

EXCLUSIVE BURR-BROWN EDITION

Analog/Mixed-Signal Products

Designer's Guide

Burr-Brown Products Edition

November, 2000



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November 2000 Burr-Brown Products Designer's Guide

The November 2000 Burr-Brown Products Designer's Guide provides summary information for TI's Burr-Brown line of precision components. The materials in this guide will assist in rapid component assessment and selection, allowing a designer to focus on only the products best suited for an application.

The November 2000 Designer's Guide contains the following sections:

PRODUCT LINE SECTIONS: Each product section contains the following information:

- **Selection Trees**—An overview of our product lines organized by performance level or key features.
- **Selection Guides**—Tables for each product line comparing product performance for several key specifications.
- **New Products**—Product features, key applications, and block diagrams for our newest introductions and for products in development.



PRODUCT APPLICATIONS: Block diagrams of the signal path for common applications with references to Burr-Brown components useful for each functional block.

DEMONSTRATION BOARDS: User-friendly evaluation fixtures for Burr-Brown products.

TOOLS FOR DESIGNERS: Listings of Applications Bulletins, Demonstration Boards, and Design Software available from Burr-Brown.

CROSS REFERENCE: A listing of Burr-Brown's products that are pin-for-pin (P/P) compatible with competitors' products, pin-for-pin with exception of one or more specs (P/E), closest part (C/P) or functional equivalent (F/E).

SALES OFFICE LISTINGS: For a list of Sales Offices in your area, please contact your local TI Product Information Center (see inside back cover).

HOW TO USE THE FALL 2000 DESIGNER'S GUIDE

The New Products Index appears on page 144 with a list of the page numbers where these products can be found. The **boldface page number** indicates more detailed, newer product information. If you are not familiar with Burr-Brown part numbers, the "flip-through" page headings make it convenient to find a specific section.

CUSTOMER SERVICE

TI is committed to providing the best customer service in the industry. For immediate assistance, contact your local TI Product Information Center (see inside back cover). Some of the services we provide:

Technical Literature and Applications Assistance

TI provides top caliber applications engineering assistance to our customers. We will provide you with professional guidance and resolve design snags real-time. Designing in Burr-Brown products from TI is easy. Applications assistance can be obtained during business hours through your local TI Product Information Center (see inside back cover).

You can also request a data book, individual product data sheets, product guides, applications bulletins, product line brochures, demo board manuals, and design software through the same phone number. In addition, promotional samples and evaluation kits are available when offered in advertisements.

World Wide Web

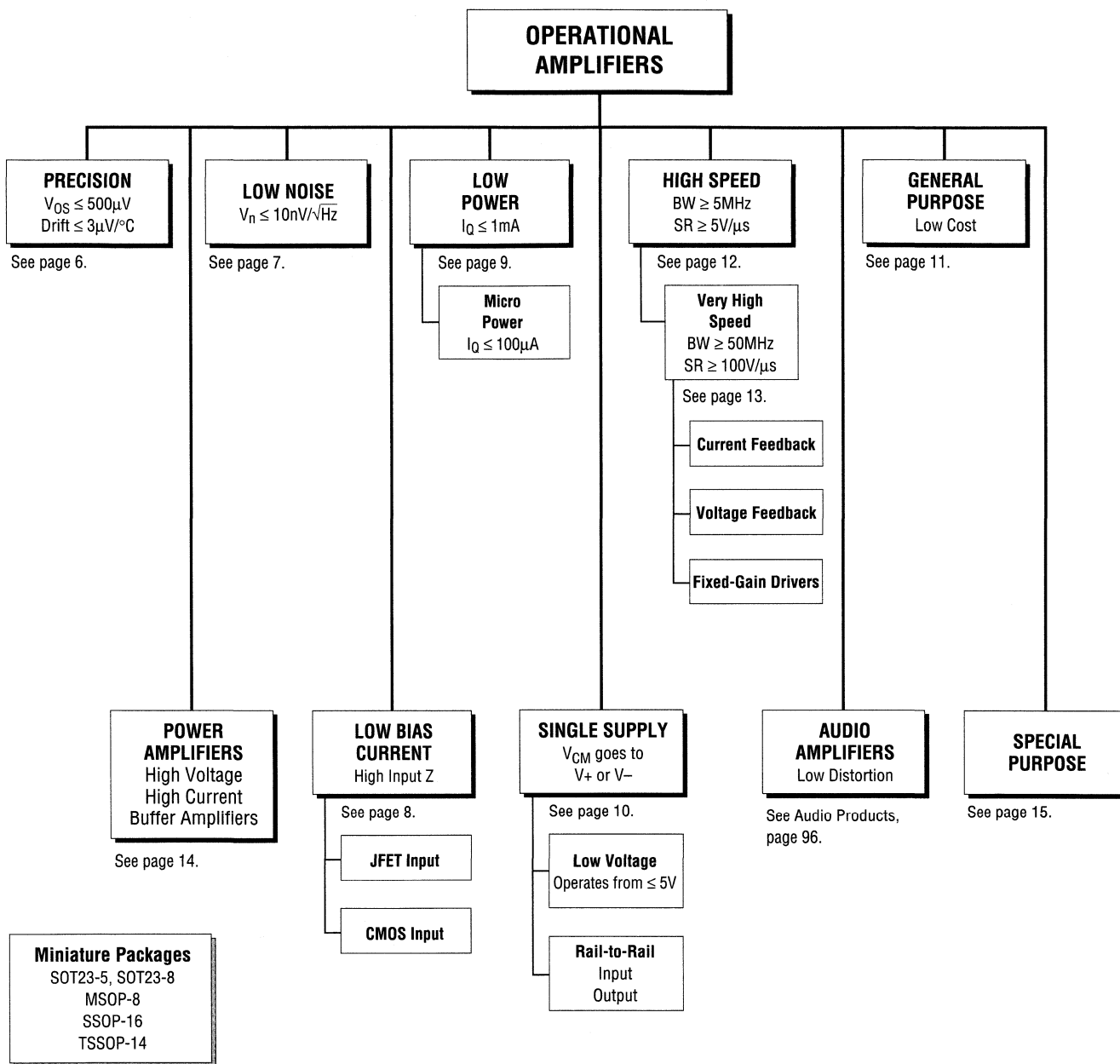
Visit the TI web site and take advantage of all the on-line tools that Burr-Brown has to offer. Currently, the site features on-line purchasing, product data sheets, applications bulletins, parametric search engine, cross reference search tool, Spice macromodels, Filter-Pro, demo board data sheets, applications seminar manuals, and financial news releases.

Make the TI web site your first stop for product information development tools and applications assistance. Visit us today at www.ti.com/sc/analog.

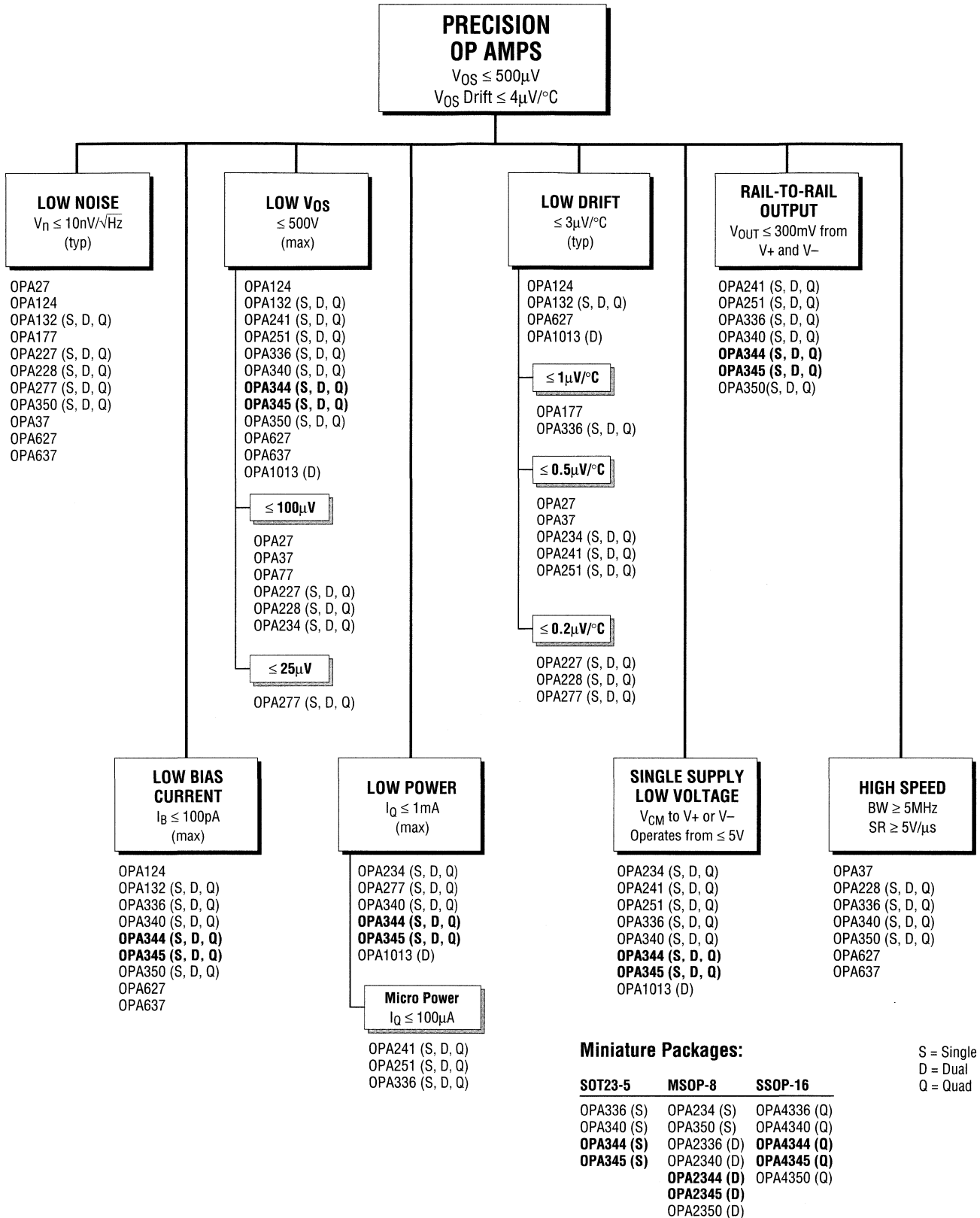
Pricing and Availability

Information on product pricing and availability from a TI authorized distributor and sample requests can be obtained by calling your local TI Product Information Center (see inside back cover).

Operational Amplifiers—Main Selection Tree



Operational Amplifiers—Selection Tree



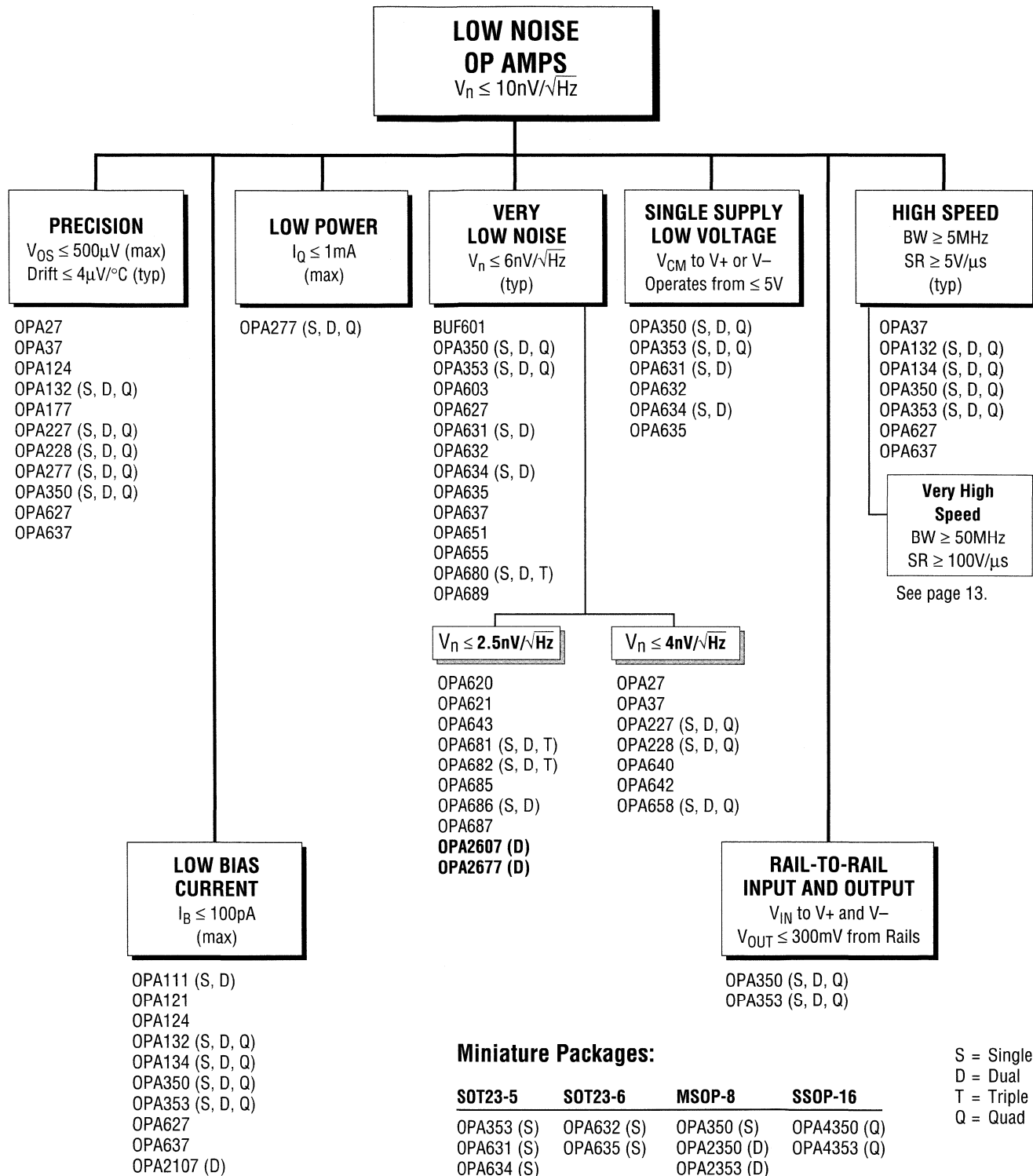
Miniature Packages:

SOT23-5	MSOP-8	SSOP-16
OPA336 (S)	OPA234 (S)	OPA4336 (Q)
OPA340 (S)	OPA350 (S)	OPA4340 (Q)
OPA344 (S)	OPA2336 (D)	OPA4344 (Q)
OPA345 (S)	OPA2340 (D)	OPA4345 (Q)
	OPA2344 (D)	OPA4350 (Q)
	OPA2345 (D)	
	OPA2350 (D)	

S = Single
 D = Dual
 Q = Quad

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Operational Amplifiers—Selection Tree



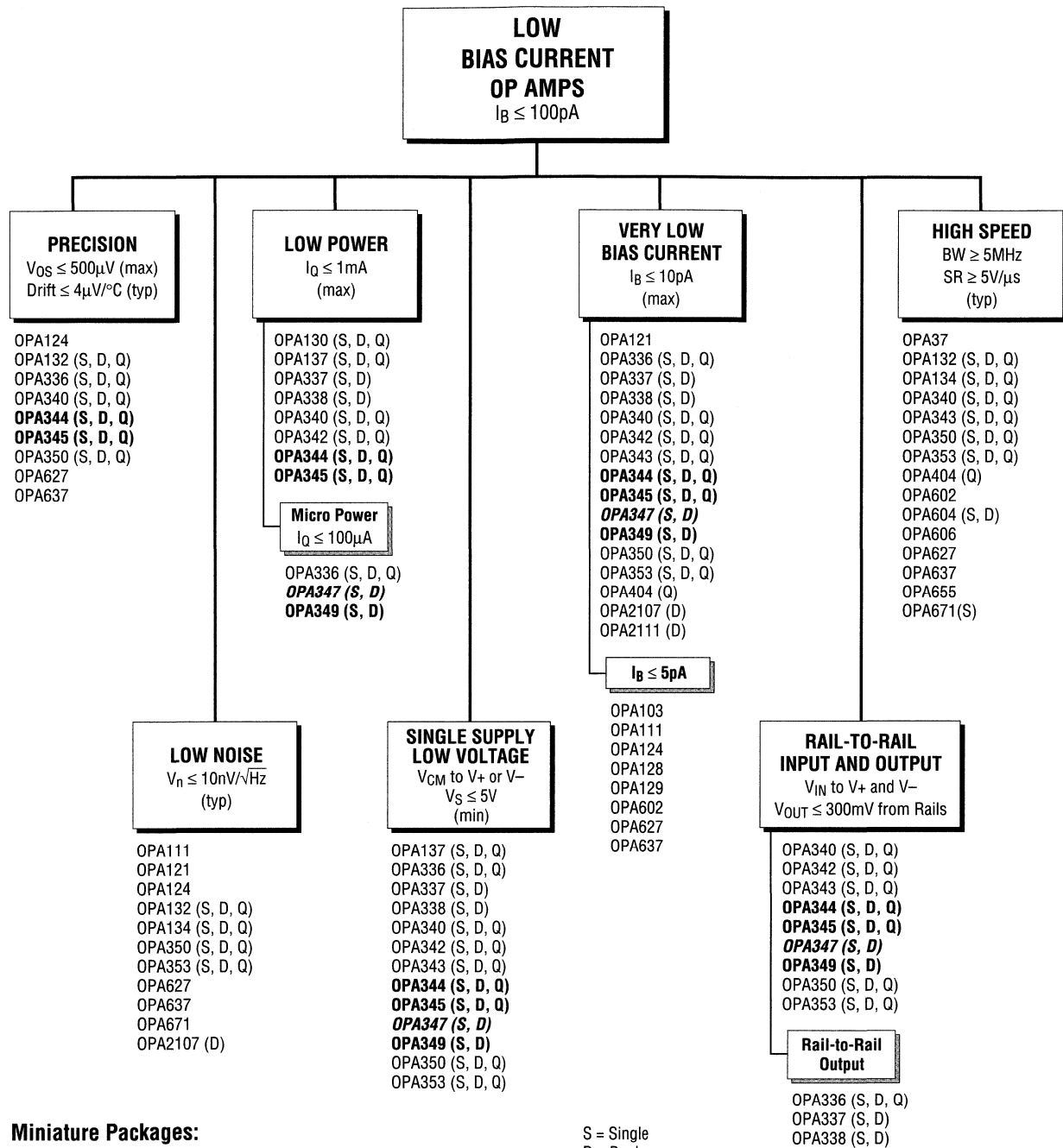
Miniature Packages:

SOT23-5	SOT23-6	MSOP-8	SSOP-16
OPA353 (S)	OPA632 (S)	OPA350 (S)	OPA4350 (Q)
OPA631 (S)	OPA635 (S)	OPA2350 (D)	OPA4353 (Q)
OPA634 (S)		OPA2353 (D)	

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Operational Amplifiers—Selection Tree



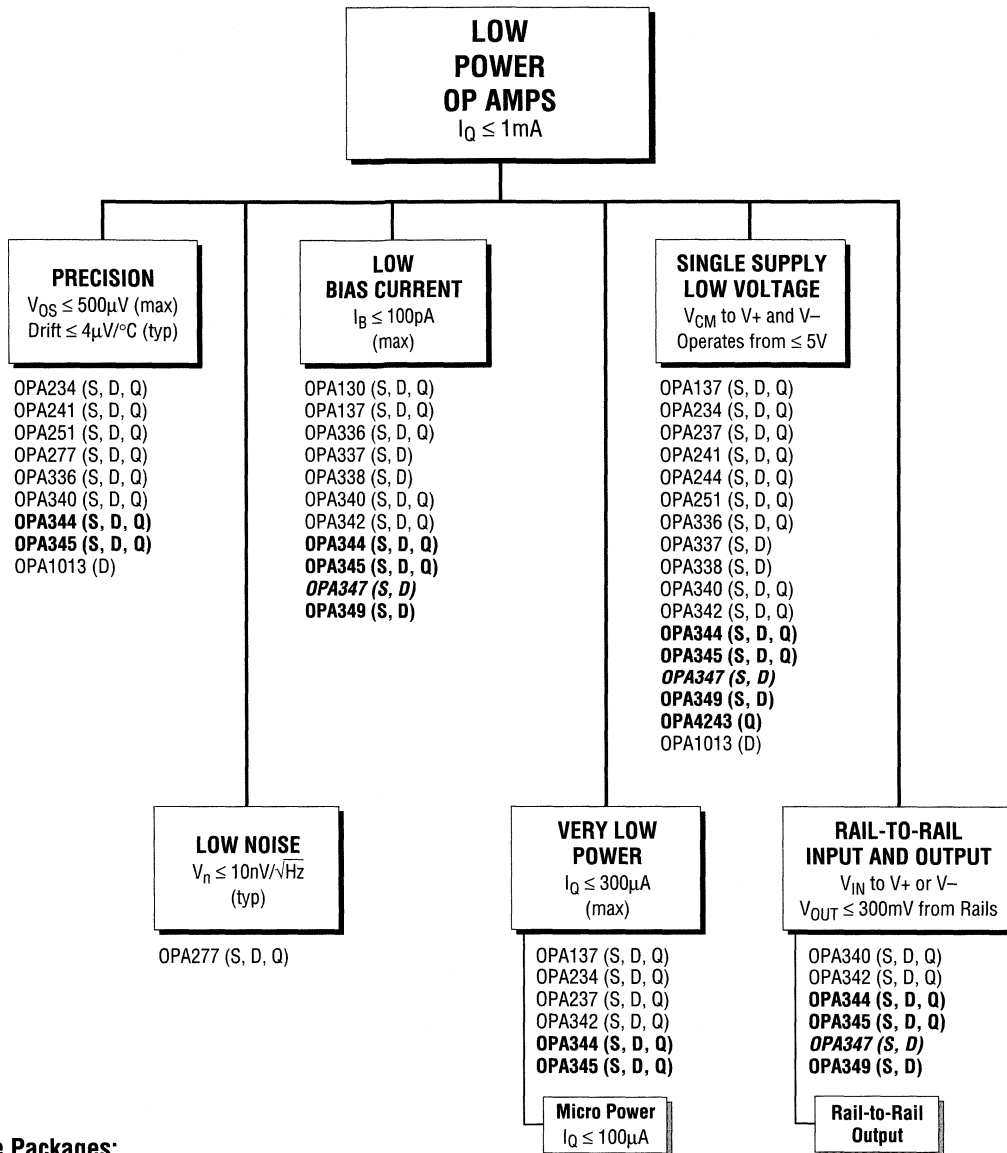
Miniature Packages:

SOT23-5	SOT23-8	MSOP-8	SSOP-16	TSSOP-14
OPA137 (S)	OPA2337 (D)	OPA350 (S)	OPA4336 (Q)	OPA4342 (Q)
OPA336 (S)	OPA2338 (D)	OPA2137 (D)	OPA4340 (Q)	OPA4343 (Q)
OPA337 (S)	OPA2347 (D)	OPA2336 (D)	OPA4342 (Q)	OPA4344 (Q)
OPA338 (S)	OPA2349 (D)	OPA2340 (D)	OPA4343 (Q)	OPA4345 (Q)
OPA340 (S)		OPA2342 (D)	OPA4344 (Q)	
OPA342 (S)		OPA2343 (D)	OPA4345 (Q)	
OPA343 (S)		OPA2350 (D)	OPA4350 (Q)	
OPA344 (S)		OPA2353 (D)	OPA4353 (Q)	
OPA345 (S)		OPA2344 (D)		
OPA347 (S)		OPA2345 (D)		
OPA349 (S)				
OPA353 (S)				

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Operational Amplifiers—Selection Tree

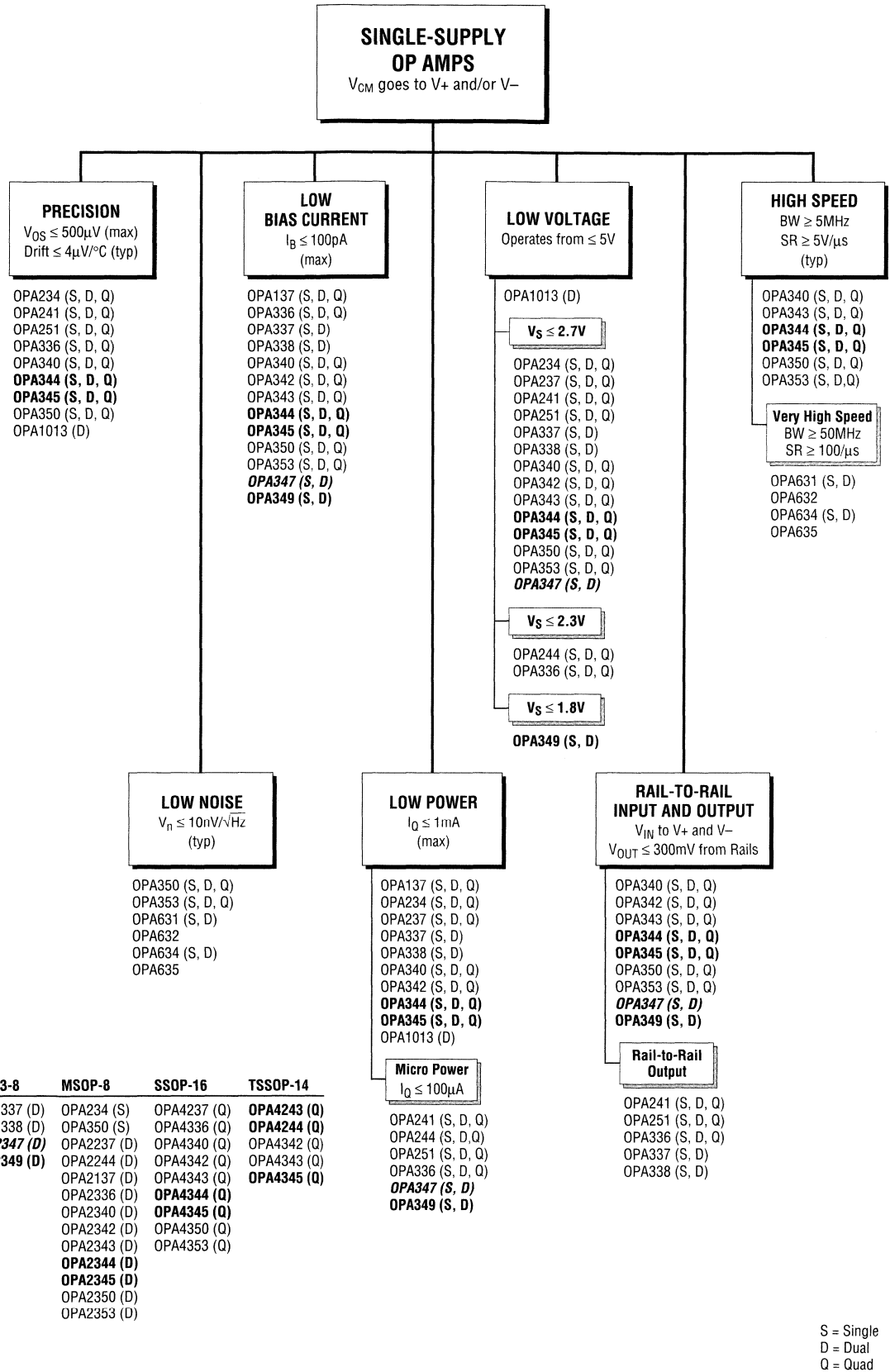


Miniature Packages:

SOT23-5	SOT23-8	MSOP-8	SSOP-16	TSSOP-14
OPA137 (S)	OPA2337 (D)	OPA234 (S)	OPA4237 (Q)	OPA4243 (Q)
OPA237 (S)	OPA2338 (D)	OPA2237 (D)	OPA4336 (Q)	OPA4244 (Q)
OPA244 (S)	OPA2347 (D)	OPA2244 (D)	OPA4340 (Q)	OPA4342 (Q)
OPA336 (S)	OPA2349 (D)	OPA2137 (D)	OPA4342 (Q)	OPA4343 (Q)
OPA337 (S)		OPA2336 (D)	OPA4344 (Q)	OPA4345 (Q)
OPA338 (S)		OPA2340 (D)	OPA4345 (Q)	
OPA340 (S)		OPA2342 (D)		
OPA342 (S)		OPA2344 (D)		
OPA344 (S)		OPA2345 (D)		
OPA345 (S)				
OPA347 (S, D)				
OPA349 (S, D)				

S = Single
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Q = Quad

Operational Amplifiers—Selection Tree



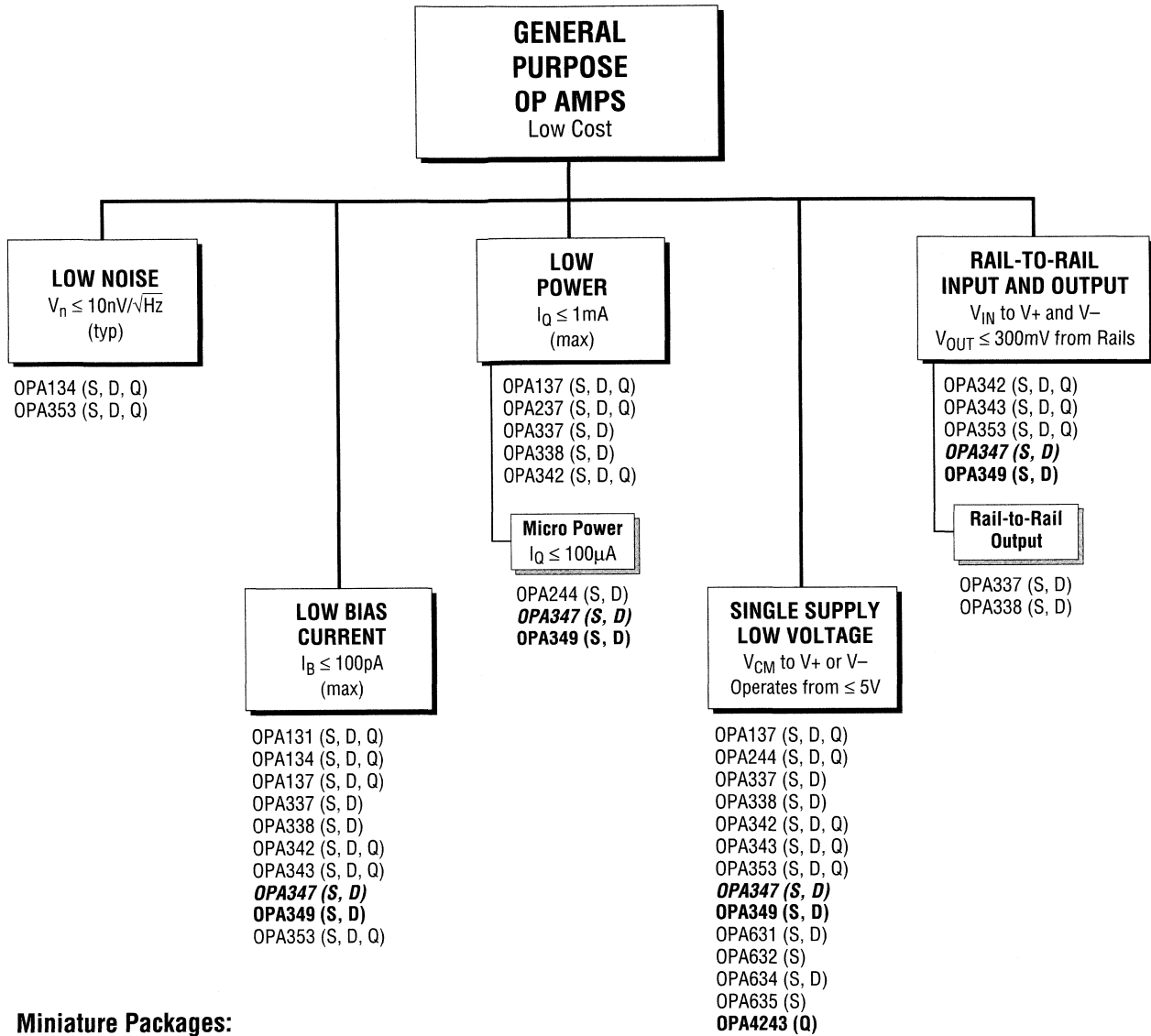
Miniature Packages:

