

Amplifiers and comparators



Selection guide



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Current sensing

CURRENT SENSING

Part number	Description	Features	Package	AG ⁽¹⁾	Operating temperature (°C)	Supply current max (µA)	Common mode input voltage		Supply voltage (V)	Voltage gain (V/V)
							min (V)	max (V)		
TSC101	High-side current sense amplifier	Independent supply and input common-mode voltages, buffered output	SOT23-5	Yes	-40 to 125	300	2.8	30	4 to 24	20, 50, 100
TSC102	High-side current sense amplifier plus signal conditioning amplifier	Integrates a standalone operational amplifier for signal post processing	SO-8, TSSOP8	Yes	-40 to 125	420	2.8	30	3.5 to 5.5	20
TSC103	High-voltage, high-side current sense amplifier	Monitors lines as high as 70 V, pin-selectable gain	SO-8, TSSOP8	Yes	-40 to 125	360	2.9	70	2.7 to 5.5	20, 25, 50, 100
TSC1021	High-side current sense amplifier	Monitors lines as high as 30 V, accurate gain stable over temperature variations	TSSOP8	Yes	-40 to 125	300	2.8	30	3.5 to 5.5	20, 50
TSC1031	High-voltage high-side current sense amplifier	Monitors lines as high as 70 V, pin-selectable gain, external EMI filter capability	SO-8, TSSOP8	Yes	-40 to 125	360	2.9	70	2.7 to 5.5	50, 100
TSC888	Low-cost high-side current sense amplifier	Independent supply and input common-mode ranges, buffered output	SOT23-5	–	-40 to 85	1000	2.8	24	4 to 24	20, 50, 100

(1) Automotive grade

OPERATIONAL AMPLIFIERS

Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
Rail-to-rail op amps														
TSX561/561A	Micropower, wide bandwidth 16 V CMOS op amps	SOT23-5	—	1	-40 to 125	360	3 to 16	1/0.6	100	0.9	1.1	90	I/O	48
TSV521/522/524	Micropower, high merit factor CMOS op amps	SC70-5, DFN8, MiniSO-8, TSSOP-14, QFN16	Yes ⁽²⁾	1/2/4	-40 to 125	60	2.7 to 5.5	1	10	1.15	0.89	55	I/O	57
TSV521A/522A/524A	Micropower, high merit factor CMOS op amps	SC70-5, DFN8, MiniSO-8, TSSOP-14, QFN16	Yes ⁽²⁾	1/2/4	-40 to 125	60	2.7 to 5.5	0.6	10	1.15	0.89	55	I/O	57
TSV611A/612A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	0.8	10	0.12	0.034	20	I/O	105/110
TSV6191A/6192A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	0.8	10	0.12	0.034	20	I/O	110
TSV620A/621A/622A/623A/624A/625A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	0.8	10	0.42	0.14	69	I/O	70/77
TSV6290A/6291A/6292A/6293A/6294A/6295A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	0.8	10	1.3	0.5	69	I/O	70/77
TSV630A/631A/632A/633A/634A/635A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	0.5/0.8	10	0.88	0.34	69	I/O	65/60
TSV6390A/6391A/6392A/6393A/6394A/6395A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	0.5	10	2.4	1.1	69	I/O	60

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (µA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/µs)	typ (mA)		typ (nV/√ Hz)
TSV611/612	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	4	10	0.12	0.034	20	I/O	105/110
TSV6191/6192	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	4	10	0.12	0.034	20	I/O	110
TSV620/621/622/623/624/625	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	4	10	0.42	0.14	69	I/O	70/77
TSV6290/6291/6292/6293/6294/6295	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	4	10	1.3	0.5	69	I/O	70/77
TSV630/631/632/633/634/635	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	3	10	0.88	0.34	69	I/O	65/60
TSV6390/6391/6392/6393/6394/6395	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	3	10	2.4	1.1	69	I/O	60
TSV991A/992A/994A	Rail-to-rail input/output high merit factor op amps	SOT23-5, MiniSO-8, SO-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	1100	2.5 to 5.5	1.5	10	20	10	35	I/O	27
TSV991/992/994	Rail-to-rail input/output high merit factor op amps	SOT23-5, MiniSO-8, SO-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	1100	2.5 to 5.5	4.5	10	20	10	35	I/O	27
TSV911A/912A/914A	Rail-to-rail input/output wide bandwidth op amps	SOT23-5, DFN8, MiniSO-8, SO-8, SO-14, TSSOP-14	Yes	4	-40 to 125	1100	2.5 to 5.5	1.5	10	8	4.5	35	I/O	21
TSV911/912/914	Rail-to-rail input/output wide bandwidth op amps	SOT23-5, DFN8, MiniSO-8, SO-8, SO-14, TSSOP-14	Yes	4	-40 to 125	1100	2.5 to 5.5	4.5	10	8	4.5	35	I/O	21

