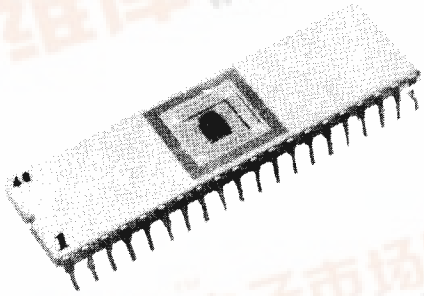
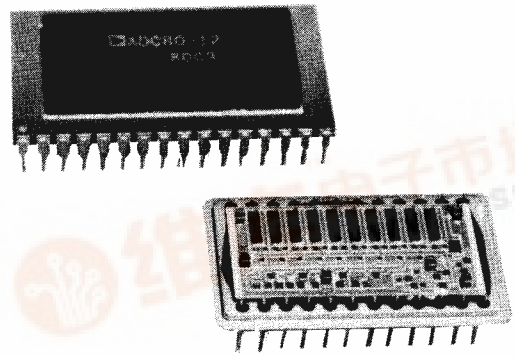
Converter IC's: A/D





INTEGRATED-CIRCUIT ANALOG-TO-DIGITAL CONVERTERS

The Analog Devices' product line of IC A/D converters consists of 12 products. Cost/performance varies from 4ms 3-digit BCD conversions to 12-bit conversions in 2.2μs.

The new AD7574 provides 8 bits in 15μs and uses only 25mW of power from a single 5V supply. This single-chip CMOS device interfaces directly to microprocessors and has no missing codes over its rated operating temperature range.

The new 10- and 12-bit AD ADC80's are improved reduced chip-count (high reliability) replacements for the other ADC80 devices. Complete with internal reference, the AD ADC80 performs 12-bit conversion in 25μs.

The AD574 is a complete μP-compatible 2-chip, 12-bit successive-approximation ADC. A built-in clock, comparator, reference, and 3-state output buffers allow direct interface with 8-, 12-, or 16-bit microprocessors. The use of laser-trimmed, thin-film resistors guarantees no missing codes over commercial and military temperature ranges.

The AD570 and AD571 are complete 8- and 10-bit monolithic A/D converters, using I^2L successive-approximation logic. The clock, voltage reference, laser-trimmed DAC, and 3-state buffers are included on the chip. No external components are needed for full-accuracy 8- and 10-bit conversion in 25μs.

The AD572, a complete 12-bit hybrid IC successive-approximation A/D converter, includes internal clock, reference comparator, and buffer amplifier. It utilizes MSI digital and linear monolithic chips and active laser trimming of high-stability thin-film resistors to provide modular performance, flexibility, and ease of use, combined with IC size, price and reliability.

The AD7550 is a 13-bit CMOS integrating A/D converter utilizing the patented "quad-slope" conversion technique. Three-state data output lines and byte control are provided for direct interfacing with microprocessors.

The AD7570 is a monolithic CMOS 10-bit successive-approximation A/D converter that requires only an external reference, comparator and passive clock components. Three-state data outputs simplify interfacing to microprocessors.

The AD2020 is a low-cost 3-BCD-digital I^2L integrating A/D converter chip for implementing a complete 3-digit DPM/DVM with only ten external components. It includes an on-chip reference and consumes only 50mW of power from a single +5V supply.

The HAS family of hybrid IC A to D converters offers extremely high speed without sacrificing precision. These 8-, 10- and 12-bit devices convert in a guaranteed 1.5μs, 1.7μs and 2.8μs respectively and guarantee no missing codes over temperature.

INTEGRATED CIRCUIT ANALOG-TO-DIGITAL CONVERTERS

SPECIFICATIONS (typical @ +25°C unless otherwise noted)