SOT23-5	SOT23-6	SOT23-8	MSOP-8	SSOP-16	TSSOP-14
OPA137 (S)	OPA632	OPA2337 (D)	OPA234 (S)	OPA4237 (Q)	OPA4243 (Q)
OPA237 (S)	OPA635	OPA2338 (D)	OPA350 (S)	OPA4336 (Q)	OPA4244 (Q)
OPA244 (S)		OPA2347 (D)	OPA2237 (D)	OPA4340 (Q)	OPA4342 (Q)
OPA336 (S)		OPA2349 (D)	OPA2244 (D)	OPA4342 (Q)	OPA4343 (Q)
OPA337 (S)			OPA2137 (D)	OPA4343 (Q)	OPA4345 (Q)
OPA338 (S)			OPA2336 (D)	OPA4344 (Q)	
OPA340 (S)			OPA2340 (D)	OPA4345 (Q)	
OPA342 (S)			OPA2342 (D)	OPA4350 (Q)	
OPA343 (S)			OPA2343 (D)	OPA4353 (Q)	
OPA344 (S)			OPA2344 (D)		
OPA345 (S)			OPA2345 (D)		
OPA353 (S)			OPA2350 (D)		
OPA347 (S, D)			OPA2353 (D)		
OPA349 (S)					
OPA631					
OPA634					

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Operational Amplifiers—Selection Tree

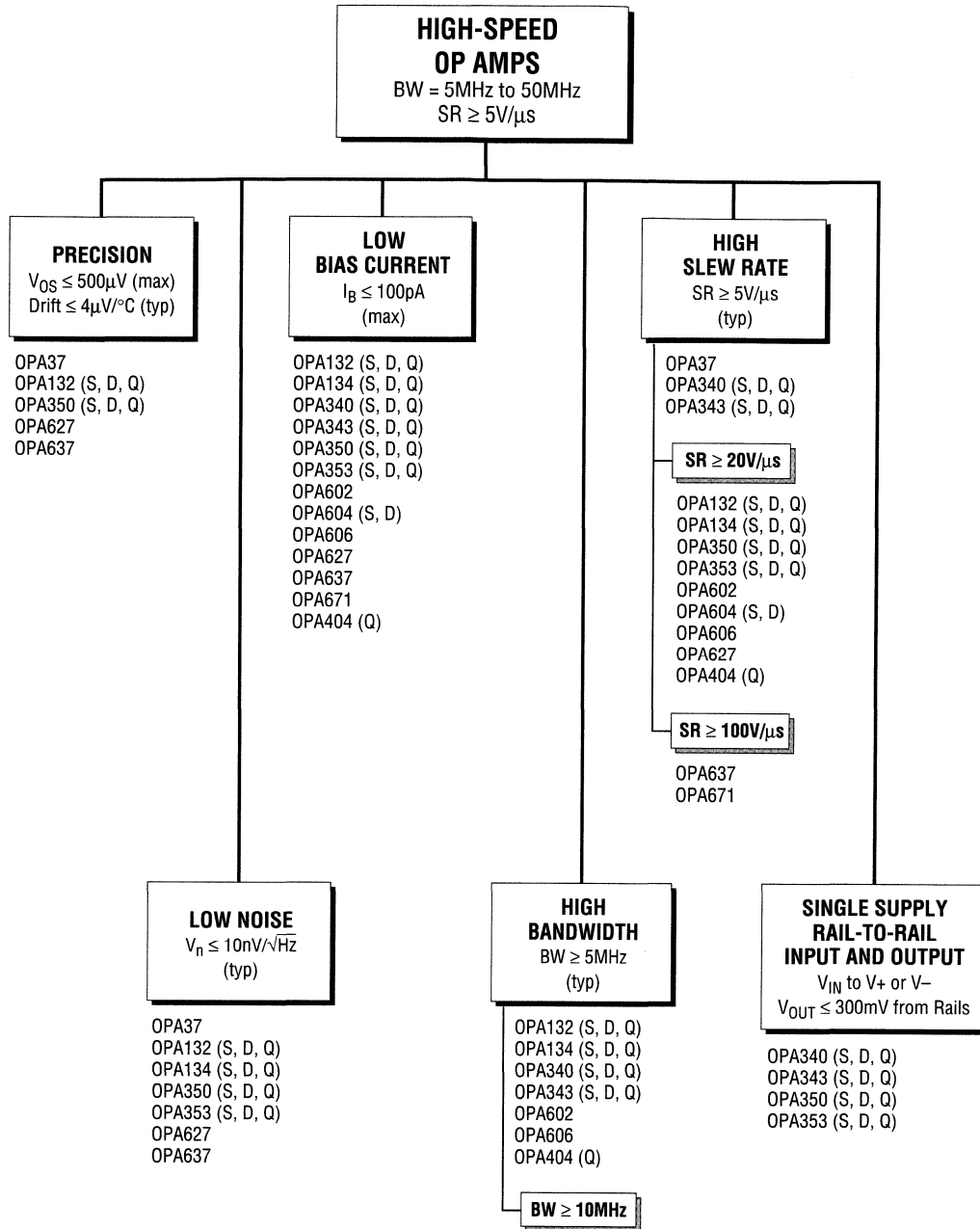


Miniature Packages:

SOT23-5	SOT23-8	MSOP-8	SSOP-16	TSSOP-14
OPA137 (S)	OPA2337 (D)	OPA2137 (D)	OPA4237 (Q)	OPA4243 (Q)
OPA237 (S)	OPA2338 (D)	OPA2237 (D)	OPA4342 (Q)	OPA4244 (Q)
OPA244 (S)	OPA2347 (D)	OPA2244 (D)	OPA4343 (Q)	OPA4342 (Q)
OPA337 (S)	OPA2349 (D)	OPA2342 (D)	OPA4350 (Q)	OPA4343 (Q)
OPA338 (S)		OPA2353 (D)		OPA4345 (Q)
OPA342 (S)				
OPA343 (S)				
OPA347 (S, D)				
OPA349 (S)				
OPA353 (S)				
OPA631 (S)				
OPA634 (S)				

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Operational Amplifiers—Selection Tree



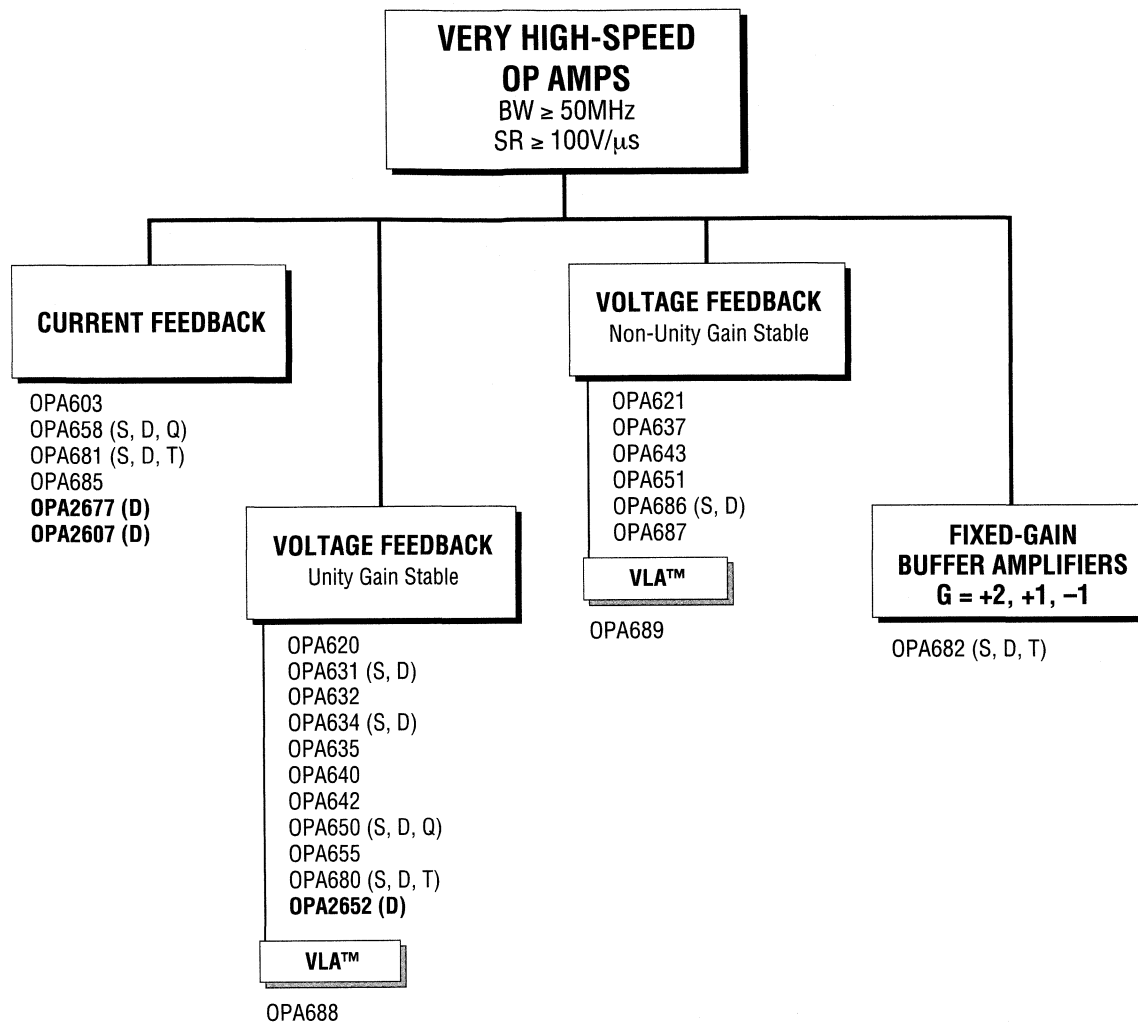
Miniature Packages:

SOT23-5	MSOP-8	SSOP-16
OPA340 (S)	OPA350 (S)	OPA4340 (Q)
OPA343 (S)	OPA2340 (D)	OPA4343 (Q)
OPA353 (S)	OPA2343 (D)	OPA4350 (Q)
	OPA2350 (D)	OPA4353 (Q)
	OPA2353 (D)	

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Operational Amplifiers—Selection Tree



Miniature Packages:

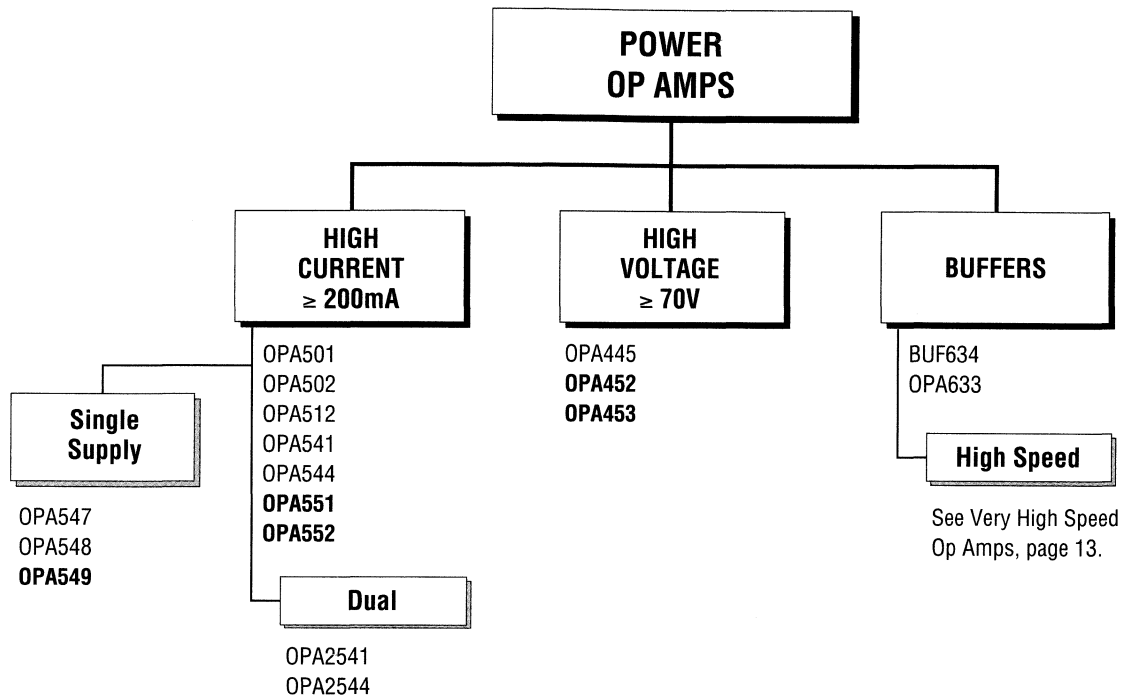
SOT23-5	SOT23-6	SOT23-8	MSOP-8	SSOP-16
OPA631 (S)	OPA632 (S)	OPA2652 (D)	OPA2650 (D)	OPA3680 (T)
OPA634 (S)	OPA635 (S)		OPA2658 (D)	OPA3681 (T)
OPA642 (S)	OPA680 (S)			OPA3682 (T)
OPA643 (S)	OPA681 (S)			
OPA650 (S)	OPA682 (S)			
OPA658 (S)	OPA685 (S)			
	OPA687 (S)			

S = Single
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 T = Triple
 Q = Quad

VLA™ = Voltage Limiting Amplifier

* See Page 17 for Listings.

Operational Amplifiers—Selection Tree and Guide



Power Op Amps—High Voltage, High Current

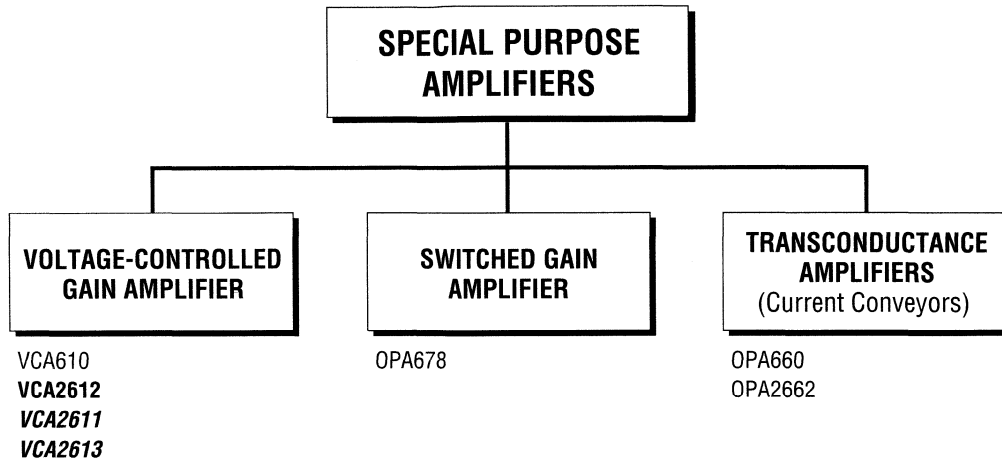
Product	Description	Chan	Power Supply V	Output Current A (min)	I_Q mA (max)	BW MHz (typ)	Slew Rate V/ μ s (typ)	Offset mV (max)	Offset Drift mV/ $^{\circ}$ C (typ)	Bias Current nA (max)	Package(s)	Price* 1kpcs
OPA445	High Voltage, FET Inputs, Low Cost	1	± 10 to ± 45	0.015	4.7	2	15	3	10	50p	TO99-8, DIP-8, SO-8	\$2.44
OPA452	High Voltage, FET Inputs	1	± 10 to ± 40	0.05	6.5	2	8	5	5	100p	TO220-7, DDPak-7	2.37
OPA453	High Voltage, FET Inputs, High Speed	1	± 10 to ± 40	0.05	6.5	8	20	5	5	100p	TO220-7, DDPak-7	2.37
OPA544 ⁽¹⁾	FET Inputs, Dual Version Available	1, 2	± 10 to ± 35	2	15	1.4	5	5	10	100p	ZIP-5, TO220-5, DDPak-5	6.60
OPA547	Single-Supply, Shutdown	1	8 to 60	0.75	10	1	6	5	25	500n	TO220-7, DDPak-7	4.09
OPA548	Single-Supply, Shutdown	1	8 to 60	5	17	1	10	5	25	500n	TO220-7, DDPak-7	5.45
OPA549	Single-Supply, Shutdown	1	8 to 60	10	35	0.9	9	5	20	500n	ZIP-11	7.40
OPA551	Low Cost, High Accuracy	1	± 4 to ± 30	0.2	8.5	3	15	3	7	100p	DIP-8, SO-8, DDPak-7	1.90
OPA552	High Speed, G > 5	1	± 4 to ± 30	0.2	8.5	12	24	3	7	100p	DIP-8, SO-8, DDPak-7	2.28

NOTE: (1) Single version listed; for dual version use OPA2544.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Operational Amplifiers—Selection Tree



Operational Amplifiers—Selection Guide

FET Op Amps—Low Bias Current, ±15V Capability

Product ⁽¹⁾	Description	Chan	BW MHz (typ)	Slew Rate V/μs (min)	Offset mV (max)	Offset Drift μV/°C (typ)	Bias Current A (max)	Noise at 1kHz nV/√Hz (typ)	Power Supply V	I _Q mA (typ)	Output Swing V (min)	Package ⁽²⁾		Price* 1kpcs
												SO, DIP	Micro	
OPA130	Low Power, 530μA Quiescent	1, 2, 4	1	2	1	2	20p	16	±2.25 to ±18	0.53	(V+) – 2 to (V-) + 1.2	✓		\$1.30
OPA131	General Purpose	1, 2, 4	4	10	0.75	2	50p	15	±4.5 to ±18	1.5	(V+) – 3 to (V-) + 3	✓		0.70
OPA132	Fast, 0.00008% Distortion	1, 2, 4	8	20	0.5	2	50p	8	±2.5 to ±18	4	(V+) – 1.2 to (V-) + 0.5	✓		1.33
OPA134	Audio Op Amp, 0.00008% Distortion	1, 2, 4	8	20	2	2	100p	8	±2.5 to ±18	4	(V+) – 1.2 to (V-) + 0.5	✓		0.87
OPA137	Low Cost, Input Voltage Includes V+	1, 2, 4	1	3.5	3	15	100p	45	±2.25 to ±18	0.22	(V+) – 1 to (V-) + 1.2	✓	✓	0.55
OPA627	Ultra-Low Distortion, High Precision	1	16	55	0.1	0.4	1p	5.2	±4.5 to ±18	7	(V+) – 3.5 to (V-) + 3.5	✓		8.28
OPA637	G > 5 Stable, 100V/μs	1	80	135										

Bipolar Op Amps—Low Offset Voltage/Drift

Product ⁽¹⁾	Description	Chan	BW MHz (typ)	Slew Rate V/μs (min)	Offset mV (max)	Offset Drift μV/°C (typ)	Bias Current A (max)	Noise at 1kHz nV/√Hz (typ)	Power Supply V	I _Q mA (typ)	Output Swing V (min)	Package ⁽²⁾		Price* 1kpcs
												SO, DIP	Micro	
OPA27	Low Noise, High Precision,	1	8	1.9	100	0.4	40n	3.2	±4 to ±22	4.7	(V+) – 3 to (V-) + 3	✓		\$1.06
OPA37	G > 5, 45MHz	1	63	11.9	100	0.4	40n	3.2	±4 to ±22	4.7	(V+) – 3 to (V-) + 3	✓		1.08
OPA227	Low Noise, Dual/Quad Version	1, 2, 4	8	2.3	75	0.1	10n	3	+2.5 to +18	3.7	(V+) – 2 to (V-) + 2	✓		1.00
OPA228	G > 10	1, 2, 4	33	11	75	0.1	10n	3	±2.5 to ±18	3.7	(V+) – 2 to (V-) + 2	✓		1.00
OPA177	High Precision	1	0.6	0.3	25	0.1	1.5n	7.5	±3 to ±18	1.3	(V+) – 1.5 to (V-) + 1.5	✓		0.82
OPA277	High Precision, Dual/Quad Version	1, 2, 4	1	0.8	25	0.1	1n	8	±1.35 to ±18	0.8	(V+) – 1.2 to (V-) + 0.5	✓		0.90
OPA234	Single-Supply	1, 2, 4	0.35	0.2	100	0.5	25n	25	2.7 to 36	0.25	(V+) – 1 to (V-) + 0.5	✓	✓	0.98
OPA237	Single-Supply, Low Cost	1, 2, 4	1.4	0.5	750	2	40n	28	2.7 to 36	0.17	(V+) – 1 to (V-) + 0.1	SO	✓	0.50
OPA241	Single-Supply, microPower,	1, 2, 4	0.035	0.01	250	0.4	20n	45	2.7 to 36	0.025	(V+) – 0.1 to (V-) + 0.1	✓		1.06
OPA251	Precision ±15V Specified	1, 2, 4	0.035	0.01	250	0.4	20n	45	2.7 to 36	0.025	(V+) – 0.1 to (V-) + 0.1	✓		1.06
OPA4243	Single-Supply, microPower, Low Cost	4	0.3	0.1	5000	8	25n	22	2.6 to 36	0.04	(V+) – 0.9 to (V-) + 0.5		✓	1.50
OPA244	Single-Supply, microPower	1, 2, 4	0.24	0.1	1500	4	25n	22	2.6 to 36	0.04	(V+) – 0.9 to (V-) + 0.5	✓	✓	0.49

Single-Supply CMOS Op Amps—Low Cost

Product ⁽¹⁾	Description	Chan	BW MHz	Slew Rate V/μs (typ)	Offset mV (typ)	Offset Drift μV/°C (max)	CMRR dB (typ)	Noise at 1kHz nV/√Hz (min)	Power Supply V (typ)	I _Q μA	Rail-to-Rail		Package ⁽²⁾		Price* 1kpcs
											In	Out	SO, DIP	Micro	
OPA336	Precision, microPower: 25μA/Amp	1, 2, 4	0.1	0.03	0.125	1.5	80	40	2.3 to 5.5	20		✓	✓	✓	\$0.60
OPA337	Low Cost, Dual Version in SOT23-8	1, 2	3	1.2	3	2	74	26	2.7 to 5.5	525		✓	✓	✓	0.40
OPA338	Fast, Low Cost, G > 5	1, 2	12.5	4.6	3	2	74	26	2.7 to 5.5	525		✓	✓	✓	0.40
OPA340	Fast, Precision	1, 2, 4	5.5	6	0.5	2.5	80	25	2.7 to 5.5	750	✓	✓	✓	✓	0.66
OPA342	Low Power, Low Cost	1, 2, 4	1	1	6	3	76	30	2.7 to 5.5	150	✓	✓	SO	✓	0.58
OPA343	Fast, Low Cost	1, 2, 4	5.5	6	8	3	74	25	2.5 to 5.5	850	✓	✓	SO	✓	0.57
OPA344	Low Power, Precision	1, 2, 4	1	1	0.5	2.5	80	32	2.7 to 5.5	150	✓	✓	SO	✓	0.67
OPA345	Low Power, Fast, G > 5	1, 2, 4	4	4	0.5	2.5	80	32	2.7 to 5.5	150	✓	✓	SO	✓	0.67
OPA347	microPower, Low Cost	1, 2	0.35	0.1	10	2	62	60	2.5 to 5.5	30	✓	✓	SO	✓	0.50
OPA349	Ultra-Low Power, 2μA/Amp	1, 2	0.075	0.02	10	2.5	52	200	1.8 to 5.5	2	✓	✓	SO	✓	0.58
OPA350	High Speed, Low Noise	1, 2, 4	38	22	0.5	4	76	5	2.5 to 5.5	5200	✓	✓	✓	✓	1.22
OPA353	High Speed, Low Cost, Low Noise	1, 2, 4	44	22	8	5	76	5	2.7 to 5.5	5200	✓	✓	SO	✓	0.96

NOTES: (1) Actual Part Number Example: OPAx343: single: use Base Model Number from table, dual: x = 2, quad: x = 4. (2) microPackages = SOT23-5/6/8, MSOP-8, SSOP-16, TSSOP-14. Most op amps are also available in standard DIP and SO packages.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Operational Amplifiers—Selection Guide

OPERATIONAL AMPLIFIERS—Very High Speed

Product	BW ⁽¹⁾ MHz (typ)	G _{NOM} ⁽²⁾ (typ)	SR ⁽³⁾ V/μs (typ)	SFDR ⁽⁴⁾ dB (typ)	V _S ⁽⁵⁾ V (typ)	I _Q ⁽⁶⁾ mA/Chan (typ)	V _{OR} ⁽⁷⁾ V (min)	I _{OUT} ⁽⁸⁾ mA (min)	V _{OS} ⁽⁹⁾ mV (max)	e _{ni} ⁽¹⁰⁾ nV/√Hz (typ)	Package(s)	Price* 1kpcs
Fixed Gain Buffer Amplifiers (G = +2, +1, -1)												
OPA682	240	2	2100	74	±5, 5	6.0	±3.8	135	5.0	2.2	SOT23-6, SO-8, PDIP-8	\$1.82
OPA2682	240	2	2100	74	±5, 5	6.0 (dual)	±3.8	135	5.0	2.2	SO-8, SO-14	2.94
OPA3682	240	2	2100	74	±5, 5	6.0 (triple)	±3.8	135	5.0	2.2	SSOP-16, SO-16	3.85
Current Feedback												
OPA603	160	2	1000	59	±15, ±5	21	±10	150 (typ)	6.0	4.2	SO-16, PDIP-8	4.65
OPA658	680	2	1700	68	±5	5.0	±2.7	60	5.5	3.2	SOT23-5, SO-8, PDIP-8	1.49
OPA2658	500	2	1700	68	±5	5.0 (dual)	±2.7	60	5.5	3.2	SO-8, PDIP-8	2.39
OPA4658	450	2	1700	66	±5	5.0 (quad)	±2.7	60	5.5	3.3	SO-14	4.99
OPA681	220	2	2100	74	±5, +5	6.0	±3.8	135	5.0	2.2	SOT23-6, SO-8, PDIP-8	1.79
OPA2681	220	2	2100	74	±5, +5	6.0 (dual)	±3.8	135	5.0	2.2	SO-8, SO-14	2.89
OPA3681	220	2	2100	74	±5, +5	6.0 (triple)	±3.8	135	5.0	2.2	SO-16, SSOP-16	3.79
OPA685	900	2	4200	74	±5, +5	12.9	±3.9	60	3.5	1.7	SO-8, SOT23-6	1.89
OPA2607	25	8	600	77 (1MHz)	±12	8.0 (dual)	±9.9	150	10.0	1.6	PSO-8, SO-8, SO-14, PSO-14	2.85
OPA2677	200	4	1100	72	±6	9.0 (dual)	±4.7	280	1.5	1.7	PSO-8, SO-8, SO-14	2.29
Voltage Feedback (G_{MN} = 1)												
OPA620	300	1	250	—	±5	21	±3.0	50	1.0	2.3	SO-8, PDIP-8	7.20
OPA631	75	2	100	42	+10 to +3	6	0.06 to 4.80	25	6.0	6.0	SOT23-5, SO-8	1.29
OPA2631	75	2	100	42	+10 to +3	6 (dual)	0.06 to 4.80	25	6.0	6.0	SO-8	2.09
OPA632	75	2	100	42	+10 to +3	6	0.06 to 4.80	25	6.0	6.0	SOT23-6, SO-8	1.29
OPA634	150	2	250	63	+10 to +3	12	0.05 to 4.80	50	7.0	5.6	SOT23-5, SO-8	1.49
OPA2634	150	2	250	63	+10 to +3	12 (dual)	0.05 to 4.80	50	7.0	5.6	SO-8	2.49
OPA635	150	2	250	63	+10 to +3	12	0.05 to 4.80	50	7.0	5.6	SOT23-6, SO-8	1.49
OPA642	400	1	380	92	±5	20	±3.0	40	4.0	2.7	SOT23-5, SO-8, PDIP-8	3.75
OPA650	560	1	240	73	±5	5.1	±2.7	65	5.0	8.4	SOT23-5, SO-8, PDIP-8	1.29
OPA2650	360	1	240	72	±5	5.5 (quad)	±2.7	65	5.0	8.4	SO-8, PDIP-8	1.95
OPA4650	360	1	240	68	±5	5.8 (quad)	±2.7	65	5.5	8.4	SO-14, PDIP-14	4.99
OPA2652	200	2	290	75	±5	5.5 (dual)	±3.0	80	7.0	8.0	SOT23-8, SO-8	1.19
OPA655 ⁽¹¹⁾	400	1	290	90	±5	25	±3.0	35	2.0	6.0	SO-8, PDIP-8	9.13
OPA671 ⁽¹¹⁾	33	1	107	—	±15, ±5	15	±10.5	50	5.0	10.0	PDIP-8	4.37
OPA680	220	2	1800	68	±5, +5	6.4	±3.8	135	4.0	4.8	SOT23-6, SO-8, PDIP-8	1.79
OPA2680	220	2	1800	68	±5, +5	6.4 (dual)	±3.8	135	4.5	4.8	SO-8, SO-14	2.89
OPA3680	220	2	1800	68	±5, +5	6.4 (triple)	±3.8	135	5.0	4.8	SSOP-16, SO-16	3.79
OPA688 ⁽¹²⁾	260	2	1000	66	±5, +5	16	±3.9	70	6.0	6.3	SO-8, PDIP-8	2.65
Voltage Feedback (G_{MN} > 1)												
OPA621	500	2	500	—	±5	26	±2.7	60	1.0	2.3	SO-8	7.20
OPA643	200	5	1000	90	±5	20	±3.0	40	4.0	2.3	SOT23-5, SO-8	3.75
OPA651	470	2	300	67	±5	5.1	±2.7	65	5.0	4.6	SOT23-5, SO-8	1.95
OPA686	250	10	600	72	±5	12	±3.2	60	1.0	1.3	SOT23-5, SO-8	2.89
OPA2686	250	10	600	72	±5	12 (dual)	±3.2	60	1.0	1.4	SO-8	4.59
OPA687	290	20	900	74	±5	18	±3.3	60	1.0	0.95	SOT23-6, SO-8	3.49
OPA689 ⁽¹²⁾	280	6	1600	61	±5, +5	16	±3.9	70	5.0	4.6	SO-8, PDIP-8	2.95

NOTES: (1) BW refers to small-signal bandwidth. (2) G_{NOM} is the gain for the other specs. (3) SR refers to slew rate. (4) SFDR is the Spurious Free Dynamic Range at f = 5MHz and V_O = 2Vp-p. (5) V_S is the specified supply voltage(s). (6) I_Q is the supply current per channel. (7) V_{OR} is the no load, voltage output range (guaranteed at 25°C). (8) I_{OUT} refers to the output current (guaranteed at 25°C). (9) V_{OS} is the input offset voltage. (10) e_{ni} is the input voltage noise density. (11) FET Input. (12) Voltage Limiting Amplifier.