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
TSV912H	High-temperature rail-to-rail input/output wide bandwidth op amp	SO-8	Yes	2	-40 to 150	1100	2.5 to 5.5	4.5	10	8	4.5	35	I/O	27
TS982	High output current dual op amp	PowerSO-8	Yes	2	-40 to 125	7200	2.5 to 5.5	5	500,000	2.2	0.7	200	I/O	17
TS951/952/954	Real input and output rail-to-rail op amps, low distortion (0.01 %)	SOT23-5, DIP-8, SO-8, TSSOP-8, SO-14, TSSOP-14	—	1/2/4	-40 to 125	1300	2.7 to 12	6	100,000	3	1	22	I/O	25
TS9511	Precision rail-to-rail input/output 3 MHz single op amp	SOT23-5	Yes	1	-40 to 125	1200	2.7 to 12	0.8	70,000	3	1	20	I/O	25
TS921/922/924/925	Excellent audio performance, low distortion (0.005 %) op amps	FlipChip8, DIP-8, SO-8, TSSOP-8, DIP-14, SO-14, TSSOP-14, SO-16, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	1500	2.7 to 12	0.9/3	100,000	4	1.3	80	I/O	9
TS507	High-precision single supply rail-to-rail op amp	SO-8, SOT23-5	Yes	1	-40 to 125	1150	2.5 to 5.5	0.1	70,000	1.9	0.6	128	I/O	12
LMV321/358/324	Low-cost low-power rail-to-rail input/output op amps	SOT23-5, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	200	2.7 to 6	3	50,000	1	0.35	48	I/O	40
TSV321/358/324	General-purpose low-voltage rail-to-rail input/output op amps	SOT23-5, MiniSO-8, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	835	2.5 to 6	3	125,000	1.4	0.6	80	I/O	27
TS1871/1872/1874	1.8 V min. voltage supply, micropower op amps	SOT23-5, MiniSO-8, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	4	-40 to 125	560	2 to 6	1.5/3	125,000	1.6	0.54	65	I/O	27
TS1851/1852/1854	1.8 V min. voltage supply, micropower op amps	SOT23-5, SO-8, SO-14, TSSOP-14	—	1/2/4	-40 to 125	170	1.8 to 6	3	50,000	0.48	0.18	29	I/O	40

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (µA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/µs)	typ (mA)		typ (nV/√ Hz)
TS912/914	Low-power op amps with CMOS inputs	DIP-8, SO-8, SO-14, TSSOP-14	Yes	2/4	-40 to 125	350	2.7 to 16	2/5/10	150	1	0.8	60	I/O	30
TS9222/9224	Precision rail-to-rail high output current op amps	SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	2/4	-40 to 125	1200	2.7 to 12	0.5	55,000	4	1.3	80	I/O	9
TSZ121⁽³⁾	1.8 V, zero drift micropower, rail-to-rail amplifier	SC70-5, SOT23-5	—	1	-40 to 125	40	1.8 to 5.5	0.02	10	0.4	0.1	10	I/O	50
TSV711⁽³⁾	1.5 V, high-accuracy, micropower CMOS amplifier	SC70-5	—	1	-40 to 125	14	1.5 to 5.5	0.2	10	0.1	0.04	7	I/O	100
TSV731⁽³⁾	1.5 V, high-accuracy, micropower CMOS amplifier	SC70-5	—	1	-40 to 125	58	1.5 to 5.5	0.2	10	0.85	0.35	7	I/O	35
Micropower I_{cc} < 200 µA														
TSV521/522/524	Micropower, high merit factor CMOS op amps	SC70-5, DFN8, MiniSO-8, TSSOP-14, QFN16	Yes ⁽²⁾	1/2/4	-40 to 125	60	2.7 to 5.5	1	10	1.15	0.89	55	I/O	57
TSV521A/522A/524A	Micropower, high merit factor CMOS op amps	SC70-5, DFN8, MiniSO-8, TSSOP-14, QFN16	Yes ⁽²⁾	1/2/4	-40 to 125	60	2.7 to 5.5	0.6	10	1.15	0.89	55	I/O	57
TSV611A/612A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	0.8	10	0.12	0.034	20	I/O	105/110
TSV6191A/6192A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	0.8	10	0.12	0.034	20	I/O	110
TSV620A/621A/622A/623A/624A/625A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	0.8	10	0.42	0.14	69	I/O	70/77
TSV6290A/6291A/6292A/6293A/6294A/6295A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	0.8	10	1.3	0.5	69	I/O	70/77

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (µA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/µs)	typ (mA)		typ (nV/√ Hz)
TSV630A/631A/632A/633A/634A/635A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	0.5/0.8	10	0.88	0.34	69	I/O	65/60
TSV6390A/6391A/6392A/6393A/6394A/6395A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	0.5	10	2.4	1.1	69	I/O	60
TSV611/612	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	4	10	0.12	0.034	20	I/O	105/110
TSV6191/6192	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	4	10	0.12	0.034	20	I/O	110
TSV620/621/622/623/624/625	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	4	10	0.42	0.14	69	I/O	70/77
TSV6290/6291/6292/6293/6294/6295	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	4	10	1.3	0.5	69	I/O	70/77
TSV630/631/632/633/634/635	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	3	10	0.88	0.34	69	I/O	65/60
TSV6390/6391/6392/6393/6394/6395	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	3	10	2.4	1.1	69	I/O	60
TSV850A/851A/852A/853A/854A/855A	Low-power, high-accuracy, general-purpose op amps	SOT23-6, SC70-5, SOT23-5, MiniSO-8, SO-8, TSSOP-10, SO-14, TSSOP-14, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	180	2.5 to 5.5	0.8	60,000	1.3	0.7	43	0	39

