

Quick Selection Guide for Precision Operational Amplifiers (BW < 50 MHz)—Mid to High Voltage

Precision Op Amps—High Operating Voltage ($V_{ov} > 44V$)

Single	Dual	Quad	Spec
ADA4700-1			100V operating

Precision Op Amps—High Voltage (5 V to 44 V)

Ultraprecision

$V_{os} < 20 \mu V$			
Single	Dual	Quad	Spec
ADA4638-1			5 μV , zero drift
AD8638	AD8639		10 μV , zero drift

$V_{os} < 100 \mu V$			
Single	Dual	Quad	Spec
ADA4077-1	ADA4077-2	ADA4077-4	25 μV
	AD8676		50 μV
AD8671	AD8672	AD8674	75 μV
AD8675			75 μV

$V_{os} < 300 \mu V$			
Single	Dual	Quad	Spec
ADA4084-1 ¹	ADA4084-2	ADA4084-4	100 μV
AD8610	AD8620		100 μV , JFET
AD8597	AD8599		120 μV
	AD8622	AD8624	125 μV
AD8677			130 μV
ADA4004-1	ADA4004-2	ADA4004-4	140 μV
AD8661	AD8662	AD8664	160 μV
ADA4627-1			200 μV , JFET
ADA4637-1			200 μV , JFET
	ADA4091-2	ADA4091-4	250 μV
	ADA4096-2		250 μV , input overvoltage
AD8663	AD8667	AD8669	300 μV

Low Power (I_{sv})

$I_{sv} < 100 \mu A$			
Single	Dual	Quad	Spec
	OP281	OP481	5 μA
	AD8657		22 μA
	AD8546	AD8548 ¹	22 μA
	ADA4096-2		50 μA , input overvoltage

$I_{sv} < 500 \mu A$			
Single	Dual	Quad	Spec
	AD8622	AD8624	200 μA
	ADA4091-2	ADA4091-4	200 μA
	ADA4062-2	ADA4062-4	220 μA
		ADA4092-4	225 μA
	AD8682	AD8684	250 μA
AD8663	AD8667	AD8669	285 μA
AD8641	AD8642	AD8644	290 μA
	ADA4665-2		400 μA
ADA4077-1	ADA4077-2	ADA4077-4	450 μA

$I_{sv} < 1 \text{ mA}$			
Single	Dual	Quad	Spec
AD820	AD822	AD824	700 μA
ADA4084-1 ¹	ADA4084-2	ADA4084-4	750 μA
AD8627	AD8626	AD8625	785 μA
AD8565	AD8566	AD8567	850 μA

$I_{sv} < 2 \text{ mA}$			
Single	Dual	Quad	Spec
AD8638	AD8639		1.5 mA, zero drift
ADA4610-1 ¹	ADA4610-2	ADA4610-4 ¹	1.7 mA
ADA4004-1	ADA4004-2	ADA4004-4	2 mA

Low Noise¹

Voltage Noise (e_n)— $e_n < 3 \text{ nV}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8597	AD8599		1 $\text{nV}/\sqrt{\text{Hz}}$
ADA4004-1	ADA4004-2	ADA4004-4	1.8 $\text{nV}/\sqrt{\text{Hz}}$
AD8675	AD8676		2.8 $\text{nV}/\sqrt{\text{Hz}}$
AD8671	AD8672	AD8674	2.8 $\text{nV}/\sqrt{\text{Hz}}$
	ADA4075-2		2.8 $\text{nV}/\sqrt{\text{Hz}}$

Voltage Noise (e_n)— $e_n < 8 \text{ nV}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
ADA4084-1 ¹	ADA4084-2	ADA4084-4	3.9 $\text{nV}/\sqrt{\text{Hz}}$
ADA4627-1			6.1 $\text{nV}/\sqrt{\text{Hz}}$
ADA4637-1			6.1 $\text{nV}/\sqrt{\text{Hz}}$
ADA4077-1	ADA4077-2	ADA4077-4	7 $\text{nV}/\sqrt{\text{Hz}}$
ADA4610-1 ¹	ADA4610-2	ADA4610-4 ¹	7.3 $\text{nV}/\sqrt{\text{Hz}}$
	ADA4001-2		7.7 $\text{nV}/\sqrt{\text{Hz}}$

