

DAC 1-CH Segment 14-bit 28-Pin SOIC W Tube



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[Inquiry](#)

Manufacturer: [Analog Devices, Inc](#)

Package/Case: SOP28

Product Type: Data Conversion ICs

Lifecycle: Active

General Description

The AD9764 is the 14-bit resolution member of the TxDAC® series of high performance, low power CMOS digital-to-analog converters (DACs). The TxDAC® family, which consists of pin-compatible 8-, 10-, 12-, and 14-bit DACs, is specifically optimized for the transmit signal path of communications systems. All of the devices share the same interface options, small outline package and pinout, providing an upward or downward component selection path based on performance, resolution and cost. The AD9764 offers exceptional ac and dc performance while supporting update rates up to 125 MSPS.

The AD9764's flexible single-supply operating range of 2.7 V to 5.5 V and low power dissipation are well suited for portable and low power applications. Its power dissipation can be further reduced to a mere 45 mW with a slight degradation in performance by lowering the full-scale current output. Also, a power-down mode reduces the standby power dissipation to approximately 25 mW.

The AD9764 is manufactured on an advanced CMOS process. A segmented current source architecture is combined with a proprietary switching technique to reduce spurious components and enhance dynamic performance. Edge-triggered input latches and a 1.2 V temperature compensated bandgap reference have been integrated to provide a complete monolithic DAC solution. Flexible supply options support +3 V and +5 V CMOS logic families.

The AD9764 is a current-output DAC with a nominal full-scale output current of 20 mA and >100 kΩ output impedance. Differential current outputs are provided to support single-ended or differential applications. Matching between the two current outputs ensures enhanced dynamic performance in a differential output configuration. The current outputs may be tied directly to an output resistor to provide two complementary, single-ended voltage outputs or fed directly into a transformer. The output voltage compliance range is 1.25 V.

The on-chip reference and control amplifier are configured for maximum accuracy and flexibility. The AD9764 can be driven by the on-chip reference or by a variety of external reference voltages. The internal control amplifier, which provides a wide (>10:1) adjustment span, allows the AD9764 full-scale current to be adjusted over a 2 mA to 20 mA range while maintaining excellent dynamic performance. Thus, the AD9764 may operate at reduced power levels or be adjusted over a 20 dB range to provide additional gain ranging capabilities.

The AD9764 is available in a 28-lead SOIC package. It is specified for operation over the industrial temperature range.

Product Highlights

The AD9764 is a member of the TxDAC product family that provides an upward or downward component selection path based on resolution (8 to 14 bits), performance and cost.

Manufactured on a CMOS process, the AD9764 uses a proprietary switching technique that enhances dynamic performance beyond that previously attainable by higher power/cost bipolar or BiCMOS devices.

On-chip, edge-triggered input CMOS latches readily interface to +3 V and +5 V CMOS logic families. The AD9764 can support update rates up to 125 MSPS. A flexible single-supply operating range of 2.7 V to 5.5 V, and a wide full-scale current adjustment span of 2 mA to 20 mA, allows the AD9764 to operate at reduced power levels.

The current output(s) of the AD9764 can be easily configured for various single-ended or differential circuit topologies.

Key Features

Member of pin-compatible TxDAC product family

125 MSPS update rate

14-bit resolution

Excellent SFDR and IMD

Differential current outputs: 2 mA to 20 mA

Power dissipation: 190 mW at 5 V to 45 mW at 3 V

Power-down mode: 25 mW at 5 V

On-chip 1.20 V reference

Single +5 V or +3 V supply operation

Packages: 28-lead SOIC and TSSOP

Edge-triggered latches

Application

Communication Transmit Channel:- Basestations- ADSL/HFC Modems

Instrumentation



Recommended For You

AD7305BRZ

Analog Devices, Inc

SOP20

AD9910BSVZ

Analog Devices, Inc

TQFP100

AD9831ASTZ

Analog Devices, Inc

QFP

AD5447YRUZ

Analog Devices, Inc
TSSOP

AD5302BRMZ

Analog Devices, Inc
MSOP10

AD5531BRUZ

Analog Devices, Inc
TSSOP16

AD537JH

Analog Devices, Inc
CAN10

AD652AQ

Analog Devices, Inc
DIP

AD654JN

Analog Devices, Inc
DIP8

AD7740YRMZ

Analog Devices, Inc
MSOP8

AD9914BCPZ

Analog Devices, Inc
LFCSP

AD73311ARSZ

Analog Devices, Inc
SSOP20

AD7291BCPZ

Analog Devices, Inc
LFCSP20

AD9954YSVZ

Analog Devices, Inc
QFP

AD2S1205YSTZ

Analog Devices, Inc
LQFP44