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (µA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/µs)	typ (mA)		typ (nV/√ Hz)
TSV850/851/852/853/854/855	Low-power, general-purpose op amps	SOT23-6, SC70-5, SOT23-5, MiniSO-8, SO-8, TSSOP-10, SO-14, TSSOP-14, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	180	2.5 to 5.5	4	60,000	1.3	0.7	43	0	39
TS1851/1852/1854	1.8 V min. voltage supply, micropower op amps	SOT23-5, SO-8, SO-14, TSSOP-14	—	1/2/4	-40 to 125	170	1.8 to 6	3	50,000	0.48	0.18	29	I/O	40
LMX321/358/324	Low-power, general-purpose op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SO-14, TSSOP-14	—	1/2/4	-40 to 125	180	2.5 to 5.5	4	60,000	1.3	0.7	43	0	39
LMV321/358/324	Low-cost low-power rail-to-rail input/output op amps	SOT23-5, MiniSO-8, SO-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	200	2.7 to 6	3	50,000	1	0.35	46	I/O	40
TS941A/942A/944A	Ultra-micropower amplifiers with CMOS inputs	SOT23-5, SO-8, SO-14, TSSOP-14	—	1/2/4	-40 to 85	1.85	2.5 to 10	5	150	0.01	0.005	1.5	0	-
TS941/942/944	Ultra-micropower amplifiers with CMOS inputs	SOT23-5, SO-8, SO-14, TSSOP-14	—	1/2/4	-40 to 85	1.85	2.5 to 10	10	150	0.01	0.005	1.5	0	-
TS941B	Ultra-micropower amplifier with CMOS inputs	SOT23-5	—	1	-40 to 85	1.85	2.5 to 10	2	150	0.01	0.005	1.5	0	-
TS931A/932A/934A	Micropower amplifiers with CMOS inputs	SOT23-5, SO-8, SO-14, TSSOP-14	Yes ⁽²⁾	1/2/4	-40 to 85	33	2.7 to 10	5	150	0.1	0.05	5	0	76
TS931/932/934	Micropower amplifiers with CMOS inputs	SOT23-5, SO-8, SO-14, TSSOP-14	Yes ⁽²⁾	1/2/4	-40 to 85	33	2.7 to 10	10	150	0.1	0.05	5	0	76
TS931B/932B	Micropower amplifiers with CMOS inputs	SO-8, SOT23-5	—	1/2	-40 to 85	33	2.7 to 10	2	150	0.1	0.05	5	0	76
TS27L2/27L4	Micropower, high-voltage CMOS op amps	DIP-8, SO-8, TSSOP-8, DIP-14, SO-14, TSSOP-14	—	2/4	-40 to 125	15	3 to 16	10	-	0.1	0.04	60	0	68
TS271	Micropower, programmable op amp	DIP-8, SO-8	—	1	-40 to 125	15	3 to 16	10	-	0.1	0.04	60	No	30

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
TSZ121⁽³⁾	1.8 V, zero drift micropower, rail-to-rail amplifier	SC70-5, SOT23-5	—	1	-40 to 125	40	1.8 to 5.5	0.02	10	0.4	0.1	10	I/O	50
TSV711⁽³⁾	1.5 V, high-accuracy, micropower CMOS amplifier	SC70-5	—	1	-40 to 125	14	1.5 to 5.5	0.2	10	0.1	0.04	7	I/O	100
TSV731⁽³⁾	1.5 V, high-accuracy, micropower CMOS amplifier	SC70-5	—	1	-40 to 125	58	1.5 to 5.5	0.2	10	0.85	0.35	7	I/O	35
Low power I_{CC} < 1 mA														
TSX561/561A	Micropower, wide bandwidth 16 V CMOS op amps	SOT23-5	—	1	-40 to 125	360	3 to 16	1/0.6	100	0.9	1.1	90	I/O	48
TS912/914	Low-power op amps with CMOS inputs	DIP-8, SO-8, SO-14, TSSOP-14	Yes	2/4	-40 to 125	350	2.7 to 16	2/5/10	150	1	0.8	60	I/O	30
LMV820A/821A/822A/823A/824A/825A	Low-power, high-accuracy, general-purpose op amps	SC70-5, SOT23-5, SOT23-6, DFN8, MiniSO-8, SO-8, TSSOP-10, SO-14, TSSOP-14, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	600	2.5 to 5.5	0.8	120,000	5.5	1.9	48	0	39
LMV820/821/822/823/824/825	Low-power, high-accuracy, general-purpose op amps	SC70-5, SOT23-5, SOT23-6, DFN8, MiniSO-8, SO-8, TSSOP-10, SO-14, TSSOP-14, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	400	2.5 to 5.5	3.5	120,000	5.5	1.9	48	0	39
LMV321L/358L/324L	Low-cost, low-power, general-purpose op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SO-14, TSSOP-14	—	1/2/4	-40 to 125	350	2.7 to 5.5	7	60,000	1	0.7	43	0	39
LMV321/358/324	Low-cost, low-power, rail-to-rail input/output op amps	SOT23-5, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	200	2.7 to 6	3	50,000	1	0.35	48	I/O	40

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
TSV321/358/324	General-purpose low-voltage rail-to-rail input/output op amps	SOT23-5, MiniSO-8, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	835	2.5 to 6	3	125,000	1.4	0.6	80	I/O	27
TS512/512A/514	Low-power op amps	DIP-8, SO-8, SO-14	—	2/4	-40 to 125	600	6 to 30	0.5/2.5	150,000	3	1.5	23	No	8
TS321	Single LM324, LM358 enhanced version in SOT23-5 package	SO-8, SOT23-5	Yes	1	-40 to 125	800	3 to 30	4	150,000	0.8	0.4	40	No	40
TS27M2/27M2A/27M2B/27M4	Micropower, high-voltage CMOS op amps	DIP-8, SO-8, TSSOP-8, SO-14, TSSOP-14	—	2/4	-40 to 125	200	3 to 16	2/5/10	-	1	0.6	60	No	38
TS1871/1872/1874	1.8 V min. voltage supply, micropower op amps	SOT23-5, MiniSO-8, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	4	-40 to 125	560	2 to 6	1.5/3	125,000	1.6	0.54	65	I/O	27
TL062/064	JFET inputs, low input bias current op amps	DIP-8, SO-8, DIP-14, SO-14	—	4	-40 to 105	250	6 to 36	3/6/15	200	1	3.5	-	No	42
MC33171/33172/33174	Low consumption versus speed op amps	DIP-8, SO-8, DIP-14, SO-14	—	1/2/4	-40 to 125	250	4 to 44	4.5	100,000	2.1	2	-	No	29
LM2904/2904A	Low-power, bipolar op amps	DFN8, DIP-8, MiniSO-8, SO-8, TSSOP-8	Yes	2	-40 to 125	600	3 to 30	2/7	150,000	1.1	0.6	40	No	55
LM2902	Low-power, bipolar op amp	DIP-14, SO-14, TSSOP-14, QFN16	Yes	4	-40 to 125	750	3 to 30	7	150,000	1.3	0.4	40	No	40
LM258	Low-power dual op amp with low input bias current	DIP-8, MiniSO-8, SO-8, TSSOP-8	Yes	2	-40 to 105	600	3 to 32	5	150,000	1.1	0.3	60	No	55
LM248	Quad UA741 bipolar op amp	DIP-14, SO-14	—	4	-40 to 105	900	3 to 44	5	100,000	1.3	0.5	25	No	40
LM224A	Low-power, low input bias current op amp	DIP-14, SO-14, TSSOP-14	—	4	-40 to 105	750	3 to 30	3	100,000	1.3	0.4	40	No	40

