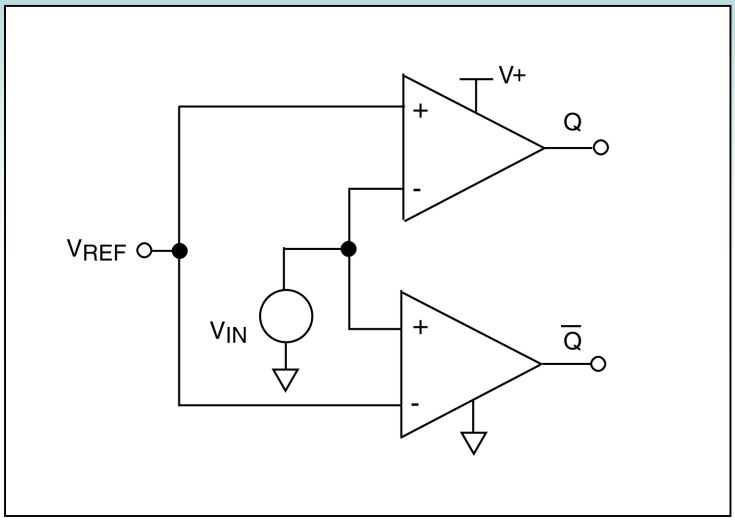
Category: Comparator & Detector **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. cd_23010.0

Voltage Comparator with Complementary Outputs



Description

This circuit utilizes a dual operational amplifier with high slew rate to act as voltage comparators with complementary outputs Q and QBAR. Alternatively, a dual voltage comparator can also be used. The input reference can be any reference signal generated externally that is within input voltage limits. Both the outputs Q and QBAR change state whenever the input signal VIN crosses VREF voltage levels. A high-precision voltage comparator function can be implemented by selecting a low offset voltage rail-to-rail dual operational amplifier. When a dual operational amplifier or dual voltage comparator is used, when both comparator functions are within the same IC package, the outputs Q and QBAR have better timing and temperature tracking to each other. In other words, the transition whenever Q changes state would track QBAR changing state in the opposite direction.

Recommended Components

ALD2701, ALD2702, ALD2704, ALD2706, ALD2711,
½ ALD4701, ½ ALD4702, ½ ALD4704, ½ ALD4706
ALD2301 and ALD2303 for open-drain outputs
ALD2302 for push-pull outputs
ALD2321 for high precision applications

Other Related Circuit Ideas

Schematic no. cd_23007.0 Rail-to-Rail Window Comparator
Schematic no. cd_23008.0 Rail-to-Rail Voltage Comparator
Schematic no. cd_23009.0 Rail-to-Rail Window Comparator