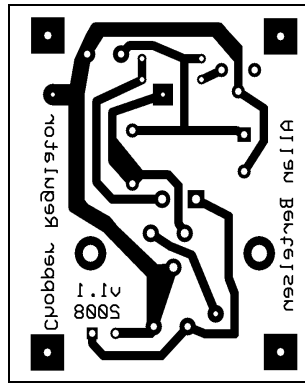
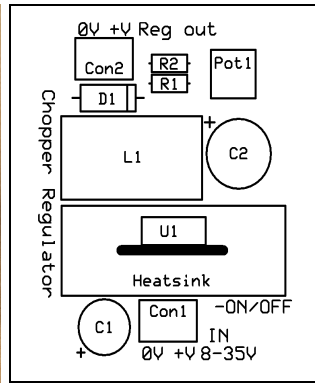


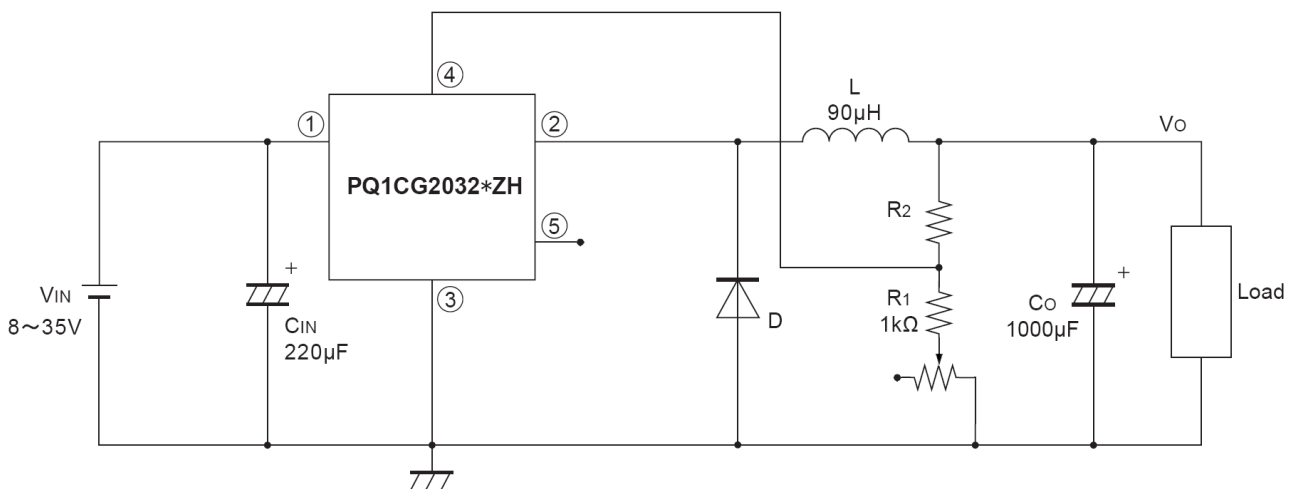
Switching power supply

This regulator is an adjustable type based on PQ1CG2032. Other regulators can be used. This one can switch a current up to 3.5A. The aim is to power a laptop computer from two lead-acid batteries in series by converting 24 VDC to about 16 VDC. Picture, silkscreen layer, bottom copper layer and list of components are shown here:



Components	
U1	PQ1CG2032RZ
R1	1k Ω
R2	See text
D1	MBR360 Schottky
C1	220 μ F 35V
C2	1000 μ F 25V
L1	90 μ H
Pot1	1 k Ω

The circuit is based on the datasheet for PQ1CG2032. Pin 5 on PQ1CG2032 is not used thou. This pin can be used for an on/off signal, but it requires additional components. See datasheet for information.



The trimmer potentiometer is for fine tuning (Digi-Key Part Number D4AA13-ND). R2 should be selected according to witch interval the voltage should cover. For the laptop purpose, 15k Ω will do. If values around 5V is needed 3.3 k Ω is could be used. For this board I selected FIT68-1 as inductor (Digi-Key Part Number 237-1189-ND). It is 89.500 μ H and goes up to 2.8A. The heat sink is Digi-Key Part Number 345-1030-ND.