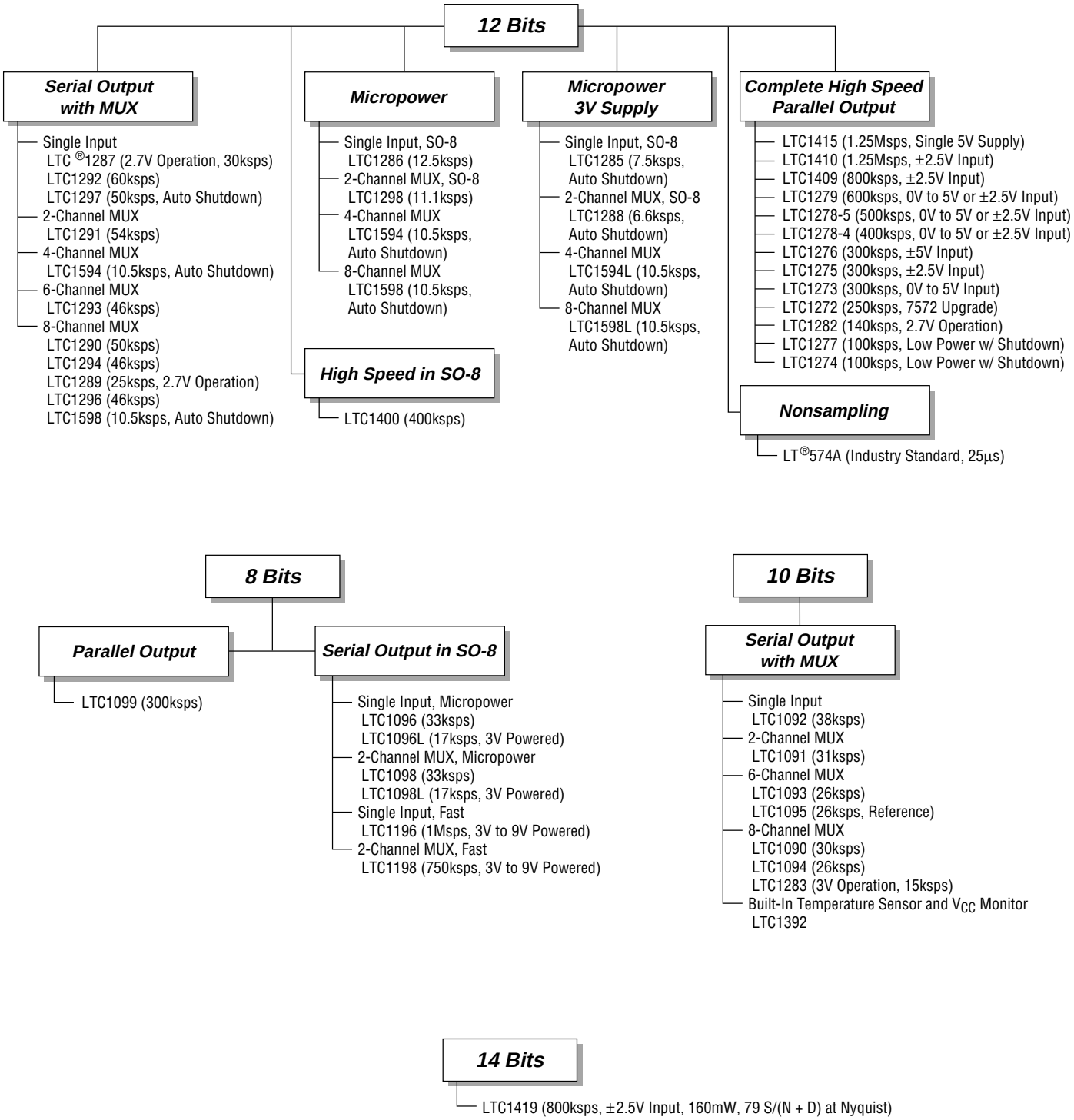
Analog-to-Digital Converters



Complete Linear Technology 12-Bit A/D Feature Matrix

	SAMPLE RATE (ksps)	CONVERSION TIME (µs)	SUPPLY CURRENT (mA)	MICROPOWER	3V SINGLE SUPPLY OPERATION	5V SINGLE SUPPLY OPERATION	NUMBER OF INPUT CHANNELS	DIFFERENTIAL INPUT	BIPOLAR INPUT CAPABILITY	HALF-DUPLEX SERIAL I/O	FULL-DUPLEX SERIAL I/O	PARALLEL I/O	SOFTWARE PROGRAMMABLE	ONBOARD REFERENCE	MIN SPAN. (V)	SHUTDOWN	PACKAGES	NUMBER OF PINS	SINAD AT NYQUIST (dB)	DATABOOK PAGE
LTC1415	1250	0.75	20			✓		✓				✓		✓		✓	SO	28	70	DS**
LTC1410	1250	0.75	12/–20					✓	✓			✓		✓	±2.5	✓	G, SO	28	71	95DB 13-97
LTC1409	800	1.1	6/–10					✓	✓			✓		✓	±2.5	✓	SO	28	71	DS**
LTC1279	600	1.4	12			✓			✓			✓		✓	5/±2.5	✓	SW	24	70	95DB 6-8
LTC1278-5	500	1.6	15			✓			✓			✓		✓	5/±2.5	✓	SW	24	70	94DB 6-80
LTC1278-4	400	2	15			✓			✓			✓		✓	5/±2.5	✓	N, SW	24	70	94DB 6-80
LTC1400	400	2.1	15			✓			✓	✓				✓	4.1	✓	S8	8	70	95DB 13-86
LTC1273	300	2.7	15			✓						✓		✓	5		N, SW	24	70	94DB 6-58
LTC1275	300	2.7	15						✓			✓		✓	±2.5		N, SW	24	70	94DB 6-58
LTC1276	300	2.7	15						✓			✓		✓	±5		N, SW	24	70	94DB 6-58
LTC1272-3	250	3	15			✓						✓		✓	NA		N, SW	24	65	92DB 6-6
LTC1282	140	5	4		✓				✓			✓		✓	2.5/±1.25		N, SW	24	68	94DB 6-95
LTC1272-8	110	8	15			✓						✓		✓	NA		N, SW	24		92DB 6-6
