

Re: high voltage boost DC/DC converters (5V->250V)

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- *From:* Joerg <[notthisjoergsch@xxxxxxxxxxxxxxxxxxxxxxxx](mailto:notthisjoergsch@xxxxxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Fri, 30 Nov 2007 12:52:07 -0800
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Mike Harrison wrote:

On Thu, 29 Nov 2007 15:57:17 -0800, Joerg <[notthisjoergsch@xxxxxxxxxxxxxxxxxxxxxxxx](mailto:notthisjoergsch@xxxxxxxxxxxxxxxxxxxxxxxx)> wrote:

Michael wrote:

Hi there – at work I'm probably going to have to design a high voltage DC/DC converter sometime in the near future. It looks like it'll be something along the lines of 5V input and 250V output. Current will be under 10ma. Probably more like 1–2ma. The more regulated the better, but I will probably just regulate it down a bit with a FET to clean it up.

My understanding is that once you start to get to something like an output voltage 10x or more of the input voltage the standard boost circuit (cap + diode + inductor) no longer really cuts it. Instead, I've read that step-up transformers are a better way to go. However, when I look through Digi-Key, all I see are step down transformers for stepping down wall power, as well as various specialty transformers.

Any suggestions? Thanks!

I went well past 10:1 on bucks. But when the factor nears 20 it does get old. You need a ferrite transformer like those used in very small switcher wall

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warts. Except that you'd operate this transformer in reverse. The problem is the usual: Very difficult to obtain at reasonable prices when outside China. Sure, you could get the for a few dimes from China but only if you buy a whole pallet of them. Also, keep in mind that the flyback versions are air-gapped.

I think a few people do standard magnetics for Power Integrations' Topswitch family – these may be suitable.

A bit too pricey for my taste, and single-sourced. I'd rather roll my own.

Also look at transformers for photo flash/strobe charging – you may be able to find these off the shelf

And those for CFL backlights since those have HV windings.

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Regards, Joerg

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