

Single ended to differential

$\pm 12\text{V}$ single ended to 1.2V differential

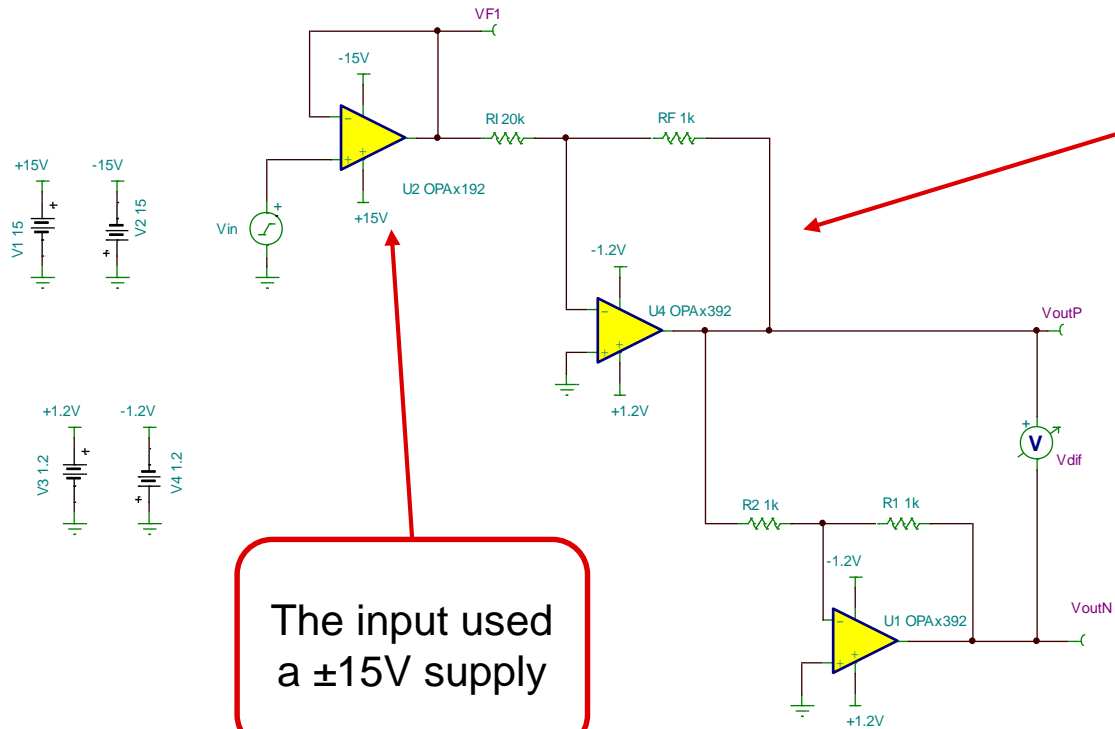
0V to 10V single -> 1.2V differential

0V to 10V single -> 3.3V single ended

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6-20-2023

Single ended to differential $\pm 12V$ to $\pm 1.2V$ (dif)



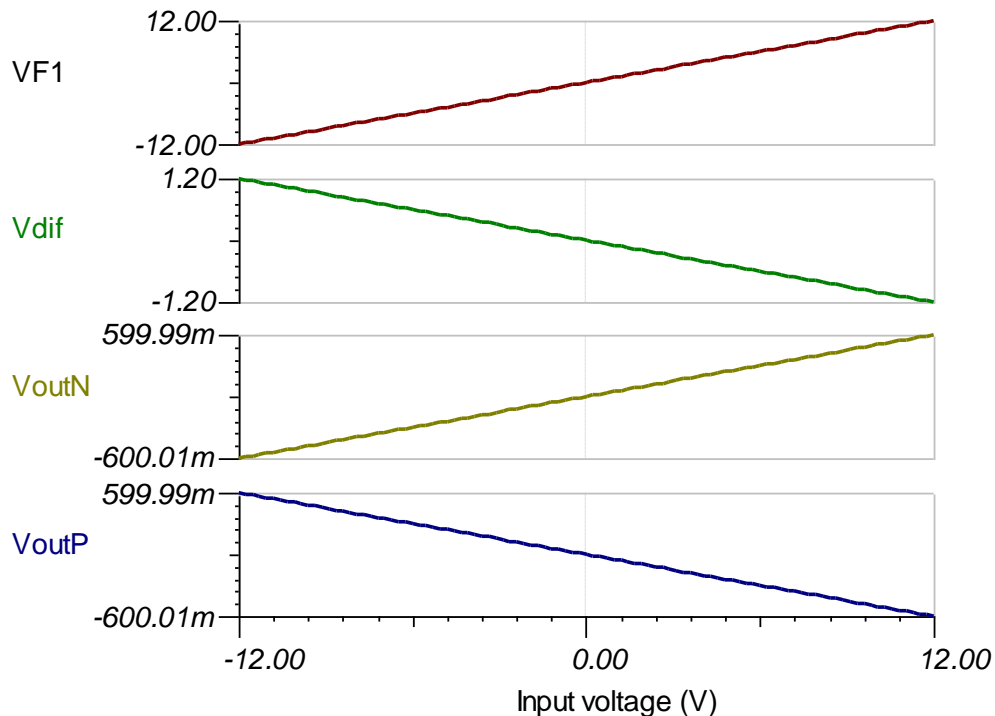
The first stage has a 20:1 attenuator. This drops 12V to 0.6V.

