TEAM PV

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I decided to use a MOSFET based Buck Boost Converter as the main regulator. This was because the IC 7185 modifications would be very complex and results would not be so accurate. Op Amp LM358 was mainly used for feedback control where this functions as a comparator which senses current and calibrates the circuit accordingly for variable loads. When different loads have to be charged, the values of R and C at V out [RL and Cout] have to be changed accordingly to have a very low disturbance of 100mV to the 12V output. FB pin at Op Amp has been connected with a voltage divider circuit to get a feedback voltage of 1.23 V approximately so hence the values of R3 and R4 are chosen to match the requirements. The gate terminal of MOSFET is also supplied with the Vin of the circuit. Vin can be varied from any value of 15 V to 30 V yet the output would be of 12 V only. PWM based control strategy has been used for dynamic current adjustment and voltage regulators and current regulators can also be easily added to the circuit. Zener diode has been used for protection of MOSFET and cases of over current can also be easily avoided.