

Re: Half-wave rectifier opamp in single supply

Source: <http://sci.tech-archive.net/Archive/sci.electronics.basics/2007-06/msg00806.html>

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 - *Date:* Fri, 22 Jun 2007 17:45:38 -0400
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MRW wrote:

Good day! I have the following circuit:
<http://www.bayimg.com/NabJOAABE>

Just looking at the configuration on paper, the voltage at R18's terminal next to D2 would have given me V2 if $V_{in} < V2$. I'm not quite sure why my spice simulation is showing 1.683V.

Is V2 defined as 2.5 volts, somewhere?

The output should go positive enough to supply current through D1 and R14, to ring the right end of R14 up to 2.5 volts. However, that takes $(2.5-1.1)/1k = 700\mu A$ from the opamp output.

Take a look at the data sheet:

<http://www.ee.siue.edu/~gengel/robotics/pdf/tlv2254.pdf>
page 27, figure 18.

The output current limits with more than the whole supply dropped across the pull up fet before the current gets to 700 mA. Change the 2k resistors to 20k, and it should start working.

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