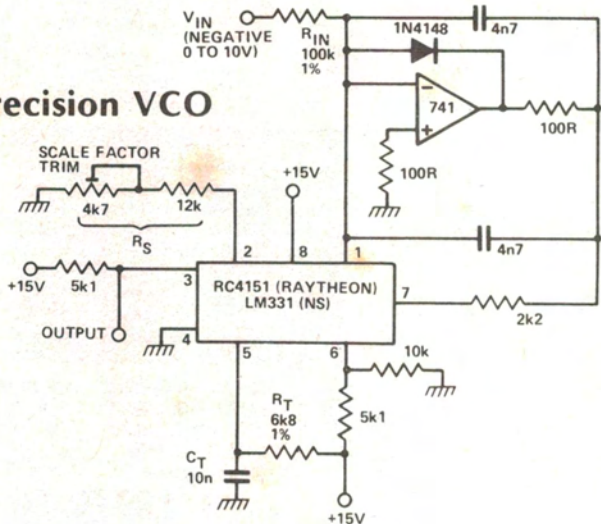


Precision VCO



$$F = (-V_{IN})/2.09 \times (R_S/R_{IN}) \times 1/(R_T C_T) \text{ Hz}$$

Maximum frequency = 10 kHz

Linearity = 0.05%

Response time = 10 us

Op-amp powered from ± 15 V

The LM331 is a precision voltage-to-frequency converter. In this application an additional op-amp is used to facilitate immediate response to changes of the input control voltage. The other advantage of the use of an additional op-amp is an increase in the sensitivity of the circuit to low control voltages. The limit here is the offset voltage and current for the particular op-amp used. The 741 specified is satisfactory although an improvement would be obtained if alternative devices were used, e.g: LM108, LM308A or LF351B.

Note that the 4n7 capacitor in the integrator should be a mylar capacitor to ensure accurate operation.