

## Single Resistor Controls Wien Bridge Oscillator Frequency

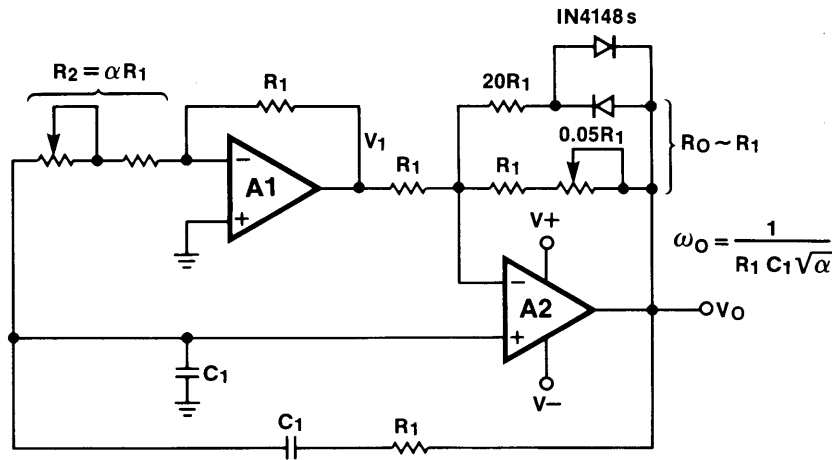
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Frequency control can be added to the conventional Wien bridge circuit by adding an op amp inverter (A1 in the diagram). The low power OP-221 dual works well in this circuit. Center frequency  $\omega_0$  is  $1/R_1 C_1$  multiplied by a variable term  $1/\sqrt{\alpha}$ . The inverter gain is  $1/\alpha$ , where  $\alpha$  is nominally unity.

The center frequency is given by

$$\omega_0 = \frac{1}{R_1 C_1 \sqrt{\alpha}}$$

This circuit adds tuning capability to the Wien bridge oscillator circuit.



A1, A2: 1/2 OP-221