

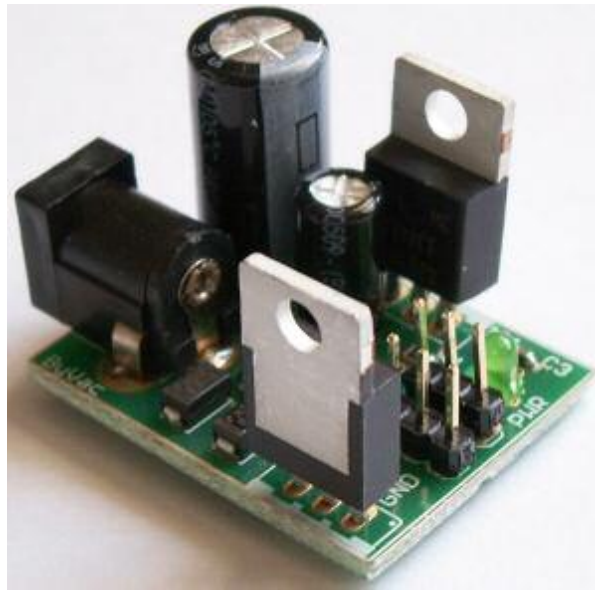
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# Power Regulator

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# BV1102

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## **BV1102** **Power Regulator**

Product specification and build instructions

Jan 2006 v0.a

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## 1. Introduction

Most socket adaptors (Figure 2) are either unregulated or poorly regulated and are usually unsuitable for powering +5V logic. It is also difficult to tell or inconvenient to switch polarity.

This is a simple but effective device for supplying regulated +12V and +5V from just about any household power adaptor of any polarity, AC or DC.

It has been specifically designed so that the regulator IC's point outwards enabling heat sinks to be attached if required.

## 2. Features

- Accepts AC or DC any polarity
- +12V regulated output
- +5V regulated output
- Up to 150mA without heat sink (depends on input voltage)
- Up to 1A with heat sinks
- Thermal overload and short circuit protection
- Uses standard 7805 and 7812 regulator IC's



Figure 1 BV1102 Board

## 3. Using



Figure 2 Socket adaptor

Just about any power adaptor will do, AC / DC from +5V to about 20V. The regulator will of course not output more voltage than the input so don't expect 12V if a 5V power adaptor is used. An ideal power adapter voltage is between 12 and 15V. A high voltage will cause the regulators to get hotter.

As mentioned before this works quite happily with lower currents up to about 200mA without a heat sink. A pair of heat sinks can easily be attached because of the board layout.

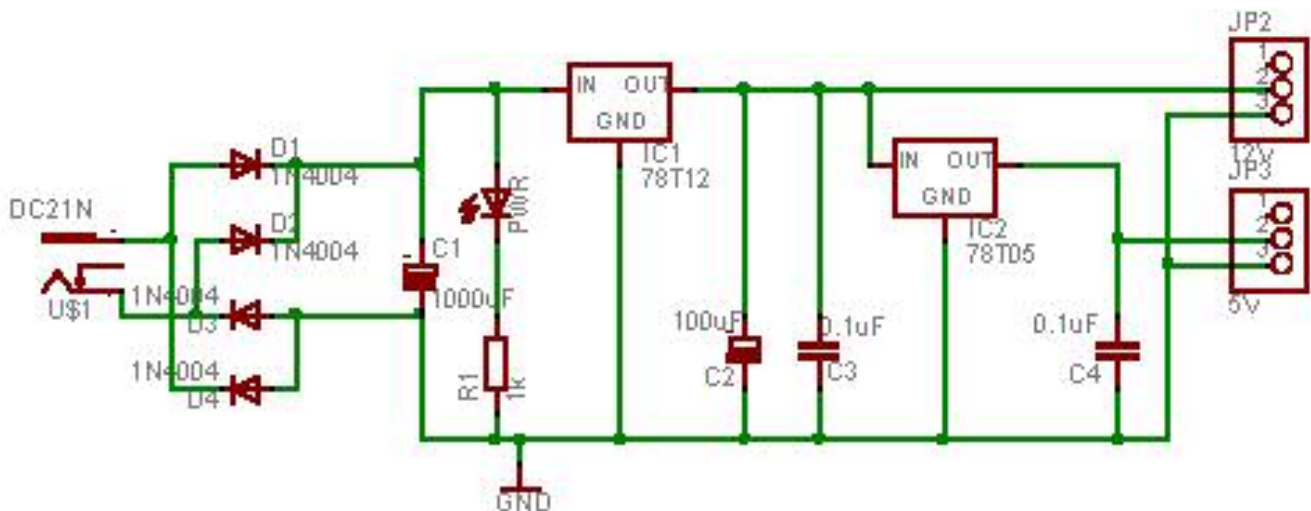
## 4. Outputs

The +5V and +12V outputs are taken to a 3 pin header. The middle pin is +ve so that if used with a 3 pin shell, connecting it up the wrong way round will not cause any damage.

## 5. More power

The power output is dependant on the voltage of the input. The more the regulator has to reduce the voltage the more power is dissipated and more heat generated.

As an option heat sinks can be fitted to both regulators. This is an example with heat sinks fitted.



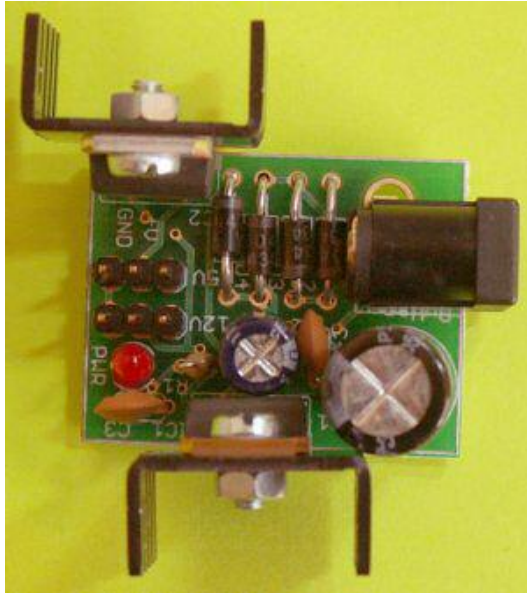
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The circuit will work with less than 12V for powering 5V apparatus only. As a general rule the input needs to be about 8V for a good 5V output and 14V for a good 12V output.

The maximum input voltage should be limited to 35V DC or 22V AC. The higher the input voltage in relation to the output voltage will determine the efficiency of the device. The ideal being to match as closely as possible to the 14V required for the first 12V regulator.