

Re: 12V regulator

Source: <http://sci.tech-archive.net/Archive/sci.electronics.design/2008-10/msg03742.html>

- *From:* JosephKK <quiettechblue@xxxxxxxx>
 - *Date:* Fri, 24 Oct 2008 19:44:27 -0700
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On Tue, 21 Oct 2008 01:03:42 -0400, "Paul E. Schoen" <pstech@xxxxxxxx> wrote:

"Rich Grise" <rich@xxxxxxxx> wrote in message news:pan.2008.10.20.23.37.10.447840@xxxxxxxx

On Mon, 20 Oct 2008 17:17:10 -0500, Steve wrote:

On Mon, 20 Oct 2008 19:18:16 GMT, Rich Grise <rich@xxxxxxxx> wrote:

On Mon, 20 Oct 2008 01:59:51 -0400, Paul E. Schoen wrote:

"Steve" <s@xxx> wrote in message

...

led switch,
but it's
proving a
bit more
difficult
than I
wanted for
this
particular
application.
Thanks for
the replies,
Steve

You should be able to use
about a 10k resistor (about
1-2 watt), and a

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1N4004 or higher rated diode, in series with the LED.

It's not necessary to put a diode in series – the LED is already a diode.

But it is necessary to put a diode in antiparallel with the LED so its reverse voltage stays below its limit.

But the OP has already said that he doesn't have access to the resistor/LED junction, so he's just going to spring for the neon switch.

So, would putting the diode in reverse across the switch terminals not provide enough protection for the LED? Thanks for all the help,

Now that you mention it, yes – the other diode will clamp the voltage across the resistor/LED series circuit, which will serve the same function as only clamping the LED – i.e., very limited reverse voltage.

And don't forget the series resistor! :-)

I suggested the series diode so that the circuit will only conduct during positive half-cycles, and thus reduce power and heating in the series resistor. The reverse current through the diode should be low enough to avoid damage to the LED when the circuit is reverse biased. A diode across the LED will conduct during the negative half-cycles and just waste power. You could use a bridge rectifier and a higher value resistor, but that adds more complexity.

It's a good idea to use a fusible type resistor that is rated for line voltage use, and the entire circuit should be well insulated and protected from human contact or damage. The neon lamp is the best, but that means getting a new switch or making major changes in the existing one. And you can't get a blue neon lamp. You're stuck with red or yellow (except for special green lamps).

Paul

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Actually just use store bought LED illuminated switches.

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