LTC1274	100	8	2			✓			✓			✓		✓	4	✓	SW	24	73	95DB 13-22
LTC1277	100	8	2			✓		✓	✓			✓		✓	4	✓	SW	24	73	95DB 13-22
LTC1292	60	12	6			✓		✓		✓					1.2		N8	8		94DB 6-182
LTC1291	54	12	6			✓	2	✓		✓			✓		NA	✓	N8	8		94DB 6-163
LTC1290	50	13	6			✓	8	✓	✓		✓		✓		1.2	✓	N, SW	20		92DB 6-67
LTC1297	50	12	6			✓		✓		✓					1.2	✓	N8	8		94DB 6-182
LTC1293	46	12	6			✓	6	✓	✓	✓			✓		1.2	✓	N, SW	16		92DB 6-113
LTC1294	46	12	6			✓	8	✓	✓	✓			✓		1.2	✓	N	20		92DB 6-113
LTC1296	46	12	6			✓	8	✓	✓	✓			✓		1.2	✓	N	20		92DB 6-113
LTC1287	30	24	1.5		✓			✓		✓					1.2		N8	8		92DB 6-25
LTC1289	25	26	1.5		✓		8	✓	✓		✓		✓		1.2	✓	N, SW	20		92DB 6-40
LTC1286	12.5	80	0.250*	✓		✓		✓		✓					1.2	✓	N8, S8	8		94DB 6-140
LTC1298	11.1	90	0.340*	✓		✓	2	✓		✓			✓		4.5	✓	N8, S8	8		94DB 6-140
LTC1594	10.5	60	0.160*	✓		✓	4			✓			✓		1.2	✓	SO	16		DS**
LTC1594L	10.5	60	0.160*	✓	✓		4			✓			✓		1.2	✓	SO	16		DS**
LTC1598	10.5	60	0.160*	✓		✓	8			✓			✓		1.2	✓	G	24		DS**
LTC1598L	10.5	60	0.160*	✓	✓		8			✓			✓		1.2	✓	G	24		DS**
LTC1285	7.5	125	0.160*	✓	✓			✓		✓					1.2	✓	N8, S8	8		95DB 6-24
LTC1288	6.6	141	0.210*	✓	✓		2	✓		✓			✓		2.7	✓	N8, S8	8		95DB 6-24
LT574A	—	25	40/–25									✓		✓	10		N	28		95DB 6-48

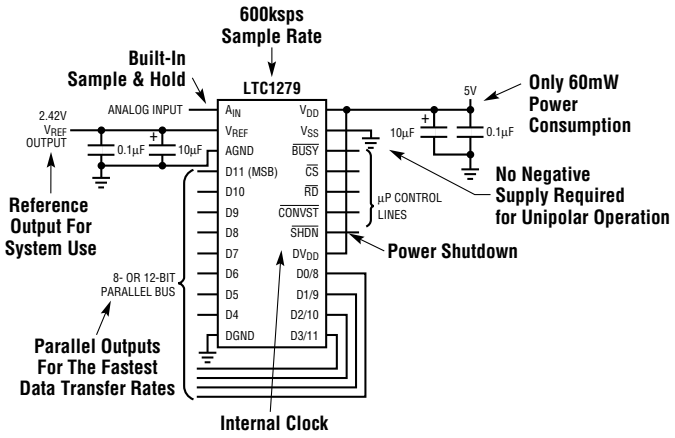
*Average supply current drops with sample rate. Supply current listed is a $f_{SAMPLE(MAX)}$

