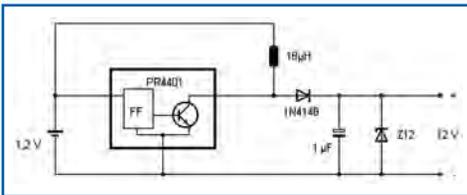


Alternative and original uses for the LED driver board (September 2007 issue) (2)

12-V converter using the PR4401

Many thanks for the nice lamp driver, although the IC is almost too good for a piddly little lamp. I had a different problem in my lab: my digital multimeter (Conrad BT-555) uses an expensive 12-V photo battery. It needs a new one every few weeks, and after replacing the battery twice you have paid for the instrument twice over. I thus needed to build a voltage converter to generate 12 V from a 1.2-V source (a NiCd or NiMH cell). To do so, I fitted a 12-V zener diode to the board that came with the September 2007 issue of *Elektor*. Naturally, you can use a diode with a different zener voltage if you need a different output voltage. The 1.2-V rechargeable cell came from a 9-V battery (GF22), which consists of a flat stack of six cells. All of this fits perfectly in the multimeter. Now I can use the multimeter with renewed pleasure!

John Dyer



Hi Jan—I am considering installing it in a book reading lamp with a white LED, and a plastic diffuser sheet from a broken phone LCD panel.

I found the diffuser plastic works really well in providing a more even light distribution. It removes the contrasting rings of light dark cast from the led and there is very little loss of intensity. I tested the diffuser with a commercial LED torch and it makes the torch more usable. I believe the diffuser plastic is very similar to what Luminit manufacture using holographic technology.

www.luminitco.com/index.html

Peter Wintulich (Australia)



Residual charge converter

When I saw the Elektor LED driver circuit, I was immediately reminded of the following website: www.emanator.demon.co.uk/bigclive/joule.htm

As you can see, an even simpler solution is possible. In theory you could also omit the 1-kΩ resistor by winding the coil with resistance wire.

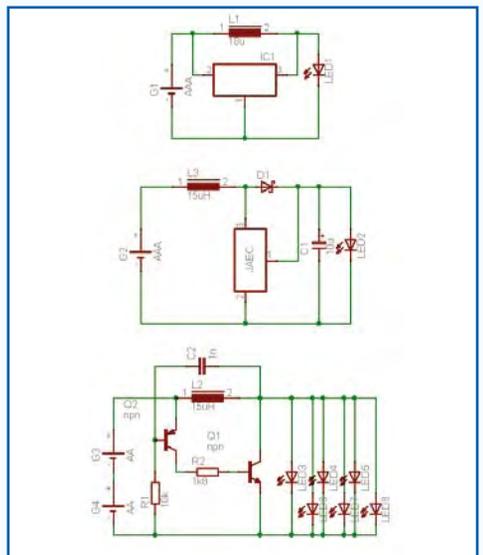
Ron Kellerman

Déjà vu

This was a sort of déjà vu experience. I discovered a three-lead LED driver around two years ago. The circuit (of which I found two versions) is used in an aluminium pocket torch with a single AAA cell, and it starts working at around 0.7 V. If you forget to switch off the torch, it keeps working down to below 0.2 V. This should also be possible with your IC. This means it could also be used with a single-cell solar module, which could then be used to recharge a mobile phone.

I also found another type of circuit in an aluminium torch from China. It consists of six discrete components and drives six white LEDs from a voltage of around 0.7 V or more. This circuit board is not much larger, since the transistors are in SOT23 packages.

Frederic Stephens



The PR4401 is not the best choice for a solar charger with only one solar cell. This would need a somewhat lower minimum input voltage, and the maximum output current would have to be somewhat higher. The TPS61200 from TI is one possible recommendation, although it is somewhat limited by its 3x3 QFN package.