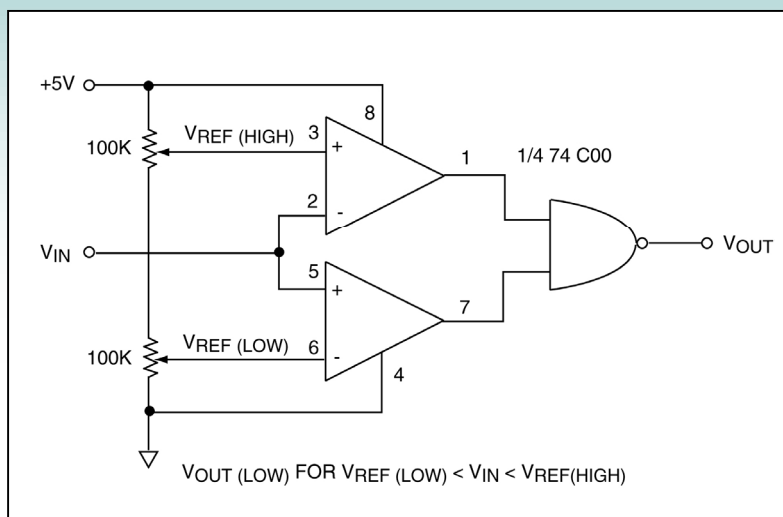


### Rail-to-Rail Window Comparator



### Description

This circuit utilizes two rail-to-rail operational amplifiers with relatively high slew rate to act as a rail-to-rail window voltage comparator. The input reference levels are adjusted from  $V+$  rail to ground via 2 potentiometers connected in series from  $V+$  to ground. Note that this input reference level is ratiometric with the supply voltage. When  $V_{IN}$  is between  $V_{REF}(\text{low})$  and  $V_{REF}(\text{high})$  voltage levels, the output  $V_{OUT}$  is at a low, or logical "0" state. The output changes state and become a logical "1" whenever the input signal  $V_{IN}$  crosses below  $V_{REF}(\text{low})$  or above  $V_{REF}(\text{high})$  voltage levels. A high-precision voltage comparator function can be implemented by selecting low offset voltage rail-to-rail operational amplifiers. The input leakage characteristics of the dual operational amplifier would limit the resistor and potentiometer values that can be used. For micropower and precision applications ALD2706A dual operational amplifier is recommended.

### Recommended Components

ALD2701, ALD2702, ALD2704, ALD2706, ALD2711, 1/2 ALD4701, 1/2 ALD4702, 1/2 ALD4704, 1/2 ALD4706

### 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\_23010.0 Voltage Comparator with Complementary Outputs