The next stage inverts the previous stage. If the previous stage is +0.6V, this stage is -0.6V. Thus $V_{out}(\text{dif}) = 0.6 - (-0.6) = 1.2V$

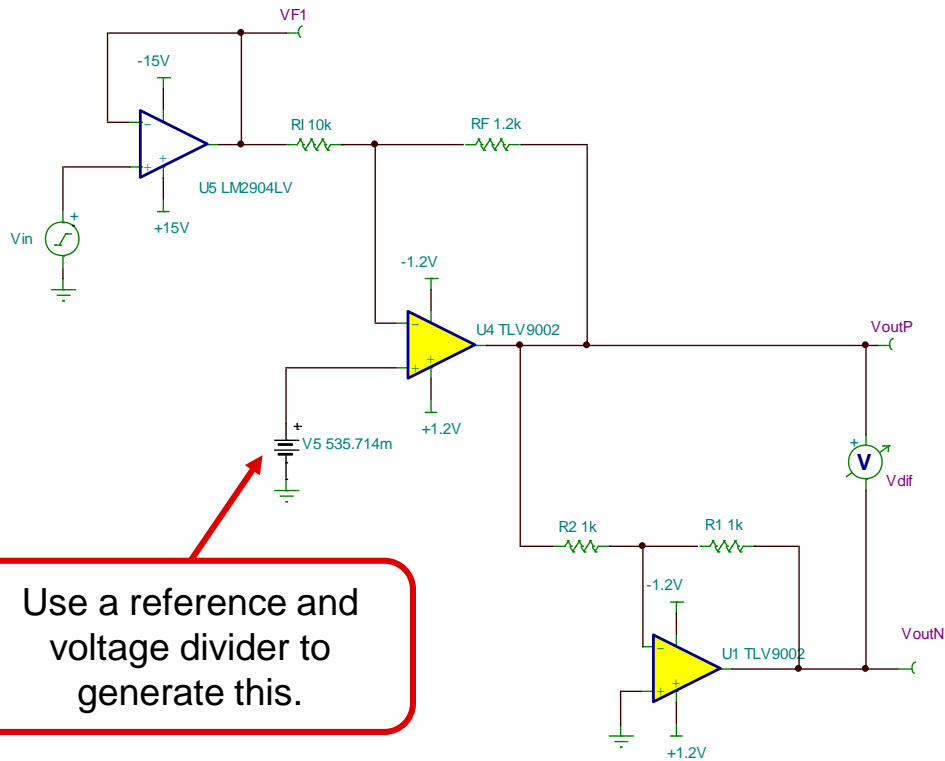
The input used a $\pm 15V$ supply

Single ended to differential $\pm 12\text{V}$ to $\pm 1.2\text{V}$ (dif)

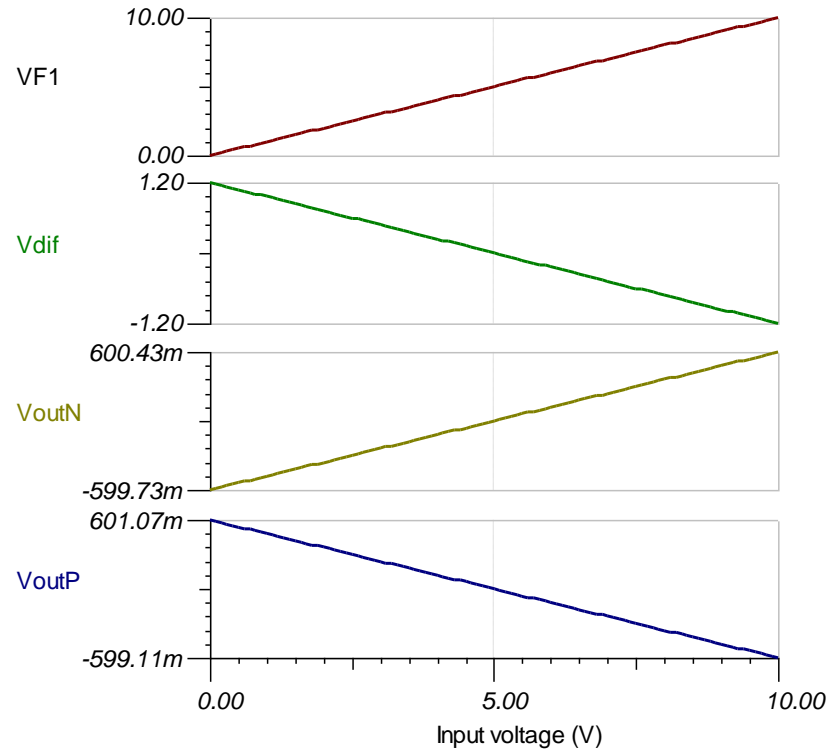
- Here is the DC sweep results for -12V to $+12\text{V}$.
- $-0.6\text{V} < V_{\text{outP}} < 0.6\text{V}$
- $-0.6\text{V} < V_{\text{outN}} < 0.6\text{V}$
- $-1.2\text{V} < V_{\text{dif}} < 1.2\text{V}$
- The ranges satisfy the absolute maximum, Absolute input voltage, and the differential input voltage.
- The two output amplifiers have $\pm 1.2\text{V}$ supplies. This limits the output of these amplifiers to 1.2V which is within the ABS MAX for the ADS121M03. Note that on startup you can get transient amplifier outputs equal to the supply regardless of input signals. This is why it is useful to limit the supplies to a level inside the absolute maximum.



0V to 10V unipolar to 1.2V differential



Use a reference and voltage divider to generate this.



0V to 10V single, to 0V to 3V single ended

