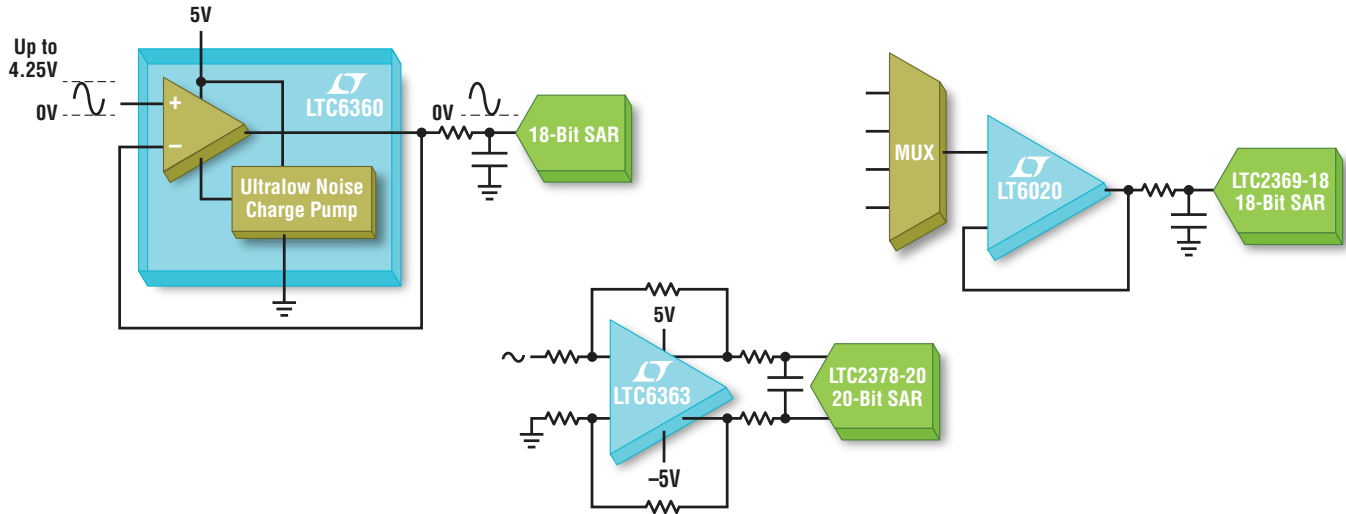


SAR ADC Drivers



Linear Technology offers a wide range of amplifiers for driving the industry's highest performance successive approximation register (SAR) ADCs, including:

LTC®6363: High Performance Low Power Differential Driver

- 100 μ V Max V_{OS} , 2.9nV/ $\sqrt{\text{Hz}}$ e_n
- Single-Ended or Differential In, Differential Out
- 1.8mA I_S , 20 μ A Shutdown
- 780ns 18-Bit, 8V $_{P-P}$ Settling

LT®6350: Low Noise Single-Ended to Differential Conversion

- 350ns Settling to 16 Bits
- 400 μ V Max V_{OS} , 1.9nV/ $\sqrt{\text{Hz}}$ e_n
- 2.7V to 12V Supply

LT6020: Precision Op Amp for Low Power, Fast Multiplexing

- 100 μ A/Amplifier, 5V/ μ s Enhanced Slew Rate
- 30 μ V Maximum V_{OS} , 0.5 μ V/ $^{\circ}$ C Maximum Drift
- High Dynamic Input Impedance

LTC6246/LTC6247/LTC6248, LTC6252/LTC6253/LTC6254, LTC6255/LTC6256/LTC6257: Power Efficient Op Amps

- Single in SOT-23, Dual in 2mm x 2mm DFN, SOT-23, MSOP, Quad in MSOP Packages
- LTC6252: 720MHz GBW, 2.75nV/ $\sqrt{\text{Hz}}$ e_n , 3.5mA Max
- LTC6246: 180MHz GBW, 4.2nV/ $\sqrt{\text{Hz}}$ e_n , 1mA Max
- LTC6255: 6.5MHz GBW, 20nV/ $\sqrt{\text{Hz}}$ e_n , 85 μ A Max

Linear Technology Signal Chain Products



Differential Amplifiers



Precision Amplifiers
High Speed Amplifiers



Comparators



Filters



Matched Resistors



Delta Sigma ADCs



SAR ADCs



High Speed ADCs



Switches and
Multiplexers



VREF Voltage References



D-to-A Converters



TimerBlox® Silicon Timers and
Silicon Oscillators



Interface and Isolation



WSN Wireless Sensor Networks



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Differential Output Amplifiers for SAR ADCs

Part Number	Input	V _{OS} Max 25°C (μV)	I _B Max 25°C (nA)	GBW Typ 25°C (MHz)	0.1% Settling Time (ns)	e _n Typ 25°C (nV/√Hz)	I _S Max 25°C (mA)	V _S Min (V)	V _S Max (V)	Rail-to-Rail I/O
LTC6363	SE, Diff	100	1000	500	350	2.9	1.8	2.8	11	Out
LTC6362	SE, Diff	200	260	180	230	3.9	0.96	2.8	5.25	Yes
LT6350	SE	500	6800	85	200	1.9	5.8	2.7	12	Yes
LTC1992	SE, Diff	2500	0.25	4		45	1	2.7	12	Out
LT1994	SE, Diff	2000	45000	70	90	3	18.5	2.375	12.6	Out
LTC6403	SE, Diff	1500	25000	200	30	2.8	11.8	2.7	5.25	Out
LTC6404	SE, Diff	2000	60000	500	13	1.5	35.5	2.7	5.25	Out
LTC6405	SE, Diff	3500	24000	2700	11	1.6	23	4.5	5.5	In
LTC6406	SE, Diff	3500		3000	11	1.6	22	2.7	3.5	In
LTC6409	SE, Diff	1000	14000	10000	1.9	1.1	56	2.7	5.25	SS