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
LM224	Low-power quad op amp with low input bias current	DIP-14, SO-14, TSSOP-14, QFN16	—	4	-40 to 105	750	3 to 30	5	150,000	1.3	0.4	40	No	40
LM158	Low-power dual op amp with low input bias current	DIP-8, SO-8, TSSOP-8	Yes	2	55 to 125	600	3 to 32	5	150,000	1.1	0.6	40	No	55
LM148	Quad UA741 bipolar op amp	SO-14	—	4	55 to 125	900	3 to 44	5	100,000	1.3	0.5	25	No	40
Precision/low offset Vio < 1 mV														
TSV521A/522A/524A	Micropower, wide bandwidth 16 V CMOS op amps	SC70-5, DFN8, MiniSO-8, TSSOP-14, QFN16	Yes ⁽²⁾	1/2/4	-40 to 125	60	2.7 to 5.5	0.6	10	1.15	0.89	55	I/O	57
TSV611A/612A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	0.8	10	0.12	0.034	20	I/O	105/110
TSV6191A/6192A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8	—	1/2	-40 to 85	12	1.5 to 5.5	0.8	10	0.12	0.034	20	I/O	110
TSV620A/621A/622A/623A/624A/625A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	0.8	10	0.42	0.14	69	I/O	70/77
TSV6290A/6291A/6292A/6293A/6294A/6295A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	36/35	1.5 to 5.5	0.8	10	1.3	0.5	69	I/O	70/77
TSV630A/631A/632A/633A/634A/635A	Micropower CMOS, low-voltage op amps	SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	0.5/0.8	10	0.88	0.34	69	I/O	65/60

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
TSV6390A/6391A/6392A/6393A/6394A/6395A	Micropower CMOS, low-voltage op amps	SOT23-6, SC70-6, SC70-5, SOT23-5, MiniSO-8, SO-8, SOT23-8, TSSOP-10, TSSOP-14, TSSOP-16	—	1/2/4	-40 to 125	69	1.5 to 5.5	0.5	10	2.4	1.1	69	I/O	60
TSV850A/851A/852A/853A/854A/855A	Low-power, high-accuracy, general-purpose op amps	SOT23-6, SC70-5, SOT23-5, MiniSO-8, SO-8, TSSOP-10, SO-14, TSSOP-14, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	180	2.5 to 5.5	0.8	60,000	1.3	0.7	43	0	39
LMV820A/821A/822A/823A/824A/825A	Low-power, high-accuracy, general-purpose op amps	SOT23-6, SC70-5, SOT23-5, MiniSO-8, SO-8, TSSOP-10, SO-14, TSSOP-14, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	600	2.5 to 5.5	0.8	120,000	5.5	1.9	48	0	39
TSX561/561A	Micropower, wide bandwidth 16 V CMOS op amps	SOT23-5	—	1	-40 to 125	360	3 to 16	1/0.6	100	0.9	1.1	90	I/O	48
TS9222/9224	Precision rail-to-rail high output current op amps	SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	2/4	-40 to 125	1200	2.7 to 12	0.5	55,000	4	1.3	80	I/O	9
TS507	High-precision single supply rail-to-rail op amp	SO-8, SOT23-5	Yes	1	-40 to 125	1150	2.7 to 5.5	0.1	70,000	1.9	0.6	128	I/O	12
TS924A	Excellent audio performance op amp, low distortion (0.005 %)	SO-14, TSSOP-14	Yes	4	-40 to 125	1750	2.7 to 12	0.9	100,000	4	1.3	80	I/O	9
TS9511	Precision rail-to-rail input/output 3 MHz single op amp	SOT23-5	Yes	1	-40 to 125	1200	2.7 to 12	0.8	70,000	3	1	20	I/O	25
TS522	Precision low-noise dual op amp	DIP-8, SO-8	—	2	-40 to 125	2500	5 to 30	0.85	750,000	15	7	37	No	4.5
TS524	Very low noise op amp suitable for audio applications (4.5 nV/√ Hz)	SO-14	—	4	-40 to 125	2500	5 to 30	0.95	750,000	15	7	38	No	4.5

