Accelerometers

ADXL150/ADXL250. Third generation ±50 g surface micromachined accelerometers. These improved replacements for the ADXL05 offer lower noise, wider dynamic range, reduced power consumption and improved zero g bias drift. The ADXL150 is a single axis product; the ADXL250 is a fully integrated dual axis accelerometer with signal conditioning on a single monolithic IC, the first of its kind available on the commercial market. The two sensitive axes of the ADXL250 are orthogonal (90°) to each other. Both devices have their sensitive axes in the same plane as the silicon chip.

ADXL202. A low cost, low power complete 2-axis accelerometer with a measurement range of ±2 g. The ADXL202 can measure both dynamic acceleration (e.g., vibration) and static acceleration (e.g., gravity).

Mfr.'s Type	Power		Primary Output	BW (kHz)	Range (g)	Sensitivity (mV/g)	No. of Leads	Axis
	Vs (V)	Is (mA)						
ADXL150AQC	+5	3	DC	1	±5 to ±50	35 to 41	14	Single
ADXL150JQC	+5	3	DC	1	±5 to ±50	35 to 41	14	Single
ADXL202AQC	+3	1	PWM	6	±2	T1/T2	14	Dual
ADXL202JQC	+3	1	PWM	6	±2	T1/T2	14	Dual
ADXL250AQC	+5	6	DC	1	±5 to ±50	35 to 41	14	Dual

ADXL Accelerometer Evaluation Kit

The ADXL-EB evaluation board comes complete with non-resonant surface-mount resistors and capacitors and allows users to configure and customize the accelerometer's scale factor, 0 g bias level, and bandwidth; with either ac or dc coupling. This compact (0.8" × 0.8") board provides access to every pin, including output, self-test and reference terminals — perfect for initial evaluation and introductory operation.

Mfr.'s Type	Description
ADXL202EB	ADXL202 Dual Axis Evaluation Module

Analog-to-Digital Converters

Sampling Analog-to-Digital Converters

Mfr.'s Type	Resolution in Bits	Throughput Rate kSPS Max.	Linearity Error (LSB @ TA = +25°C)	SHA BW (kHz Typ.)	Bus Interface Bits†	Reference Voltage Int./Ext.‡	Comments
PDIP							
AD7821KN	8	1000.00	±1.0	100	8, µP	0-5 V, Ext.	CMOS, Bipolar or Unipolar Operation
AD7824KN	8	400.00	±1.0	10	8, µP	0-5 V, Ext.	CMOS, 4-Channel, 8-Bit Sampling ADC
AD7828KN	8	400.00	±1.0	10	8, µP	0-5 V, Ext.	CMOS, 8-Channel, 8-Bit Sampling ADC
AD7828LN	8	400.00	±1/2	10	8, µP	0-5 V, Ext.	CMOS, 8-Channel, 8-Bit Sampling ADC
AD1674JN	12	100.00	±1.0	500	8/12/16, µP	10 V, Int.	Complete AD574A Pinout Compatible, Sampling Input, AC/DC Tested
AD976AN	16	100.00	6 max.	1500	16, 8 Par/Byte, µP	+2.5 V, Int./Ext.	16-Bit, 100 kSPS ADC

†This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. ‡Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Non-Sampling Analog-to-Digital Converters

Mfr.'s Type		Resolution in Bits	Conv. Rate (µS Max.)	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits*	Reference Voltage Int./Ext.†	Comments
Hermetic DIP	PDIP						
—	AD673JN	8	30	±1/2	8, µP	Int.	Complete 8-Bit ADC with Reference, Clock and Comparator
AD574AJD	AD574AJN	12	35	±1	8/12, µP	10 V, Int.	Complete ADC with Reference and Clock; Industry Standard
AD574AKD	AD574AKN	12	35	±1/2	8/12, µP	10 V, Int.	Complete ADC with Reference and Clock; Industry Standard
—	AD674BJN	12	15	±1	8/12, µP	10 V, Int.	Complete Monolithic 12-Bit A/D Converter with Reference, Clock, and 3-State Output Buffers