**DS = Data sheet

High Speed 12-Bit A/D Converters—World's Best Power/Speed Ratio

- Up to 1.25Msps (LTC1410)
- ±5V or 5V Supply Operation*
- High Bandwidth Sample-and-Hold (LTC1410: 20MHz)
- Excellent SINAD at Nyquist (≥70dB)
- Surface Mount Packages
- Nap and Sleep Modes for Instant Wakeup*
- Internal Reference
- Internal Synchronized Clock*

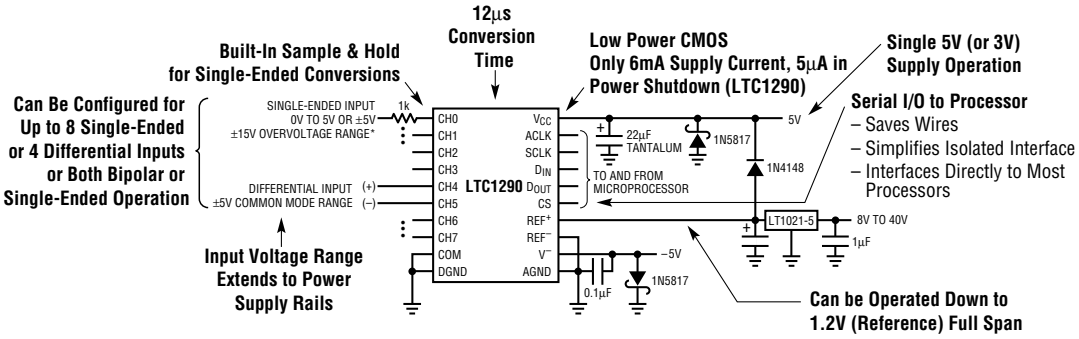
*See the A/D Feature Matrix for Devices Which Contain This Feature



- LTC1279: 600ksps with Shutdown

Serial I/O 12-Bit A/D Converters

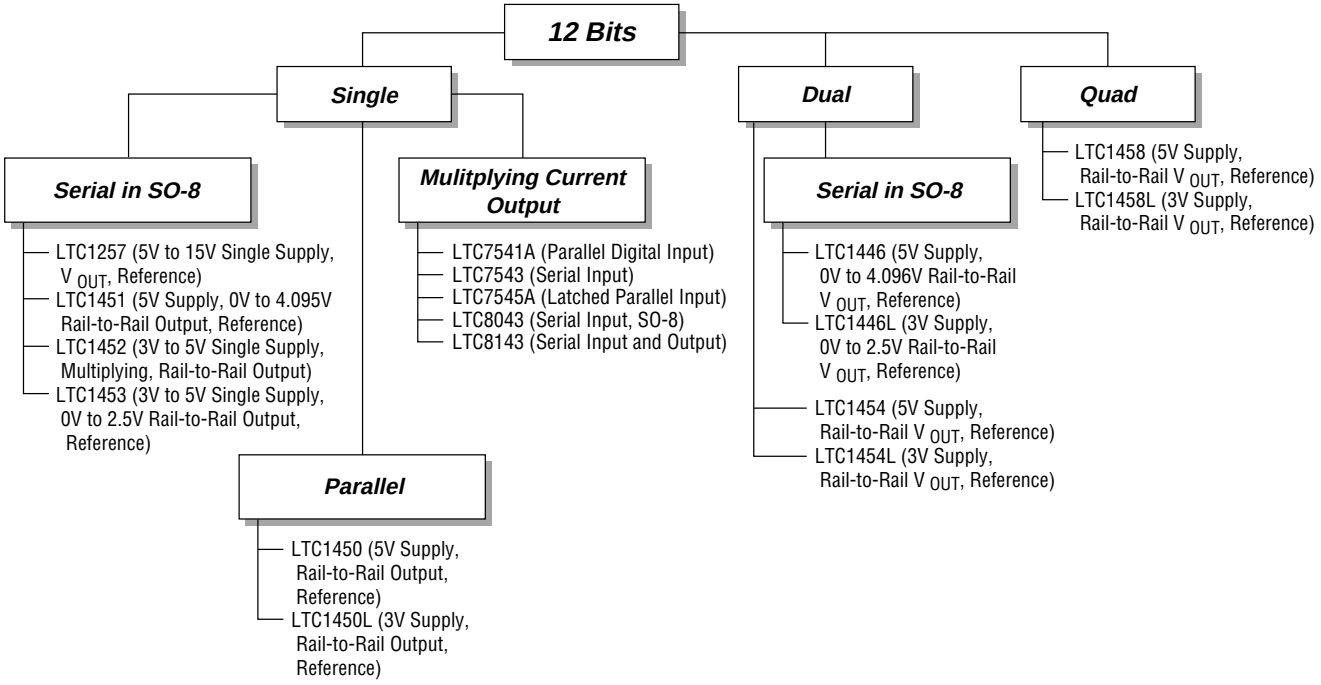
12-Bit Serial Interface A/D Converter Systems