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
TS512A	Low noise and distortion op amp (8 nV/√ Hz, 0.03 %)	DIP-8, SO-8	Yes	2	-40 to 125	600	6 to 30	0.5	150,000	3	1.5	23	No	8
TSZ121⁽³⁾	1.8 V, zero drift micropower, rail-to-rail amplifier	SC70-5, SOT23-5	—	1	-40 to 125	40	1.8 to 5.5	0.02	10	0.4	0.1	10	I/O	50
TSV711⁽³⁾	1.5 V, high-accuracy, micropower CMOS amplifier	SC70-5	—	1	-40 to 125	14	1.5 to 5.5	0.2	10	0.1	0.04	7	I/O	100
TSV731⁽³⁾	1.5 V, high-accuracy, micropower CMOS amplifier	SC70-5	—	1	-40 to 125	58	1.5 to 5.5	0.2	10	0.85	0.35	7	I/O	35
Low-noise op amps														
TS461/462/464	Output rail-to-rail op amps	SOT23-5, MiniSO-8, SO-8, TSSOP-8, SO-14, TSSOP-14	—	1/2/4	-20 to 70	2800	2.7 to 10	5	750,000	12	4	1.5	0	4
TS971/972/974	Output rail-to-rail very low-noise op amps	SOT23-5, DFN8, MiniSO-8, SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	1/2/4	-40 to 125	2800	2.7 to 10	5	750,000	12	4	100	0	4
TS522/524	Very low noise op amps suitable for audio applications (4.5 nV/√ Hz)	DIP-8, SO-8, SO-14	—	2/4	-40 to 125	2500	5 to 30	0.85	750,000	15	7	38	No	4.5
MC33078/33079	Low-noise op amps	DIP-8, SO-8, SO-14	Yes	2/4	-40 to 105	2500	5 to 30	2.5	750,000	15	7	30	No	4.5
LM833	Low-noise dual op amp	DIP-8, SO-8	—	2	-40 to 125	8000	5 to 30	5	1,000,000	15	7	30	No	4.5
TS512/514	Precision op amps	DIP-8, SO-8, SO-14	Yes ⁽²⁾	2/4	-40 to 125	600	6 to 30	0.5/2.5	150,000	3	1.5	23	No	8
TS9222/9224	Precision rail-to-rail high output current op amps	SO-8, TSSOP-8, SO-14, TSSOP-14	Yes	2/4	-40 to 125	1200	2.7 to 12	0.5	55,000	4	1.3	80	I/O	9
TS921/922/924/925	Excellent audio performance op amps, low distortion (0.005 %)	FlipChip8, DIP-8, SO-8, TSSOP-8, DIP-14, SO-14, TSSOP-14, SO-16, TSSOP-16	Yes ⁽²⁾	1/2/4	-40 to 125	1500	2.7 to 12	0.9/3	100,000	4	1.3	80	I/O	9

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
LS204/404	Low-noise bipolar op amps	DIP-8, SO-8, DIP-14, SO-14	—	2/4	-40 to 105	1200	6 to 36	2.5	150,000	3	1.5	23	No	10
TS507	High-precision single supply rail-to-rail op amp	SO-8, SOT23-5	Yes	1	-40 to 125	1150	2.7 to 5.5	0.1	70,000	1.9	0.6	128	I/O	12
MC4558	Wide bandwidth dual bipolar op amp	DIP-8, SO-8, TSSOP-8	—	2	-40 to 105	2250	6 to 44	5	400,000	5.5	2.2	20	No	12
Industry-standard op amps														
UA748	Wide application range op amp	DIP-8, SO-8	—	1	-40 to 105	3000	5 to 40	2	75,000	1	0.5	50	No	-
UA741	Wide application range op amp	DIP-8, SO-8	—	1	-40 to 105	2800	5 to 44	5	100,000	1	0.5	25	No	23
TSH22/H24	High gain bandwidth product bipolar op amps	DIP-8, SO-8, SO-14	—	2/4	-40 to 125	2750	3 to 30	2.5	650,000	25	15	37	No	14
TS321	Single LM324, LM358 enhanced version in SOT23-5 package	SO-8, SOT23-5	Yes	1	-40 to 125	800	3 to 30	4	150,000	0.8	0.4	40	No	40
TS27L2/27L4	Micropower, high-voltage CMOS op amps	DIP-8, SO-8, TSSOP-8, DIP-14, SO-14, TSSOP-14	—	2/4	-40 to 125	15	3 to 16	10	-	0.1	0.04	60	No	68
TS272/274	Low power op amps, wide range of input offset voltage	DIP-8, SO-8, TSSOP-8, DIP-14, SO-14, TSSOP-14	—	2/4	-40 to 125	1500	3 to 16	10	-	3.5	5.5	60	No	30
TS271	Micropower, programmable op amp	DIP-8, SO-8	—	1	-40 to 125	15	3 to 16	10	-	0.1	0.04	60	No	30
TL081/082/084	JFET inputs, low input bias current op amps	DIP-8, SO-8, TSSOP-8, DIP-14, SO-14, TSSOP-14	Yes	4	-40 to 105	2500	6 to 36	10	200	4	16	40	No	15
TL071/072/074	JFET inputs, low input bias current op amps	DIP-8, SO-8, DIP-14, SO-14	Yes ⁽²⁾	1/2/4	-40 to 105	2500	6 to 36	3/6	200	4	16	40	No	15

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
TL061/062/064	JFET inputs, low input bias current op amps	DIP-8, SO-8, DIP-14, SO-14	—	1/2/4	-40 to 105	250	6 to 36	6	200	1	3.5	-	No	42
TJM4558	Wide bandwidth dual bipolar op amp	DIP-8, SO-8	—	2	-40 to 125	4500	6 to 44	5	400,000	0.02	2.2	20	No	22
MC4558	Wide bandwidth dual bipolar op amp	DIP-8, SO-8, TSSOP-8	—	2	-40 to 105	2250	6 to 44	5	400,000	5.5	2.2	20	No	12
MC3403	Quad enhanced UA741 version with lower consumption	DIP-14, SO-14	—	4	0 to 70	1750	3 to 36	5	500,000	1	0.5	45	No	43
MC33171/33172/33174	Low consumption versus speed op amps	DIP-8, SO-8, DIP-14, SO-14	—	1/2/4	-40 to 125	250	4 to 44	4.5	100,000	2.1	2	-	No	29
MC3303	Quad enhanced UA741 version with lower consumption	DIP-14, SO-14, TSSOP-14	—	4	-40 to 105	1750	3 to 36	5	500,000	1	0.5	45	No	43
MC1458/1558	High-performance dual op amps with wide input common-mode voltage range	DIP-8, SO-8	—	2	-40 to 105 or -55 to 125	2500	5 to 30	5	500,000	1	0.8	20	No	45
LM358	Low-power dual op amp with low input bias current	DFN8, DIP-8, MiniSO-8, SO-8, TSSOP-8	—	2	0 to 70	1200	3 to 32	7	150,000	1.1	0.3	60	No	55
LM258	Low-power dual op amp with low input bias current	DIP-8, MiniSO-8, SO-8, TSSOP-8	Yes	2	-40 to 105	1200	3 to 32	5	150,000	1.1	0.3	60	No	55
LM258W	Low-power dual op amp with ESD diodes	MiniSO-8, SO-8, TSSOP-8	Yes	2	-40 to 105	1200	3 to 32	3	150,000	1.1	0.6	40	No	55
LM158	Low-power dual op amp with low input bias current	DIP-8, SO-8, TSSOP-8	Yes	2	55 to 125	1200	3 to 32	5	150,000	1.1	0.6	40	No	55