Voltage Noise (e_n)— $e_n < 20 \text{ nV}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8661	AD8662	AD8664	10 $\text{nV}/\sqrt{\text{Hz}}$
AD8665	AD8666	AD8668	10 $\text{nV}/\sqrt{\text{Hz}}$
AD8677			10 $\text{nV}/\sqrt{\text{Hz}}$
	AD8622	AD8624	11 $\text{nV}/\sqrt{\text{Hz}}$
ADA4000-1	ADA4000-2	ADA4000-4	16 $\text{nV}/\sqrt{\text{Hz}}$
AD8627	AD8626	AD8625	16 $\text{nV}/\sqrt{\text{Hz}}$
AD820	AD822	AD824	16 $\text{nV}/\sqrt{\text{Hz}}$, JFET

Current Noise (i_n)— $i_n < 0.4 \text{ pA}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8641			0.0005 $\text{pA}/\sqrt{\text{Hz}}$
ADA4627-1			0.0016 $\text{pA}/\sqrt{\text{Hz}}$
ADA4637-1			0.0016 $\text{pA}/\sqrt{\text{Hz}}$
	ADA4062-2	ADA4062-4	0.005 $\text{pA}/\sqrt{\text{Hz}}$
AD820	AD822	AD824	0.008 $\text{pA}/\sqrt{\text{Hz}}$
	AD8682	AD8684	0.01 $\text{pA}/\sqrt{\text{Hz}}$
ADA4000-1	ADA4000-2	ADA4000-4	0.01 $\text{pA}/\sqrt{\text{Hz}}$
AD8663	AD8667	AD8669	0.05 $\text{pA}/\sqrt{\text{Hz}}$
AD8677			0.074 $\text{pA}/\sqrt{\text{Hz}}$
AD8661	AD8662	AD8664	0.1 $\text{pA}/\sqrt{\text{Hz}}$
AD8665	AD8666	AD8668	0.1 $\text{pA}/\sqrt{\text{Hz}}$
	ADA4096-2	ADA4096-4	0.2 $\text{pA}/\sqrt{\text{Hz}}$
ADA4077-1	ADA4077-2	ADA4077-4	0.2 $\text{pA}/\sqrt{\text{Hz}}$
AD8675	AD8676		0.3 $\text{pA}/\sqrt{\text{Hz}}$
AD8671	AD8672	AD8674	0.3 $\text{pA}/\sqrt{\text{Hz}}$

JFET Input

Single	Dual	Quad	Spec
ADA4627-1			
ADA4637-1			
ADA4610-1 ¹	ADA4610-2	ADA4610-4 ¹	
	ADA4001-2		
ADA4000-1	ADA4000-2	ADA4000-4	
	ADA4062-2	ADA4062-4	
AD8510	AD8512	AD8513	
AD8610	AD8620		
AD8627	AD8626	AD8625	
AD8641	AD8642	AD8644	
AD8682	AD8682	AD8684	
AD820	AD822	AD824	

Low Bias Current ($I_b < 5 \text{ pA}$)

Single	Dual	Quad	Spec
AD549			60 fA
AD8663	AD8667	AD8669	300 fA
AD8661	AD8662	AD8664	1 pA
AD8665	AD8666	AD8668	1 pA
AD8627	AD8626	AD8625	1 pA
AD8641	AD8642	AD8644	1 pA
AD820	AD822	AD824	1 pA
	ADA4665-2		1 pA
	ADA4661-2		3 pA
	ADA4666-2		3 pA
ADA4627-1			5 pA
ADA4637-1			5 pA

Quick Selection Guide for Precision Operational Amplifiers (BW < 50 MHz)—Low Voltage

Precision Op Amps—Low Voltage (1.8 V to 6 V)

Precision (V_{os})			
$V_{os} < 20 \mu V$ (Auto-Zero)			
Single	Dual	Quad	Spec
ADA4825-1	ADA4528-2		2.5 μV , zero drift
AD8628	AD8629	AD8630	5 μV , zero drift
AD8551	AD8552	AD8554	5 μV , zero drift
AD8571	AD8572	AD8574	5 μV , zero drift
AD8538	AD8539		13 μV , zero drift
ADA4051-1	ADA4051-2		15 μV , zero drift

$V_{os} < 400 \mu V$			
Single	Dual	Quad	Spec
AD8603	AD8607	AD8609	50 μV
AD8615	AD8616	AD8618	65 μV
AD8655	AD8656		250 μV , 0.4 $\mu V/^\circ C$
AD8605	AD8606	AD8608	300 μV , 1 $\mu V/^\circ C$
AD8651	AD8652		350 μV , 4 $\mu V/^\circ C$