Comparison of Specs and Features

Device Type	Analog Input Channels	Supply Voltage (V)	Sample Rate (ksps)	Number of Pins	Full/Half Duplex I/O	Auto Shutdown
LTC1285	1	3	7.5	8	Half	X
LTC1286	1	3	12.5	8	Half	X
LTC1287	1	3	30	8	Half	
LTC1288	2	5	6.6	8	Half	X
LTC1289	8	3/±3	25	20	Full	
LTC1290	8	5/±5	50	20	Full	
LTC1291	2	5	54	8	Half	
LTC1292	1	5	60	8	Half	
LTC1293	6	5/±5	46	16	Half	
LTC1294	8	5/±5	46	20	Half	
LTC1296	8	5/±5	46	20	Half	
LTC1297	1	5	50	8	Half	X
LTC1298	2	5	11.1	8	Half	X
LTC1594	4	5	16.8	16	Half	X
LTC1594L	4	3	10.5	16	Half	X
LTC1598	8	5	16.8	24	Half	X
LTC1598L	8	3	10.5	24	Half	X

Digital-to-Analog Converters



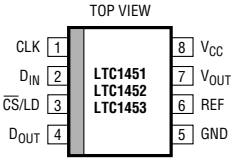
Complete V_{OUT} DACs

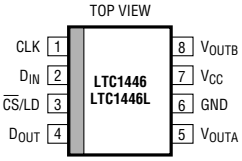
12-Bit

	I/O	REF	V_{OUT}	DAISY CHAIN	V_{CC}	P_{DIS} (mW)	PINS	PACKAGES	POWER-ON RESET
Single									
LTC1257	Serial	✓	0V to 2.048V	✓	4.5V to 15V	1.7	8	PDIP/SO	
LTC1451	Serial	✓	0V to 4.096V	✓	4.5V to 6.5V	2.0	8	PDIP/SO	✓
LTC1452	Serial		0V to 2(V_{REF})	✓	2.7V to 6.5V	1.1	8	PDIP/SO	✓
LTC1453	Serial	✓	0V to 2.5V	✓	2.7V to 3.5V	0.75	8	PDIP/SO	✓
LTC1450	Parallel	✓	0V to 4.096V/ Ext V_{REF}		4.5V to 5.5V	2.0	24	PDIP/SSOP	✓
LTC1450L	Parallel	✓	0V to 2.5V/ Ext V_{REF}		2.7V to 3.5V	0.75	24	PDIP/SSOP	✓
Dual									
LTC1446	Serial	✓	0V to 4.096V	✓	4.5V to 5.5V	2.25	8	SO/PDIP	✓
LTC1446L	Serial	✓	0V to 2.5V	✓	2.7V to 3.5V	1.35	8	SO/PDIP	✓
LTC1454	Serial	✓	Variable	✓	4.5V to 5.5V	2.25	16	SO	✓
LTC1454L	Serial	✓	Variable	✓	2.7V to 3.5V	1.35	16	SO	✓
Quad									
LTC1458	Serial	✓	0V to 4.096V	✓	4.5V to 5.5V	6.5	28	SO/SSOP	✓
LTC1458L	Serial	✓	0V to 2.5V	✓	2.7V to 3.5V	2.7	28	SO/SSOP	✓

Multiplying Current Output

	RESOLUTION (BITS)	I/O	V_{CC}	COMMENTS
LTC7541A	12	Parallel	5V	
LTC7543	12	Serial	5V	
LTC7545	12	Parallel	5V	Microprocessor Compatible
LTC8043	12	Serial	5V	SO-8
LTC8143	12	Serial	5V	Daisy-Chain Serial Data Output





Complete 12-Bit Single and Dual DACs in SO-8 Packages!!