

ENEE 417 -Fall 2004

Week #8

Designs #4: Current Controlled BJT Translinear Floating Resistor

In this experiment a BJT floating current controlled resistor will be designed.

1. Choose complementary pnp and npn transistors and do curve traces of them.
2. For the circuit shown below design a current source which will generate I_0 in the range of one microamp to 1 milliamp.
3. Construct the circuit shown below
4. Plot the circuit's $I_1 = -I_2$ vs $V_1 - V_2$. From these determine the value of the floating resistance.
5. Vary I_0 and repeat step 4.
6. Write a two page report summarizing your study;

Reference:

R. Senani, A. K. Singh, and V. K. Singh, "A New Floating Current-Controlled Positive Resistance Using Mixed Translinear Cells," IEEE Transactions on Circuits and Systems – II, Vol. 51, No. 7, July 2004, pp. 374 – 377