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
LM158W	Low-power dual op amp with ESD diodes	SO-8	—	2	-55 to 125	1200	3 to 30	2	150,000	1.1	0.6	40	No	55
LM348	Quad UA741 bipolar op amp	DIP-14, SO-14	—	4	0 to 70	3600	3 to 44	5	100,000	1.3	0.5	25	No	40
LM248	Quad UA741 bipolar op amp	DIP-14, SO-14	—	4	-40 to 105	3600	3 to 44	5	100,000	1.3	0.5	25	No	40
LM148	Quad UA741 bipolar op amp	SO-14	—	4	55 to 125	3600	3 to 44	5	100,000	1.3	0.5	25	No	40
LM324W	Low-power, low input bias current op amp with ESD diodes	DIP-14, SO-14, TSSOP-14	—	4	0 to 70	1200	3 to 32	3	100,000	1.3	0.4	40	No	40
LM324/324A	Low-power, low input bias current op amps	DIP-14, SO-14, TSSOP-14, QFN16	—	4	0 to 70	1200	3 to 32	3/5	150,000	1.3	0.4	40	No	40
LM2904WH	Dual general-purpose op amp with ESD diodes	SO-8	Yes	2	-40 to 150	1200	3 to 30	7	150,000	1.1	0.6	40	No	55
LM2904W	Low-power dual op amp with ESD diodes	SO-8, TSSOP-8	Yes	2	-40 to 125	1200	3 to 30	7	150,000	1.1	0.6	40	No	55
LM2904/2904A	Low-power, bipolar op amps	DFN8, DIP-8, MiniSO-8, SO-8, TSSOP-8	Yes	2	-40 to 125	600	3 to 30	2/7	150,000	1.1	0.6	40	No	55
LM2902W	Low-power quad op amp with ESD diodes	SO-14, TSSOP-14	Yes	4	-40 to 125	1200	3 to 30	7	150,000	1.3	0.4	20	No	40
LM2902	Low-power, bipolar op amp	DIP-14, SO-14, TSSOP-14, QFN16	Yes	4	-40 to 125	750	3 to 30	7	150,000	1.3	0.4	40	No	40
LM224/224A	Low-power quad op amps with low input bias current	DIP-14, SO-14, TSSOP-14, QFN16	—	4	-40 to 105	750	3 to 30	3/5	150,000	1.3	0.4	40	No	40
LM124	Low-power, low input bias current op amp	DIP-14, SO-14	—	4	-55 to 125	1200	3 to 30	5	150,000	1.3	0.4	40	No	40

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Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Input offset voltage	Input bias current	GBP	Slew rate	Output current	Rail-to-rail	Input equivalent noise voltage
					(°C)	max (μA)	(V)	max (mV)	max (pA)	typ (MHz)	typ (V/μs)	typ (mA)		typ (nV/√ Hz)
LM201A/301A	Input/output overload protection, low input offset current op amps	DIP-8, SO-8	—	1	0 to 70 & -40 to 105	3000	5 to 40	2	75000	1	0.5	50	No	25
LF253/353	JFET inputs, low input bias and offset current op amps (15 nV/√ Hz, 0.01 %)	DIP-8, SO-8	—	2	0 to 70 & -40 to 105	3200	6 to 32	10	200	4	12	60	No	15
LF351	JFET inputs, low input bias and offset current op amps (15 nV/√ Hz, 0.01 %)	DIP-8, SO-8	—	1	0 to 70	3400	6 to 32	10	200	4	12	60	No	15
LF247/347	JFET inputs, low input bias and offset current op amps (15 nV/√ Hz, 0.01 %)	DIP-14, SO-14	—	4	0 to 70 & -40 to 105	2700	6 to 36	10	200	4	12	60	No	15
TS522/524	Very low noise op amps suitable for audio applications (4.5 nV/√ Hz)	DIP-8, SO-8, SO-14	—	2/4	-40 to 125	2500	5 to 30	0.85	750,000	15	7	38	No	4.5
TS512/514	Precision op amps	DIP-8, SO-8, SO-14	Yes ⁽²⁾	2/4	-40 to 125	600	6 to 30	0.5/2.5	150,000	3	1.5	23	No	8
TS27M2/27M2A/27M2B/27M4	Micropower, high-voltage CMOS op amps	DIP-8, SO-8, TSSOP-8, SO-14, TSSOP-14	—	2/4	-40 to 125	200	3 to 16	2/5/10	-	1	0.6	60	No	38

