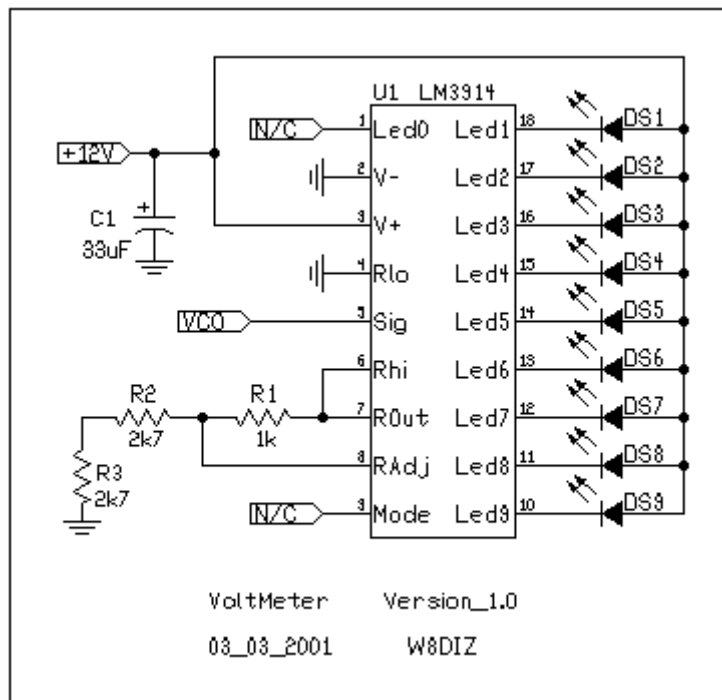# Voltmeter for VCO

The PLL, aka "Phased Locked Loop"

For the PLL to function, the VCO (voltage controlled oscillator) voltage should be in a range suitable for the varactor diodes. The 4 varactor diodes will operate in the range of 0 to 8 volts. The higher the voltage, the less the capacitance, but the higher the "Q" of the varactors. When tuning C25, the 1000 pF vari-cap, the VCO voltage will swing from 0 to 8 volts. Our objective is to have the VCO operate in the 6 volt region. What we need is a voltmeter to monitor the VCO voltage as we adjust C25.   This circuit is our answer. It is a linear display voltmeter, using an LM3914 IC. Each LED represents 1 volt when lit. So if D1 is lit, we have 1 volt DC on the input on pin 5. When D6 is lit, we have 6 volts on pin 5 of the LM3914.   The input of the voltmeter (pin 5) connects to the PLL circuit at the junction of R10 and R12.

Schematic Updated 03/10/01