Model	Description	Resolution	Accuracy	Differential Nonlinearity	Gain T.C.	Conversion Time	Power Dissipation	Temp Range*	DIP Package	Price – $ (100's)
AD570JD	8-bit bipolar A/D	8 Bits	±1/2LSB	No missing	176ppm/°C max	25μs	275mW max	C	18 Pin	16.30
AD570SD	complete with	8 Bits	±1/2LSB	codes over	80ppm/°C max	25μs	275mW max	M	Ceramic	33.05
AD570SD/883B	reference, clock, comparator	8 Bits	±1/2LSB	temperature	80ppm/°C max	25μs	275mW max	M		38.65
AD7570JD	8- & 10-bit, ratio-	8 Bits	±0.19% max	No missing	10ppm/°C max	20μs	40mW max	C	28 Pin	24.00
AD7570LD	metric CMOS, successive approximation	10 Bits	±0.05% max	codes	10ppm/°C max	40μs	40mW max	C	28 Pin	49.00
AD7574JN	8-bit fast, ratio-	8 Bits	±3/4LSB max	No missing	ΔG: ±2LSB	15μs	25mW max	C	18 Pin	7.50
AD7574KN	metric CMOS	8 Bits	±1/2LSB max	codes over	ΔT: 100°C[1]	15μs	25mW max	C	Plastic	9.00
AD7574AD	successive	8 Bits	±3/4LSB max	temperature		15μs	25mW max	I		9.50
AD7574AD	approximation								18 Pin	
/883B	μP compatible	8 Bits	±3/4LSB max			15μs	25mW max	I	Ceramic	14.50
AD7574BD		8 Bits	±1/2LSB max			15μs	25mW max	I		11.00
AD7574BD										
/883B		8 Bits	±1/2LSB max			15μs	25mW max	I		16.00
AD7574SD		8 Bits	±3/4LSB max			15μs	25mW max	M		19.00
AD7574SD										
/883B		8 Bits	±3/4LSB max			15μs	25mW max	M		24.00
AD7574TD		8 Bits	±1/2LSB max			15μs	25mW max	M		22.00
AD7574TD										
/883B		8 Bits	±1/2LSB max			15μs	25mW max	M		27.00
AD571J	10-bit bipolar A/D	10 Bits	±1LSB max	No missing	88ppm/°C	30μs max	275mW max	C		28.35
AD571K	complete with	10 Bits	±1/2LSB max	codes	44ppm/°C	30μs max	275mW max	C	18 Pin	32.15
AD571S	reference, clock comparator	10 Bits	±1LSB max		40ppm/°C	30μs max	275mW max	M	Ceramic	61.60
AD2020	I^2L 3 digit A/D converter	3 Digits	±0.05% Rdg. ±1 Digit	No missing codes	50ppm/°C	4ms	50mW	C	16 Pin Plastic	9.00
AD ADC80-10	Improved second	10 Bits	±1/2LSB max	No missing	30ppm/°C max	21μs max	800mW	I	32 Pin	49.50
AD ADC80Z-10[2]	source for ADC80	10 Bits	±1/2LSB max	codes over	30ppm/°C max	21μs max	800mW	I	Ceramic	51.50
AD ADC80-12		12 Bits	±1/2LSB max	temperature	30ppm/°C max	25μs max	800mW	I		52.00
AD ADC80Z-12[2]		12 Bits	±1/2LSB max		30ppm/°C max	25μs max	800mW	I		54.00
AD572A	12-bit bipolar A/D	12 Bits	±0.012% max	±1/2LSB max	30ppm/°C max	25μs max	900mW	I	32 Pin	76.50
AD572B	with reference, com-	12 Bits	±0.012% max	No missing	15ppm/°C max	25μs max	900mW	I	Metal	120.50
AD572S	parator, buffer	12 Bits	±0.012% max	codes	25ppm/°C max**	25μs max	900mW	M		234.50
AD574JD	12-bit complete	12 Bits	±1LSB		50ppm/°C max	35μs max	455mW	C		34.50
AD574KD	successive	12 Bits	±1/2LSB		27ppm/°C max	35μs max	455mW	C		44.50
AD574LD	approximation	12 Bits	±1/2LSB	No missing	10ppm/°C max	35μs max	455mW	C		65.00
AD574SD	A/D including	12 Bits	±1LSB	codes	50ppm/°C max	35μs max	455mW	M	28 Pin	95.00
AD574TD	reference and clock	12 Bits	±1/2LSB		25ppm/°C max	35μs max	455mW	M	Ceramic	130.00
AD574UD	μP compatible	12 Bits	±1/2LSB		12.5ppm/°C max	35μs max	455mW	M		190.00
AD7550BD	13-bit, quad slope A/D	13 Bits	±1LSB max	No missing codes	1ppm/°C	40ms	9mW	C	40 Pin	25.00
HAS-0802	Ultra fast complete	8 Bits	±1/4LSB	No missing	30ppm/°C	1.2μs	1.8W	C***	32 Pin	133.00
HAS-1002	successive approxi-	10 Bits	±1/2LSB	codes over	30ppm/°C	1.4μs	1.8W	C***	32 Pin	149.00
HAS-1202	mation A/D's with clock, ref, comparator	12 Bits	±1/2LSB	temperature	30ppm/°C	2.2μs	1.8W	C***	32 Pin	173.00

*C = 0 to +70°C, I = –25°C to +85°C, M = –55°C to +125°C **±15ppm/°C max for temperature range –25°C to +85°C

***Extended temperature ranges available; consult factory. [1] Gain error over temperature [2] ±12V Operation