Good
Better
Best



Operational Amplifiers for Driving SAR ADCs

Highest Precision

Single Part Number	Dual Part Number	Quad Part Number	V _{OS} Max 25°C (μV)	I _B Max 25°C (nA)	GBW Typ 25°C (MHz)	0.1% Settling Time (ns)	e _n Typ 25°C (nV/√Hz)	I _S Max 25°C (mA)	V _S Min (V)	V _S Max (V)	Rail-to-Rail I/O
LTC2054	LTC2055		3	0.15	0.5	5000		0.18	2.7	12	Out
LTC2050	LTC2051	LTC2052	3	0.05	3	2000		1.5	2.7	12	Out
LTC2057			4	0.015	1.5		11	1.21	4.75	60	Out
	LTC6078	LTC6079	25	0.001	0.75	24000	18	0.072	2.7	6	Yes
LT1007			25	0.1	8		2.5	4	4	44	
	LT6023		30	3	0.04	40000	132	0.02	3	30	Out
	LT6020		30	3	0.4	6000	46	0.1	3	30	Out
LT1028			40	90	75		0.85	9.5	8	44	
LT1097			50	0.25	0.7		14	0.56	2	40	
LT6015	LT6016	LT6017	50	5	3.2	3500	18	0.335	3	50	OTT
LT6018			50	150	15	1200	1.2	7.67	8	33	
LT1677			60	20	7.2	5000	3.2	3.5	2.5	44	Yes
	LT2078	LT2079	70	8	0.2	10000	28	0.05	2.3	44	SS
	LTC6081	LTC6082	70	0.001	3.6	6000	13	0.43	2.7	5.5	Yes
	LT1124	LT1125	70	20	12.5		2.7	2.75	8	44	
LT1468	LT1469		75	40	90	760	5	5	9	36	
LT1468-2	LT1469-2		75	40	200	600	5	5	9	36	
	LT1678	LT1679	100	20	20		3.9	3.4	3	36	Yes
	LTC6244		100	0.075	50	535	8	7.4	2.8	7	Out
LTC6240	LTC6241	LTC6242	125	0.075	18	900	7	2.2	2.8	6	Out
	LT1211	LT1212	150	100	13	900	12	1.8	2.5	36	SS
	LT1492	LT1493	180	100	4.5	2600	16.5	0.55	2.1	36	SS
	LT1498	LT1499	475	650	10.5		12	2.2	2.2	36	Yes
LT6003	LT6004	LT6005	500	0.09	0.002		325	0.001	1.6	16	Yes
LTC6255	LTC6256	LTC6257	350	60	6.5	4000	20	0.073	1.8	5.25	Yes
LT6230-10			500	10000	1450		1.1	3.75	3	12.6	Out
LT6000	LT6001	LT6002	600	5	0.05		75	0.016	1.8	18	Yes
	LT1630	LT1631	525	1000	30	520	6	4.4	2.6	36	Yes
	LT1632	LT1633	1350	2200	45	400	12	5.2	2.6	36	Yes
LT1803	LT1804	LT1805	2000	750	80	350	21	3	2.3	12.6	Yes
LT6220	LT6221	LT6222	350	150	60	300	10	1	2.2	12.6	Yes
LT1800	LT1801	LT1802	350	250	80	250	8.5	2	2.3	12.6	Yes
LT1354	LT1355	LT1356	800	300	12	230	10	1.25	5	36	
LT6233	LT6234	LT6235	350	3000	60	170	1.9	1.25	3	12.6	Out
LT6200	LT6201		1000	40000	165	140	0.95	23	2.5	12.6	Yes
LT1357	LT1358	LT1359	600	500	25	115	8	2.5	5	36	
LT1226			1000	8000	1000	100	2.6	9	5	36	
LT1722	LT1723	LT1724	400	300	200	91	3.8	4.5	4.6	12.6	
LT6202	LT6203	LT6204	500	7000	100	78	1.9	3.5	2.50	12.6	Yes
LT1222			300	300	500	75	3	10.5	5	36	
LTC6246	LTC6247	LTC6248	500	350	180	74	4.2	1	2.5	5.25	Yes
LT1360	LT1361	LT1362	1000	1000	50	60	9	4.8	3	36	
LT1806	LT1807		550	4000	325	60	3.5	13	2.5	12.6	Yes
LT1363	LT1364	LT1365	1500	2000	70	50	9	7.5	3	36	
LT6236	LT6237	LT6238	500	10000	215	50	1.1	3.75	3	12.6	Out
LT6360			250	30000	1000	45	2.3	17.5	4.75	5.25	Out
LTC6252	LTC6253	LTC6254	350	650	720	36	2.75	3.5	2.5	5.25	Yes
LT1812	LT1813	LT1814	1500	4000	100	30	8	3.6	2.5	12.6	
LT1809	LT1810		2500	8000	160	27	16	17	2.5	12.6	Yes
LT1815	LT1816	LT1817	1500	8000	220	15	6	7.8	2.5	12.6	
LT1818	LT1819		1500	8000	400	10	6	10	3.5	12.6	

Fastest

* Some parameters vary between single/dual/quad versions. For a complete list of products and full specifications visit www.linear.com

OTT = Over-The-Top®. This feature allows full functionality when the input voltage exceeds the supply voltage.

SS = Single Supply. Input common mode range includes V⁻. See data sheet for details.