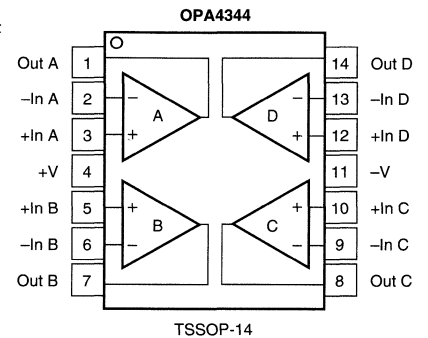
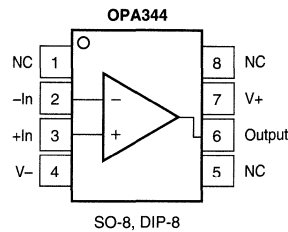
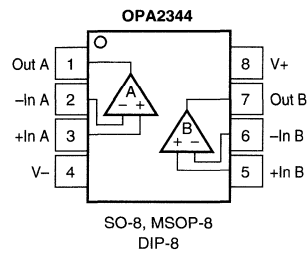
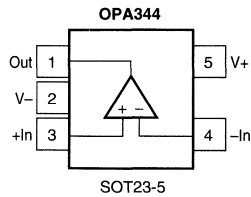
*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Operational Amplifiers—New Products

OPA344, OPA2344, OPA4344

Low Power, Single-Supply, Rail-to-Rail
CMOS OPERATIONAL AMPLIFIERS
MicroAmplifier™ Series

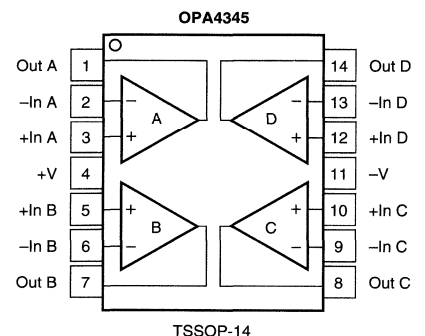
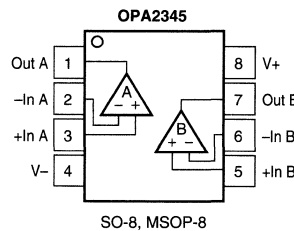
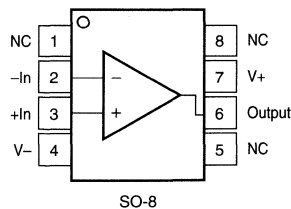
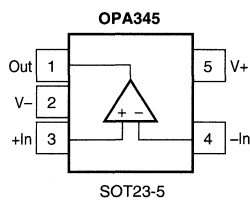


FEATURES

- RAIL-TO-RAIL INPUT
- RAIL-TO-RAIL OUTPUT (within 1mV)
- LOW QUIESCENT CURRENT: 150µA
- *MicroSIZE* PACKAGE OPTIONS:
 - SOT23-5 TSSOP-14
 - MSOP-8
- BANDWIDTH: 1MHz
- SLEW RATE: 1V/µs
- THD+NOISE: 0.006%
- SINGLE, DUAL, AND QUAD VERSIONS

OPA345, OPA2345, OPA4345

Low Power, Single-Supply, Rail-to-Rail, $G \geq 5$
CMOS OPERATIONAL AMPLIFIERS
MicroAmplifier™ Series

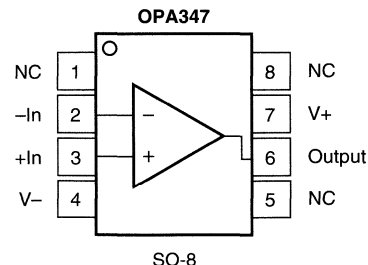
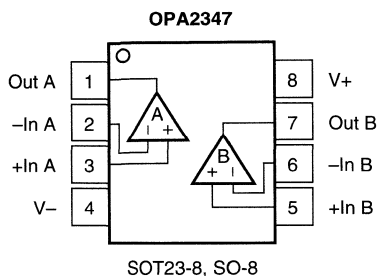
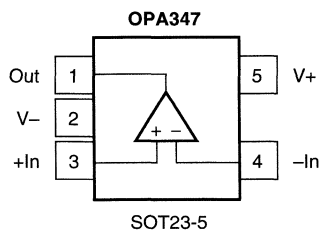


FEATURES

- RAIL-TO-RAIL INPUT
- RAIL-TO-RAIL OUTPUT (within 1mV)
- LOW QUIESCENT CURRENT: 150µA
- *MicroSIZE* PACKAGE OPTIONS:
 - SOT23-5 TSSOP-14
 - MSOP-8
- BANDWIDTH: 4MHz ($G \geq 5$)
- SLEW RATE: 4V/µs
- THD+NOISE: 0.006%
- SINGLE, DUAL, AND QUAD VERSIONS

OPA347, OPA2347

microPower, Rail-to-Rail
CMOS OPERATIONAL AMPLIFIER
20 μ A

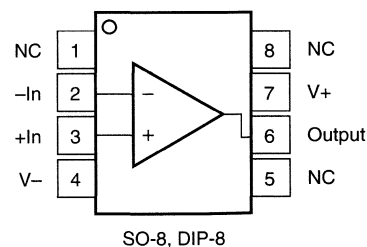
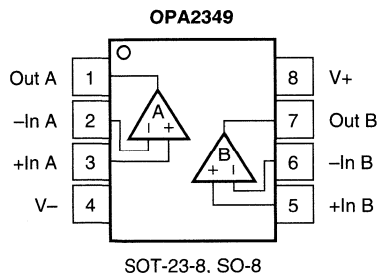
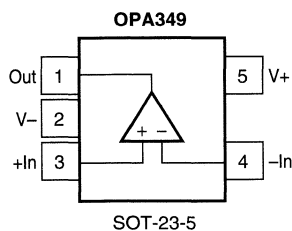


FEATURES

- LOW I_Q : 20 μ A typ
- **MicroSIZE PACKAGES:** SOT23, Dual in SOT23-8, SO-8
- LOW COST
- HIGH BANDWIDTH: 350kHz
- RAIL-TO-RAIL INPUT AND OUTPUT
- SINGLE-SUPPLY: +2.5V to +5.5V

OPA349, OPA2349

microPower, Rail-to-Rail, Single-Supply
CMOS OPERATIONAL AMPLIFIER
1 μ A, 75kHz



FEATURES

- LOW SUPPLY CURRENT: 1 μ A typ
- GAIN BANDWIDTH: 75kHz
- UNITY-GAIN STABLE
- LOW INPUT BIAS CURRENT: 10pA
- WIDE SUPPLY RANGE: +1.8V to +5.5V
- INPUT RANGE SWINGS 200mV BEYOND RAILS
- OUTPUT SWINGS WITHIN 150mV OF RAILS
- OPEN-LOOP GAIN: 90dB
- SOT23-5, SOT23-8 MICROPACKAGES

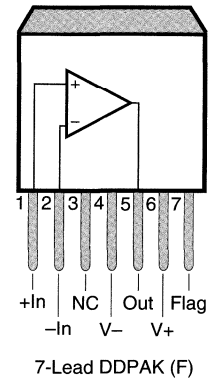
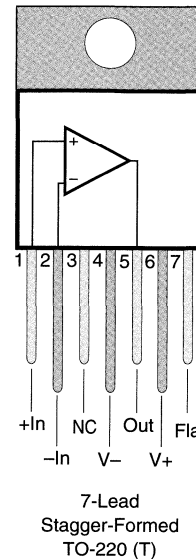
Operational Amplifiers—New Products

OPA452

80V, 50mA
OPERATIONAL AMPLIFIER

FEATURES

- WIDE POWER SUPPLY RANGE: $\pm 10V$ to $\pm 40V$
- EXCELLENT OUTPUT LOAD DRIVE: 50mA Continuous
- UNITY-GAIN STABLE
- HIGH SLEW RATE: $9V/\mu s$
- WIDE OUTPUT VOLTAGE SWING: 1V to Rail
- FULLY PROTECTED: Thermal Shutdown, Output Current Limit
- FET INPUT
- WIDE JUNCTION TEMPERATURE RANGE: $-40^{\circ}C$ to $+125^{\circ}C$
- PACKAGE OPTIONS: TO220-7, DDPAK-7 SURFACE MOUNT

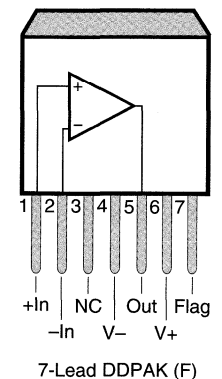
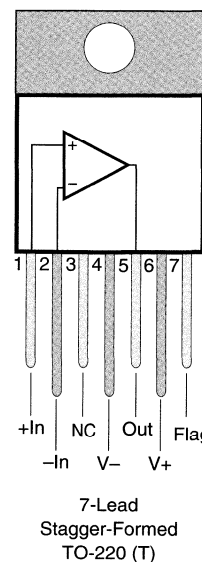


OPA453

80V, 50mA
OPERATIONAL AMPLIFIER

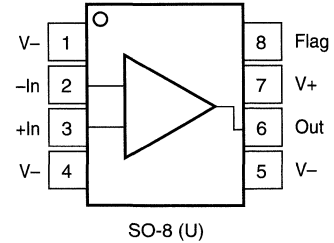
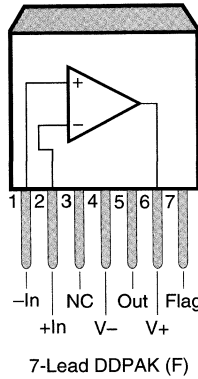
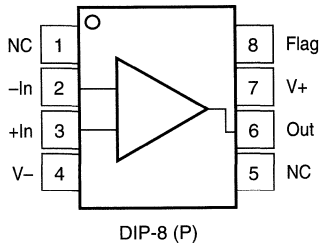
FEATURES

- WIDE POWER SUPPLY RANGE: $\pm 10V$ to $\pm 40V$
- EXCELLENT OUTPUT LOAD DRIVE: 50mA Continuous
- OPTIMIZED FOR $G \geq 4$
- HIGH SLEW RATE: $15V/\mu s$
- WIDE OUTPUT VOLTAGE SWING: 1V to Rail
- FULLY PROTECTED: Thermal Shutdown, Output Current Limit
- FET INPUT
- WIDE JUNCTION TEMPERATURE RANGE: $-40^{\circ}C$ to $+125^{\circ}C$
- PACKAGE OPTIONS: TO220-7, DDPAK-7 SURFACE MOUNT



OPA551

60V, 200mA
OPERATIONAL AMPLIFIER



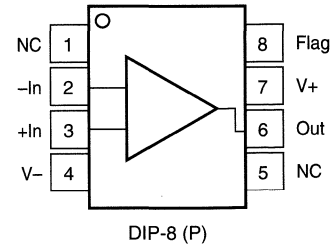
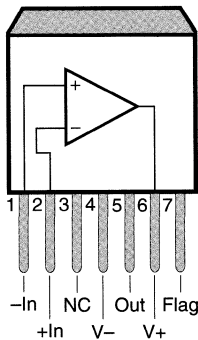
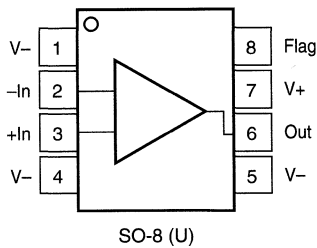
NOTE: Tab is connected to V- supply.

FEATURES

- WIDE SUPPLY RANGE: $\pm 4V$ to $\pm 30V$
- HIGH OUTPUT CURRENT: 200mA Continuous
- FULLY PROTECTED: Thermal Shutdown, Output Current Limit
- WIDE OUTPUT SWING: 2V from Rails
- FAST SLEW RATE: $15V/\mu s$
- WIDE BANDWIDTH: 3MHz
- PACKAGES: DIP-8, SO-8 or DDPACK-7

OPA552

60V, 200mA
OPERATIONAL AMPLIFIER



NOTE: Tab is connected to V- supply.

FEATURES

- WIDE SUPPLY RANGE: $\pm 4V$ to $\pm 30V$
- HIGH OUTPUT CURRENT: 200mA Continuous
- FULLY PROTECTED: Thermal Shutdown, Output Current Limit
- WIDE OUTPUT SWING: 2V from Rails
- FAST SLEW RATE: $24V/\mu s$
- WIDE BANDWIDTH: 12MHz
- PACKAGES: DIP-8, SO-8 or DDPACK-7

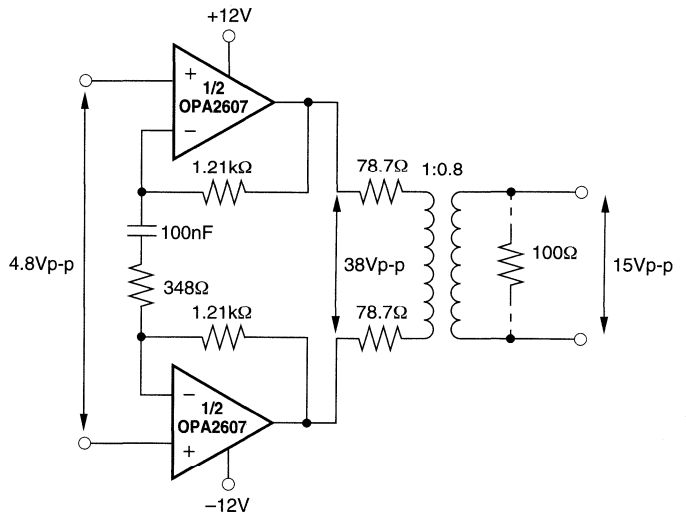
Operational Amplifiers—New Products

OPA2607

SpeedPLUS Dual, High Output,
Current-Feedback
OPERATIONAL AMPLIFIER

FEATURES

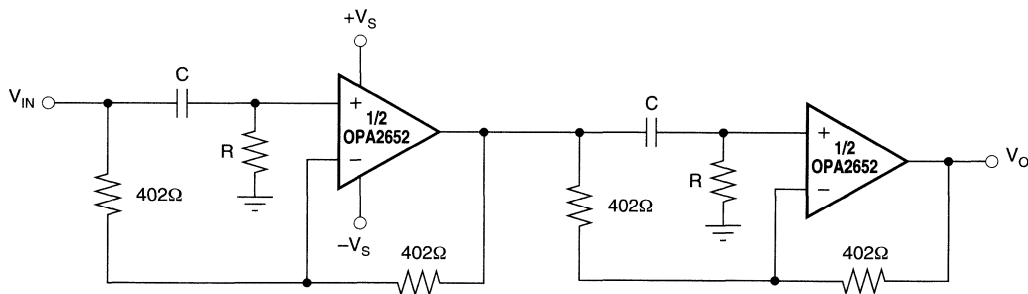
- WIDEBAND $\pm 12\text{V}$ OPERATION: 25MHz ($G = +8$)
- UNITY GAIN STABLE: 35MHz ($G = 1$)
- HIGH OUTPUT CURRENT: 250mA
- OUTPUT VOLTAGE SWING: $\pm 11\text{V}$
- HIGH SLEW RATE: 600V/ μs
- LOW SUPPLY CURRENT: 8.0mA/Chan
- FLEXIBLE POWER CONTROL



Low Turns Ratio ADSL Upstream Driver

OPA2652

SpeedPLUS Dual, Voltage-Feedback
OPERATIONAL AMPLIFIER



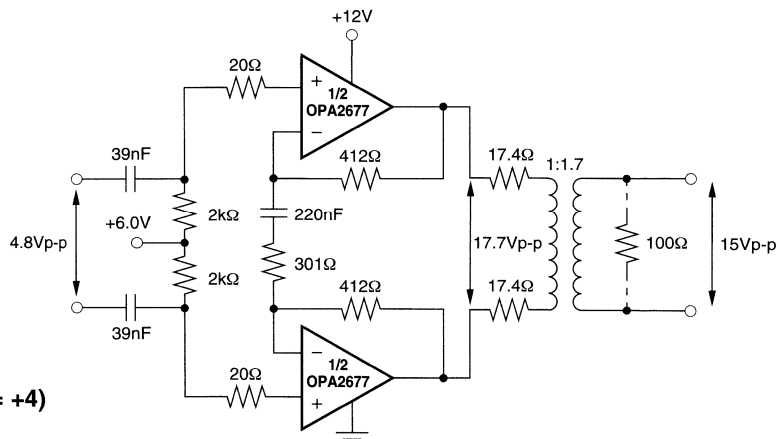
Pulse Delay Circuit

FEATURES

- HIGH BANDWIDTH: 200MHz, $G = +2$
- HIGH OUTPUT CURRENT: 100mA
- LOW SUPPLY CURRENT: 11mA
- LOW $dG/d\phi$ ERRORS: 0.01%/0.05°
- HIGH SLEW RATE: 290V/ μs

OPA2677

SpeedPLUS™ Wideband, High Output Current
OPERATIONAL AMPLIFIER



Single Supply ADSL Upstream Driver

FEATURES

- WIDEBAND +12V OPERATION: 200MHz (G = +4)
- UNITY GAIN STABLE: 220MHz (G = 1)
- HIGH OUTPUT CURRENT: 500mA
- OUTPUT VOLTAGE SWING: ±5V
- HIGH SLEW RATE: 1800V/μs
- LOW SUPPLY CURRENT: 18mA
- FLEXIBLE POWER CONTROL

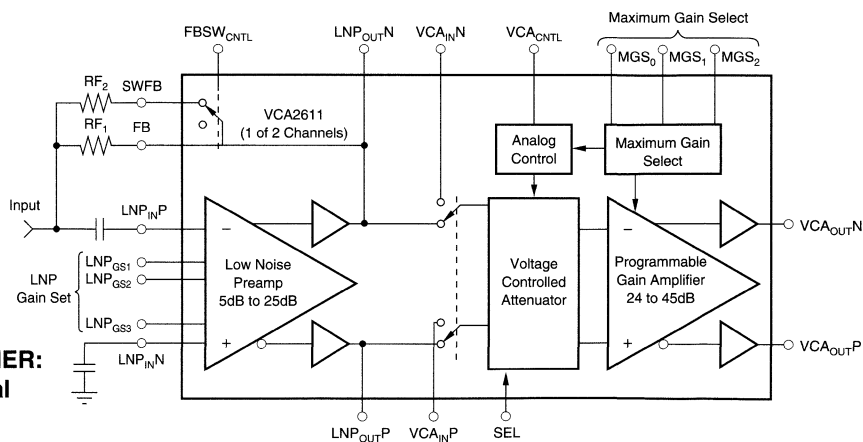
VCA2611

SpeedPLUS™ Dual,
VARIABLE GAIN AMPLIFIER
With Low Noise Preamp



FEATURES

- **LOW NOISE PREAMP:**
Low Input Noise: $0.65\text{nV}/\sqrt{\text{Hz}}$
Active Termination Noise Reduction
Switchable Termination Value
80MHz Bandwidth
5dB to 25dB Gain
Differential In and Out
- **LOW NOISE VARIABLE GAIN AMPLIFIER:**
Low Noise VCA: $3.3\text{nV}/\sqrt{\text{Hz}}$, Differential
Programming Optimizes Noise Figure
25dB to 46dB Gain
40MHz Bandwidth
Differential In and Out
- **LOW CROSSTALK:** 52dB at Max Gain, 5MHz
- **HIGH-SPEED VARIABLE GAIN ADJUST**
- **SWITCHABLE EXTERNAL PROCESSING**

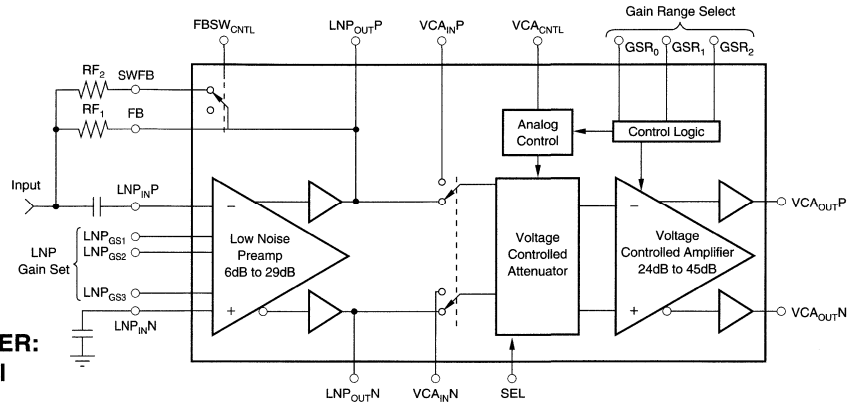


VCA2612

SpeedPLUS Dual, VARIABLE GAIN AMPLIFIER With Low Noise Preamp

FEATURES

- **VERY LOW NOISE PREAMP:**
Low Input Noise: $0.62\text{nV}/\sqrt{\text{Hz}}$
Active Termination Noise Reduction
Switchable Termination Value
80MHz Bandwidth
5dB to 25dB Gain
Differential In and Out
- **LOW NOISE VARIABLE GAIN AMPLIFIER:**
Low Noise VCA: $2.6\text{nV}/\sqrt{\text{Hz}}$, Differential
Programming Optimizes Noise Figure
24dB to 45dB Gain
40MHz Bandwidth
Differential In and Out
- **LOW CROSSTALK:** 52dB at Max Gain, 5MHz
- **HIGH-SPEED VARIABLE GAIN ADJUST**
- **SWITCHABLE EXTERNAL PROCESSING**



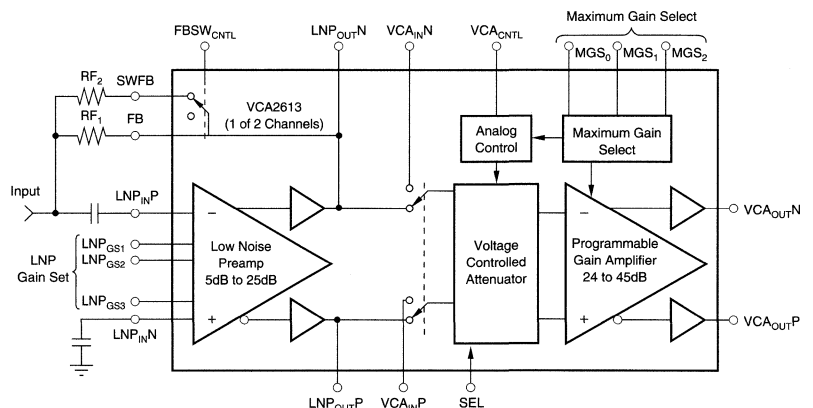
VCA2613

SpeedPLUS Dual, VARIABLE GAIN AMPLIFIER With Low Noise Preamp

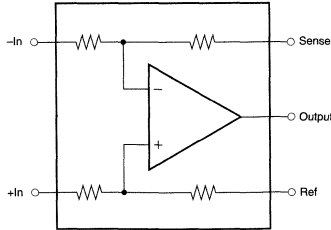


FEATURES

- **LOW NOISE PREAMP:**
Low Input Noise: $0.8\text{nV}/\sqrt{\text{Hz}}$
Active Termination Noise Reduction
Switchable Termination Value
80MHz Bandwidth
5dB to 25dB Gain
Differential In and Out
- **LOW NOISE VARIABLE GAIN AMPLIFIER:**
Low Noise VCA: $3.3\text{nV}/\sqrt{\text{Hz}}$, Differential
Programming Optimizes Noise Figure
24dB to 45dB Gain
40MHz Bandwidth
Differential In and Out
- **LOW CROSSTALK:** 52dB at Max Gain, 5MHz
- **HIGH-SPEED VARIABLE GAIN ADJUST**
- **SWITCHABLE EXTERNAL PROCESSING**



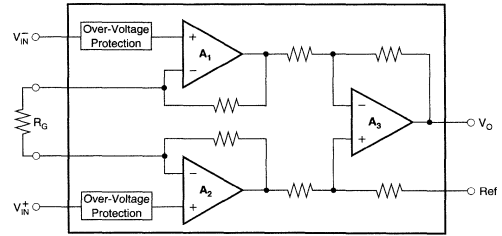
Instrumentation Amplifiers—Main Selection Tree



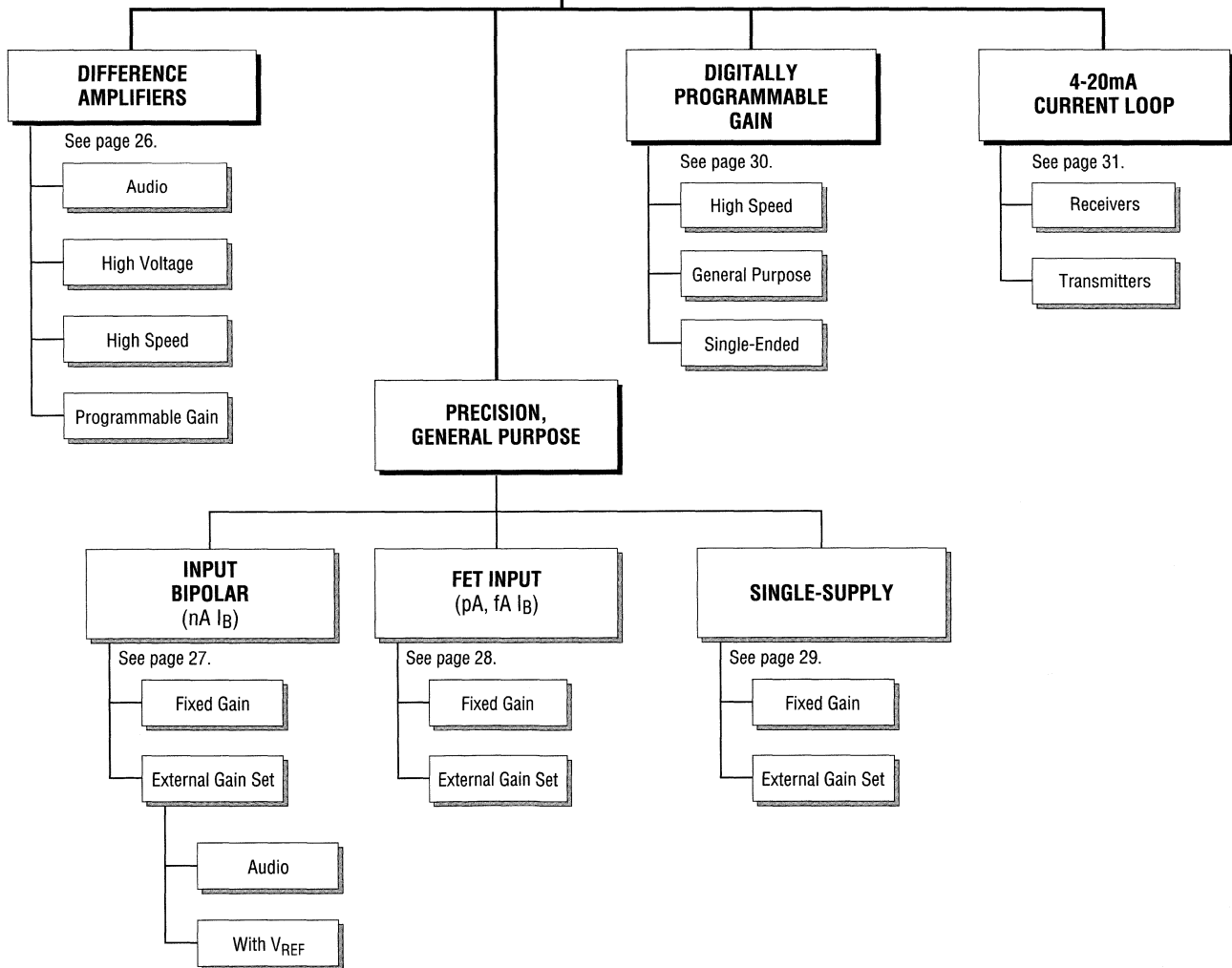
Difference Amplifier

INSTRUMENTATION AMPLIFIERS

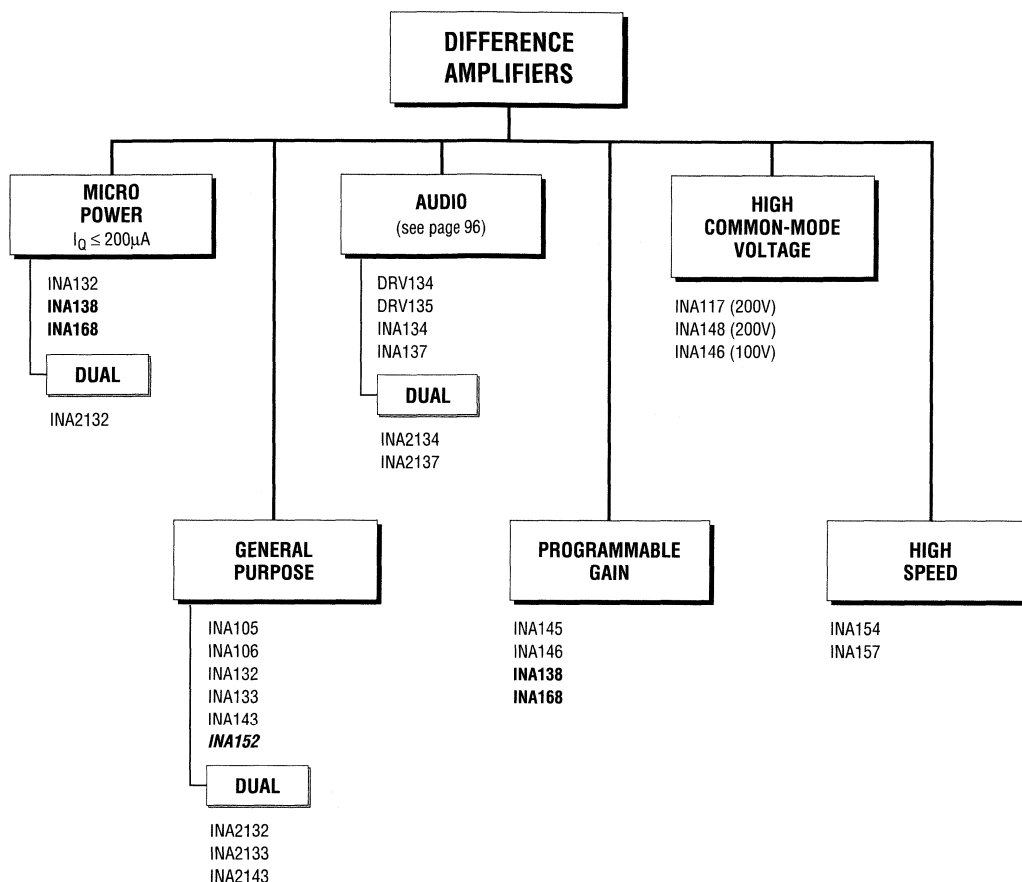
Instrumentation amplifiers (IAs) are much more than just precise op amps. They are closed-loop amplifiers with built-in precision feedback components. IAs are used to extract low-level signals in the presence of system errors and noise.



