D/A Converters

Harris supplies digital-to-analog converters (D/A converters) with 8-bit, 10-bit, 12-bit, 14-bit and 16-bit resolution. All are four-quadrant multiplying D/A converters using thin-film resistors and CMOS circuitry for high accuracy and low power dissipation. All are microcomputer compatible, with input protection against damage from electrostatic discharge.

CMOS D/A Converters

Type	Res. (Bits)	Settling Time to ½ LSB	Integral Non-Linearity (± %FSR : LSB)	Diff. Non-Linearity (± LSB)	Gain Error (±%FSR)	Output I/V	Input Buffer	Power Supply (V)	Temp. Range (°C)	Comment
AD7523	8	200ns max.	0.2 : ½ 0.1 : ¼ 0.05 : ⅛	Guaranteed monotonic	1.8 max.	I	No	5 to 16	0 to +70 -55 to +125	Multiplying DAC Industry standard
CA3338 CA3338A	8	20ns	0.4 : 1 0.3 : ¾	¾ ½		V	Yes	5	-40 to +85 -55 to +125	Video applications Low glitch
AD7520 AD7530	10	500ns	0.2 : 2 0.1 : 1 0.05 : ½		0.3	I	No	5 to 16	0 to +70 -25 to +85 -55 to +125	Multiplying DAC Industry standard
AD7533	10	800ns max.	0.2 : 2 0.1 : 1 0.05 : ½		1.5 max	I	No	5 to 16	0 to +70	Multiplying DAC Industry standard Low cost
AD7521 AD7531	12	500ns	0.2 : 8 0.1 : 4 0.05 : 2		0.3	I	No	5 to 16	0 to +70 -25 to +85 -55 to +125	Multiplying DAC Industry standard
AD7541	12	1µs max.	0.024 : 1 0.012 : ½ 0.012 : ½	 >½	0.4 max.	I	No	5 to 16	0 to +70 -25 to +85 -55 to +125	Multiplying DAC High performance Industry standard
AD7545	12	2µs max.	0.05 : 2 0.024 : 1 0.012 : ½	4 1 1	0.6 0.4 0.2	I	Yes	5 to 15	0 to +70 -40 to +85 -55 to +125	Mulitplying DAC Industry standard
ICL7134	14	1µs	0.012 : 3/2 0.006 : 1 0.003 : ½	12 Bit 13 mono- 14 tonic	0.024 0.012 0.006	I	Yes double	3.5 to 6.0	0 to +70 -25 to +85 -55 to +125	On-chip PROM Controlled Correction DAC
ICL7121	16	3µs max.	0.009 : 6 0.006 : 4 0.003 : 2 (1 LSB typ.)	14 Bit 15 mono- 16 tonic	0.04 0.02 0.01	I	Yes	4.5 to 5.5	0 to +70 -55 to +125	On-chip PROM Controlled Correction DAC

Bipolar D/A Converters

Type	Res. (Bits)	Settling Time to ½ LSB	Integral Non-Linearity (± %FSR : LSB)	Diff. Non-Linearity (± LSB)	Gain Error (±%FSR)	Output I/V	Input Buffer	Power Supply (V)	Temp. Range (°C)	Comment
ICL8018A ICL8019A ICL8020A	4	200ns (12 bits)	0.01 Maximum absolute error at any 0.1 Input Code 1			I	No	+5 -15	0 to +70 -55 to +125	4-bit expandable current-switch
HI-562A	12	300ns	0.012 : ½	½	0.024	I	No	+5 -15	0 to +75 -25 to +85 -55 to +125	Industry standard
HI565A	12	350ns	0.012 : ½	¾	0.1	I	No	±12	0 to +75 -55 to +125	On-chip +10V reference
HI-DAC80V	12	1.5µs	0.012 : ½	¾	0.3 max.	V	No	±15	0 to +75	On-chip reference and output op-amp
HI-DAC85V	12	1.5µs	0.012 : ½	½	0.15 max.	V	No	±15	-25 to +85	On-chip reference and output op-amp
HI-DAC87V /883	12	2.0µs	0.018 : ¾	1	0.45 max.	V	No	±15	-55 to +125	On-chip reference and output op-amp Mil. temp. range
HI-DAC16B HI-DAC16C	16	1µs (14 bits)	0.002 : 3/2 0.0045 : 3 (typ.)	1 2 (typ.)	0.1	I	No	±15	0 to +75	High temperature stability