

# DAC1001D125:

## Dual 10-Bit DAC, Up to 125 Msps

Product Feature Sheet

### Features

- Dual 10-bit resolution
- 125 Msps update rate
- Single 3.3 V supply
- Dual-port or Interleaved data modes
- 1.8 V, 3.3 V and 5 V compatible digital inputs
- Internal and external reference
- 2 mA to 20 mA full-scale output current
- Typical 185 mW power dissipation
- 16 mW power-down
- SFDR: 80 dBc;  $f_0 = 1$  MHz;  $f_s = 52$  Msps
- SFDR: 77 dBc;  $f_0 = 10.4$  MHz;  $f_s = 78$  Msps
- Msp
- SFDR: 72 dBc;  $f_0 = 1$  MHz;  $f_s = 52$  Msps; -12 dBFS
- LQFP48 package
- Industrial temperature range of -40 °C to +85 °C

### Typical Applications

- Quadrature modulation
- Medical/test instrumentation
- Direct IF applications
- Direct digital frequency synthesis
- Arbitrary waveform generator

### Device Overview

The DAC1001D125 is a dual-port high-speed 2-channel CMOS Digital-to-Analog Converter (DAC), optimized for high dynamic performance with low power dissipation. The Supporting an update rate of up to 125 Msps, the DAC1001D125 is suitable for Direct IF applications.

Separate write inputs allow data to be written to the two DAC ports independently of one another. Two separate clocks control the update rate of each DAC port.

The DAC1001D125 can interface two separate data ports or one single interleaved high-speed data port. In Interleaved mode, the input data stream is demultiplexed into its original I and Q data and latched. The I and Q data is then converted by the two DACs and updated at half the input data rate.

Each DAC port has a high-impedance differential current output, suitable for both single-ended and differential analog output configurations.

The DAC1001D125 is pin compatible with the AD9763, DAC2900 and DAC5652.

### Absolute Maximum Ratings:

Digital Supply Voltage	-0.3 V to +5.0 V
Analog Supply Voltage	-0.3 V to +5.0 V
Supply Voltage Difference	-50 mV to +150 mV
Input Voltage	-0.3 V to 5.5 V
Output Voltage	-0.3 V to $V_{DDA} + 0.3$ V
Storage Temperature	-55 °C to +150 °C
Ambient Temperature	-40 °C to +85 °C
Junction Temperature	125 °C

### Block Diagram

