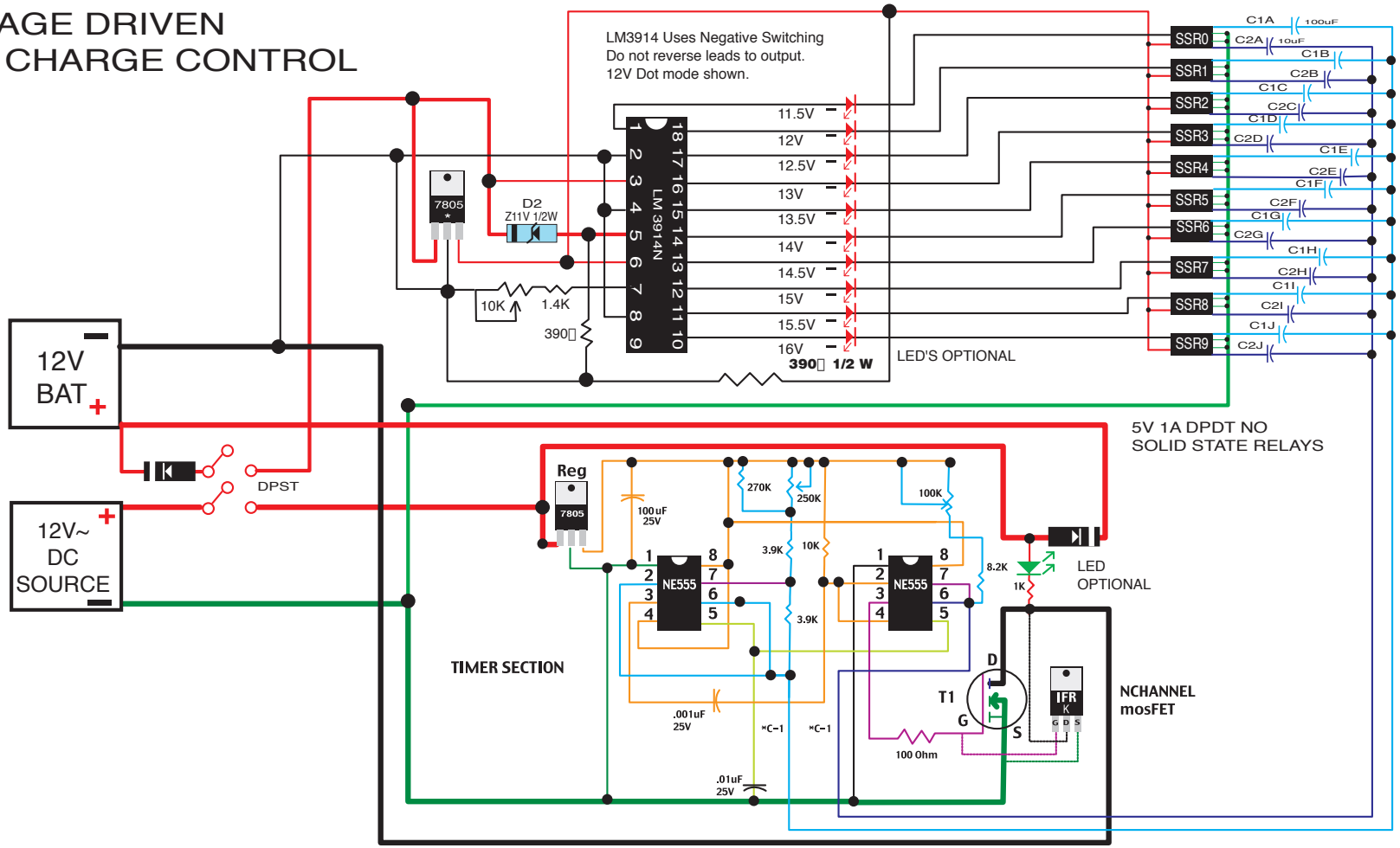
VOLTAGE DRIVEN PWM CHARGE CONTROL



The 2 segments of this design work to both set the charge rate and monitor battery voltage. The LM3914 drives optional LED's and double pole double throw solid state 5V relays, which in turn provides the frequency capacitor value and the pulse duration capacitor value to the timer section. Operating in dot mode the LM3914 will active only the associated relay in relation to battery voltage. Resistance can be added to the LM3914 drive if the relays are too sensitive to the LM3914 output between voltages. The DC source must exceed battery voltage and the mosFET matched to anticipated loads or multiples paralleled and used with a good heatsink. The LM7805's should also be heatsunk individually. A muffin fan might become needed at higher amperages. The relay switched capacitors values should be adjusted for your application. Aluminum electrolytic should work but for higher accuracy use tantalum caps. Near constant pulsing at lower battery voltages followed by a reversing trend towards longer ferquencies and shorter pulses as battery voltages rise. Higher cap1(A-J) values= long freq & higher cap2(A-J) valuse= long pulses. (Suggestion: start with a 100uF 25V for C1A, and a 10uF 25V for C2A, then increase the uF values by 1/10th for each successive step in C1(B-J) while decreasing C(B-J). Care must be taken to not overlap feq w/ pulses or an unpredictable result may occur, such as missed pulses or no pulse or always on. Fine tuning is possible by adjusting the pots in the timing section, as the 250K is for freq and the 100K is for duration. At very high freq the indicator LED may appear as always on. The 16V sensing relay could be set to active a dump load via an isolated contactor and bypass the timing section completely. This is an experimental design and usefulness of same must be determined by the individual. I'm not responsible for how you use this or the results thereof... 02/10/07 Roger Stephenson