(1) Automotive grade

(2) Not all products are automotive grade

(3) Coming H2.2012

HIGH-SPEED AMPLIFIERS

Part number	Description	Package	Operating temperature	Number of channels	Bandwidth	Slew rate	Supply current	Input equivalent noise voltage	Supply voltage	Input offset voltage
			(°C)		(MHz)	(V/ μ s)	typ (mA)	(nV/ $\sqrt{\text{Hz}}$)	(V)	max (mV)
TS613	ADSL line driver	SO-8	-40 to 85	2	130	40	11	3	7 to 12	6
TS616	Multi video line driver (6 lines) and ADSL driver	PowerSO-8	-40 to 85	2	60	410	11.9	2.5	5 to 12	6
TSH114	Low-noise, large bandwidth op amp with standby	SO-14, TSSOP-14	-40 to 85	4	100	450	3	3	5 to 12	3
TSH300	Ultra-low-noise high-speed op amp	SO-8, SOT23-5	-40 to 85	1	200	230	15	0.65	4.5 to 5.5	1.8
TSH62	Wide band, low-power op amp with standby function	SO-8	0 to 70	2	60	80	8	11	5 to 12	1.5
TSH70	Rail-to-rail video op amp with standby	SOT23-5	0 to 70	1	100	100	7.2	11	3 to 12	10
TSH72	Rail-to-rail video op amp	SO-8, TSSOP-8	0 to 70	2	100	100	7.2	11	3 to 12	10
TSH73	Rail-to-rail video op amp with standby	SO-14, TSSOP-14	0 to 70	3	100	100	7.2	11	3 to 12	10
TSH74	Rail-to-rail video op amp	SO-14, TSSOP-14	0 to 70	4	100	100	7.2	11	3 to 12	10
TSH75	Rail-to-rail video op amp with standby	SO-16, TSSOP-16	0 to 70	4	100	100	7.2	11	3 to 12	10
TSH80	Rail-to-rail video op amp with standby	SO-8, SOT23-5	-40 to 85	1	100	100	8.2	11	4.5 to 12	10
TSH81	Rail-to-rail video op amp with standby	SO-8, TSSOP-8	-40 to 85	2	100	100	8.2	11	4.5 to 12	10
TSH82	Rail-to-rail video op amp	SO-8, TSSOP-8	-40 to 85	2	100	100	8.2	11	4.5 to 12	10
TSH84	Wide band rail-to-rail op amp	TSSOP-14	-40 to 85	4	100	100	8.2	11	4.5 to 12	10
TSH94	Video op amp with standby	SO-16	-40 to 125	3	150	110	4.5	4.2	7 to 12	4
TSH95	Video op amp with standby	SO-16	-40 to 125	4	150	110	4.5	4.2	7 to 12	4

VIDEO AMPLIFIERS

Part number	Description	Package	Operating temperature	Number of channels	Bandwidth	Slew rate	Supply current	Input equivalent noise voltage	Supply voltage
			(°C)		(MHz)	(V/ μ s)	typ (mA)	(nV/ $\sqrt{\text{Hz}}$)	(V)
TSH103	Low-cost triple video buffer/filter for standard video	S0-8	-40 to 85	3	6	-	5.5	76	4.5 to 5.5
TSH122	Ultra-low-power video buffer/filter with power-down	SOT323-6	-40 to 85	1	6	-	2	51	2.25 to 5
TSH173	Single supply triple video buffer and filter	S0-8	-40 to 85	3	6	-	7.4	25	4.5 to 5.5
TSH340	Video buffer, single-supply, low input and output rail of 40 mV/GND	S0-8, SOT23-5	-40 to 85	1	320	780	9.8	7	4.5 to 5.5
TSH341	Video op amp, single-supply, low input and output rail of 40 mV/GND	SOT23-5	-40 to 85	1	300	400	9.8	7	4.5 to 5.5
TSH343	280 MHz single-supply triple video buffer	S0-8	-40 to 85	3	250	780	14.4	25	4.5 to 5.5
TSH344	340 MHz single-supply triple video buffer	S0-8	-40 to 85	3	270	740	10.1	25	4.5 to 5.5
TSH345	Single-supply triple video buffer and selectable filter for HD and SD video applications	S0-14, TSSOP-14	-40 to 85	3	30	-	15	75	4.5 to 5.5
TSH346	Single-supply triple video buffer and filter for HD video applications	S0-8	-40 to 85	3	30	-	15	85	4.5 to 5.5

COMPARATORS

Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Response time	Input offset voltage	Rail-to-rail input	Output configuration
					(°C)	typ (µA)	(V)	typ (µs)	max (mV)		
Low power											
TS881	Nanopower low-voltage comparator	SC-70	-	1	-40 to 125	0.21	1.1 to 5.5	2	6	Yes	Push-pull
LMV331	General-purpose low-voltage comparator	SOT23-5, SC70-5	-	1	-40 to 85	20	2.7 to 5	0.2	7	No	Open drain
LMV339	General-purpose low-voltage comparator	S0-14, TSSOP-14	-	4	-40 to 85	20	2.7 to 5	0.2	7	No	Open drain
LMV393	General-purpose low-voltage comparator	MiniSO-8, SO-8	-	2	-40 to 85	20	2.7 to 5	0.2	7	No	Open drain
TS3021	Rail-to-rail 1.8 V high-speed micropower comparator	SOT23-5, SC70-5	Yes	1	-40 to 125	73	1.8 to 5.5	0.038	6	Yes	Push-pull
TS3022	Rail-to-rail 1.8 V high-speed micropower comparator	MiniSO-8, SO-8	-	2	-40 to 125	73	1.8 to 5.5	0.038	6	Yes	Push-pull
TS331	Micropower low-voltage rail-to-rail comparator	SOT23-5, SC70-5, DFN6	Yes	1	-40 to 125	20	1.6 to 5	0.2	5	Yes	Open drain
TS332	Micropower low-voltage rail-to-rail comparator	MiniSO-8, SO-8	Yes	2	-40 to 125	20	1.6 to 5	0.2	5	Yes	Open drain
TS334	Micropower low-voltage rail-to-rail comparator	S0-14, TSSOP-14	Yes	4	-40 to 125	20	1.6 to 5	0.2	5	Yes	Open drain
TS339	Micropower quad CMOS voltage comparator	S0-14, TSSOP-14	-	4	-40 to 125	9	2.7 to 16	1.5	5	No	Open drain
TS3704	Micropower quad CMOS voltage comparator	S0-14, TSSOP-14	-	4	-55 to 125	7	2.7 to 16	1.2	5	No	Push-pull
TS3702	Micropower dual CMOS voltage comparator	DIP-8, SO-8, TSSOP-8	-	2	-55 to 125	7	2.7 to 16	1.5	5	No	Push-pull
TS372	Low-power dual CMOS voltage comparator	DIP-8, SO-8	-	2	-55 to 125	150	3 to 16	0.6	10	No	Open drain
TS374	Low-power quad CMOS voltage comparator	S0-14	-	4	-55 to 125	150	3 to 16	0.6	10	No	Open drain
TS393	Micropower CMOS dual-voltage comparator	SO-8, TSSOP-8	Yes	2	-40 to 125	9	2.7 to 16	1.5	5	No	Open drain
TS7211	Rail-to-rail micropower BiCMOS comparator	SOT23-5	-	1	-40 to 85	6	2.7 to 10	0.5	7	Yes	Push-pull
TS7221	Rail-to-rail micropower BiCMOS comparator	SOT23-5	-	1	-40 to 85	6	2.7 to 10	0.5	7	Yes	Open drain
TS861	Rail-to-rail micropower BiCMOS comparator	SO-8, SOT23-5	-	1	-40 to 85	6	2.7 to 10	0.5	7	Yes	Push-pull