3-Op Amp Instrumentation Amplifier



Instrumentation Amplifiers—Selection Tree and Guide



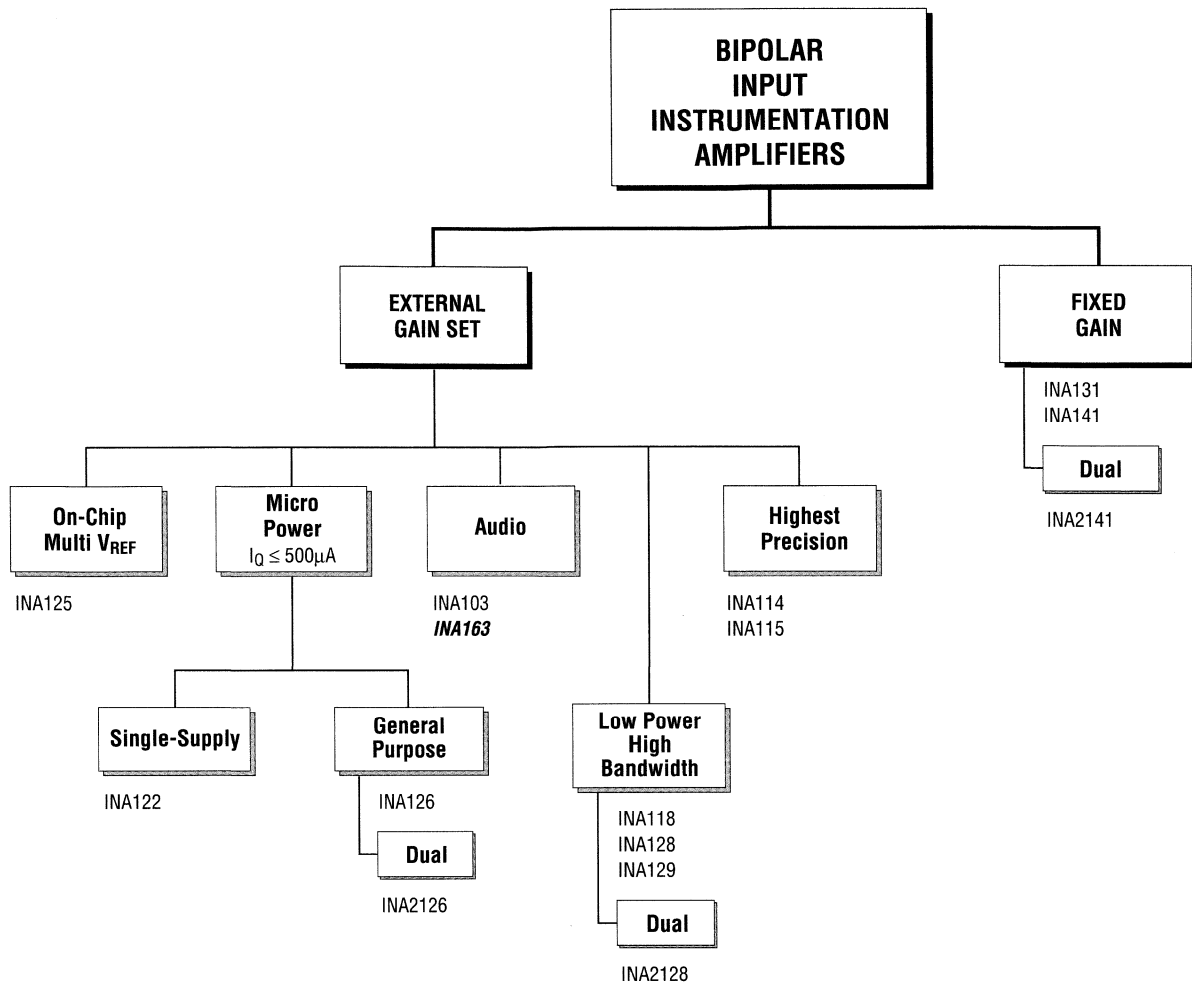
Product	Description	Chan	Gain	Offset µV (max)	Offset Drift µV/°C (max)	CMRR dB (min)	BW MHz (typ)	Common- Mode Input V (min)	Output Voltage Swing V	Power Supply V	I _Q mA	Package(s)	Price* 1kpcs
General Purpose													
INA132	<i>micro</i> Power, High Precision	1, 2	1	250	5	76	0.3	+28, -15	(V+) - 1 to (V-) + 0.5	+2.7 to +36	0.16	DIP-8/14, SO-8/14	\$0.99
INA133	High Precision, Fast	1, 2	1	250	5	86	1.5	±27	(V+) - 1.5 to (V-) + 1	±2.25 to ±18	1.2	SO-8, SO-14	0.99
INA143	High Precision, G = 10 or 1/10	1, 2	10, 1/10	250	3	86	0.15	±14, 85	(V+) - 1 to (V-) + 0.5	±2.25 to ±18	1.2	SO-8, SO-14	0.99
INA145	Resistor Programmable Gain	1, 2	1-500	500	10 ⁽¹⁾	76	0.5	+28, -30	(V+) - 1 to (V-) + 0.5	±1.35 to ±18	0.8	SO-8	1.40
INA152	<i>micro</i>Power, High Precision	1	1	750	5	86	0.7	±18	(V+) - 0.2 to (V-) + 0.2	+2.7 to +20	0.45	MSOP-8	1.10
INA154	High Speed, Precision, G = 1	1	1	750	20	80	3.1	±25	(V+) - 2 to (V-) + 2	±4 to ±18	2.4	SO-8	0.99
INA157	High Speed, G = 2 or 1/2	1	2, 1/2	500	20	86	4	±37	(V+) - 2 to (V-) + 2	±4 to ±18	2.4	SO-8	0.99
Audio													
INA134	Low Distortion: 0.0005%	1, 2	1	1000	2 ⁽¹⁾	74	3.1	±25	(V+) - 2 to (V-) + 2	±4 to ±18	2.4	DIP-8/14, SO-8/14	0.99
INA137	Low Distortion, G = 1/2 or 2	1, 2	2, 1/2	1000	2 ⁽¹⁾	74	4	±25	(V+) - 2 to (V-) + 2	±4 to ±18	2.4	DIP-8/14, SO-8/14	0.99
High Common-Mode Voltage													
INA117	±200V CM Range	1	1	1000	20	86	0.2	±200	(V+) - 5 to (V-) + 5	±5 to ±18	1.5	DIP/SO-8, TO-99	3.75
INA146	±100V CM Range, Prog. Gain	1	0.1-100	5000	100 ⁽¹⁾	70	0.55	±100	(V+) - 1 to (V-) + 0.15	±1.35 to ±18	0.57	SO-8	1.60
INA148	±200V CM Range, 1MΩ Input	1	1	5000	100 ⁽¹⁾	70	0.1	±200	(V+) - 1 to (V-) + 0.25	±1.35 to ±18	0.6	SO-8	1.95
High Side Current Shunt Monitor													
INA138	Low-Cost, +36V Input	1	200µA/V	1000	1⁽¹⁾	100	0.8	+36	0 to (V+) - 0.8	+2.7 to 36	0.025	SOT23-5	0.95
INA168	Low-Cost, +60V Input	1	200µA/V	1000	1⁽¹⁾	100	0.8	+60	0 to (V+) - 0.8	+2.7 to 60	0.025	SOT23-5	1.15

NOTE: (1) Denotes single supply.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Instrumentation Amplifiers—Selection Tree and Guide

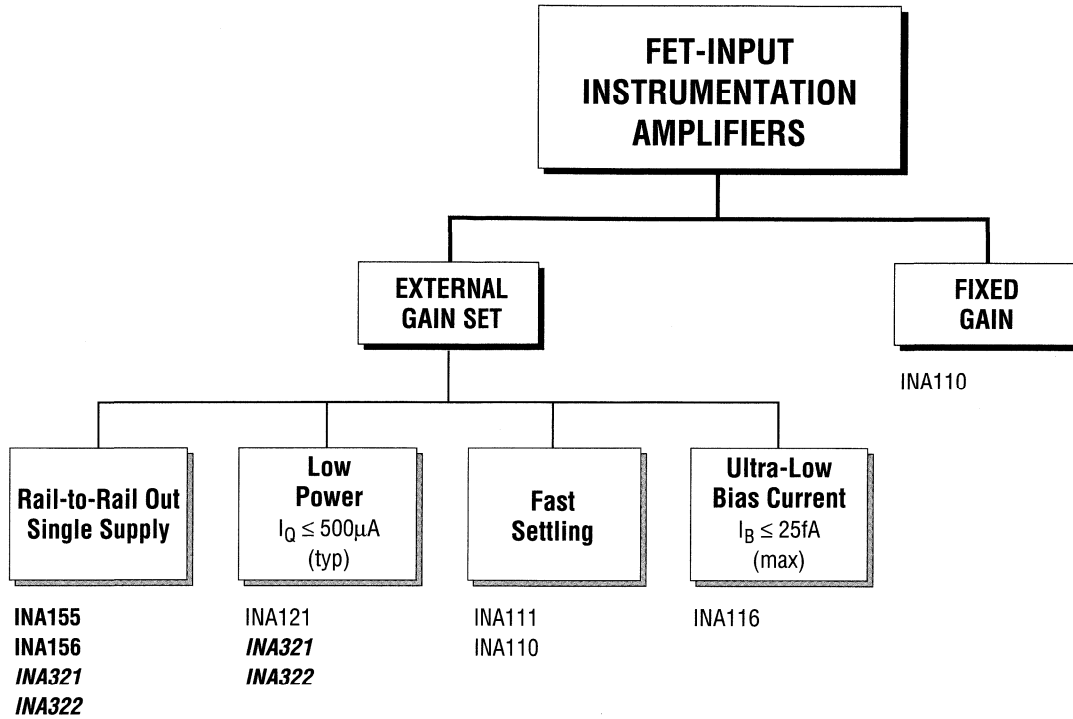


Product	Description	Internal +40V Input Protection	Gain	Non Linearity % (max)	Offset μ V (max)	Offset Drift μ V/°C (max)	CMRR at G = 100 dB (min)	BW at G = 100 kHz (typ)	Noise at 1kHz nV/√Hz (typ)	Power Supply V	I_Q mA	Package(s)	Price* 1kpcs
Bipolar Input—Lowest Offset Voltage and Drift													
INA114	High-Precision, Output-Sense	✓	1-10000	0.002	50	0.25	110	10	11	±2.25 to ±18	2.2	DIP-8, SO-16	\$3.55
INA118	Low-Power, Single-Supply	✓	1-10000	0.002	50	0.5	107	70	10	±1.35 to ±18	0.35	DIP-8, SO-8	3.73
INA122	microPower, CM Range to GND		5-10000	0.012	200	3	86	5	60	2.2 to 36	0.060	DIP-8, SO-8	1.95
INA125	Internal Reference, Sleep Mode		4-10000	0.01	250	2	100	4.5	38	3 to 36	0.460	DIP-8, SO-16	2.10
INA126	Low-Cost, Low-Power, MSOP-8		5-10000	0.012	250	3	83	9	35	3 to 36	0.175	DIP/SO/MSOP-8	0.99
INA2126	Dual Version		5-10000	0.012	250	3	83	9	35	3 to 36	0.175	DIP/SO/MSOP-16	1.80
INA128	Precision, General Purpose	✓	1-10000	0.002	50	0.5	120	200	8	±2.25 to ±18	0.7	DIP-8, SO-8	3.31
INA2128	Dual Version	✓	1-10000	0.002	50	0.5	120	200	8	±2.25 to ±18	0.7	DIP-16, SO-16	6.00
INA129	AD620 Second Source	✓	1-10000	0.002	50	0.5	120	200	8	±2.25 to ±18	0.7	DIP-8, SO-8	3.31
INA141	Fixed Gain, Pin Comp. with AD621	✓	10, 100	0.002	50	0.5	117	200	8	±2.25 to ±18	0.75	DIP-8, SO-8	3.31
INA2141	Dual Version	✓	10, 100	0.002	50	0.5	117	200	8	±2.25 to ±18	0.75	DIP-16, SO-16	6.00
INA163	Low Noise, Audio		1-10000	0.004	500	5	100	800	1	±4.5 to ±18	8.5	SO-14	1.95

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Instrumentation Amplifiers—Selection Tree and Guide

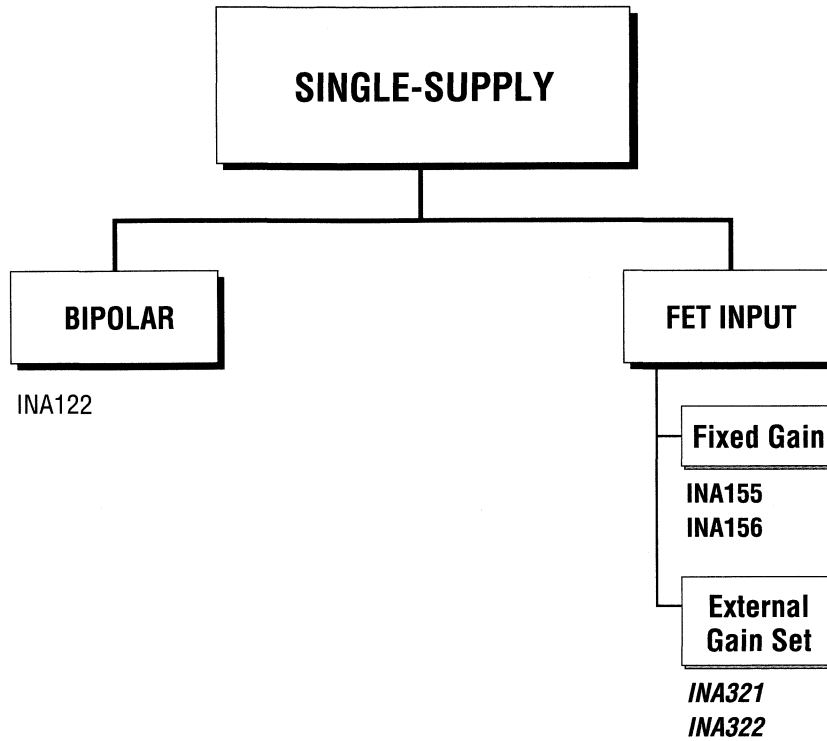


Product	Description	Gain	Non Linearity % (max)	Offset μV (max)	Offset Drift $\mu\text{V}/^\circ\text{C}$ (max)	CMRR at $G = 100$ dB (min)	BW at $G = 100$ kHz (typ)	Output Voltage Swing V	Power Supply V	I_Q mA	Package(s)	Price* 1kpcs
INA155	CMOS, Rail-to-Rail Out, MSOP-8	10, 50	0.05	1000	3 (typ)	92	110	(V+) - 0.01 to (V-) + 0.01	2.7 to 5.5	1.7	MSOP-8	\$1.00
INA156	CMOS, Rail-to-Rail Out, MSOP-8	10, 50	0.015	5000	10 (typ)	74	110	(V+) - 0.02 to (V-) + 0.02	2.7 to 5.5	1.7	MSOP-8	0.90
INA321	CMOS, Rail-to-Rail Out, MSOP-8	5-10000	0.05	1000	3 (typ)	92	50	(V+) - 0.05 to (V-) + 0.05	2.2 to 5.5	0.05	MSOP-8	1.15
INA322	CMOS, Rail-to-Rail Out, MSOP-8	5-10000	0.015	5000	10 (typ)	72	50	(V+) - 0.05 to (V-) + 0.05	2.2 to 5.5	0.05	MSOP-8	0.95
INA111	High-Speed, 20pA Bias Current	1-600	0.005	500	5	106	450	(V+) - 4 to (V-) + 4	± 6 to ± 18	3.3	DIP-8, SO-16	3.91
INA116	FET-Input, 3fA Bias Current	1-1000	0.005	2000	10	86	70	(V+) - 1 to (V-) + 0.35	± 4.5 to ± 18	1	DIP-14	3.95
INA121	FET-Input, Low-Power	1-10000	0.005	500	5	96	50	(V+) - 1.5 to (V-) + 1	± 2.25 to ± 18	0.45	DIP-16, SO-16	2.35
INA110	FET-Input, Fixed Gain	1, 10, 100, 200, 500	0.005	250	2	106	470	(V+) - 5 to (V-) + 5	± 6 to ± 18	3	DIP-16	6.60

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Instrumentation Amplifiers—Selection Tree and Guide

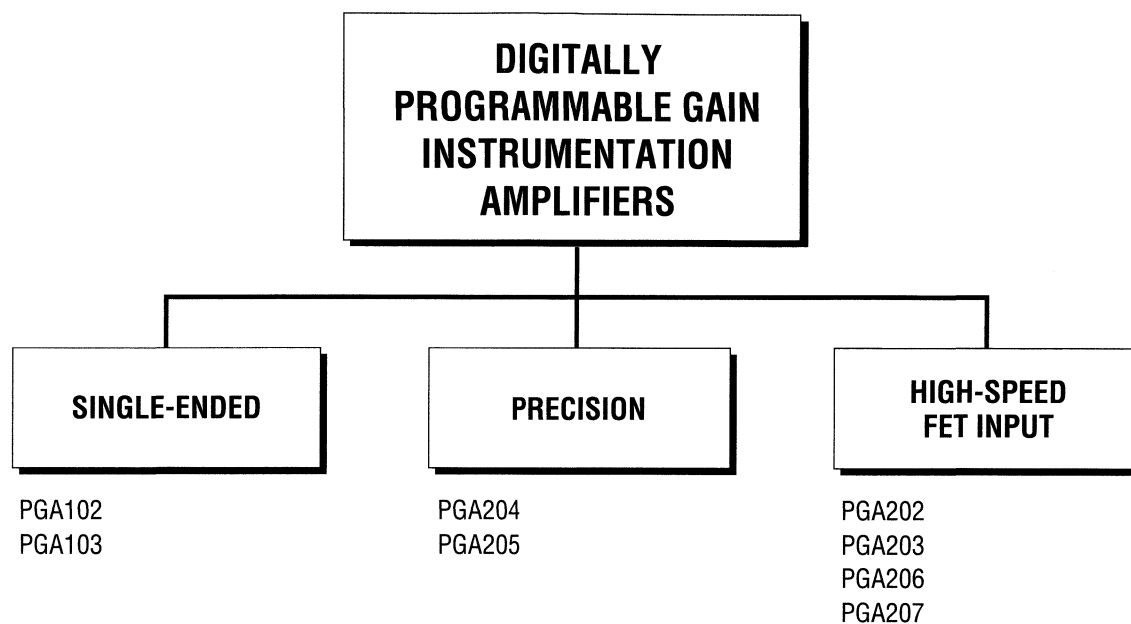


Product	Description	Gain	Non Linearity % (max)	Offset μV (max)	Offset Drift $\mu\text{V}/^\circ\text{C}$ (max)	CMRR at G = 100 dB (min)	BW at G = 100 kHz (typ)	Output Voltage Swing V	Power Supply V	I_Q mA	Package(s)	Price* 1kpcs
INA122	<i>microPower</i> , CM Range to GND	5-10000	0.012	200	3	86	5	(V+) - 0.1 to (V-) + 0.1	2.2 to 36	0.060	DIP-8, SO-8	\$1.95
INA155	CMOS, Rail-to-Rail Out, MSOP-8	10, 50	0.015	1000	3 (typ)	92	110	(V+) - 0.01 to (V-) + 0.01	2.7 to 5.5	1.7	MSOP-8	1.00
INA156	CMOS, Rail-to-Rail Out, MSOP-8	10, 50	0.015	5000	10 (typ)	72	110	(V+) - 0.02 to (V-) + 0.02	2.7 to 5.5	1.7	MSOP-8	0.90
INA321	CMOS, Rail-to-Rail Out, MSOP-8	5-10000	0.05	1000	3 (typ)	92	50	(V+) - 0.05 to (V-) + 0.05	2.2 to 5.5	0.05	MSOP-8	1.15
INA322	CMOS, Rail-to-Rail Out, MSOP-8	5-10000	0.015	5000	10 (typ)	72	50	(V+) - 0.05 to (V-) + 0.05	2.2 to 5.5	0.05	MSOP-8	0.95

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Instrumentation Amplifiers—Selection Tree and Guide

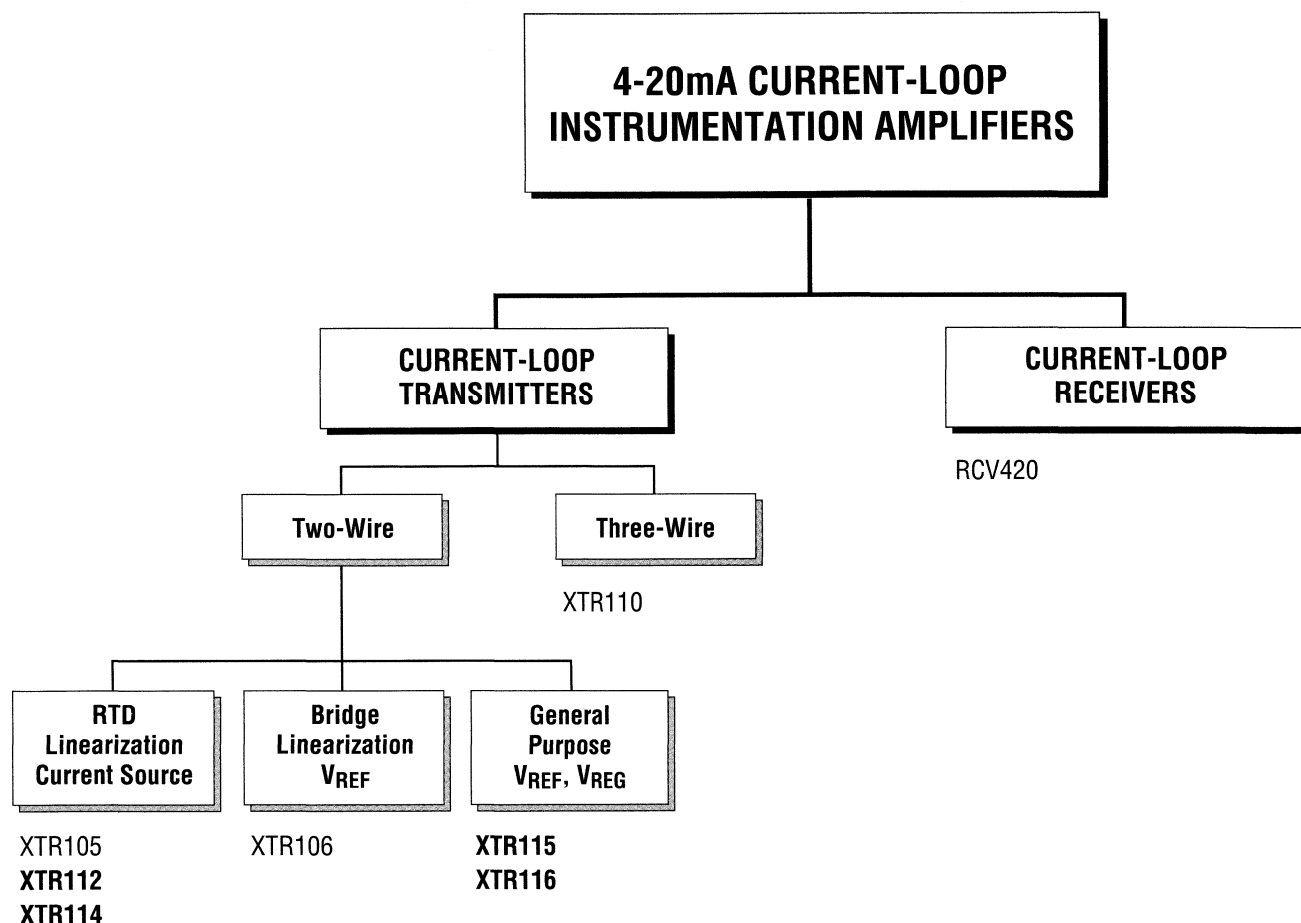


Product	Description	Internal +40V Input Protection	Gain	Non Linearity % (max)	Offset μ V (max)	Offset Drift μ V/ $^{\circ}$ C (max)	CMRR at G = 100 dB (min)	BW at G = 100 kHz (typ)	Noise at 1kHz nV/ \sqrt Hz (typ)	Power Supply V	I_q mA	Package(s)	Price* 1kpcs
PGA202	High-Speed FET Input		1, 10, 100, 1000	0.012	1000	12	92	1000	12	± 4.5 to ± 18	6.5	DIP-14	\$7.28
PGA203	High-Speed, FET Input		1, 2, 4, 8	0.012	1000	12	92	1000	12	± 4.5 to ± 18	6.5	DIP-14	7.28
PGA204	High Precision, Gain Error: 0.25%	✓	1, 10, 100, 1000	0.002	50	0.25	110	10	13	± 6 to ± 18	5.2	DIP-8, SO16	6.82
PGA205	Gain Drift: 0.024ppm/ $^{\circ}$ C	✓	1, 2, 4, 8	0.002	50	0.25	95	100	15	± 6 to ± 18	5.2	DIP-8, SO16	6.82
PGA206	High-Speed FET Input	✓	1, 2, 4, 8	0.002	1500	2	95	600	18	± 4.5 to ± 18	12.4	DIP-16, SO-16	10.13
PGA207	High-Speed, FET Input	✓	1, 2, 5, 10	0.002	1500	2	95	600	18	± 4.5 to ± 18	12.4	DIP-16, SO-16	11.14
PGA102	Precision, Single-Ended Input		1, 10, 100	0.005	200	3	—	250	18	± 5 to ± 18	3.3	DIP-16	7.41
PGA103	Precision, Single-Ended Input		1, 10, 100	0.005	500	2	—	250	11	± 4.5 to ± 18	3.5	DIP-8, SO-8	3.90

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Instrumentation Amplifiers—Selection Tree and Guide



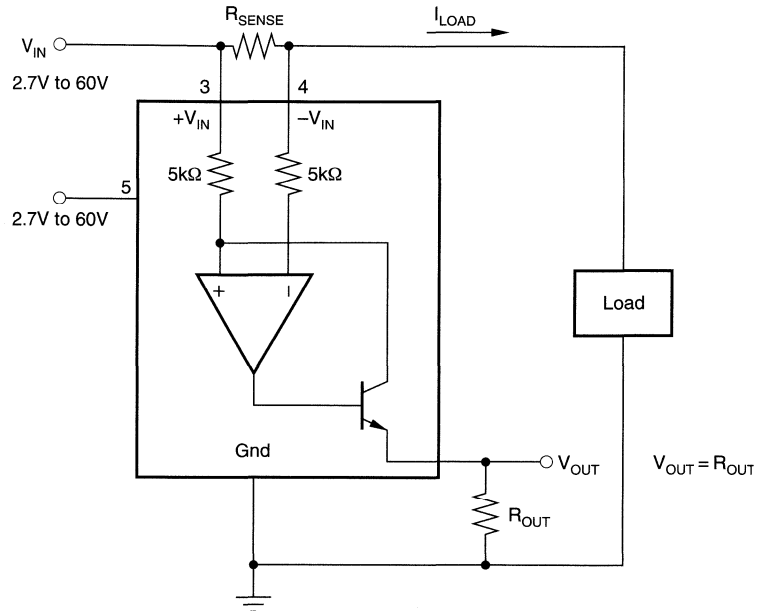
Product	Description	Sensor Linearization	Sensor Excitation	Loop Voltage Range	Full-Scale Input Range	Output Range	Additional Power Available	Package(s)	Price* 1kpcs
4-20mA Transmitters									
XTR105	2-Wire, 100Ω, V_{REG} , Low Cost	✓	Two 800μA	7.5V to 36V	5mV to 1V	4-20mA	5.1V at 1mA	DIP-14, SO-14	\$3.75
XTR106	2-Wire Bridge, V_{REG} , Low Cost	✓	5V, Adj.	7.5V to 36V	5mV to 1V	4-20mA	5.1V at 1mA	DIP-14, SO-14	3.75
XTR110	3-Wire, Selectable In/Out Ranges	—	10V	13.5V to 40V	0V to 10V	Resistor Set	—	DIP-16	6.35
XTR112	2-Wire, 1kΩ RTD, V_{REG} , Low Cost	✓	Two 250μA	7.5V to 36V	5mV to 1V	4-20mA	5.1V at 1mA	DIP-14, SO-14	3.75
XTR114	2-Wire, 10kΩ RTD, V_{REG} , Low Cost	✓	Two 100μA	7.5V to 36V	5mV to 1V	4-20mA	5.1V at 1mA	DIP-14, SO-14	3.75
XTR115	2-Wire, High-Level Input, V_{REG} , V_{REF}	—	$V_{REF} = 2.5V$	7.5V to 36V	200μA	4-20mA	5V, 3.5mA	SO-8	0.95
XTR116	2-Wire, High-Level Input, V_{REG} , V_{REF}	—	$V_{REF} = 4.096V$	7.5V to 36V	200μA	4-20mA	5V, 3.5mA	SO-8	0.95
4-20mA Receiver									
RCV420	4-20mA Current-Loop Receiver	—	(10V Ref)	±18V	4-20mA	0V to 5V	—	DIP-16	3.34

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INA138, INA168

High-Side Measurement, Current Shunt Monitor DIFFERENCE AMPLIFIERS

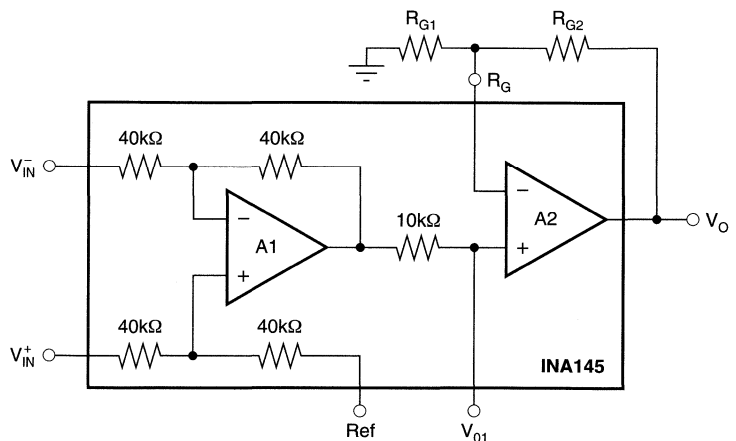


FEATURES

- COMPLETE UNIPOLAR HIGH-SIDE CURRENT MEASUREMENT CIRCUIT
- WIDE SUPPLY AND COMMON-MODE RANGE:
INA138: 2.7V to 36V
INA168: 2.7V to 60V
- INDEPENDENT SUPPLY AND INPUT COMMON-MODE VOLTAGES
- SINGLE RESISTOR GAIN SET
- LOW QUIESCENT CURRENT (25 μ A typ)
- SOT23-5 PACKAGE

