PSpice Verification of the Voltage Regulator

a. **DC voltage and currents at VD=D15V**

![Diagram of voltage regulator circuit]

b. **Line Regulation: ΔVo/ΔV_{DD}**:  

Do a transient simulation with ΔV_{DD} = 2V: See Figure below  

Notice that ΔVo/ΔV_{DD} = 10.27/2mV/V = 5.13mV/V (or 0.5% variation per volt). This corresponds to the hand calculations of 5mV/V.

![Diagram of voltage vs time graph]

**Vo:**
c. Effect of Load current: $\Delta V_o/\Delta I_L$.

Add a current source to the output of value 1mA

The is $\Delta V_o/\Delta I_L = -5.1/2 = 2.55\text{mV/mA}$ close to the calculations of $2.48\text{mV/mA}$. 

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