COMPARATORS

Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Response time	Input offset voltage	Rail-to-rail input	Output configuration
					(°C)	typ (µA)	(V)	typ (µs)	max (mV)		
TS862	Rail-to-rail micropower BiCMOS dual comparator	SO-8, TSSOP-8	-	2	-40 to 85	6	2.7 to 10	0.5	7	Yes	Push-pull
TS864	Rail-to-rail micropower BiCMOS quad comparator	SO-14, TSSOP-14	-	4	-40 to 85	6	2.7 to 10	0.5	7	Yes	Push-pull
High-speed											
LM219	Dual high-speed comparator	DIP-14, SO-14	-	2	-40 to 105	8000	5 to 30	0.08	4	No	Open collector
LM319	Dual high-speed comparator	DIP-14, SO-14	-	2	0 to 70	8000	5 to 30	0.08	8	No	Open collector
TS3011	Rail-to-rail high-speed comparator	SOT23-5, SC70-5	-	1	-40 to 125	470	2.2 to 5	0.008	7	Yes	Push-pull
TS3021	Rail-to-rail 1.8 V high-speed micropower comparator	SOT23-5, SC70-5	-	1	-40 to 125	73	1.8 to 5.5	0.038	6	Yes	Push-pull
TS3022	Rail-to-rail 1.8 V high-speed micropower comparator	MiniSO-8, SO-8	-	2	-40 to 125	73	1.8 to 5.5	0.038	6	Yes	Push-pull
Industry-standard											
LM139	Low-power quad-voltage comparator	DIP-14, SO-14	-	4	-55 to 125	275	2 to 36	1.3	5	No	Open collector
LM193	Low-power dual-voltage comparator	DIP-8, SO-8	Yes	2	-55 to 125	200	2 to 36	1.3	5	No	Open collector
LM211	Voltage comparator with strobe	DIP-8, SO-8	-	1	-40 to 105	5100	5 to 30	0.2	3	No	Open collector
LM239	Low-power quad-voltage comparator	DIP-14, SO-14, TSSOP-14	-	4	-40 to 105	275	2 to 36	1.3	5	No	Open collector
LM2901	Low-power quad-voltage comparator	DIP-14, SO-14, TSSOP-14, QFN16	Yes	4	-40 to 125	275	2 to 32	1.3	7	No	Open collector
LM2901H	Low-power quad-voltage comparator	SO-14	Yes	4	-40 to 150	275	2 to 36	1.3	7	No	Open collector
LM2903	Low-power dual-voltage comparator	DIP-8, SO-8, TSSOP-8	Yes	2	-40 to 125	400	2 to 36	1.3	7	No	Open collector
LM2903H	Low-power dual-voltage comparator	SO-8	Yes	2	-40 to 150	400	2 to 36	1.3	7	No	Open collector
LM2903W	Low-power dual-voltage comparator	SO-8, TSSOP-8	Yes	2	-40 to 125	400	2 to 36	1.3	7	No	Open collector
LM293	Low-power dual-voltage comparator	DIP-8, MiniSO-8, SO-8, TSSOP-8, DFN8	-	2	-40 to 105	200	2 to 36	1.3	5	No	Open collector

COMPARATORS

Part number	Description	Package	AG ⁽¹⁾	Number of channels	Operating temperature	Supply current per channel	Supply voltage	Response time	Input offset voltage	Rail-to-rail input	Output configuration
					(°C)	typ (µA)	(V)	typ (µs)	max (mV)		
LM311	Voltage comparator with strobe	DIP-8, SO-8	-	1	0 to 70	5100	5 to 30	0.2	7.5	No	Open collector
LM339	Low-power quad-voltage comparator	DIP-14, SO-14, TSSOP-14	-	4	0 to 70	275	2 to 36	1.3	5	No	Open collector
LM393	Low-power dual-voltage comparator	DIP-8, MiniSO-8, SO-8, TSSOP-8, DFN8	-	2	0 to 70	200	2 to 36	1.3	5	No	Open collector
LM393W	Low-power dual-voltage comparator	SO-8	-	2	0 to 70	400	2 to 36	1.3	5	No	Open collector
TS391	Low-power, single-voltage comparator	SOT23-5, DFN8	Yes	1	-40 to 125	200	2 to 34	1.3	5	No	Open collector
TS391H	High-temperature, low-power, single-voltage comparator	Die	Yes	1	-40 to 150	200	2 to 34	1.3	5	No	Open collector

(1) Automotive grade