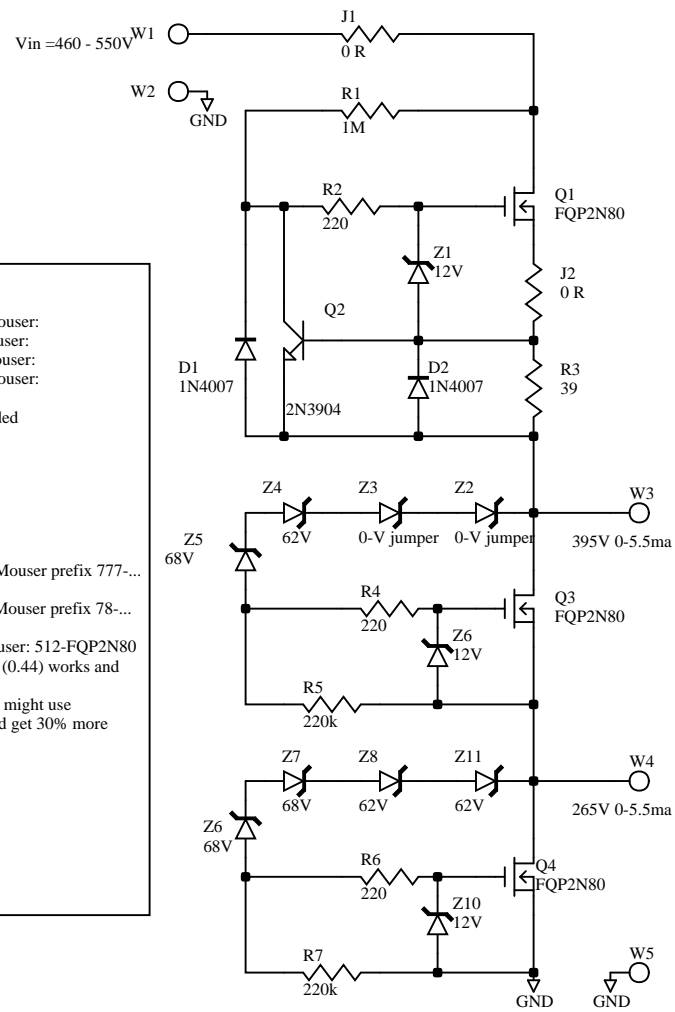
J1, J2 = jumpers for single sided
 can use top side traces

D1, D2 = 1N4007 Mouser:

Z1, Z6, Z10 = 12V nominal
 10V to 15V OK

BZ part number zeners have Mouser prefix 777-...
 1N part number zeners have Mouser prefix 78-...

Q1/Q2/Q3 = FQP2N80 Mouser: 512-FQP2N80
 heat sink 984-ATS-PCB1069 (0.44) works and
 is only 1/4" tall.
 If you can stand 3/8" tall, you might use
 984-ATS-PCB1070 (0.50) and get 30% more
 heat removal.



12V zener is noncritical.
 Any of these will work:
 771-BZX79-C12113
 771-BZX79-C12,143
 512-1N5242B
 78-1N5242B
 and many others.

62V 5% 500mW
 BZX79-C62,1130.13
 1N5265B-TR0.18
 BZX55C62-TR0.19

68V 5% 500mW
 BZX79-C68-1130.13
 1N5266B-TR0.18
 BZX55C68-TR0.20

62v 2% 500mW
 BZX79-B62,1130.21

68v 2% 500mW
 BZX79-B68-1130.21

62V 5% 1.3W
 1N4759-TAP0.30
 BZV85-C62,1130.30

68v 1.3W 5%
 1N4760-TAP0.30
 BZV85-C68,1130.30

These are run at high voltage, low
 current.
 The higher a zener's voltage, the higher
 its minimum current for regulation is, so
 low
 power zeners are better for this case.
 The lower the power rating, the cheaper
 the zener is.
 The lower the zener power, the less
 likely
 it is to have an available high voltage.