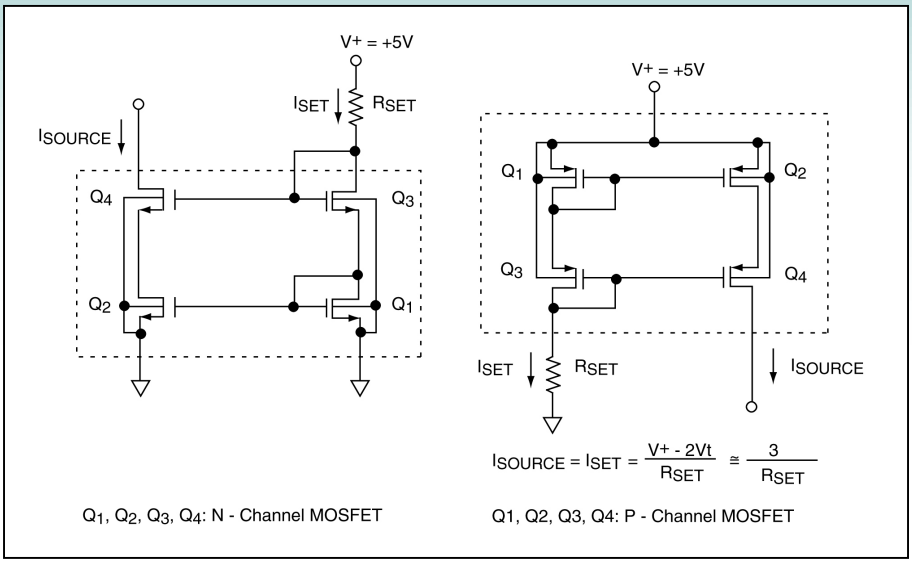
Category: Current Source **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. cs_11002.0

Cascode Current Source



Description

In cases where the basic current source needs to be more stable over a large output voltage range, a higher output impedance current source may be desired. This is accomplished by putting two current sources in "cascade" to each other as shown. N channel cascode current source uses 4 N channel MOSFETs. The set current is given by the equation: I_{SET} = (V+ - VGD1 – VGD3)/ R_{SET}. I_{SOURCE} is equal to I_{SET} for output voltages exceeding VGD1 + VGD3. I_{SOURCE} is a "sink" current to Ground. In the example given in the schematic, if V_T = 1.0V, and V+ = 5.0V, then I_{SOURCE} is equal to 3/R_{SET}. A P-channel current source works in the same manner, except that I_{SOURCE} is a "source" current from V+ instead.

Recommended Components

N channel: 2 x ALD1101, ALD1106, ALD1108xx, 2 x ALD1103, 2 x ALD1105
P channel: 2 x ALD1102, ALD1107, 2 x ALD1103, 2 x ALD1105

Other Related Circuit Ideas

Schematic no. cs_11007.0 High Output Impedance Current Source