

DESIGN SHOWCASE

Sample/Hold Has Zero Droop and Infinite Hold

Driving a D/A converter with an A/D converter provides an overall analog-hold function which, though limited in output resolution, offers zero voltage droop and infinite hold time (Figure 1). The A/D converter shown (IC₁) includes a 12-Bit compatible track/hold at its input. The track/hold specs a 6MHz full-power bandwidth, 30nsec aperture delay, and 50psec aperture jitter.

Control-signal polarities allow the two converters to work together without glue logic: each negative-going transition of the HOLD signal initiates a conversion in IC₁, which

produces a 12-Bit data word eight microseconds later. The rising edge of HOLD then latches data into the D/A converter. To allow time for A/D conversions, the negative HOLD pulses should be at least 8.5µsec wide.

The voltage reference internal to IC₁, which serves both converters, minimizes the parts count and eliminates one source of mismatch in reconstructing sampled voltages. The direct connections shown allow the D/A converter to reconstruct signal levels within the input range 0 to 5V.

(Circle 7)

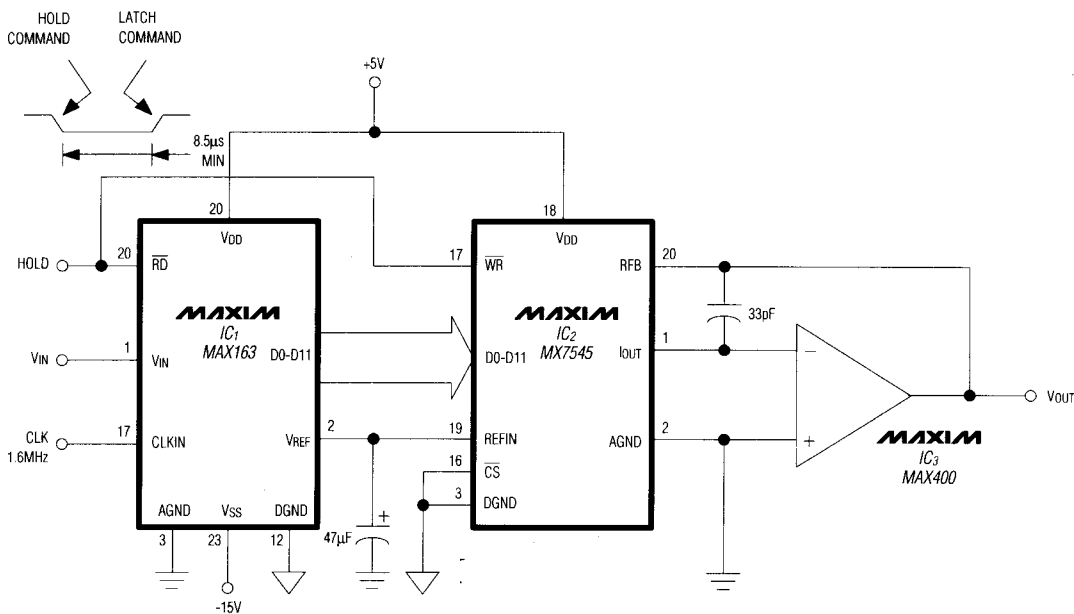


Figure 1. Direct connections between an A/D converter and a compatible D/A converter provide a simple analog-hold function requiring only three ICs.

See our specs in **CAPS**