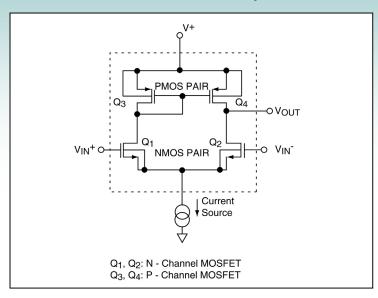


Category: Amplifiers

### **CIRCUIT IDEAS FOR DESIGNERS**

Schematic no. amp\_27004.0

# **Discrete Differential Amplifier**



## **Description**

This is a version of a discrete differential amplifier consisting of an N channel matched-pair MOSFET Array and a P channel matched-pair MOSFET Array. Whenever a circuit required for an application cannot be met by an existing component available as an IC function such as an operational amplifier or a voltage comparator, a discrete circuit version would have to be designed and built. This differential amplifier is biased by a separate external N-channel current source (see current source cs-series circuits). With this type of differential circuit, it is possible to set each individual circuit parameters separately to produce a more optimized differential amplifier circuit for many types of specialized situations and applications. As an example, a differential amplifier operating at less than 1V supply can be constructed. As a second example, an amplifier with the current bias tweaked to run on trickle supply current of mere nano-amperes can be implemented using discrete MOSFET components.

### **Recommended Components**

N channel: ALD1101, ALD1116, 1/2 ALD1106, ALD1108xx

P channel: ALD1102, ALD1117, 1/2 ALD1107

Either N or P channel or both: ½ each of ALD1103, ALD1105

#### **Other Related Circuit Ideas**

Schematic no. amp 27006.0 Low Voltage Instrumentation Amplifier

©2005 Advanced Linear Devices, Inc. Information furnished by Advanced Linear Devices, Inc. (ALD) is believed to be accurate and reliable. However, ALD assumes no responsibility for the use of such information nor for any infringement of patent or rights of third parties that may result from its use. No license is granted implication or otherwise under any patent rights of ALD.