

Re: how to control LED array? (follow-up)

Source: <http://sci.tech-archive.net/Archive/sci.electronics.basics/2005-05/msg00807.html>

- *From:* Michael Noone <mnoone.uiuc.edu@xxxxxxxxxx>
 - *Date:* Sat, 28 May 2005 13:23:37 -0500
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"Ban" <bansuri@xxxxxx> wrote in
[news:uvTle.952925\\$b5.41513040@xxxxxxxxxxxxxx](news:uvTle.952925$b5.41513040@xxxxxxxxxxxxxx):

- > Michael, in the first place choose different transistors for 240mA
- > current. I had a look at the Zetex site and found these for example:
- > NPN
- > ZTX1047A Vbe<70mV @1A Ib=10mA
- > ZTX1048A Vbe<45mV @0.5A Ib=10mA
- > PNP
- > ZTX717 Vbe<17mV @0.1A Ib=10mA
- > ZTX788A Vbe<35mV @0.1A Ib=2mA

Why use different transistors? The 2N4401 and 2N4403 are both rated for 600ma I believe. Is your worry that they will be dissipating too much power? I must admit my use of them is due to them being the ones recommended to me – but also it makes sense to me to use them as they are considered to be "classic" transistors.

- > You can also get a ready made current source BCR402R, you can switch
- > it off putting pin1 high.
- > [http://www.google.com/url?sa=U&start=1](http://www.google.com/url?sa=U&start=1&q=http://www.infineon.com/cgi/ec)
- > <http://www.infineon.com/cgi/ec>
- > rm.dll/ecrm/scripts/public_download.jsp%3Foid%3D18469%26parent_oid%3D22
- > 765&e=10313 . It is also possible to make a current source with 2
- > transistors that can be switched by a logic voltage. But I do not draw
- > it now.

I'm looking at the datasheet for the BCR402R, but I must admit I'm a bit confused about it. Is the idea of the chip essentially that it outputs an amount of current controlled by the size of the resistor between Vs and Rext? The datasheet is rather sparse in regards to the effects of changing the value of this resistor. Or is the idea that the chip always supplies 30ma if it can, and this resistor is used to drop the voltage down? The latter of these is what I'm thinking is probably the case – but I'm just not sure – I mean I think most LEDs run at more like 5–15ma – I think 30ma is pretty high for an LED.

So – what I think you're suggesting is to use these BCR402Rs to drive

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single LEDs at a time, and then use a saturated transistor to handle the whole 240ma. Is that right? Also – do you know of any sources for the BCR402R? The usual suspects – Digikey, Newark, and Mouser, all don't carry it.

Thanks!

–Michael

• **References:**

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 - ◇ From: Ban
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