INA145

Programmable Gain DIFFERENCE AMPLIFIER



FEATURES

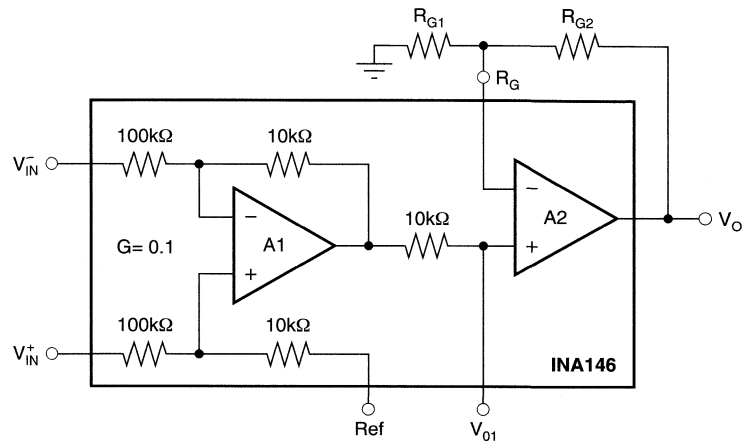
- MINIMUM DIFFERENTIAL GAIN = 1V/V
- HIGH COMMON-MODE VOLTAGE:
+8V at $V_S = +5V$
 $\pm 28V$ at $V_S = \pm 15V$
- LOW QUIESCENT CURRENT: $\pm 570\mu A$
- WIDE SUPPLY RANGE:
Single Supply: 4.5V to 36V
Dual Supplies: $\pm 2.25V$ to $\pm 18V$
- LOW GAIN ERROR: 0.1%
- LOW NONLINEARITY: 0.002%
- HIGH CMR: 80dB
- EASY GAIN SET WITH EXTERNAL RESISTORS
- SO-8 PACKAGE

INA146

High Voltage, Programmable Gain
DIFFERENCE AMPLIFIER

FEATURES

- MINIMUM DIFFERENTIAL GAIN = 0.1V/V
- HIGH COMMON-MODE VOLTAGE:
+40V at $V_S = +5V$
 $\pm 100V$ at $V_S = \pm 15V$
- LOW QUIESCENT CURRENT: $\pm 570\mu A$
- WIDE SUPPLY RANGE:
Single Supply: 4.5V to 36V
Dual Supplies: $\pm 2.25V$ to $\pm 18V$
- LOW GAIN ERROR: 0.1% max
- LOW NONLINEARITY: 0.002%
- HIGH CMR: 80dB
- EASY GAIN SET WITH TWO EXTERNAL RESISTORS
- SO-8 PACKAGE

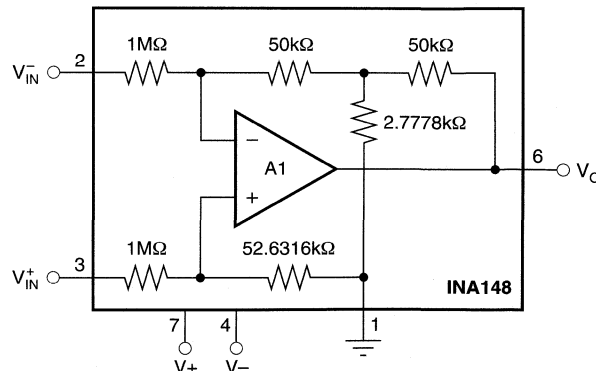


INA148

High Common-Mode Voltage
HIGH INPUT IMPEDANCE DIFFERENCE AMPLIFIER

FEATURES

- HIGH COMMON-MODE VOLTAGE:
+80V at $V_S = +5V$
 $\pm 200V$ at $V_S = \pm 15V$
- 1MΩ INPUT RESISTORS
- FIXED DIFFERENTIAL GAIN = 1V/V
- LOW QUIESCENT CURRENT: $\pm 250\mu A$
- WIDE SUPPLY RANGE:
Single Supply: 2.7V to 36V
Dual Supplies: $\pm 1.35V$ to $\pm 18V$
- LOW GAIN ERROR: 0.05% max
- LOW NONLINEARITY: 0.002% max
- HIGH CMR: 90dB
- SO-8 PACKAGE



Instrumentation Amplifiers—New Products

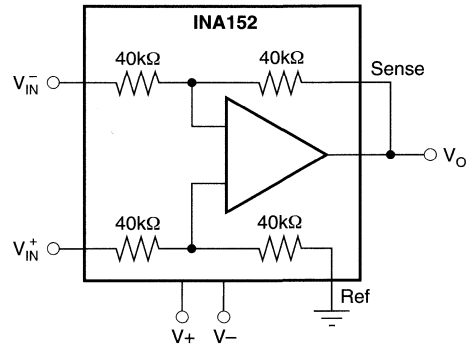
INA152

CMOS MicroPackage, Single-Supply
DIFFERENCE AMPLIFIER



FEATURES

- LOW OFFSET DRIFT: $\pm 3\mu\text{V}/^\circ\text{C}$
- LOW OFFSET VOLTAGE: $750\mu\text{V}$ max
- HIGH CMR: 86dB
- LOW QUIESCENT CURRENT: $500\mu\text{A}$
- LOW ERROR GAIN: 0.01%
- LOW ERROR GAIN DRIFT: $10\text{ppm}/^\circ\text{C}$
- OUTPUT SWING TO WITHIN 200mV OF RAILS
- WIDE SUPPLY RANGE:
Single Supply: 2.7V to 20V
Dual Supplies: $\pm 1.35\text{V}$ to $\pm 10\text{V}$
- MSOP-8 PACKAGE

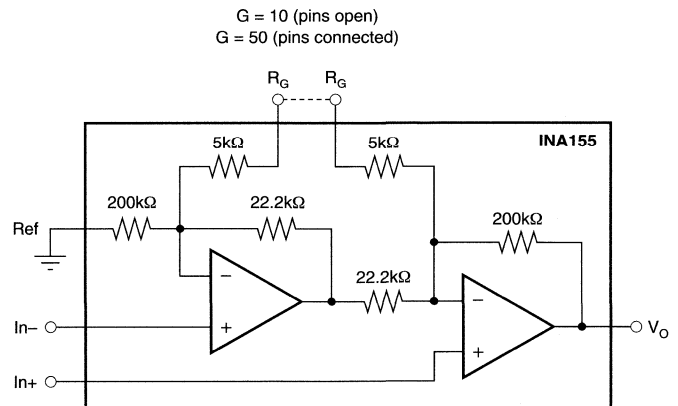


INA155, INA156

Single-Supply, Rail-to-Rail Output, CMOS
INSTRUMENTATION AMPLIFIER

FEATURES

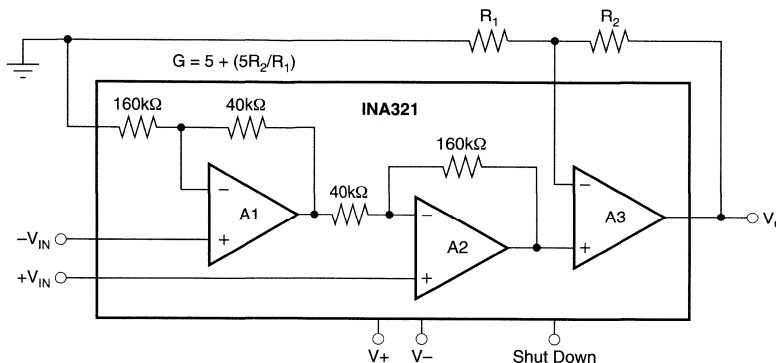
- RAIL-TO-RAIL OUTPUT SWING: $(V_+)-0.01$
- WIDE INPUT RANGE: $(V_-)+0.3\text{V}$ to $(V_+)-0.3\text{V}$
- INTERNAL FIXED GAIN: 10V/V and 50V/V
- LOW OFFSET VOLTAGE: $1\mu\text{V}$ max (INA156: $5\mu\text{V}$)
- LOW OFFSET DRIFT: $\pm 5\mu\text{V}/^\circ\text{C}$
- LOW BIAS CURRENT: 1pA
- WIDE BANDWIDTH: 550kHz, $G = 10\text{V/V}$
- HIGH SLEW RATE: $6\text{V}/\mu\text{s}$
- WIDE SUPPLY RANGE: +2.5V to +6V
- LOW QUIESCENT CURRENT: 1.7mA
- SO-8 AND TINY MSOP-8 PACKAGES



Instrumentation Amplifiers—New Products

INA321, INA2321

microPower, Single-Supply
CMOS INSTRUMENTATION AMPLIFIERS



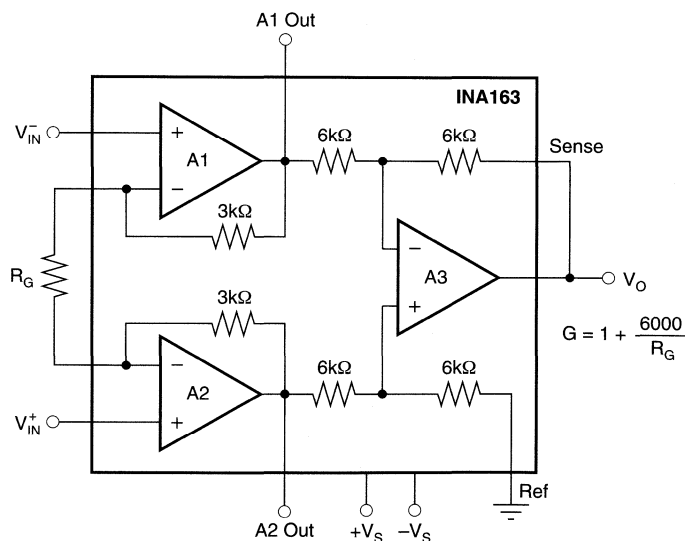
FEATURES

- RAIL-TO-RAIL OUTPUT SWING: $(V+) - 0.02V$
- HIGH GAIN ACCURACY $G = 5$: 0.1%, 10ppm/°C
- GAIN SET WITH RESISTOR FOR $> 5V/V$
- LOW OFFSET: $\pm 200\mu V$, $\pm 3\mu V/^\circ C$
- HIGH CMR: 100dB
- LOW BIAS CURRENT: 10pA
- WIDE BANDWIDTH: 200kHz
- WIDE SUPPLY RANGE: +2.5V to +6V
- LOW QUIESCENT CURRENT: 50 μA max/channel
- SHUTDOWN SAVES POWER: 1 μA
- TINY MSOP-8 AND TSSOP-14 PACKAGES

Instrumentation Amplifiers

INA163

Low Noise
INSTRUMENTATION AMPLIFIER

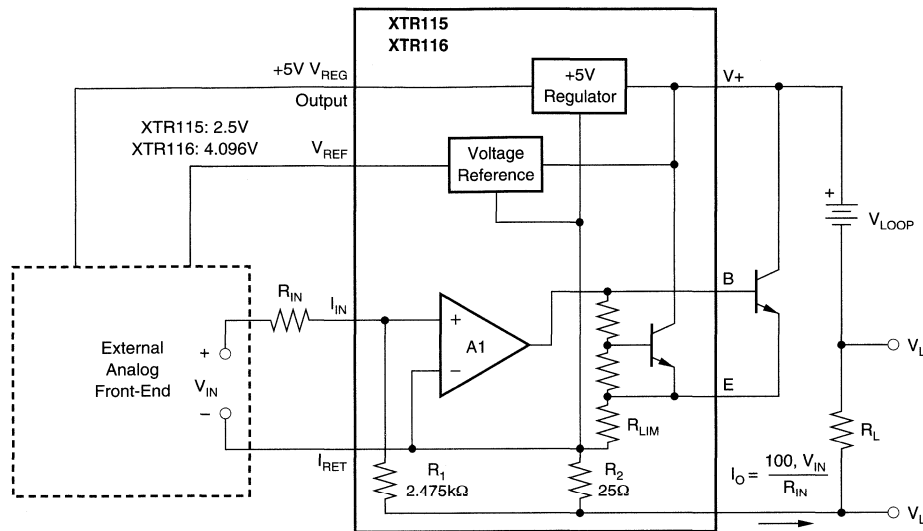


FEATURES

- LOW NOISE: 1nV/ \sqrt{Hz} at 1kHz
- LOW NONLINEARITY: 0.005%
- HIGH GBW: 100MHz at $G = 1000$
- WIDE SUPPLY RANGE: $\pm 4.5V$ to $\pm 18V$
- HIGH CMR: $> 100dB$
- EASY GAIN SET WITH EXTERNAL RESISTOR
- SO-14 PACKAGE

XTR115, XTR116

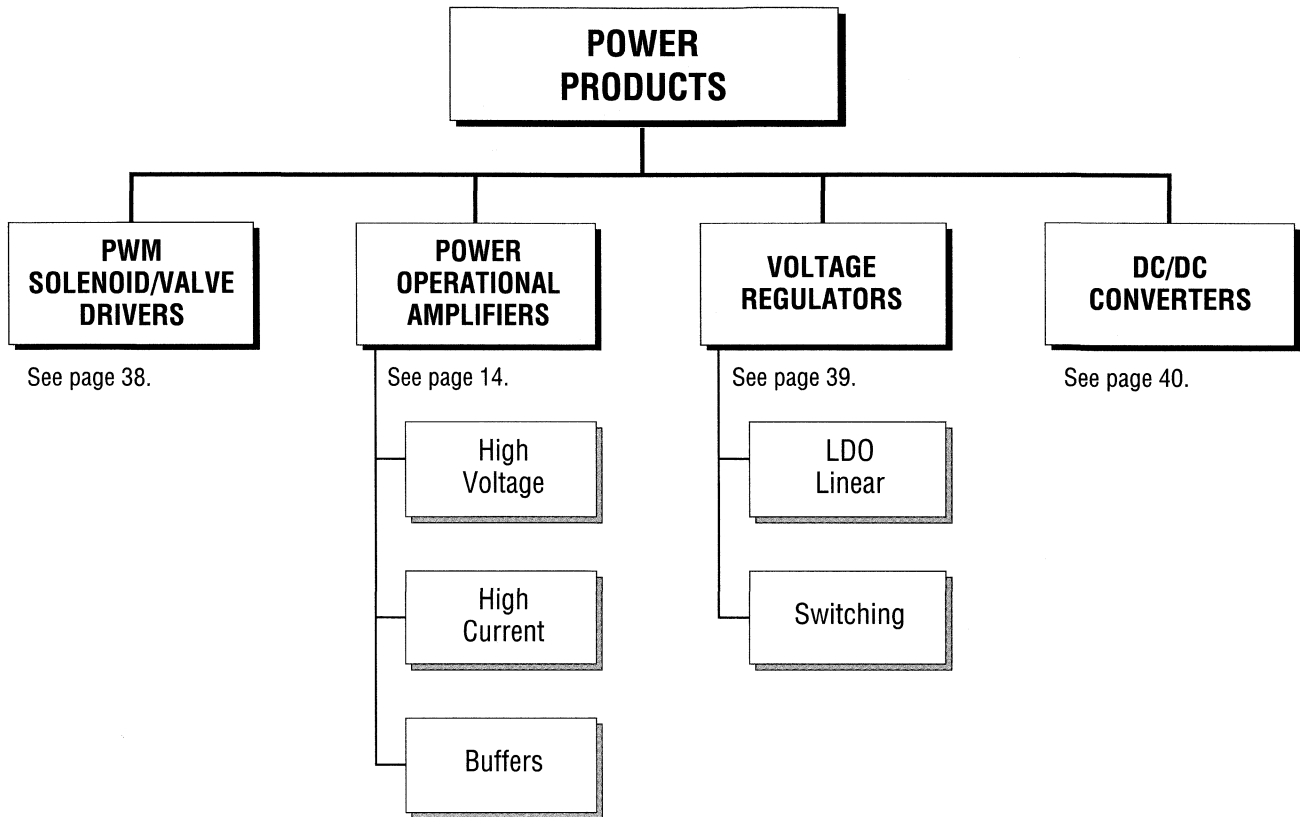
4-20mA Current-Loop Transmitter UNIVERSAL LOOP INTERFACE



FEATURES

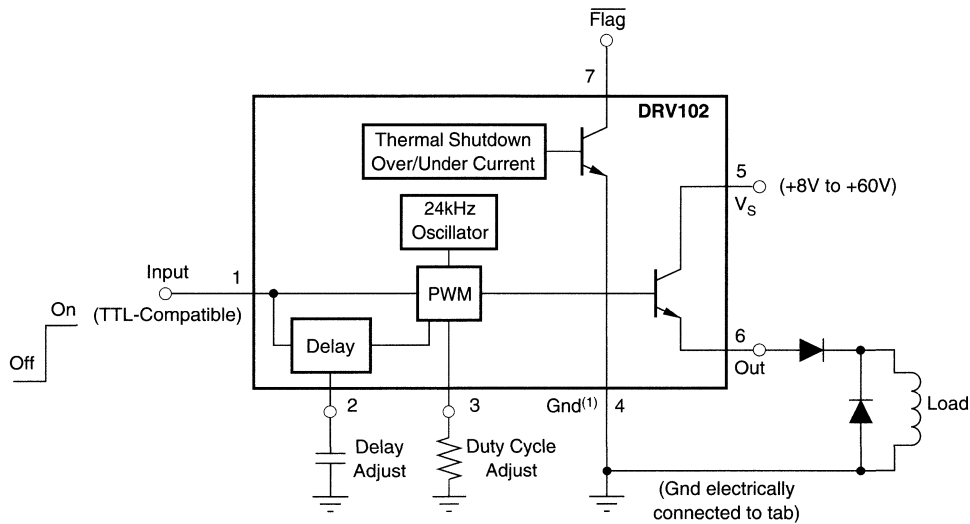
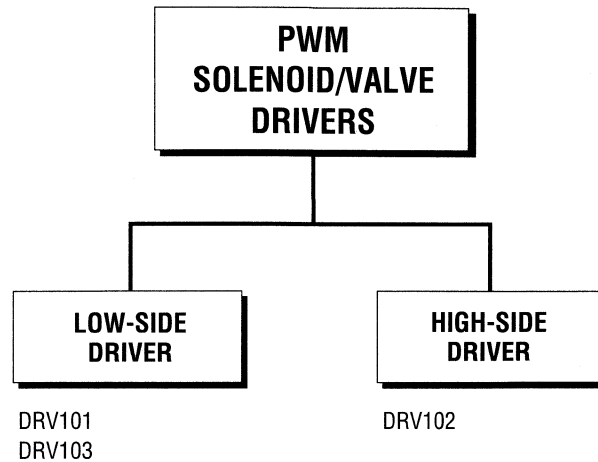
- VOLTAGE OR CURRENT INPUT
- +5V REGULATOR FOR EXTERNAL CIRCUITRY
- REFERENCE VOLTAGE OUTPUT
XTR115: 2.5V
XTR116: 4.096V
- LOW NONLINEARITY ERROR: 0.005%
- MINIMUM SCALE CURRENT: 160μA
- LOW OFFSET VOLTAGE: ±250μV
- WIDE LOOP SUPPLY RANGE: 7.5V to 36V
- SO-8 PACKAGE
- INTERFACES HIGH LOOP VOLTAGE TO LOW VOLTAGE CIRCUITRY

Power Products—Main Selection Tree



Power Products

Power Products—Selection Tree and Guide

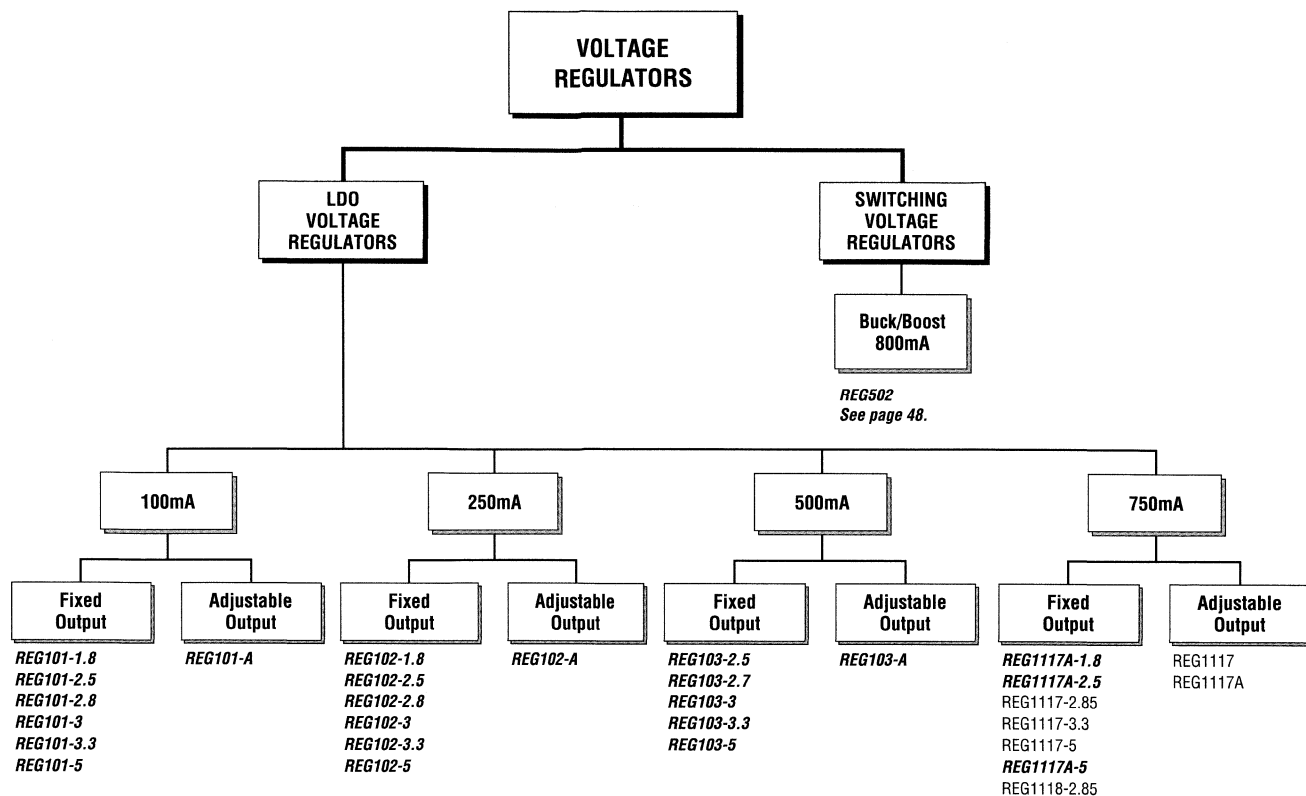


Product	Description	Power Supply V	Current A (min)	Output Voltage V (max)	Saturation Current mA (max)	Quiescent Duty Cycle Range %	Thermal Shutdown	Package(s)	Price* 1kpcs
DRV101	Low-Side PWM Driver	9 to 60	1.9	1	5	0 to 100	✓	TO220-7, DDPak-7	\$3.60
DRV102	High-Side PWM Driver	9 to 60	2	2.2	9	0 to 100	✓	TO220-7, DDPak-7	3.60
DRV103	High-Side PWM Driver	5 to 40	1	0.5	1	0 to 100	✓	SO-8	1.95

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Power Products—Selection Tree and Guide

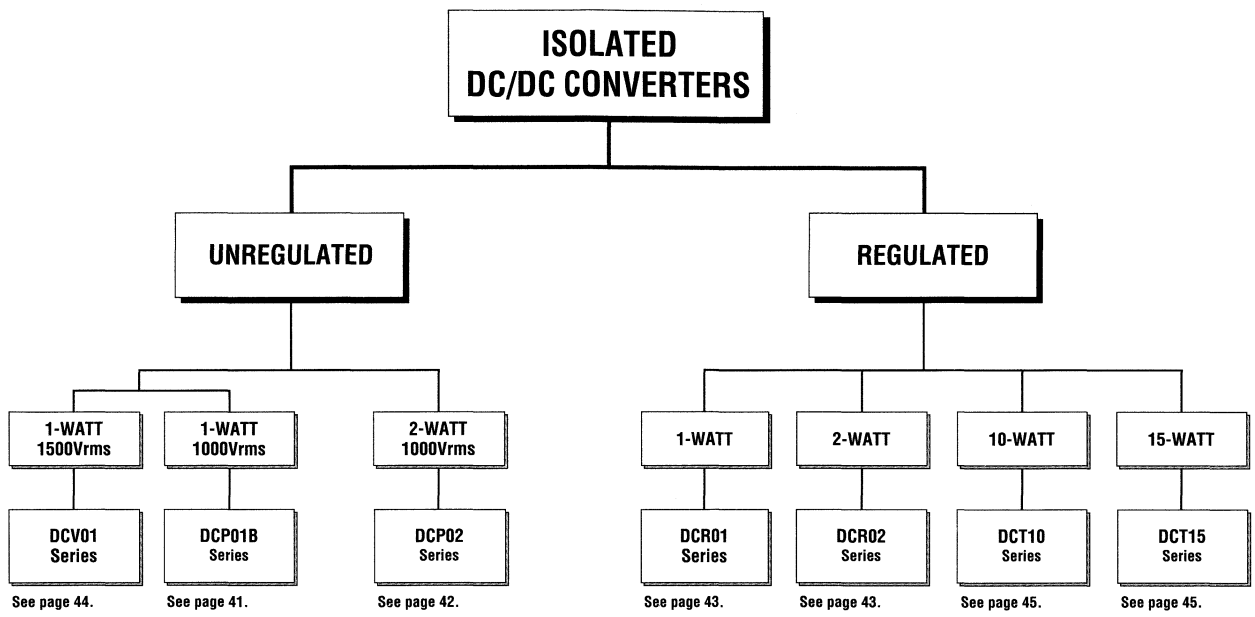


Product	Description	Output Voltage									Output Current mA (min)	Dropout Voltage V (typ)	Input Voltage V	C _{OUT} μF (min)	I _Q mA (typ)	Shutdown Current μA (typ)	Package(s)	Price* 1kpcs
		1.8	2.5	2.7	2.8	2.85	3.0	3.3	5.0	Adj								
REG101	No Output Cap Required! Low Dropout, Low Noise	✓	✓		✓		✓	✓	✓	✓	100	0.05	2.1 to 10	none	0.35	1	SO-8, SOT23-5	\$0.59
REG102	No Output Cap Required! Low Dropout, Low Noise	✓	✓		✓		✓	✓	✓	250	0.13	2.1 to 10	none	0.35	1	SO-8, SOT23-5	0.79	
REG103	No Output Cap Required! Low Dropout, Low Noise		✓	✓			✓	✓	✓	500	0.115	2.7 to 15	none	0.50	1	SO-8, SOT223-5 DDPAK-5	1.29	
REG104	No Output Cap Required! Low Dropout, Low Noise		✓	✓			✓	✓	✓	1000	0.23	2.7 to 15	none	0.50	1	SO-8, SOT223-5 DDPAK-5	1.59	
REG1117	Industry Standard					✓		✓	✓	800	1.1	3.0 to 15	10	4	N/A	SOT223-3, DDPK-3	1.38	
REG1117A	Industry Standard	✓	✓					✓	✓	1000	1.2	3.1 to 15	10	4	N/A	SOT223-3, DDPK-3	1.38	
REG1118	Industry Standard, Source, Sink, SCSI-2 Termination					✓				800	1.1	3.1 to 6	10	3	N/A	SOT223-3, DDPK-3	1.39	

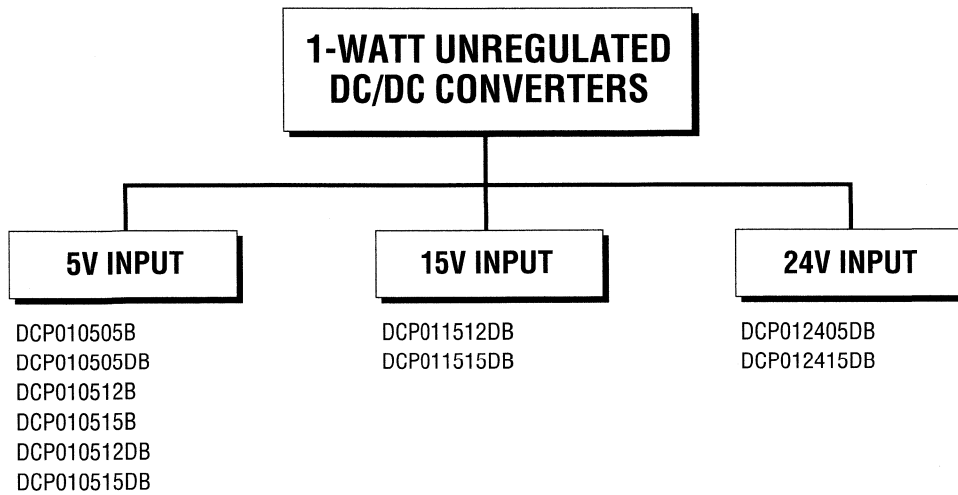
*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Power Products—Selection Tree and Guide



Power Products—Selection Tree and Guide

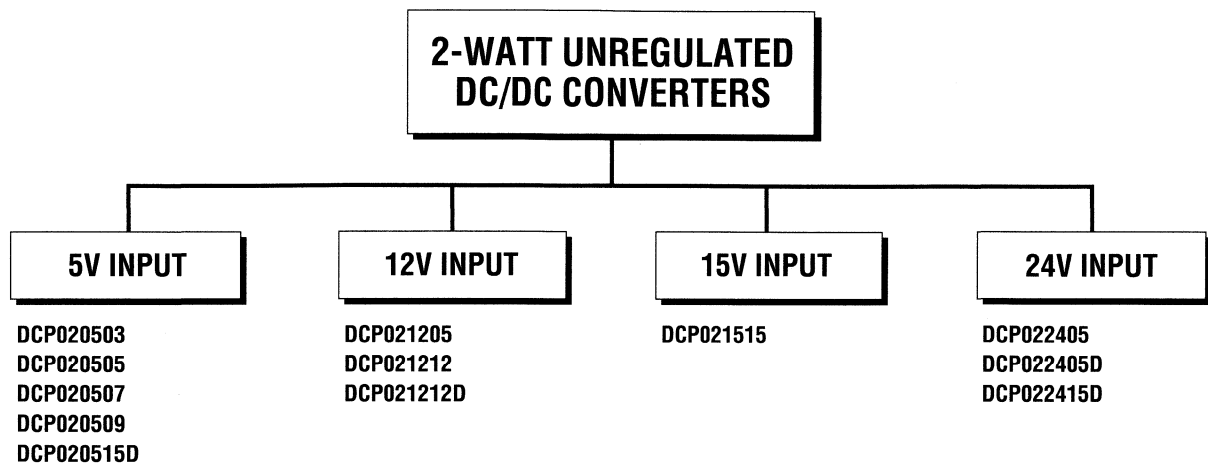


Product	Description	Isolation Voltage Cont Peak DC (V)	UL1950 Isolation Voltage Test (Vrms)	Input Voltage (VDC) min	Input Voltage (VDC) max	Output Voltage at 75% Load (VDC)	Current, Balanced Loads on All Outputs, Rated (mA)	Output Sensitivity to Input Change (% of V_{IN})	Temp Range	Typical Efficiency Full Load (%)	W/cm ³ Power Density	Reliability (FITS)	Package(s)	Price* 1kpcs
DCP010505B	1W, Isolated, 5V _{IN} , 5V _{OUT}	N/A	1000	4.5	5.5	5	200	1	Ind	71	2	75	DIP-14, Gull Wing	\$5.01
DCP010505DB	1W, Isolated, 5V _{IN} , ±5V _{OUT}	N/A	1000	4.5	5.5	±5	±100	1	Ind	66	2	75	DIP-14, Gull Wing	5.51
DCP010512B	1W, Isolated, 5V _{IN} , 12V _{OUT}	N/A	1000	4.5	5.5	12	83	1	Ind	72	2	75	DIP-14, Gull Wing	5.01
DCP010515B	1W, Isolated, 5V _{IN} , 15V _{OUT}	N/A	1000	4.5	5.5	15	67	1	Ind	73	2	75	DIP-14, Gull Wing	5.01
DCP010512DB	1W, Isolated, 5V _{IN} , ±12V _{OUT}	N/A	1000	4.5	5.5	±12	±41	1	Ind	72	2	75	DIP-14, Gull Wing	5.51
DCP010515DB	1W, Isolated, 5V _{IN} , ±15V _{OUT}	N/A	1000	4.5	5.5	±15	±33	1	Ind	75	2	75	DIP-14, Gull Wing	5.51
DCP011512DB	1W, Isolated, 15V _{IN} , ±12V _{OUT}	N/A	1000	13.5	16.5	±12	±41	1	Ind	76	2	75	DIP-14, Gull Wing	5.51
DCP011515DB	1W, Isolated, 15V _{IN} , ±15V _{OUT}	N/A	1000	13.5	16.5	±15	±33	1	Ind	76	2	75	DIP-14, Gull Wing	5.51
DCP012405B	1W, Isolated, 24V _{IN} , 5V _{OUT}	N/A	1000	21.6	5.5	5	200	1	Ind	71	2	75	DIP-14, Gull Wing	5.01
DCP012415DB	1W, Isolated, 24V _{IN} , ±15V _{OUT}	N/A	1000	21.6	5.5	5	200	1	Ind	71	2	75	DIP-14, Gull Wing	5.51

