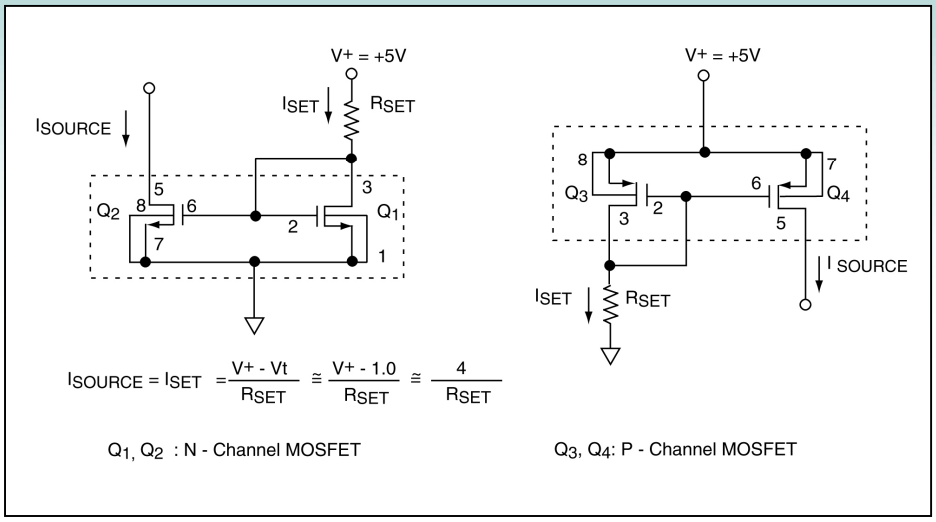
Category: Current Source **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. cs_11001.0

Basic Current Source



Description

Basic N-channel current source is shown as Q1 and Q2, with Q1 diode-connected. For this circuit the gate leakage currents of Q1 and Q2 are very low when compared to the drain currents, and can be neglected. The drain current of Q1 is then equal to drain current of Q2. The current source setting current is given by ISET = (V+ - VGD1) / RSET. The output current ISOURCE is equal to ISET when the output voltage is at VGD2 = VGD1. Likewise the basic P-channel current source using Q3 and Q4 provides an ISOURCE that is set by RSET. Note that the polarity of the currents is different for the two different current sources.

Recommended Components

N channel: ALD1101, ALD1116, ½ ALD1106, ALD1108xx
P channel: ALD1102, ALD1117, ½ ALD1107
Either N or P channel or both: ½ each of ALD1103, ALD1105

Other Related Circuit Ideas

Schematic no. cs_11002.0 Cascode Current Source
Schematic no. cs_11005.0 Current Source with Gate Control
Schematic no. cs_11006.0 Buffered Current Source