VOLTAGE CONTROLLED AMPLIFIER

When the voltage at the gate of a n-channel MOSFET is varied from 0V – supply volts its resistance varies from about 1kΩ to several tens of megohms. This fact is utilised in the following VCA. The inverter is biased into linear operation by the 10mΩ resistor. When feedback is applied the gain is set by $\frac{RF}{RIN}$. By allowing a MOSFET to be RIN and RF fixed, with the values shown as the control voltage varies from $V_{DD} - V_{SS}$ the gain of the amplifier varies from cut-off to just over unity.