Very Low Distortion Digital-to-Analog Converter

Check for Samples: DAC1280

FEATURES

- **Outstanding Performance:**
  - **THD: –125dB**
  - **SNR: 120dB (413Hz BW)**
- **Gain Control: 1/1 to 1/64**
- **SYNC Input Control**
- **Shutdown Mode**
- **Low Power: 20mW**
- **Analog Supply: +5V or ±2.5V**
- **Digital Supply: 1.8V to 3.3V**
- **Small 16-Pin TSSOP Package**

APPLICATIONS

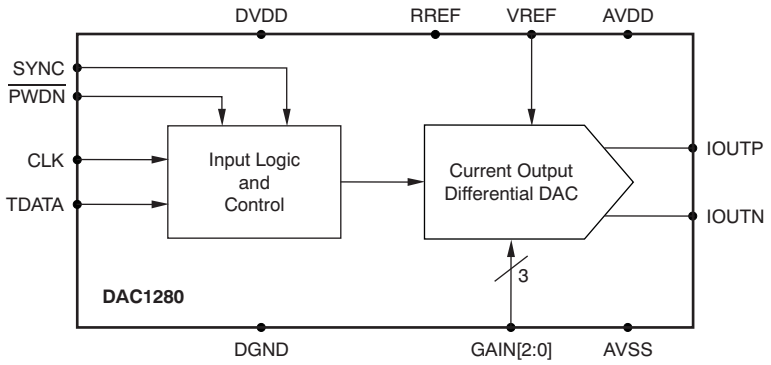
- **Energy Exploration**
- **Seismic Monitoring**
- **High-Accuracy Voltage Control**

DESCRIPTION

The DAC1280 is a very low distortion digital-to-analog converter (DAC) that generates a high-accuracy signal from an external bitstream input. The device is optimized for output signal frequencies from dc to 250Hz. The DAC1280 achieves very high linearity in a small package with low power. Together with the high-performance ADS1281 and ADS1282 analog-to-digital converters (ADCs), these devices create a measurement system that meets the exacting demands of energy exploration and seismic monitoring equipment.

The DAC1280 provides a differential current output intended to be used with an external operational amplifier I-to-V converter. The DAC1280 input is driven by an external 1s density digital bitstream. An external reference and resistor set the full-scale range output. Three input pins set the output range from 0dB to –36dB (±2.5V to 39mV, differential). The attenuations match the gains of the ADS1282 for testing at all gain settings.

The SYNC input synchronizes the DAC1280 to the sampling of ADCs. A power-down input disables the device, resulting in micropower dissipation. The DAC1280 is available in a compact TSSOP-16 package and is fully specified from –40°C to +85°C, with a maximum operating limit of +125°C.



PRODUCT PREVIEW

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
DAC1280IPW	PREVIEW	TSSOP	PW	16	90	TBD	Call TI	Call TI
DAC1280IPWR	PREVIEW	TSSOP	PW	16	2000	TBD	Call TI	Call TI

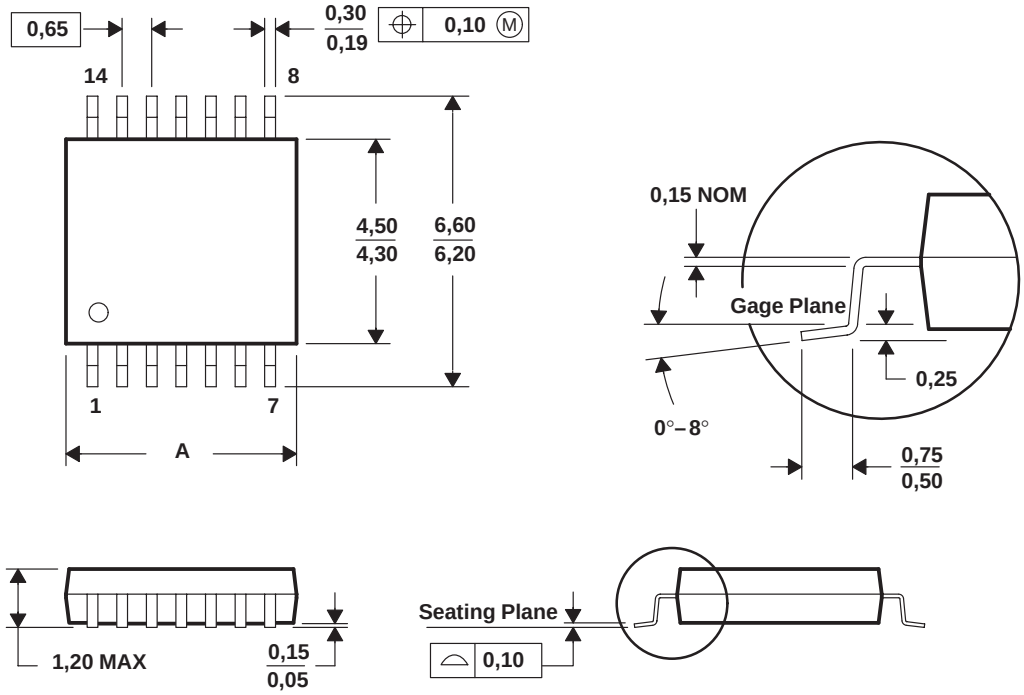
(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

PW (R-PDSO-G)** **PLASTIC SMALL-OUTLINE PACKAGE**

14 PINS SHOWN



DIM \ PINS **	8	14	16	20	24	28
A MAX	3,10	5,10	5,10	6,60	7,90	9,80
A MIN	2,90	4,90	4,90	6,40	7,70	9,60

4040064/F 01/97

NOTES: A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion not to exceed 0,15.
D. Falls within JEDEC MO-153

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