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Power Products—Selection Tree and Guide

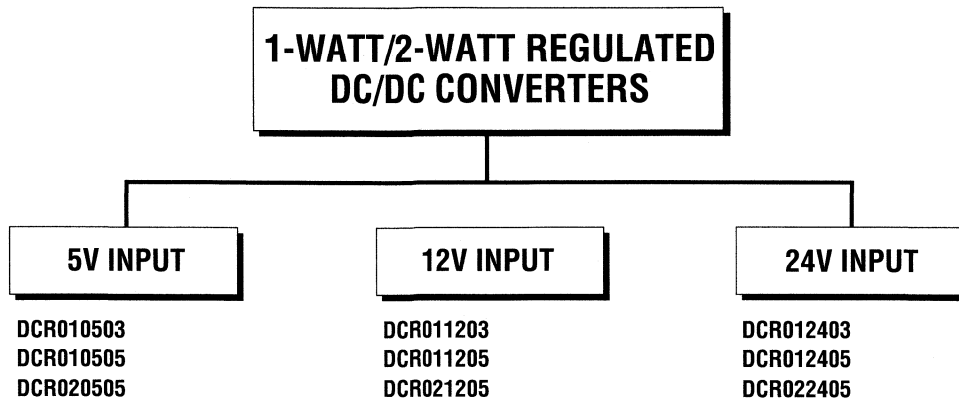


Product	Description	Isolation Voltage Cont Peak DC (V)	UL1950 Isolation Voltage Test (Vrms)	Input Voltage (VDC) min	Input Voltage (VDC) max	Output Voltage at 75% Load (VDC)	Current, Balanced Loads on All Outputs, Rated (mA)	Output Sensitivity to Input Change (% of V_{IN})	Temp Range	Typical Efficiency Full Load (%)	W/cm ³ Power Density	Reliability (FITS)	Package(s)	Price* 1kpcs
DCP020503	2W, Isolated, 5V _{IN} , 3V _{OUT}	N/A	1000	4.5	5.5	3.3	600	1	Ind	74	4.8, 6.5	75	DIP-14, SO-28	\$6.50
DCP020505	2W, Isolated, 5V _{IN} , 5V _{OUT}	N/A	1000	4.5	5.5	5	400	1	Ind	80	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP020507	2W, Isolated, 5V _{IN} , 7V _{OUT}	N/A	1000	4.5	5.5	7	286	1	Ind	81	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP020509	2W, Isolated, 5V _{IN} , 9V _{OUT}	N/A	1000	4.5	5.5	9	222	1	Ind	82	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP020515D	2W, Isolated, 5V _{IN} , ±15V _{OUT}	N/A	1000	4.5	5.5	±15	±66	1	Ind	85	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP021205	2W, Isolated, 12V _{IN} , 5V _{OUT}	N/A	1000	10.8	13.2	5	400	1	Ind	83	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP021212	2W, Isolated, 12V _{IN} , 12V _{OUT}	N/A	1000	10.8	13.2	12	166	1	Ind	87	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP021212D	2W, Isolated, 12V _{IN} , ±12V _{OUT}	N/A	1000	10.8	13.2	±12	±82	1	Ind	88	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP021515	2W, Isolated, 15V _{IN} , 15V _{OUT}	N/A	1000	13.5	16.5	15	134	1	Ind	88	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP022405	2W, Isolated, 24V _{IN} , 5V _{OUT}	N/A	1000	21.6	26.4	5	400	1	Ind	81	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP022405D	2W, Isolated, 24V _{IN} , ±5V _{OUT}	N/A	1000	21.6	26.6	±5	±200	1	Ind	80	4.8, 6.5	75	DIP-14, SO-28	6.50
DCP022415D	2W, Isolated, 24V _{IN} , ±15V _{OUT}	N/A	1000	21.6	26.4	±15	±66	1	Ind	79	4.8, 6.5	75	DIP-14, SO-28	6.50

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

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Power Products—Selection Tree and Guide

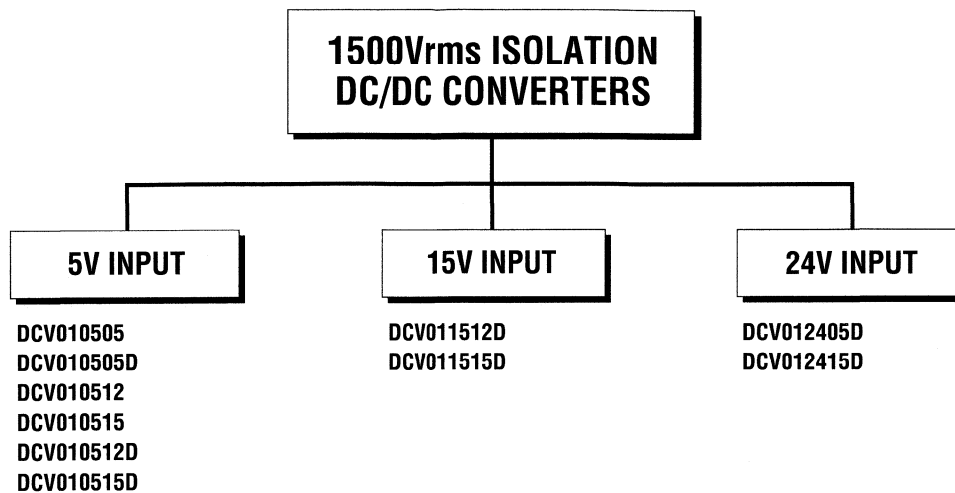


Product	Description	Isolation Voltage Cont Peak DC (V)	UL1950 Isolation Voltage Test (Vrms)	Input Voltage (VDC) min	Input Voltage (VDC) max	Output Voltage at 75% Load (VDC)	Output Current Rated (mA)	Output Sensitivity to Input Change (% of V_{IN})	Temp Range	Typical Efficiency Full Load (%)	W/cm ³ Power Density	Reliability (FITS)	Package(s)	Price* 1kpcs
DCR010503	1W, Isolated, 5V _{IN} , 3V _{OUT} , Regulated	N/A	1000	4.5	5.5	3.3	300	1	Ind	58	27	125	DIP-18, Gull Wing	\$5.60
DCR010505	1W, Isolated, 5V _{IN} , 5V _{OUT} , Regulated	N/A	1000	4.5	5.5	5	200	1	Ind	63	27	125	DIP-18, Gull Wing	5.60
DCR011203	1W, Isolated, 12V _{IN} , 3V _{OUT} , Regulated	N/A	1000	10.8	13.2	3.3	390	1	Ind	62	27	125	DIP-18, Gull Wing	5.60
DCR011205	1W, Isolated, 12V _{IN} , 5V _{OUT} , Regulated	N/A	1000	10.8	13.2	5	200	1	Ind	65	27	125	DIP-18, Gull Wing	5.60
DCR012403	1W, Isolated, 24V _{IN} , 3V _{OUT} , Regulated	N/A	1000	21.6	26.4	3.3	390	1	Ind	55	27	125	DIP-18, Gull Wing	5.60
DCR012405	2W, Isolated, 24V _{IN} , 5V _{OUT} , Regulated	N/A	1000	21.6	26.4	5	200	1	Ind	64	55	125	DIP-18, Gull Wing	7.00
DCR020505	2W, Isolated, 5V _{IN} , 5V _{OUT} , Regulated	N/A	1000	4.5	5.5	5	400	1	Ind	57	55	125	DIP-18, Gull Wing	7.00
DCR021205	2W, Isolated, 12V _{IN} , 5V _{OUT} , Regulated	N/A	1000	4.5	5.5	3.3	390	1	Ind	62	55	125	DIP-18, Gull Wing	7.00
DCR022405	2W, Isolated, 24V _{IN} , 5V _{OUT} , Regulated	N/A	1000	21.6	26.4	5	400	1	Ind	64	55	125	DIP-18, Gull Wing	7.00

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

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Power Products—Selection Tree and Guide

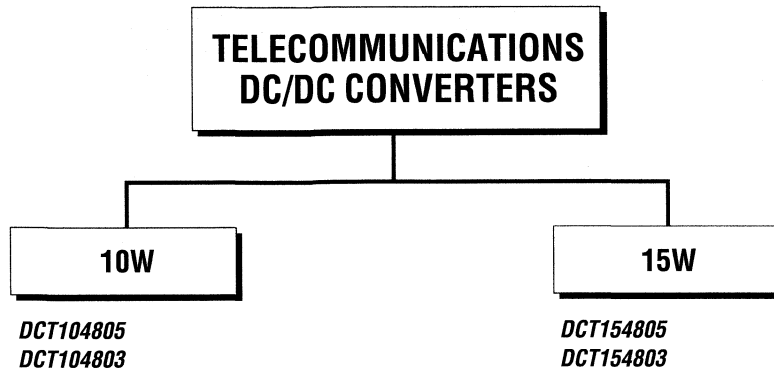


Product	Description	Isolation Voltage Cont Peak DC (V)	UL1950 Isolation Voltage Test (Vrms)	Input Voltage (VDC) min	Input Voltage (VDC) max	Output Voltage at 75% Load (VDC)	Current, Balanced Loads on All Outputs, Rated (mA)	Output Sensitivity to Input Change (% of V_{IN})	Temp Range	Typical Efficiency Full Load (%)	W/cm ³ Power Density	Reliability (FITS)	Package(s)	Price* 1kpcs
DCV010505	1W, Isolated, 5V _{IN} , 5V _{OUT}	N/A	1500	4.5	5.5	5	200	1	Ind	80	2	75	DIP-14, Gull Wing	\$8.00
DCV010505D	1W, Isolated, 5V _{IN} , ±5V _{OUT}	N/A	1500	4.5	5.5	±5	±100	1	Ind	82	2	75	DIP-14, Gull Wing	8.50
DCV010512	1W, Isolated, 5V _{IN} , 12V _{OUT}	N/A	1500	4.5	5.5	12	83	1	Ind	80	2	75	DIP-14, Gull Wing	8.00
DCV010515	1W, Isolated, 5V _{IN} , 15V _{OUT}	N/A	1500	4.5	5.5	15	67	1	Ind	85	2	75	DIP-14, Gull Wing	8.00
DCV010512D	1W, Isolated, 5V _{IN} , ±12V _{OUT}	N/A	1500	4.5	5.5	±12	±41	1	Ind	84	2	75	DIP-14, Gull Wing	8.50
DCV010515D	1W, Isolated, 5V _{IN} , ±15V _{OUT}	N/A	1500	4.5	5.5	±15	±33	1	Ind	85	2	75	DIP-14, Gull Wing	8.50
DCV011512D	1W, Isolated, 15V _{IN} , ±12V _{OUT}	N/A	1500	13.5	16.5	±12	±41	1	Ind	78	2	75	DIP-14, Gull Wing	8.50
DCV011515D	1W, Isolated, 15V _{IN} , ±15V _{OUT}	N/A	1500	13.5	16.5	±15	±33	1	Ind	79	2	75	DIP-14, Gull Wing	8.50
DCV012405	1W, Isolated, 24V _{IN} , 5V _{OUT}	N/A	1500	21.6	5.5	5	200	1	Ind	77	2	75	DIP-14, Gull Wing	8.00
DCV012415D	1W, Isolated, 24V _{IN} , ±15V _{OUT}	N/A	1500	21.6	5.5	5	±33	1	Ind	76	2	75	DIP-14, Gull Wing	8.50

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Power Products—Selection Tree and Guide



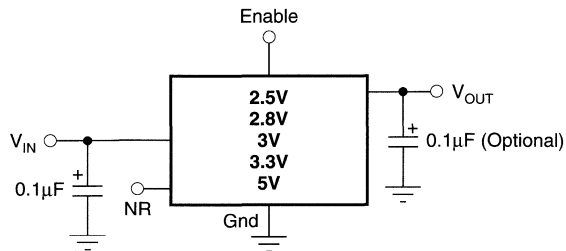
Product	Description	Input Voltage (VDC)		Output Voltage at 75%		Load Regulation 10% - 100%		Line Regulation Full Load		Output Ripple/Noise 100%		Efficiency 100%		Isolation Voltage (Vrms)		Ambient Temp Range (°C)		Package(s)	Price* 1kpcs
		min	max	Load (VDC)	Full Load (A)	Full Load Max (% of V _{OUT})	Max (% of V _{OUT})	Full Load (mVp-p)	Full Load (%)	Flash									
DCT104805	10W Telecom, Isolated DC/DC Converter	32	75	5	2	0.75	0.3	50	83	1500	+85 to 40°C	DIL-28, Gull Wing	\$25.00						
DCT104803	10W Telecom, Isolated DC/DC Converter	32	75	3.3	2	0.75	0.3	50	83	1500	+85 to 40°C	DIL-28, Gull Wing	25.00						
DCT154805	15W Telecom, Isolated DC/DC Converter	32	75	5	3	0.75	0.3	50	83	1500	+85 to 40°C	DIL-32, Gull Wing	32.00						
DCT154803	15W Telecom, Isolated DC/DC Converter	32	75	3.3	3	0.75	0.3	50	83	1500	+85 to 40°C	DIL-32, Gull Wing	32.00						

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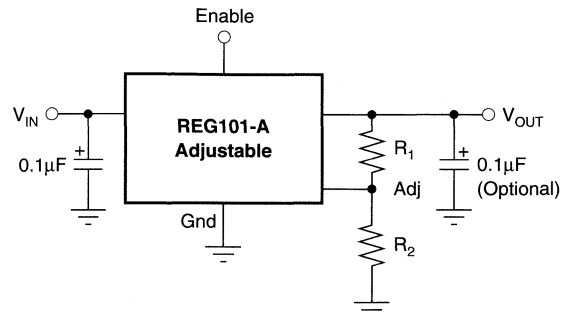
BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

REG101

100mA LOW DROPOUT REGULATOR



NR = Noise Reduction

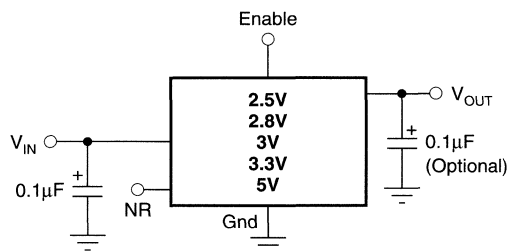


FEATURES

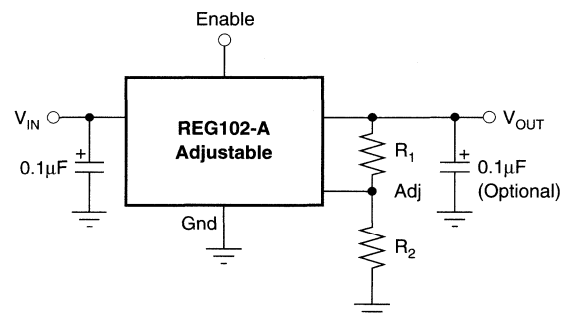
- NO OUTPUT CAPACITOR REQUIRED
- LOW DROPOUT VOLTAGE: 50mV at 100mA
- VERY LOW NOISE: 25µVrms
($V_{OUT} = 2.5V$, 10Hz -100kHz, $C_{NR} = 0.01\mu F$)
- HIGH ACCURACY: $\pm 2\%$ max
- LOW QUIESCENT CURRENT: $I_Q = 350\mu A$
- I_Q CONSTANT VERSUS LOAD CURRENT
- SHUTDOWN MODE: $I_Q = 1\mu A$
- 2.5V, 2.8V, 3.0V, 3.3V, 5.0V AND ADJUSTABLE VERSIONS
- INTERNAL CURRENT LIMIT
- THERMAL PROTECTION
- SMALL SURFACE-MOUNT PACKAGES: SOT23-5 and SO-8

REG102

250mA LOW DROPOUT REGULATOR



NR = Noise Reduction

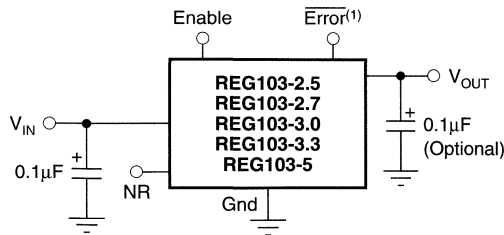


FEATURES

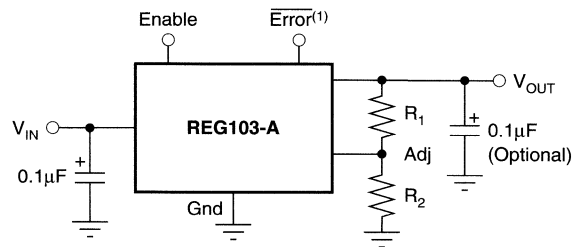
- NO OUTPUT CAPACITOR REQUIRED
- LOW DROPOUT VOLTAGE: 125mV at 250mA
- VERY LOW NOISE: 25µVrms
($V_{OUT} = 2.5V$, 10Hz -100kHz, $C_{NR} = 0.01\mu F$)
- HIGH ACCURACY: $\pm 2\%$ max
- LOW QUIESCENT CURRENT: $I_Q = 350\mu A$
- I_Q CONSTANT VERSUS LOAD CURRENT
- SHUTDOWN MODE: $I_Q = 1\mu A$
- 2.5V, 2.8V, 3.0V, 3.3V, 5.0V AND ADJUSTABLE VERSIONS
- INTERNAL CURRENT LIMIT
- THERMAL PROTECTION
- SMALL SURFACE-MOUNT PACKAGES: SOT23-5, SO-8, AND SOT223-5

REG103

500mA LOW DROPOUT REGULATOR



NR = Noise Reduction



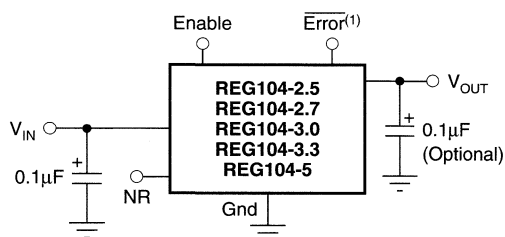
NOTE: (1) Error only available in SO-8 versions.

FEATURES

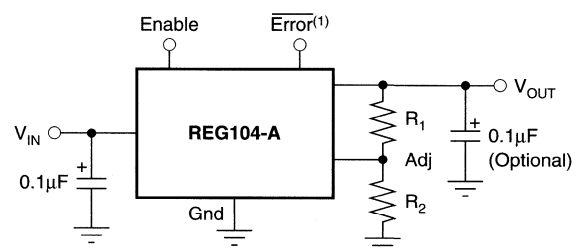
- NO OUTPUT CAPACITOR REQUIRED
- LOW DROPOUT VOLTAGE: 115mV at 500mA
- VERY LOW NOISE: 25µVrms ($V_{OUT} = 2.5V$, 10Hz -100kHz, $C_{NR} = 0.01\mu F$)
- HIGH ACCURACY: $\pm 2\%$ max
- LOW QUIESCENT CURRENT: $I_Q = 500\mu A$
- I_Q NEARLY CONSTANT VERSUS LOAD CURRENT
- SHUTDOWN MODE: $I_Q = 1\mu A$
- 2.5V, 2.7V, 3.0V, 3.3V, 5.0V AND ADJUSTABLE VERSIONS
- INTERNAL CURRENT LIMIT
- THERMAL PROTECTION
- OUTPUT VOLTAGE ERROR INDICATOR⁽¹⁾
- SMALL SURFACE-MOUNT PACKAGES: SOT223-5, SO-8, AND DPAK-5

REG104

1A LOW DROPOUT REGULATOR



NR = Noise Reduction



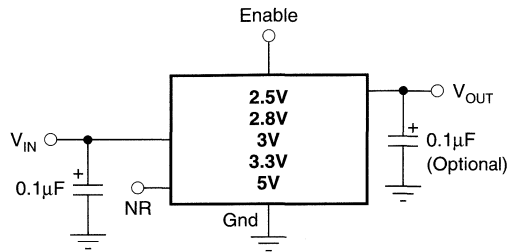
NOTE: (1) Error only available in SO-8 versions.

FEATURES

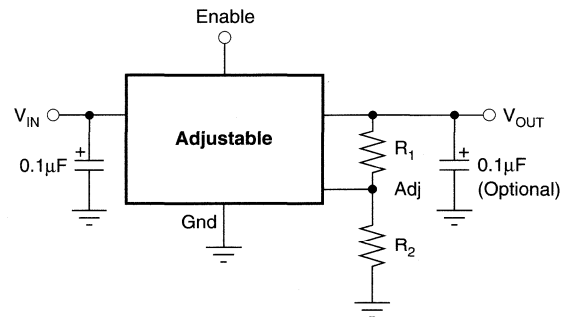
- NO OUTPUT CAPACITOR REQUIRED
- LOW DROPOUT VOLTAGE: 230mV at 1A
- VERY LOW NOISE: 25µVrms ($V_{OUT} = 2.5V$, 10Hz -100kHz, $C_{NR} = 0.01\mu F$)
- HIGH ACCURACY: $\pm 2\%$ max
- LOW QUIESCENT CURRENT: $I_Q = 500\mu A$
- I_Q NEARLY CONSTANT VERSUS LOAD CURRENT
- SHUTDOWN MODE: $I_Q = 1\mu A$
- 2.5V, 2.7V, 3.0V, 3.3V, 5.0V AND ADJUSTABLE VERSIONS
- INTERNAL CURRENT LIMIT
- THERMAL PROTECTION
- OUTPUT VOLTAGE ERROR INDICATOR⁽¹⁾
- SMALL SURFACE-MOUNT PACKAGES: SOT223-5 AND DPAK-5

REG113

460mA LOW DROPOUT REGULATOR



NR = Noise Reduction

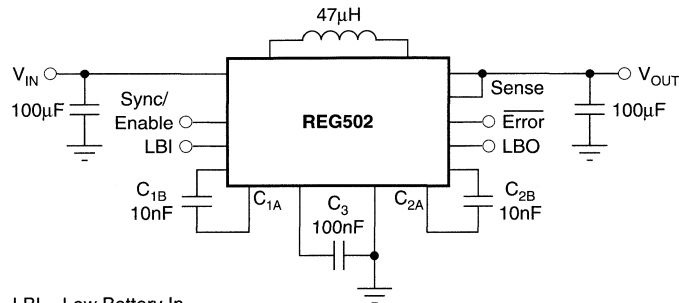


FEATURES

- NO OUTPUT CAPACITOR REQUIRED
- LOW DROPOUT VOLTAGE: 230mV at 460mA
- VERY LOW NOISE: 25µVrms
($V_{OUT} = 2.5V$, 10Hz - 100kHz, $C_{NR} = 0.01\mu F$)
- HIGH ACCURACY: $\pm 2\%$ max
- LOW QUIESCENT CURRENT: $I_Q = 350\mu A$
- I_Q CONSTANT VERSUS LOAD CURRENT
- SHUTDOWN MODE: $I_Q = 1\mu A$
- 2.5V, 2.8V, 3.0V, 3.3V, 5.0V AND ADJUSTABLE VERSIONS
- INTERNAL CURRENT LIMIT
- THERMAL PROTECTION
- SMALL SURFACE-MOUNT PACKAGES: SOT23-5 AND MSOP-8

REG502

800mA BUCK/BOOST CONVERTER



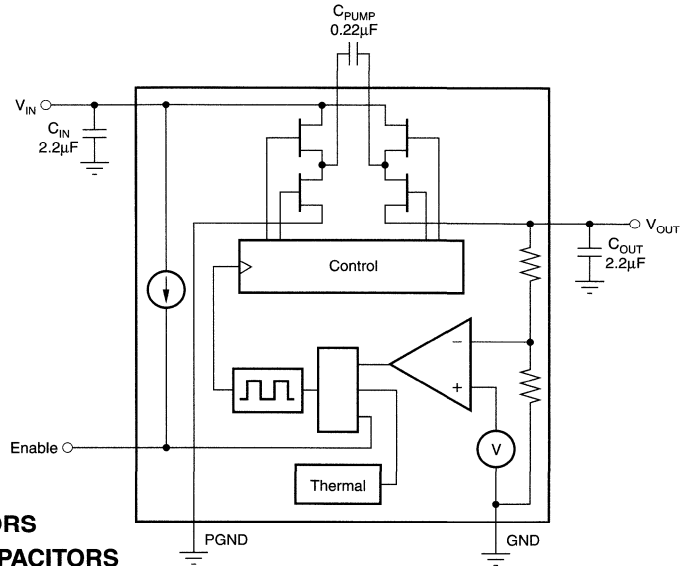
LBI = Low Battery In
LBO = Low Battery Out

FEATURES

- 800mA MAXIMUM SWITCH CURRENT
- WIDE INPUT AND OUTPUT VOLTAGE RANGE: 2.2V to 16V
- 3.3V, 5.0V AND ADJUSTABLE OUTPUT VERSIONS
- HIGH ACCURACY: 2%
- ERROR FLAG SIGNALS VALID OUTPUT VOLTAGE
- SEAMLESS TRANSITION BETWEEN STEP-UP AND STEP-DOWN OPERATION
- SYNCHRONIZABLE UP TO 700kHz
- LOW POWER: $I_Q = 2mA$
- SHUTDOWN MODE: $I_Q = 10\mu A$
- LOW BATTERY DETECTOR
- INTERNAL CURRENT LIMIT
- REVERSE CURRENT PROTECTION
- THERMAL SHUTDOWN
- THIN SURFACE-MOUNT PACKAGE: TSSOP-16

REG711

50mA Switched-Cap DC/DC CONVERTER

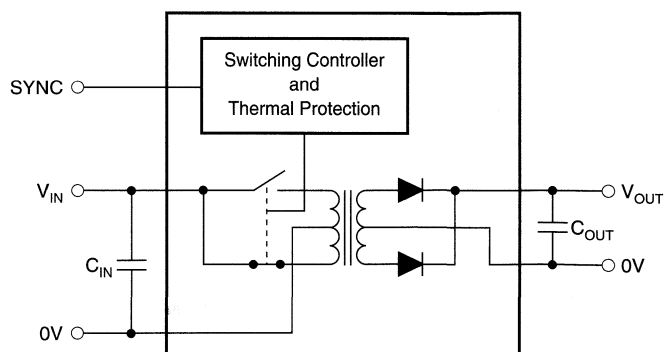


FEATURES

- WIDE INPUT RANGE: 1.8V to 5.5V
- OUTPUT VOLTAGES:
5.0V (min 2.7V_{IN}), 3.3V, 3.0V, 2.7V, 2.5V
- SHUTDOWN MODE
- LOW INPUT CURRENT RIPPLE
- LOW OUTPUT VOLTAGE RIPPLE
- MINIMUM EXTERNAL COMPONENTS—NO INDUCTORS
- 1MHz INTERNAL OSCILLATOR ALLOWS SMALL CAPACITORS
- THERMAL PROTECTION
- THIN MSOP-8 PACKAGE

DCP02

2W, Unregulated, Isolated DC/DC CONVERTER

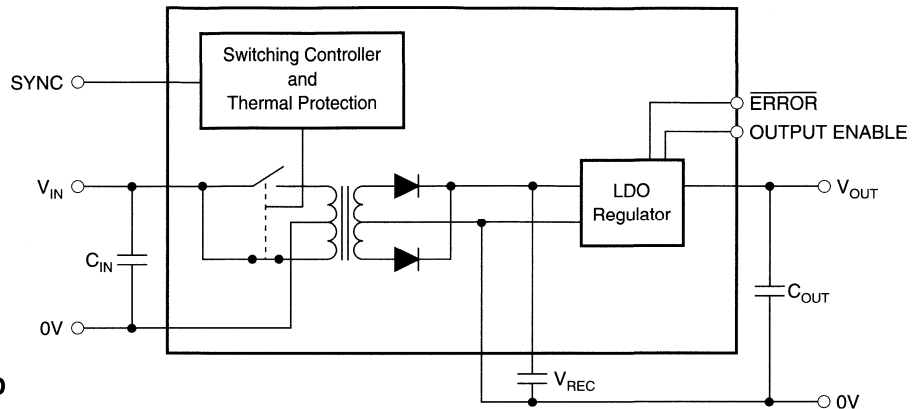


FEATURES

- INPUTS: 5, 12, 15, 24V
- OUTPUTS: 3.3, 5, ±5, 7, 9, 12, ±12, 15, ±15V
- THERMAL SHUTDOWN
- DEVICE TO DEVICE SYNCHRONIZATION AND
REMOTE SHUTDOWN
- POWER DENSITY: 106W/in³ (6.5W/cm³)
- EN55022 CLASS B EMC PERFORMANCE
- UL1950 RECOGNIZED COMPONENT
- PACKAGES: DIP-14 and SO-28

