

LOW OFFSET COMPARATORS
BASED ON CURRENT COPIERS

ABSTRACT

The offset associated with mismatch of a pair of input
5 devices in comparators used in applications such as flash
converters is eliminated by using only one input device or
transconductance circuit, time-shared between the input and
reference signals. The input device converts each signal in
succession into a current. A current copier stores one of
10 these currents while the input device produces the other
current, and the two currents are then compared by
connecting them to a common node. The comparator includes
a first switch for switching between an input and reference
nodes, and an input device which receives a reference signal
15 from the reference node during a first comparison cycle,
receives an input signal from the input node during a second
comparison cycle, and converts the input signal and the
reference signal to input and reference currents,
respectively. A current copier stores the reference current
20 during the first comparison cycle, and generates a
comparison signal from the stored reference current and the
input current during the second comparison cycle.

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