

Operational Amplifiers

General Purpose (Continued)

Type	Temperature Range	Pinout See This Sect.	Gain Bandwidth Product (MHz)	Slew Rate (V/ μ s)	Offset Voltage (mV _O)	Bias Current (nA)	1kHz Noise Voltage (nV/ $\sqrt{\text{Hz}}$)	Open Loop Gain (kV/V)	Minimum Gain Stable	Supply Current (mA/Pkg.)	Comments	
SINGLES	HA-2500	-55°C to +125°C	1, 2	12	30	2	100	21	30	Unity	4	High slew, wide bandwidth
	HA-2502	-55°C to +125°C	1, 2	12	30	4	125	21	25	Unity	4	High slew, wide bandwidth
	HA-2505	0°C to +75°C	1, 2	12	30	4	125	21	25	Unity	4	High slew, wide bandwidth
	HA-2600	-55°C to +125°C	1, 2	12	7	0.5	1	16	150	Unity	3	Wide band
	HA-2602	-55°C to +125°C	1, 2	12	7	3	15	16	150	Unity	3	Wide band
	HA-2605	0°C to +75°C	1, 2	12	7	3	5	16	150	Unity	3	Wide band
	HA-5101	-55°C to +125°C 0°C to +75°C	14, 15	10	10	0.5	100	3.5	1000	Unity	4	Low noise
	HA-5111	-55°C to +125°C 0°C to +75°C	1, 2	100	50	0.5	100	3.5	1000	10	4	High slew, wide bandwidth, low noise
	HA-5147	-55°C to +125°C 0°C to +75°C	25, 26, 27	120	35	-	± 15	-	1500	10	-	Precision, wide bandwidth, high slew
HA-5147A	-55°C to +125°C 0°C to +75°C	25, 26, 27	120	35	-	± 10	-	1800	10	-	0.5 MHz full power bandwidth	
DUALS	HA-5102	-55°C to +125°C 0°C to +75°C	11, 12, 30	8	3	0.5	130	4.3	230	Unity	3	Low noise
	HA-5112	-55°C to +125°C 0°C to +75°C	11, 12, 30	60	20	0.5	130	4.3	230	10	3	Low noise, wide bandwidth
QUADS	HA-4741	-55°C to +125°C	23, 24	3.5	1.6	0.5	60	9	100	Unity	<5	Quad 741, JI
	HA-4741	0°C to +75°C	24	3.5	1.6	1	60	9	50K	Unity	<7	Quad 741, JI
	HA-5104	-55°C to +125°C 0°C to +75°C	23, 24	8	3	0.5	130	4.3	230	Unity	5	Low noise, compensated
	HA-5114	-55°C to +125°C 0°C to +75°C	23, 24	60	20	0.5	130	4.3	230	10	5	Low noise, uncompensated, high slew, wide bandwidth

Type	Description	V _{OS} (mV Max)	I _{BIAS} (pA Max)	Slew Rate (V/ μ s)	GBW (MHz)	Compensation	V _{Supply}	Temperature Range (°C)
SINGLES	ICL7611	CMOS, Selectable I _Q	2, 5, 15	50	1.6	1.4	INT	± 5 0 to +70 -55 to +125
	ICL8007M	JFET Input Op-Amp	20	20	6	1.0	INT	± 15 -55 to +125
	ICL8007C	JFET Input Op-Amp	50	50	6	1.0	INT	± 15 0 to +70
DUALS	ICL7621	CMOS, Fixed I _Q	2, 5, 15	50	0.16	0.48	INT	± 5 0 to +70 -55 to +125
	ICL8043M	JFET Input Op-Amp	20	20	6	1.0	INT	± 15 -55 to +125
	ICL8043C	JFET Input Op-Amp	50	50	6	1.0	INT	± 15 0 to +70
TRIPLES	ICL7631	CMOS, Selectable I _Q	5, 10, 20	50	1.6	1.4	INT	± 5 0 to +70 -55 to +125
QUADS	ICL7641	CMOS, Fixed I _Q	5, 10, 20	50	1.6	1.4	INT	± 5 0 to +70 -55 to +125