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. †Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

Sigma Delta Analog-to-Digital Converters

Mfr.'s Type		Resolution in Bits	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits*	Reference Voltage Int./Ext.†	Comments
PDIP	SOIC					
AD7712AN	—	24	±0.0045% FSR Typ.	Serial, µP	2.50 V, Int.	24-Bit ADC with 1 Differential Input Channel and 1 High Voltage Input Channel
AD7714AN-5	AD7714AR-5	24	±0.0015% FSR	Serial, µP	1.25 V, Ext.	5 V, Charge Balancing ADC with PGA, MUX and Low Pass Filter with Programmable Cutoffs

*This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µe data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. †Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.

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Digital-to-Analog Converters

A Digital-to-Analog (DAC) Converter accepts a digital input and produces an analog output. The basic DAC consists of a voltage or current reference, binary weighted precision resistors, a set of electronic switches and a means of summing the weighted currents. Three important criteria are required for selecting the right DAC — resolution, accuracy and speed. Other requirements to be considered are temperature stability, input coding, output format, reference requirements and power consumption.

Single DACs, Current Output

Mfr.'s Type		Resolution in Bits	Settling Time (µs Typ.)	Linearity Error (LSB @ TA = +25°C)	Bus Interface Bits†	Reference Voltage Int./Ext. (M)‡	Comments
PDIP	SOIC						
AD7524JN	AD7524JR	8	0.100	±1/2	8, µP	Ext. (M)	CMOS, Low Cost, 8-Bit Multiplying DAC with Latch
AD7524KN	—	8	0.100	±1/4	8, µP	Ext. (M)	CMOS, Low Cost, 8-Bit Multiplying DAC with Latch
DAC08CP	DAC08CS	8	0.085	±0.390% FS	8	Ext. (M)	8-Bit High Speed Multiplying DAC
DAC08EP	—	8	0.085	±0.190% FS	8	Ext. (M)	8-Bit High Speed Multiplying DAC
ADDAC80N-CBI-V	—	12	4.000 Max.	±1/2	12	6.3, ±2%	Low Cost, 12-Bit Digital-to-Analog Converter
DAC8043FP	—	12	0.250	1.000	Serial, µP	Ext. (M)	8-Pin DIP Serial Input 12-Bit CMOS Multiplying DAC

Single DACs, Voltage Output

AD557JN	—	8	0.800	1.000	8, µP	Int.	Lowest Cost 8-Bit DACPORT; Single +5 V Supply
AD558JN	—	8	3.000	±1/2	8, µP	Int.	10 V Out DACPORT, Single or Dual Supply
AD558KN	—	8	3.000	±1/4	8, µP	Int.	10 V Out DACPORT, Single or Dual Supply
AD7224KN	—	8	5.000 Max.	±2.000	8, µP	2-12.5 V, Ext.	CMOS, Low Cost 8-Bit DAC
AD667JN	—	12	3.000	±1/2	4/8/12, µP	10 V, Int.	Highest Accuracy Complete 12-Bit DAC
AD667KN	—	12	3.000	±1/4	4/8/12, µP	10 V, Int.	Highest Accuracy Complete 12-Bit DAC
AD7233AN	—	12	10.000 Max.	±1.000	Serial, µP	Int.	Smallest 12-Bit Serial DACPORT (8-Pin) Bipolar ±5 V Output Range
AD767KN	—	12	3.000	±1/2	12, µP	10 V, Int.	Fastest Interface Complete 12-Bit DAC
AD669AN	—	16	8.000	±4.000	16, µP	10 V, Int.	Monolithic, Complete 16-Bit DAC

†This column lists the data format for the bus with "µP" indicating microprocessor capability — i.e., for a 12-bit converter 8/12, µP indicates that the data can be formatted for an 8-bit bus or can be in parallel (12 bits) and is microprocessor compatible. ‡Ext. indicates external reference with the range of voltages listed where applicable. Ext. (M) indicates external reference with multiplying capability. Int. indicates reference is internal. A voltage value is given if the reference is pinned out.