

Re: LED & Resistor befuddlement

Source: <http://coding.derkeiler.com/Archive/General/comp.arch.embedded/2004-06/0157.html>

From: rickman (spamgoeshere4_at_yahoo.com)

Date: 06/03/04

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Mike Turco wrote:

>
> > > *I have never been able to get an IV curve on LEDs and I have not*
> > > *measured it myself. Anyone know how low the current must be to get the*
> > > *voltage drop below 1 volt?*
>
> *Once a diode is turned on, the voltage remains pretty much the same*
> *regardless of the amount of in-spec current you run through it. If you limit*
> *the current too much, the LED won't be bright enough, or won't turn on.*
>
> *In general, LED's drop between 1.5 and 2V. As you vary the current through*
> *the LED, you will see some variation in the forward voltage, but not enough*
> *to make a difference, and I doubt that a reliable way to use these devices.*

I don't think you have read enough of the thread to understand what we are doing. I am trying to use a pull down resistor to pull the IO pin on the MCU to ground when the LED is absent. When the LED is in place, the pull down resistor needs to be light enough (high enough resistance) to *not* draw any more current than necessary. The pull down resistor is not trying to make the LED light. The goal is to allow the LED to pull the IO pin up to a voltage that will be seen as a 1 on the MCU IO pin.

I originally assumed that we were talking about TTL levels, but I expect there may be some devices that use CMOS thresholds on the inputs.

--

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