DCR01, DCR02

1W and 2W, Regulated, Isolated
DC/DC CONVERTERS

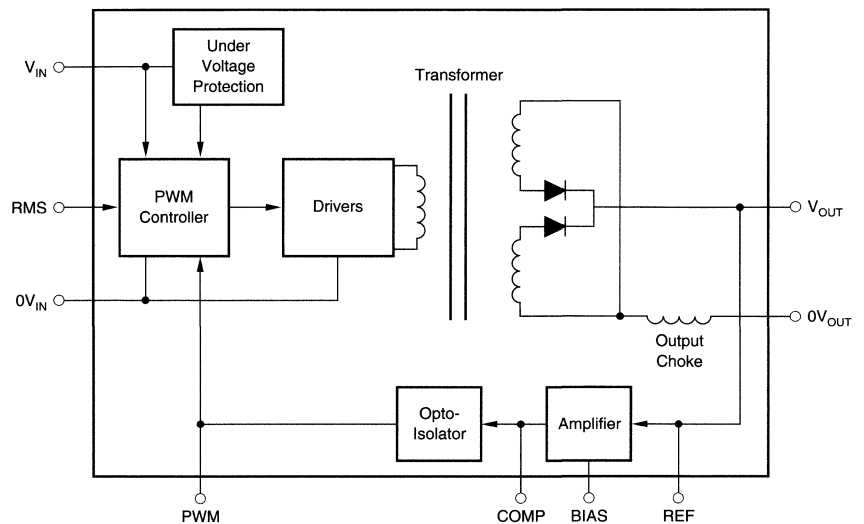


FEATURES

- INPUTS: 5, 12, 24V
- OUTPUTS: 3.3V AND 5V
- LOWEST PROFILE REGULATED DC/DC CONVERTERS
- SYNCHRONIZABLE
- ISOLATED AND NON-ISOLATED REMOTE SHUTDOWN
- EN55022 CLASS B EMC PERFORMANCE
- UL1950 RECOGNIZED COMPONENT
- PACKAGES: DIP-18 and SO-28

DCT10, DCT15

10W and 15W, Isolated Telecom
DC/DC CONVERTERS

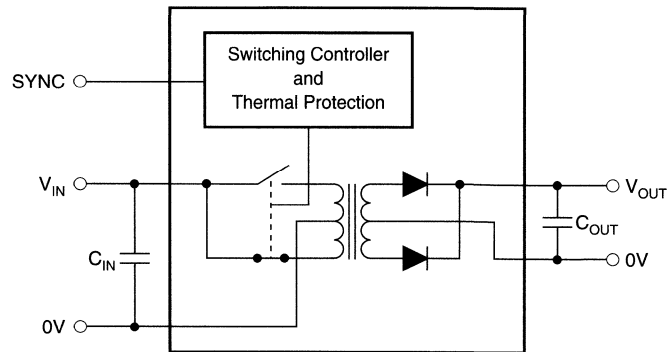


FEATURES

- INPUT: 32V to 75V or 18V to 36V
- OUTPUT: 5V or 3.3V
- THERMAL SHUTDOWN AND SHORT-CIRCUIT PROTECTION
- UNDERVOLTAGE LOCKOUT AND REMOTE SHUTDOWN
- 1500Vrms ISOLATION
- OUTPUT VOLTAGE TRIM
- -40 TO +85°C AMBIENT OPERATION WITHOUT HEATSINK
- SOFT START
- REMOTE SENSING

DCV01

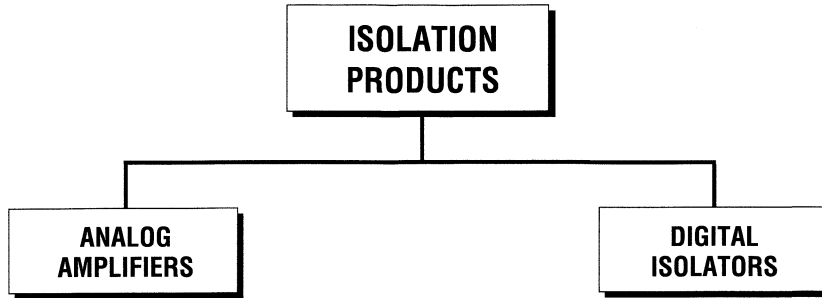
1W, Unregulated 1500Vrms, Isolated
DC/DC CONVERTER



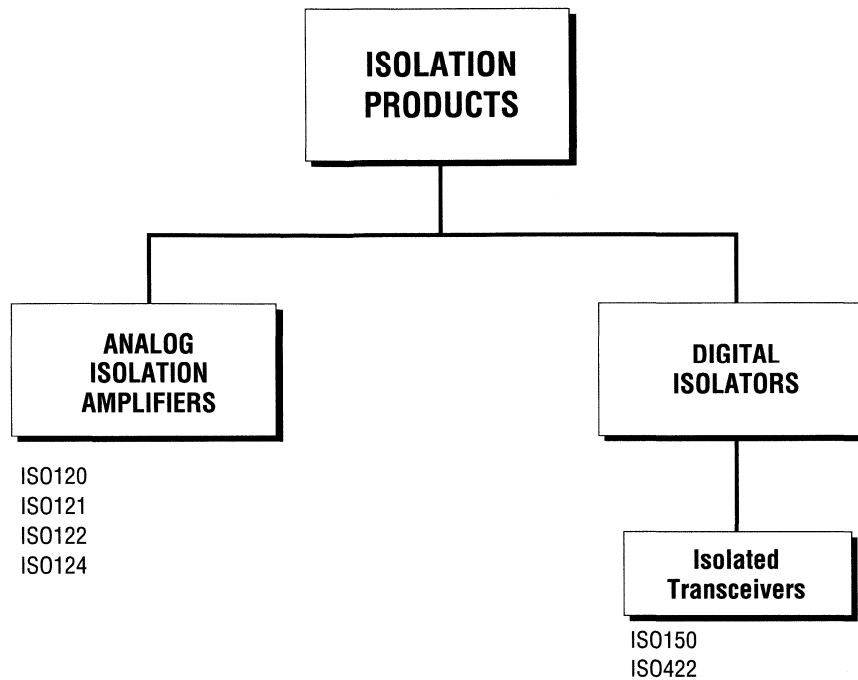
FEATURES

- INPUTS: 5, 15, 24V
- OUTPUTS: 5, ± 5 , 12, ± 12 , 15, ± 15 V
- THERMAL PROTECTION
- DEVICE-TO-DEVICE SYNCHRONIZATION
- EN55022 CLASS B EMC PERFORMANCE TO 1500Vrms
- UL1950 RECOGNIZED COMPONENT
- PACKAGES: DIP-14 and GULL WING

Isolation Products—Main Selection Tree



Isolation Products—Selection Tree and Guide



Isolation Products

Product	Description	Isolation Voltage Cont Peak (DC) (V)	Isolation Voltage Pulse/Test Peak (V)	Leakage Current at 240V/60Hz (μArms) max	Gain Non-Linearity (%) max	Input Offset Voltage Drift (±μV/°C) max	Small-Signal Bandwidth (kHz) typ	Package(s)	Price* 1kpcs
ISO120	1500Vrms Isolation, Buffer	2121	2500 ⁽¹⁾	0.5	±0.01	150	60	DIP-24	\$22.43
ISO121	3500Vrms Isolation, Buffer	4950	5600 ⁽¹⁾	0.5	±0.01	150	60	DIP-40	29.58
ISO122	1500Vrms Isolation, Buffer	2121	2400 ⁽¹⁾	0.5	±0.02	200 ⁽²⁾	50	DIP-16, SO-28	9.25
ISO124	1500Vrms Isolation, Buffer	2121	2400 ⁽¹⁾	0.5	±0.01	200 ⁽²⁾	50	DIP-16, SO-28	6.95

NOTES: (1) Partial discharge test voltage. (2) Denotes typical.

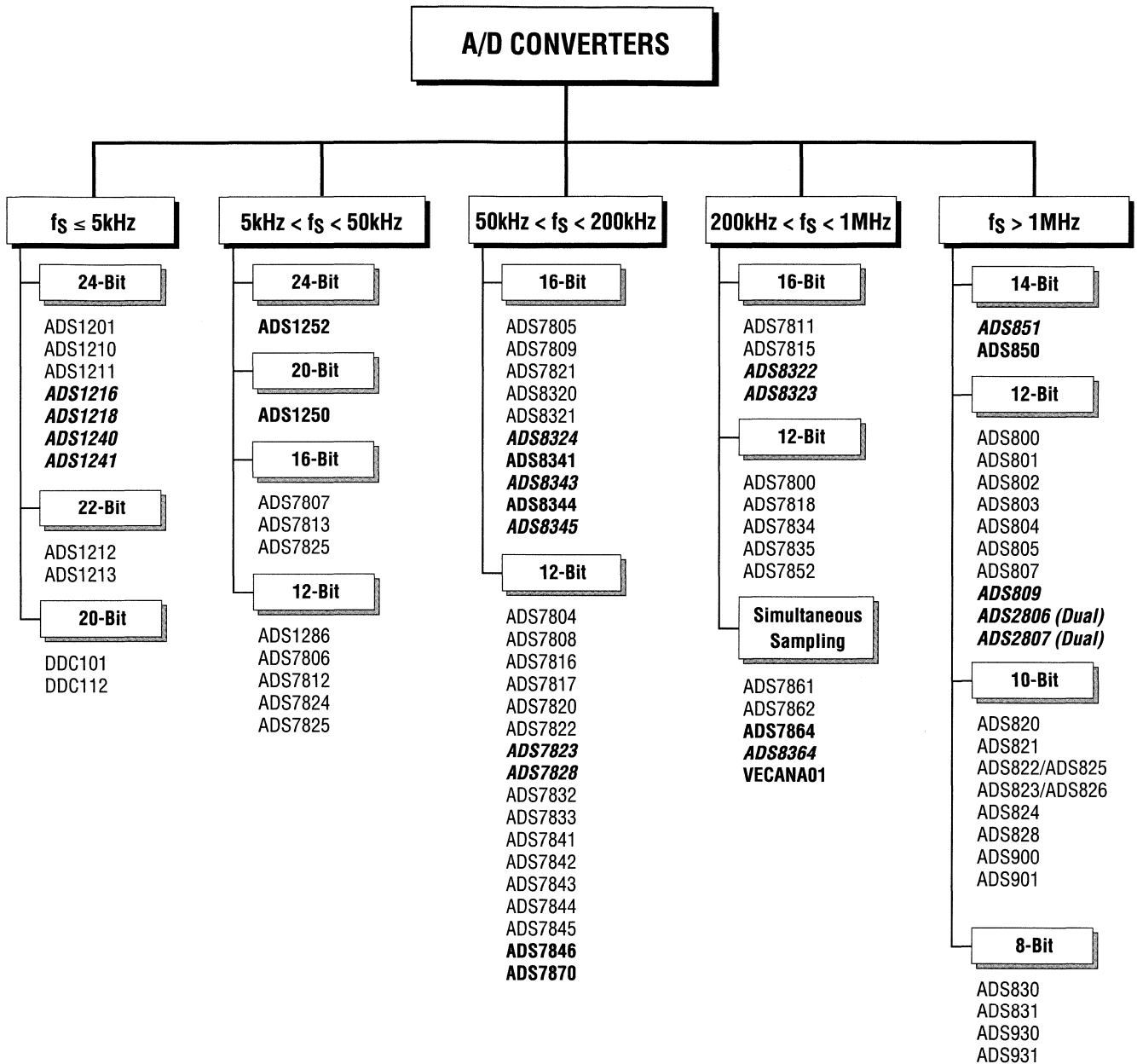
Product	Description	Isolation Voltage Cont Peak (Vrms)	Isolation Voltage Pulse/Test (Vrms)	Leakage Current at 240VAC 60Hz (μA)	Data Rate (Mbd) ⁽¹⁾	Power Consumption per Channel (mW) max	Ext Power Req	Package(s)	Price* 1kpc
ISO150	2-Channel Isolated Digital Coupler	1500	2400 ⁽²⁾	0.6	80	25	Yes	DIP-24, SO-28	\$7.38
ISO422	Isolated RS-422 Transceiver	1500	2400	2	2.5	150	Yes	DIP-24, Gull Wing	6.00

NOTES: (1) Denotes typical. (2) Partial discharge test voltage, AC Vrms.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

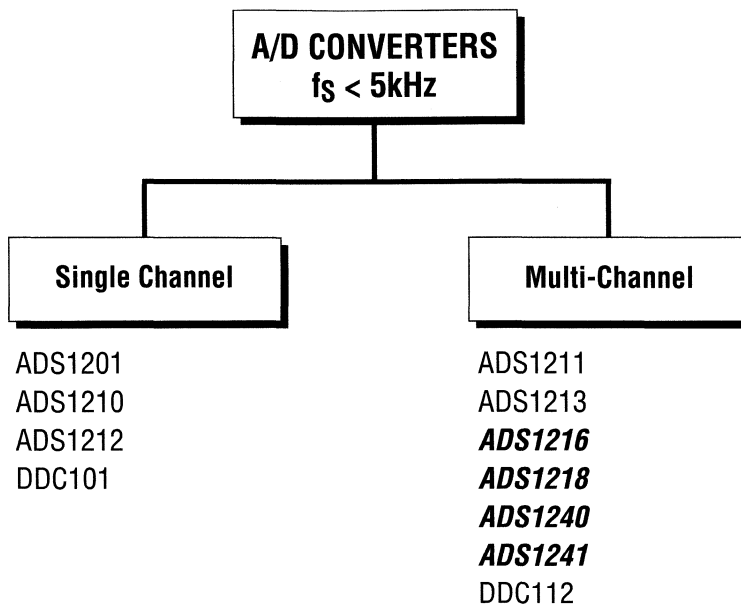
BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Analog-to-Digital Converters—Main Selection Tree



BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Analog-to-Digital Converters—Selection Tree and Guide



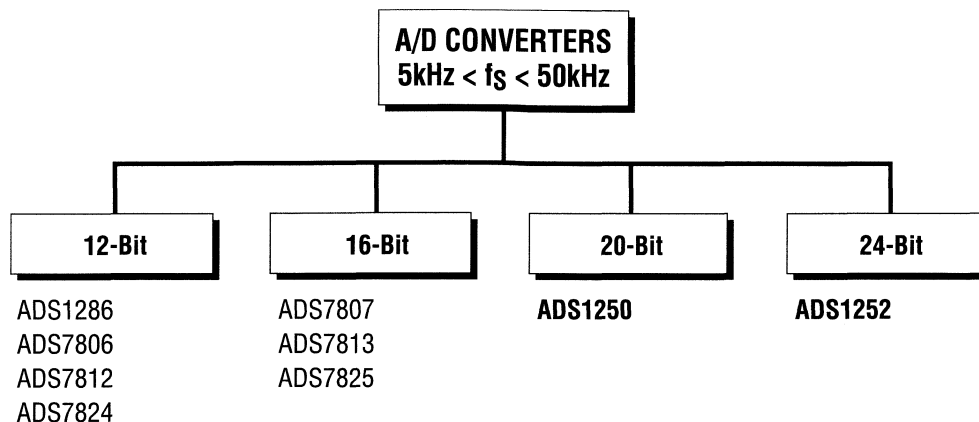
Product	Sampling		# Input Channels	Interface	Input Voltage	V _{REF}	Linearity (%)	NMC ⁽¹⁾ (Bits)	SINAD (dB)	Power	Package(s)	Price* 1kpcs
	Res. (Bit)	Rate (kHz)										
ADS1201	24	1	1 Diff	Modulator	±10V	Yes	±0.0015	22	N/A	20mW, 5V	SO-16	\$5.76
ADS1210	24	16	1 Diff	Serial	±10V	Yes	±0.0015	22	N/A	60mW, 5V	DIP-18, SO-18	9.60
ADS1211	24	16	4 Diff	Serial	±10V	Yes	±0.0015	22	N/A	60mW, 5V	DIP-24, SO-24, SSOP-28	10.26
ADS1212	22	6.25	1 Diff	Serial	±10V	Yes	±0.0015	22	N/A	8.5mW, 5V	DIP-18, SO-18	7.25
ADS1213	22	6.25	4 Diff	Serial	±10V	Yes	±0.0015	22	N/A	8.5mW, 5V	DIP-24, SO-24, SSOP-28	8.50
ADS1216	24	0.78	4 Diff/ 8 SE	Serial	PGA (1-128), 5V	Yes	±0.0015	20	N/A	2mW, 3.3, 5V	TQFP-48	6.55
ADS1218	24	0.78	4 Diff/ 8 SE	Serial/Flash	PGA (1-128), 5V	Yes	±0.0015	20	N/A	2mW, 3.3, 5V	TQFP-48	7.50
ADS1240	24	0.015	2 Diff/ 4 SE	Serial	PGA (1-128), 5V	No	±0.0015	20	N/A	2mW, 3.3, 5V	SSOP-24	3.60
ADS1241	24	0.015	4 Diff/ 8 SE	Serial	PGA (1-128), 5V	No	±0.0015	20	N/A	2mW, 3.3, 5V	SSOP-28	3.95
DDC101	20	15	1 I _{IN}	Serial	500pC	No	±0.0015	20	N/A	170mW, 5V	SO-24	18.99
DDC112	20	3kHz/Ch	2 I _{IN}	Serial	50-10000pC	No	±0.0015	20	N/A	100mW, 5V	SO-28	22.50

NOTE: (1) NMC= No Missing Codes.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Analog-to-Digital Converters—Selection Tree and Guide



Product	Res. (Bit)	Sampling Rate (kHz)	# Input Channels	Interface	Input Voltage	V _{REF}	Linearity (%)	NMC ⁽¹⁾ (Bits)	SINAD (dB)	Power	Package(s)	Price* 1kpcs
ADS1252	24	40	1 Diff	Serial	±V _{REF} , 5V	No	±0.0015	24	N/A	50mW, 5V	SO-8	\$5.25
ADS1250	20	25	1 Diff	Serial	PGA (1-8), 4V	No	±0.003	20	N/A	100mW, 5V	SO-16	6.55
ADS7807	16	40	1 SE	2B-P, 3 State, S	4, 5, ±10V	Yes	±0.0022	16	86	35mW, 5V	DIP-28, SO-28	25.75
ADS7813	16	40	1 SE	Serial	4, 10 ±3.3, 5, 10V	Yes	±0.003	16	87	35mW, 5V	DIP-16, SO-16	20.00
ADS7825	16	40	4 SE	2B-P, 3 State, S	±10V	Yes	±0.003	16	86	50mW, 5V	DIP-28, SO-28	28.46
ADS1286	12	37	1 Diff	Serial	V _{REF}	No	±0.024	12	72dB (typ)	3.5mW, 5V	DIP-8, SO-8	2.98
ADS7806	12	40	1 SE	2B-P, 3 State, S	4, 5, ±10V	Yes	±0.011	12	72	35mW, 5V	DIP-28, SO-28	9.47
ADS7812	12	40	1 SE	Serial	4, 10 ±3.3, 5, 10V	Yes	±0.012	12	72	35mW, 5V	DIP-16, SO-16	9.25
ADS7824	12	40	4 SE	2B-P, 3 State, S	±10V	Yes	±0.012	12	72	50mW, 5V	DIP-28, SO-28	12.30

NOTE: (1) NMC = No Missing Codes.

1B-P = 1-Byte Parallel

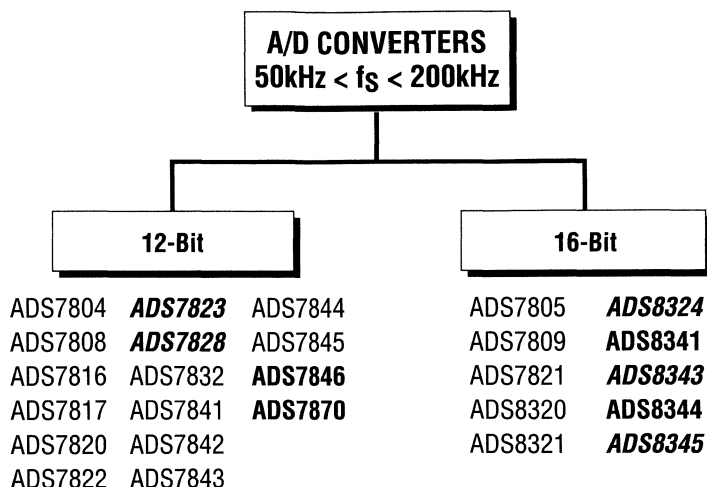
2B-P = 2-Byte Parallel

3 State = Tri-State Outputs

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Analog-to-Digital Converters—Selection Tree and Guide



Product	Res. (Bit)	Sampling Rate (kHz)	# Input Channels	Interface	Input Voltage	V _{REF}	Linearity (%)	NMC ⁽¹⁾ (Bits)	SINAD (dB)	Power	Package(s)	Price* 1kpcs
ADS7805	16	100	1 SE	1/2B-P, 3 State	±10V	Yes	±0.0045	16	86	100mW, 5V	DIP-28, SO-28	\$20.50
ADS7809	16	100	1 SE	Serial	4, 10, ±3.3, 5, 10V	Yes	±0.0030	16	86	100mW, 5V	DIP-20, SO-20	20.50
ADS7821	16	100	1 SE	1/2B-P, 3 State	5V	Yes	±0.0045	16	86	100mW, 5V	DIP-28, SO-28	27.47
ADS8320	16	100	1 Diff	Serial	V _{REF}	No	±0.012	15	84	1.8mW, 2.7V	MSOP-8	6.25
ADS8321	16	100	1 Diff	Serial	±V _{REF}	No	±0.012	15	84	5.5mW, 5V	MSOP-8	6.25
ADS8324	16	100	1 Diff	Serial	±V_{REF}	No	±0.012	15	84	1.6mW, 1.8V	MSOP-8	6.25
ADS8341	16	100	2 Diff/4 SE	Serial	V _{REF}	No	±0.009	15	86	10mW, 2.7V	SSOP-16	7.00
ADS8343	16	100	2 Diff/4 SE	Serial	±V_{REF}	No	±0.009	15	86	10mW, 2.7V	SSOP-16	7.00
ADS8344	16	100	4 Diff/8 SE	Serial	V _{REF}	No	±0.009	15	86	10mW, 2.7V	SSOP-20	7.50
ADS8345	16	100	4 Diff/8 SE	Serial	±V_{REF}	No	±0.009	15	86	10mW, 2.7V	SSOP-20	7.50
ADS7804	12	100	1 SE	1/2B-P, 3 State	±10V	Yes	±0.011	12	72	100mW, 5V	DIP-28, SO-28	11.00
ADS7808	12	100	1 SE	Serial	4, 10, ±3.3, 5, 10V	Yes	±0.011	12	72	100mW, 5V	DIP-20, SO-20	9.95
ADS7816	12	200	1 Diff	Serial	V _{REF}	No	±0.024	12	72	3.5mW, 2.7	DIP-8, SO-8, MSOP-8	1.95
ADS7817	12	200	1 Diff	Serial	±V _{REF}	No	±0.024	12	71	4mW, 2.7	DIP-8, SO-8, MSOP-8	1.95
ADS7820	12	100	1 SE	1/2B-P, 3 State	5V	Yes	±0.011	12	72	100mW, 5V	DIP-28, SO-28	10.25
ADS7822	12	75	1 Diff	Serial	V _{REF}	No	±0.018	12	71	1.6mW, 2.7V	DIP-8, SO-8, MSOP-8	1.45
ADS7823	12	200	1 SE	I²C	V_{REF}	No	±0.024	12	71 (typ)	1mW, 2.7V	MSOP-8	2.98
ADS7828	12	200	4 Diff/8 SE	I²C	V_{REF}	Yes	±0.024	12	71 (typ)	2.7mW, 2.7V	SSOP-16	3.48
ADS7832	12	117	4 SE	1/2B-P, 3 State	V _{REF}	No	±0.018	12	69	7.5mW, 3.3V	DIP-28, PLCC-28	16.00
ADS7841	12	200	2 Diff/4 SE	Serial	V _{REF}	No	±0.024	12	70	3.5mW, 2.7V	DIP-16, SSOP-16	2.50
ADS7842	12	200	4 SE	Parallel	V _{REF}	No	±0.024	12	70	3.5mW, 5V	SSOP-28	2.50
ADS7843	12	125	4-Wire	Serial	V _{REF}	No	±0.048	11	N/A	3.5mW, 2.7V	SSOP-16	3.95
ADS7844	12	125	4 Diff/8 SE	Serial	V _{REF}	No	±0.024	12	70	3.5mW, 2.7V	SSOP-20, QSOP-20	2.90
ADS7845	12	200	5-Wire	Serial	V _{REF}	No	±0.048	11	N/A	3.5mW, 2.7V	SSOP-16	3.95
ADS7846	12	200	4-Wire	Serial	Pressure, V _{BAT} , Temp	Yes	±0.048	11	N/A	2.1mW, 2.7V	SSOP-16, TSSOP-16	2.30
ADS7870	12	52	4 Diff/8 SE	Serial	Prog. G = 1, 2, 4, 5, 8, 10, 16, 20	Yes	±0.02	12	N/A	8.5mW	SSOP-28	3.90

NOTE: (1) NMC = No Missing Codes.

1B-P = 1-Byte Parallel

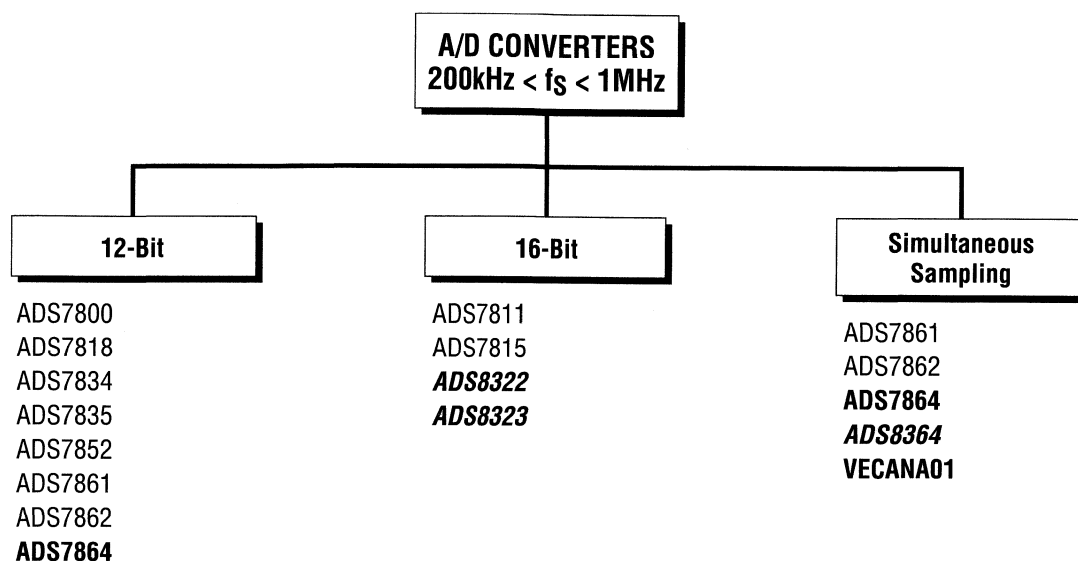
2B-P = 2-Byte Parallel

3 State = Tri-State Outputs

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Analog-to-Digital Converters—Selection Tree and Guide



Product	Res. (Bit)	Sampling Rate (kHz)	# Input Channels	Interface	Input Voltage	V _{REF}	Linearity (%)	NMC ⁽¹⁾ (Bits)	SINAD (dB)	Power	Package(s)	Price* 1kpcs
ADS7811	16	250	1 SE	1 B-P, 3 State	±2.5V	Yes	±0.006	15	84	250mW, ±5V	SO-28	\$34.75
ADS7815	16	250	1 SE	1 B-P, 3 State	±2.5V	Yes	±0.006 (typ)	15	84	250mW, ±5V	SO-28	20.00
ADS8322	16	500	1 Diff	1 B-P, 3 State	+5V	Yes	±0.009	15	90 (typ)	85mW, +5V	TQFP-32	7.50
ADS8323	16	500	1 Diff	1 B-P, 3 State	±2.5V at 2.5V	Yes	±0.009	15	90 (typ)	85mW, +5V	TQFP-32	7.50
ADS8364	16	250	6 Diff	2 B-P, 3 State	±2.5V at 2.5V	Yes	±0.003	15	80	175, +5V	TQFP-48	17.21
ADS7800	12	333	1 SE	1/2 B-P, 3 State	±5V, 10V	Yes	±0.012	12	69	215	DIP-24, SO-24, HERMETIC-24	23.95
ADS7810	12	800	1 SE	1 B-P, 3 State	±10V	Yes	±0.018	12	69	250mW, ±5V	SO-28	23.75
ADS7818	12	500	1 Diff	Serial	+5V	Yes	±0.024	12	70	15mW, +5V	DIP-8, MSOP-8	2.60
ADS7834	12	500	1 Diff	Serial	+2.5V	Yes	±0.024	12	70	15mW, +5V	DIP-8, MSOP-8	2.60
ADS7835	12	500	1 Diff	Serial	±2.5V	Yes	±0.024	12	70	17.5mW, +5V	MSOP-8	2.97
ADS7852	12	500	8 SE	1 B-P, 3 State	+5V	Yes	±0.024	12	71 (typ)	12mW, +5V	TQFP-32	3.52
ADS7861	12	500	4 Diff	Serial	±2.5V at 2.5V	Yes	±0.024	12	70 (typ)	40mW, +5V	SSOP-24	3.98
ADS7862	12	500	4 Diff	1 B-P, 3 State	±2.5V at 2.5V	Yes	±0.024	12	70 (typ)	40mW, +5V	TQFP-32	5.92
ADS7864	12	500	6 Diff	2 B-P, 3 State	±2.5V at 2.5V	Yes	±0.024	12	71 (typ)	50mW, +5V	TQFP-48	6.75
VECANA01	12	150	10 Diff	3 Serial	±2.5V	Yes	±0.024	12	70	225mW, ±5V	PLCC-68	23.75

NOTE: (1) NMC = No Missing Codes.

