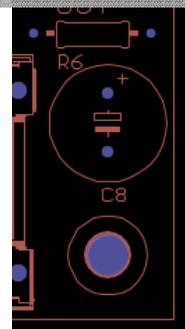
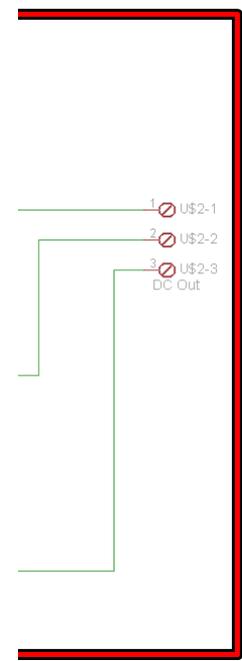


1.1



e voltage power

3.



The actual circuit diagram used to produce the PCB is given in the above figure. The parts that should put in to the PCB will depend on the outcome user needs. For example user can use jumpers instead of fuses if he does not want over current protection (not recommended). Please refer to “Tips” part of this document for more information.

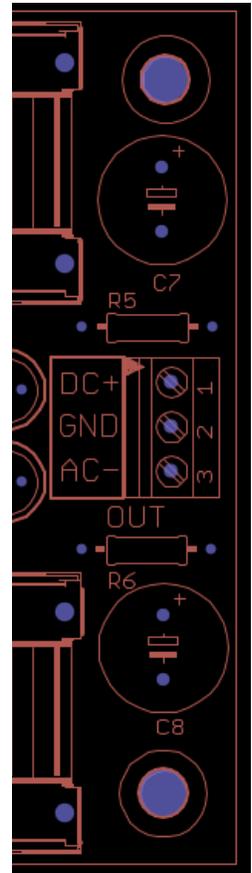
Part List:

Part	Value	Package
C1, C2	4700uF	EB20D
C3, C4, C9, C10	0.1uF	C025_050-025X075
C5, C6	10uF	E2,5-5
C7, C8	1000uF	E5-10,5
D1, D2, D3, D4	HER305	DO201-15
D5, D6, D7, D8	1N4002	DO41-10
F1, F2	Fuse	HK20Q
IC1	LM317	TO220
IC2	78xx	T0220
IC3	79xx / LM337	TO220
LED1, LED2	LED	LED5MM
R1, R2	See Tips 1	RTRIMT93YA
R3, R4	See Tips 1	Resistor Flat
R5, R6	See Tips 2	Resistor Flat
U\$1	AC/DC Input	3POL350 (3mm pitch)
U\$2	DC Out	3POL350 (3mm pitch)
Heat Sinks	-	

Usage:

The PCB can use to make single/dual and fix/adjustable power supply. However the user should put appropriate parts to do that.

You can give AC or DC input to get regulated DC output. If you like to use this as DC to DC regulator, then make sure to read Tips number 3.



except **R1, R2, R3**,
while **IC3** should be
and 7905 for $\pm 5V$

2. IC1 should be

Tips

1. You need to calculate R1, R2, R3 and R4 for according to the output voltage you need. You can take help from <http://www.whatcircuits.com/lm317-calculator-v2/> .

Positive voltage output with respect to R1 and R3 is given by

$$V_{out+} = 1.25(1+R1/R3)$$

Similarly negative voltage output with respect to R2 and R4 is given by

$$V_{out-} = -1.25(1+R2/R4)$$

For example if you want to build +/-15V adjustable regulator and if we want to use 10KOhm potentiometer for R1, then we can find R3 just by using the equation.

$$R3 = \frac{R1}{\left(\frac{V_{out+}}{1.25} - 1\right)} = \frac{10KOhm}{\left(\frac{15}{1.25} - 1\right)} = 0.909KOhm$$

However, it may be difficult to find 0.909Kohm resistor. So you can use some close value available, 820Ohms resistor instead. Using

2. R5 and R6 are current limiting resistors for LED. To calculate R5 and R6, you can get some help from <http://www.hebeiltd.com.cn/?p=zz.led.resistor.calculator>

If you are using fix output regulator, it will be easy to calculate the resistance using this calculator (in the link) .However if you are building variable regulator, since output voltage is changing as you change the potentiometers, it is wise to calculate resistor when you have maximum possible output. However, note that as you decrease the voltage LED will become dimmer or off.

3. If you would like to use this as DC to DC regulator, then you can omit D1 , D2, D3 and D4 diodes. Now make sure to insert jumpers instead of D2 and D4 diodes. DO NOT put jumpers to D1 and D4 spots.

Note: Even you use this as DC to DC keeping these diodes will save the circuit from polarity changes.

Please contact us via eBay mail if you have any additional questions or if any of this document are not clear. We are happy to help you as much as we can.

Our eBay user ID is “maxsum”