$V_{os} < 1 \text{ mV}$			
Single	Dual	Quad	Spec
AD8601	AD8602	AD8604	500 μV , 2 $\mu V/^\circ C$
AD8500			1000 μV , 3.5 $\mu V/^\circ C$

Low Power (I_{sv})

$I_{sv} < 20 \mu A$			
Single	Dual	Quad	Spec
AD8500	AD8502	AD8504	1 μA
ADA4505-1	ADA4505-2	ADA4505-4	10 μA , zero crossover
ADA4051-1	ADA4051-2		17 μA , zero drift
AD8505	AD8506	AD8508	20 μA , zero crossover

$I_{sv} < 100 \mu A$			
Single	Dual	Quad	Spec
AD8613	AD8617	AD8619	40 μA
AD8603	AD8607	AD8609	40 μA
AD8541	AD8542	AD8544	55 μA , JFET input

$I_{sv} < 1 \text{ mA}$			
Single	Dual	Quad	Spec
AD8538	AD8539		190 μA
	ADA4691-2	ADA4691-4	225 μA
	ADA4692-2	ADA4692-4	225 μA
AD8601	AD8602	AD8604	750 μA
AD8531	AD8532	AD8534	750 μA
AD8691	AD8692	AD8694	950 μA
AD8605	AD8606	AD8608	1000 μA
AD8628	AD8629	AD8630	1000 μA , zero drift

Low Bias Current ($I_b < 2 \text{ pA}$)

Single	Dual	Quad	Spec
AD8613	AD8617	AD8619	1 pA
AD8603	AD8607	AD8609	1 pA
AD8691	AD8692	AD8694	1 pA
AD8605	AD8606	AD8608	1 pA
AD8615	AD8616	AD8618	1 pA
	AD8646	AD8648	1 pA
	AD8647SD		1 pA
	ADA4500-2		1 pA
ADA4505-1	ADA4505-2	ADA4505-4	2 pA

Low Noise¹

Voltage Noise (e_n)— $e_n < 15 \text{ nV}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8655	AD8656		2.7 $\text{nV}/\sqrt{\text{Hz}}$
AD8651	AD8652		4.5 $\text{nV}/\sqrt{\text{Hz}}$
ADA4528-1	ADA4528-2		5.9 $\text{nV}/\sqrt{\text{Hz}}$, zero drift
AD8615	AD8616	AD8618	8 $\text{nV}/\sqrt{\text{Hz}}$
AD8691	AD8692	AD8694	8 $\text{nV}/\sqrt{\text{Hz}}$
AD8605	AD8606	AD8608	8 $\text{nV}/\sqrt{\text{Hz}}$
	AD8646	AD8648	8 $\text{nV}/\sqrt{\text{Hz}}$
	ADA4691-2	ADA4691-4	16 $\text{nV}/\sqrt{\text{Hz}}$
	ADA4692-2	ADA4692-4	16 $\text{nV}/\sqrt{\text{Hz}}$

Voltage Noise (e_n)— $e_n < 50 \text{ nV}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8628	AD8629	AD8630	22 $\text{nV}/\sqrt{\text{Hz}}$, zero drift
AD8515			22 $\text{nV}/\sqrt{\text{Hz}}$
AD8613	AD8617	AD8619	25 $\text{nV}/\sqrt{\text{Hz}}$
AD8601	AD8602	AD8604	33 $\text{nV}/\sqrt{\text{Hz}}$
AD8551	AD8552	AD8554	42 $\text{nV}/\sqrt{\text{Hz}}$, zero drift
AD8591	AD8592	AD8594	45 $\text{nV}/\sqrt{\text{Hz}}$
AD8531	AD8532	AD8534	45 $\text{nV}/\sqrt{\text{Hz}}$
AD8505	AD8506	AD8508	48 $\text{nV}/\sqrt{\text{Hz}}$, zero crossover

Voltage Noise (e_n)— $e_n > 50 \text{ nV}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8538	AD8539		50 $\text{nV}/\sqrt{\text{Hz}}$
AD8571	AD8572	AD8574	51 $\text{nV}/\sqrt{\text{Hz}}$, zero drift
AD4505-1	AD4505-2	AD4505-4	60 $\text{nV}/\sqrt{\text{Hz}}$
ADA4051-1	ADA4051-2		95 $\text{nV}/\sqrt{\text{Hz}}$, zero drift
AD8500	AD8502	AD8504	190 $\text{nV}/\sqrt{\text{Hz}}$

Current Noise (i_n)— $i_n < 100 \text{ fA}/\sqrt{\text{Hz}}$			
Single	Dual	Quad	Spec
AD8571	AD8572	AD	