1B-P = 1-Byte Parallel

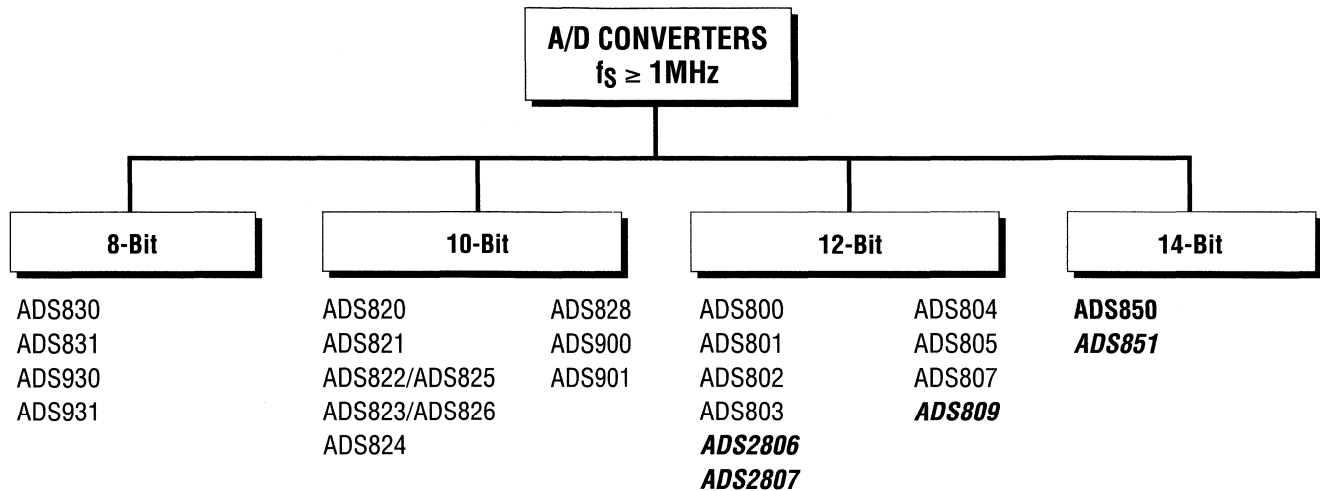
2B-P = 2-Byte Parallel

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Analog-to-Digital Converters—Selection Tree and Guide



Product	Res. Bits	f_s MSPS	Power mW	V_S V	SNR dB	SFDR at f_{IN} dBFS MHz	FPBW MHz	Ref	Input	Analog Input Vp-p	Package(s)	Price* 1kpcs
ADS851	14	40	650	+5	75	100 at 20	1000	Int/Ext	SE or Diff	1, 1.5, 2	LQFP-64	\$29.00
ADS850	14	10	220	+5	76	85 at 4.8	300	Int/Ext	SE or Diff	2, 4	TQFP-48	19.00
ADS809	12	80	770	+5	68	80 at 20	1000	Int/Ext	SE or Diff	1, 1.5, 2	TQFP-48	23.95
ADS807	12	53	324	+5	68	82 at 10	270	Int/Ext	SE or Diff	2, 3	SSOP-28	17.95
ADS2806 (Dual)	12	30	400	+5	68	80 at 10	270	Int/Ext	SE/Diff	2, 3	LQFP-64	6.95
ADS2807 (Dual)	12	50	670	+5	68	80 at 10	270	Int/Ext	SE/Diff	2, 3	LQFP-64	26.95
ADS805	12	20	300	+5	67	77 at 8	270	Int/Ext	SE or Diff	2, 5	SSOP-28, SO-28	15.35
ADS804	12	10	180	+5	69	80 at 4.8	270	Int/Ext	SE or Diff	2, 5	SSOP-28, SO-28	9.95
ADS803	12	5	116	+5	69	82 at 2	270	Int/Ext	SE or Diff	2, 5	SSOP-28, SO-28	6.95
ADS828 ⁽¹⁾	10	75	325	+5	58	70 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-28	9.75
ADS824	10	70	315	+5	58	68 at 20	300	Int/Ext	SE or Diff	1, 2	SSOP-28	8.80
ADS823	10	60	265	+5	60	74 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-28	8.45
ADS826 ⁽¹⁾	10	60	265	+5	59	73 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-28	8.45
ADS822	10	40	190	+5	60	66 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-28	4.90
ADS825 ⁽¹⁾	10	40	190	+5	59	65 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-28	4.90
ADS820	10	20	195	+5	60	63 at 10	100	Int	Diff	4	SSOP-28, SO-28	6.36
ADS900	10	20	52	+2.7	50	53 at 10	100	Int	SE	1	SSOP-28	2.75
ADS901	10	20	48	+2.7	54	51 at 9	100	Ext	SE	1	SSOP-28	2.65
ADS831	8	80	265	+5	48	65 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-20	2.55
ADS830 ⁽¹⁾	8	60	180	+5	49	65 at 10	300	Int/Ext	SE or Diff	1, 2	SSOP-20	2.95
ADS931	8	30	63	+2.7 to +5	48	49 at 12	100	Ext	SE	1	SSOP-28	2.15
ADS930	8	30	66	+2.7 to +5	46	51 at 12	100	Int	SE	1	SSOP-28	2.25

NOTE: (1) +3V or +5 I/O Compatible.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Analog-to-Digital Converters—New Products

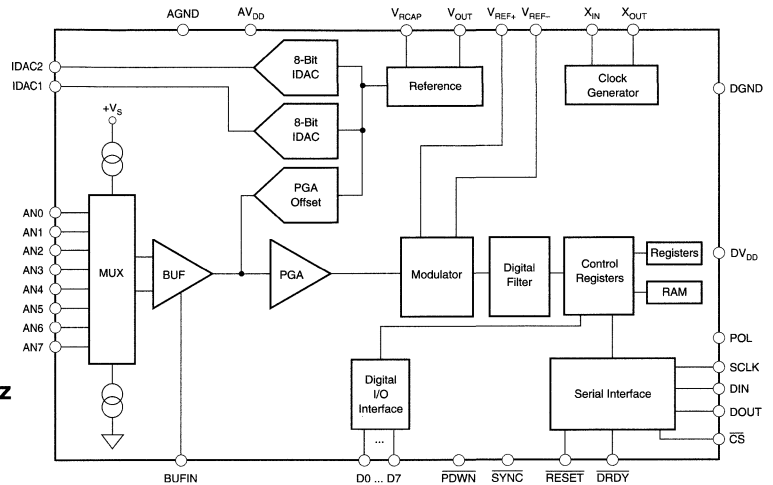
ADS1216



Resolution PLUS High Resolution ANALOG-TO-DIGITAL CONVERTER

FEATURES

- 24 BITS NO MISSING CODE
- 22 BITS EFFECTIVE RESOLUTION AT 50/60Hz
- DIFFERENTIAL INPUTS
- ON-CHIP SELF-CALIBRATION
- OFFSET DRIFT: 5ppm/°C
- GAIN DRIFT: 5ppm/°C
- OPERATES WITH REFERENCE VOLTAGES OF 0.625V TO 2.5V
- LOW POWER: 1mW



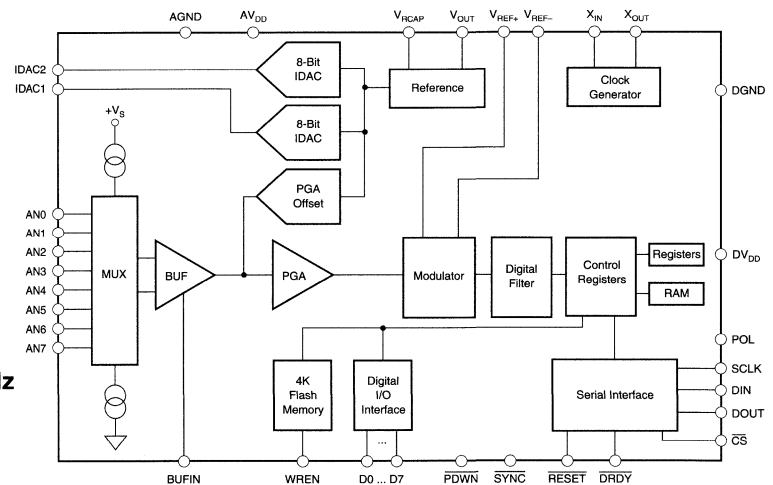
ADS1218



Resolution PLUS High Resolution ANALOG-TO-DIGITAL CONVERTER

FEATURES

- 24 BITS NO MISSING CODE
- 22 BITS EFFECTIVE RESOLUTION AT 50/60Hz
- DIFFERENTIAL INPUTS
- ON-CHIP SELF-CALIBRATION
- OFFSET DRIFT: 5ppm/°C
- GAIN DRIFT: 5ppm/°C
- OPERATES WITH REFERENCE VOLTAGES OF 0.625V TO 2.5V
- LOW POWER: 2mW
- 4K ONBOARD FLASH MEMORY

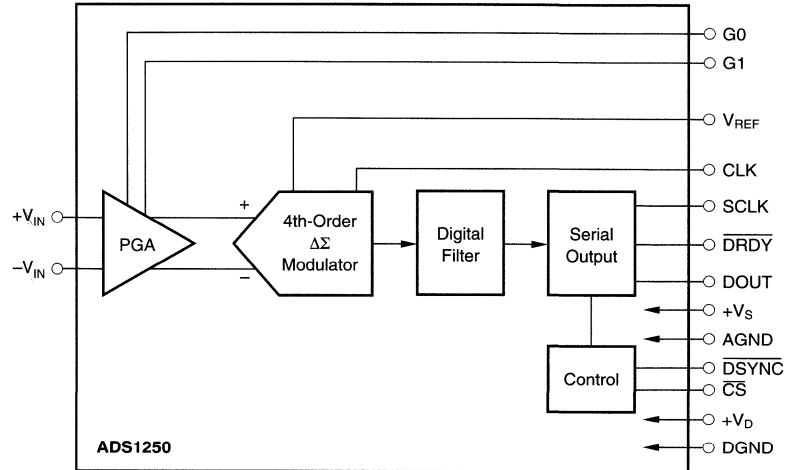


ADS1250

Resolution^{PLUS} 20-Bit
Data Acquisition System
ANALOG-TO-DIGITAL CONVERTER

FEATURES

- 20 BITS NO MISSING CODE
- 18 BITS EFFECTIVE RESOLUTION UP TO 25kHz DATA RATE
- LOW NOISE: 2.8ppm at PGA = 1
- DIFFERENTIAL INPUTS
- INL: 0.002% max
- PROGRAMMABLE FULL SCALE
- I/O CONTROLLED PGA: 1, 2, 4, 8
- EXTERNAL REFERENCE



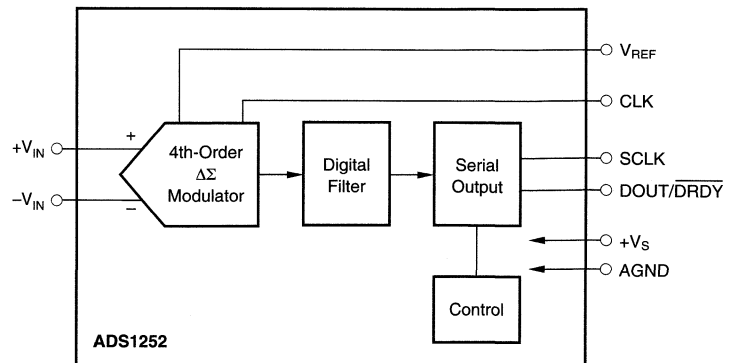
Analog-to-Digital Converters

ADS1252

Resolution^{PLUS} 24-Bit
Data Acquisition System
ANALOG-TO-DIGITAL CONVERTER

FEATURES

- 24 BITS NO MISSING CODE
- 18 BITS EFFECTIVE RESOLUTION UP TO 25kHz DATA RATE
- LOW NOISE: 2.8ppm
- DIFFERENTIAL INPUTS
- INL: 0.0015% max
- EXTERNAL REFERENCE
- POWER-DOWN MODE



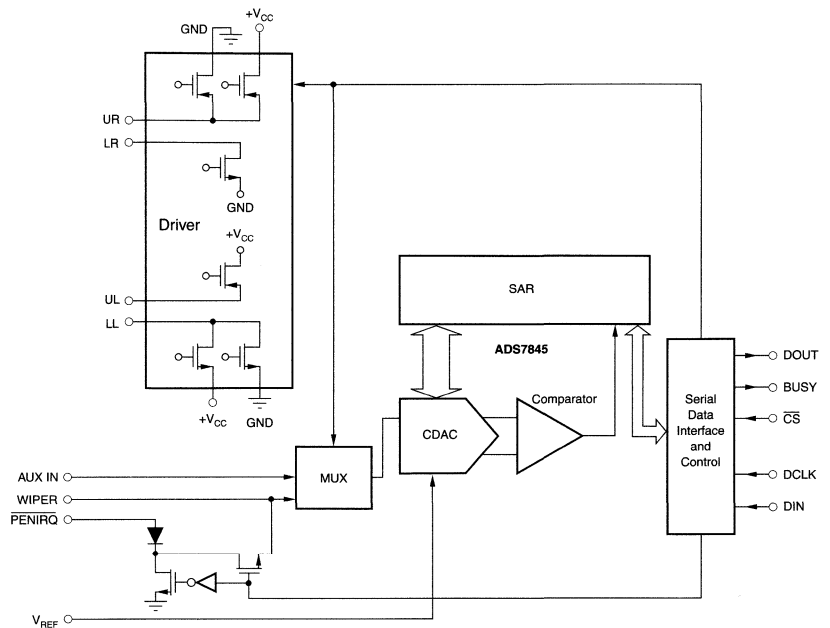
Analog-to-Digital Converters—New Products

ADS7845

5-WIRE TOUCH-SCREEN CONTROLLER

FEATURES

- 5-WIRE TOUCH SCREEN INTERFACE
- RATIOMETRIC CONVERSION
- SINGLE-SUPPLY: 2V to 5V
- UP TO 125kHz CONVERSION RATE
- SERIAL INTERFACE
- PROGRAMMABLE 8- OR 12-BIT RESOLUTION
- AUXILIARY ANALOG INPUTS
- FULL POWER-DOWN CONTROL

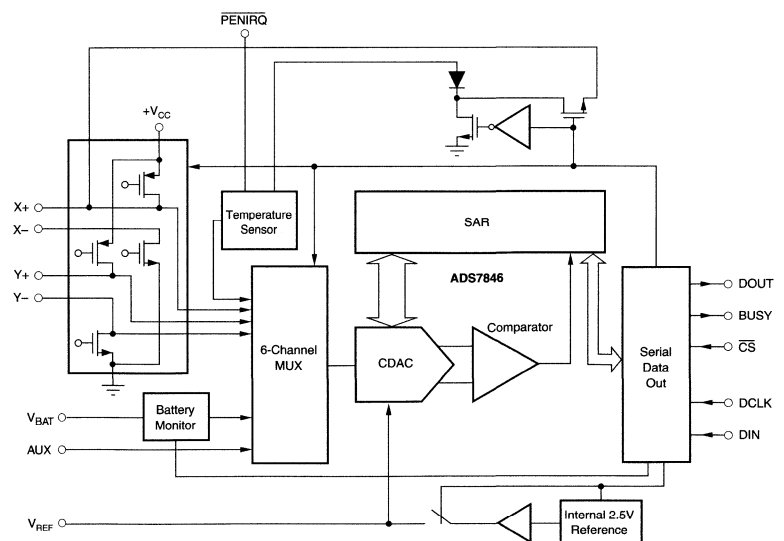


ADS7846

TOUCH-SCREEN CONTROLLER

FEATURES

- SAME PINOUT AS ADS7843
- 2.2V TO 5.25V OPERATION
- INTERNAL 2.5V REFERENCE (Operates > 2.7V)
- DIRECT BATTERY MEASUREMENT (0V to 6V)
- ON-CHIP TEMPERATURE MEASUREMENT
- TOUCH-PRESSURE MEASUREMENT
- QSPI/SPI 3-WIRE INTERFACE
- AUTO POWER DOWN
- SSOP-16 PACKAGE

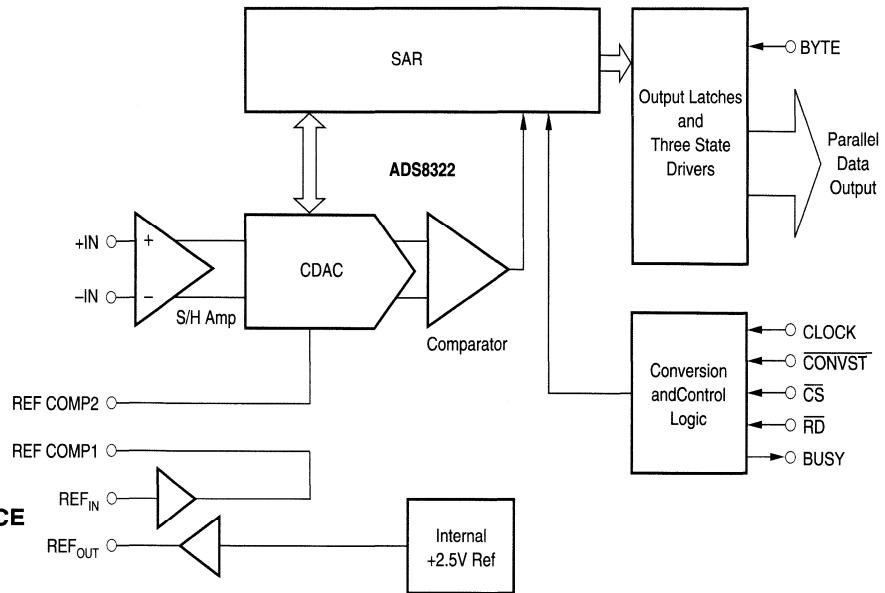


Analog-to-Digital Converters—New Products

ADS8322



16-Bit, *microPower*, Sampling ANALOG-TO-DIGITAL CONVERTER



FEATURES

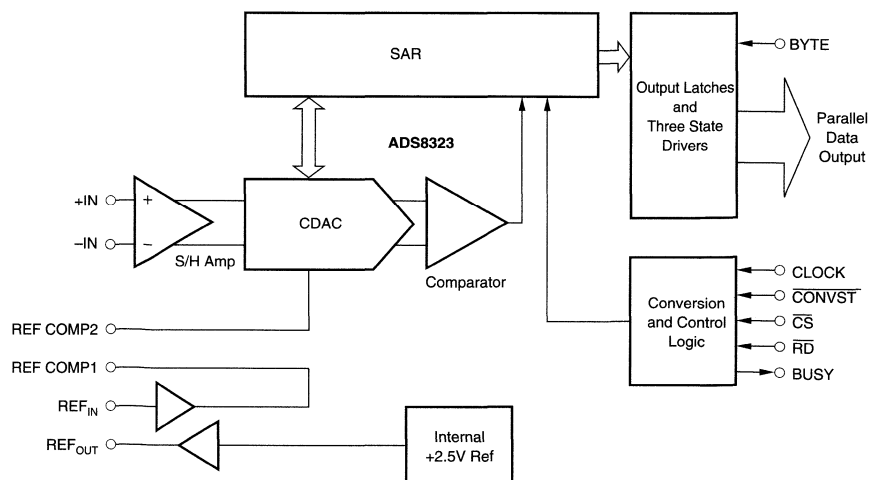
- TRUE DIFFERENTIAL INPUTS
- HIGH-SPEED PARALLEL INTERFACE
- 500kHz SAMPLING RATE
- LOW POWER: 85mW
- BIPOLAR INPUT RANGE

Analog-to-Digital Converters

ADS8323



16-Bit, 500kHz, *microPower*, Sampling ANALOG-TO-DIGITAL CONVERTER

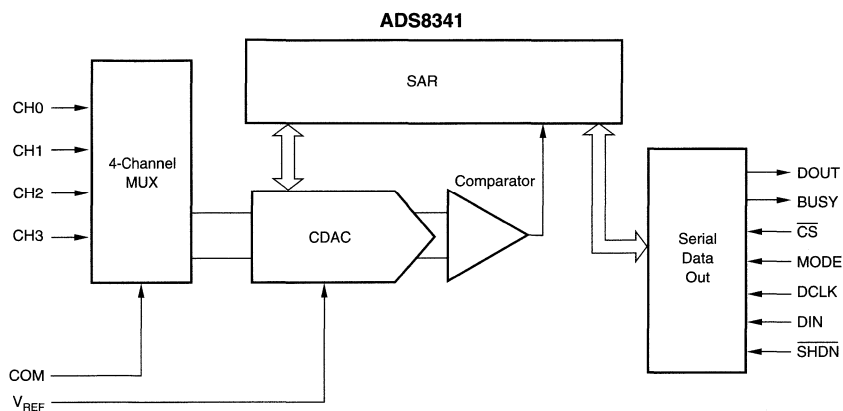


FEATURES

- HIGH-SPEED PARALLEL INTERFACE
- 500kHz SAMPLING RATE
- LOW POWER: 85mW at 500kHz
- BIPOLAR INPUT RANGE
- TQFP-32 PACKAGE

ADS8341

16-Bit, 4-Channel, Serial Output ANALOG-TO-DIGITAL CONVERTER

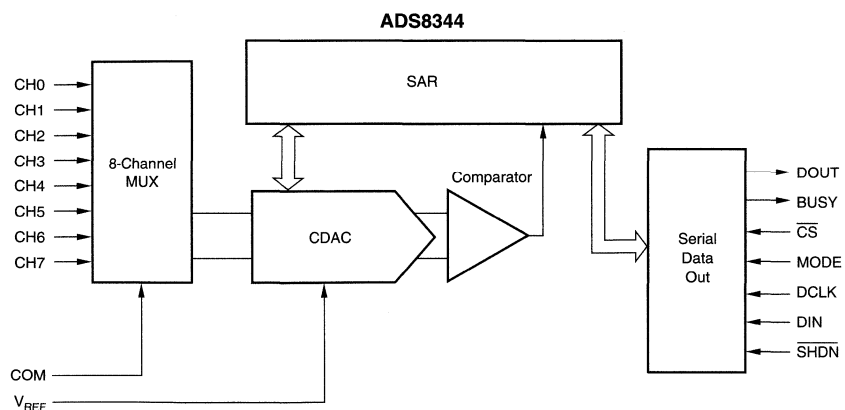


FEATURES

- 4 INPUT CHANNELS
- 100kHz SAMPLING RATE
- SINGLE 2.7V TO 5V SUPPLY
- SERIAL INTERFACE
- INTERNAL CLOCK
- 15 BITS NO MISSING CODE
- 84dB SINAD
- LOW POWER: 5mW
- PIN-FOR-PIN WITH ADS7841

ADS8344

16-Bit, 8-Channel, Serial Output ANALOG-TO-DIGITAL CONVERTER



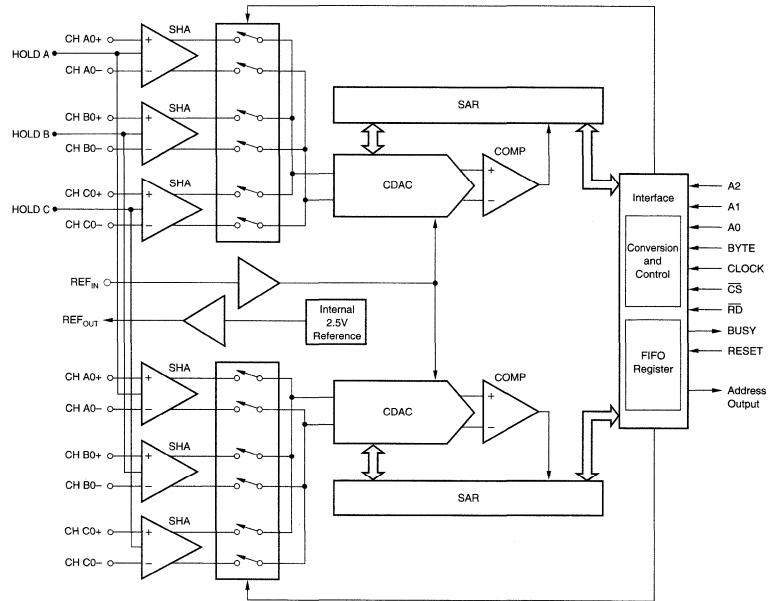
FEATURES

- 8 INPUT CHANNELS
- 100kHz SAMPLING RATE
- SINGLE 2.7V TO 5V SUPPLY
- SERIAL INTERFACE
- INTERNAL CLOCK
- 15 BITS NO MISSING CODE
- 84dB SINAD
- LOW POWER: 5mW
- PIN-FOR-PIN WITH ADS7844

Analog-to-Digital Converters—New Products

ADS7864

500kHz, 12-Bit, 6-Channel,
Simultaneous-Sampling
ANALOG-TO-DIGITAL CONVERTER



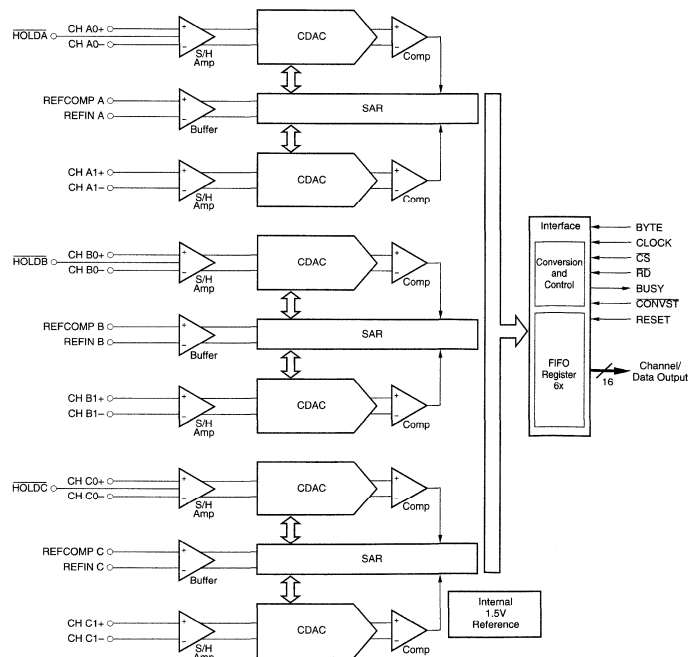
FEATURES

- 6 INPUT CHANNELS
- FULLY DIFFERENTIAL INPUTS
- 2 μ s TOTAL THROUGHPUT PER CHANNEL
- GUARANTEED NO MISSING CODES
- LOW POWER: 50mW

Analog-to-Digital Converters

ADS8364

250kHz, 16-Bit, 6-Channel,
Simultaneous-Sampling
ANALOG-TO-DIGITAL CONVERTER



FEATURES

- 6 INPUT CHANNELS
- FULLY DIFFERENTIAL INPUTS
- 4 μ s TOTAL THROUGHPUT PER CHANNEL
- GUARANTEED NO MISSING CODES TO 15 BITS
- LOW POWER: 175mW

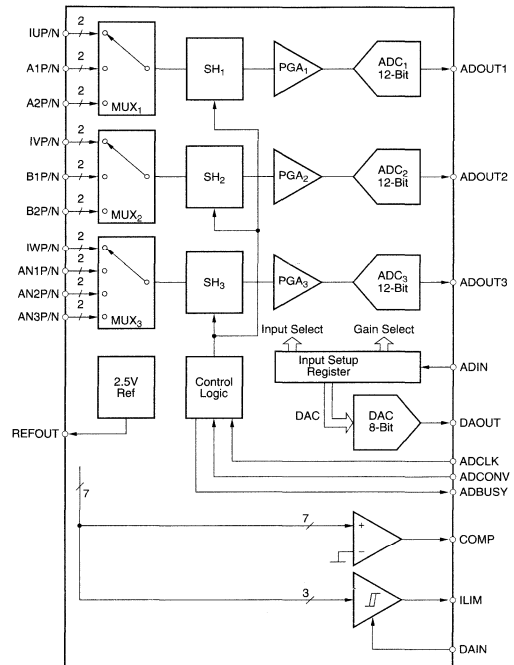
Analog-to-Digital Converters—New Products

VECANA01

10-Channel, 12-Bit DATA ACQUISITION SYSTEM

FEATURES

- 5 SIMULTANEOUS-SAMPLED CHANNELS PLUS 2 SYNCHRONIZED SAMPLING CHANNELS
- 3 SYNCHRONIZED 12-BIT ADCs
- 12.8 μ s THROUGHPUT RATE
- 10 FULLY DIFFERENTIAL INPUTS
- DIGITALLY SELECTABLE INPUT RANGES
- \pm 5V POWER SUPPLIES
- SERIAL DIGITAL INPUT/OUTPUTS
- 7 SIGN AND 3 DIGITALLY PROGRAMMABLE WINDOW COMPARATOR



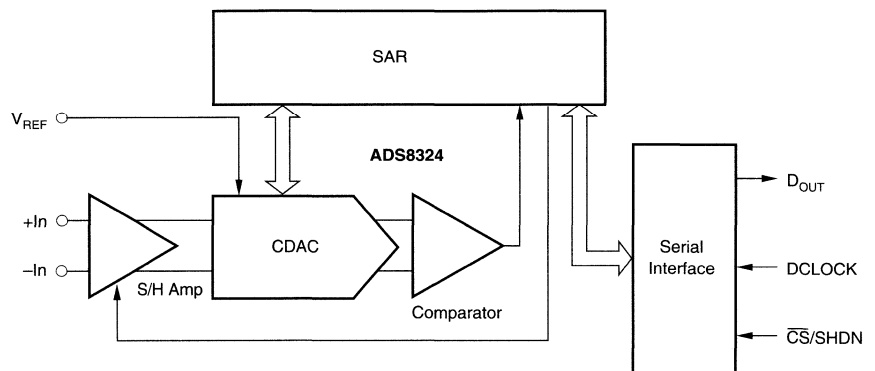
ADS8324

16-Bit, High Speed, 2.7V *micro*Power Sampling ANALOG-TO-DIGITAL CONVERTER



FEATURES

- BIPOLAR INPUT RANGE
- OPERATION TO 1.8V
- 100kHz SAMPLING RATE
- *micro*POWER:
1.8mW at 2.7V
1mW at 1.8V
- POWER DOWN: 3 μ A max
- MSOP-8 PACKAGE
- PIN-COMPATIBLE TO ADS7817
- SERIAL (SPI/SSI) INTERFACE



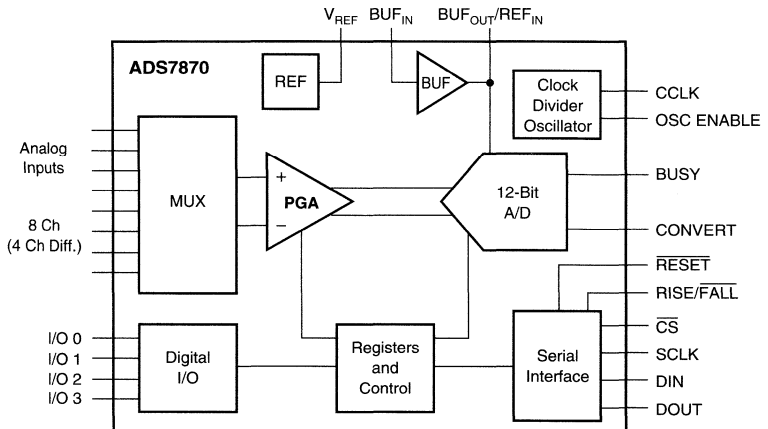
Analog-to-Digital Converters—New Products

ADS7870

12-Bit ADC, MUX, PGA,
and Internal Reference
DATA ACQUISITION SYSTEM

FEATURES

- 16-BIT DYNAMIC RANGE
- PGA GAINS: 1, 2, 4, 5, 8, 10, 16, 20V/V
- 4-CHANNEL DIFFERENTIAL/8-CHANNEL SINGLE-ENDED MULTIPLEXER
- 2.048V OR 2.5V INTERNAL REFERENCE
- FAST SERIAL DIGITAL INTERFACE
- HIGH-SPEED THROUGHPUT RATE: 50kS/s
- ERROR/OVERLOAD INDICATOR
- 2.7V TO 5.5V SINGLE SUPPLY OPERATION
- DIGITAL I/O THROUGH SERIAL INTERFACE
- SSOP-28 PACKAGE



Analog-to-Digital Converters

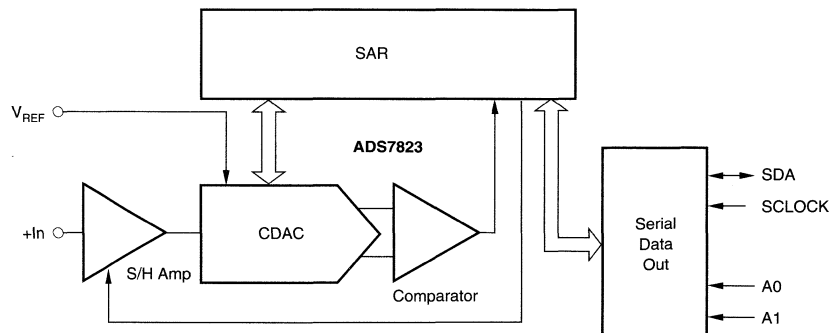
ADS7823

12-Bit, 2.7V *microPower* Sampling,
With I²C Interface
ANALOG-TO-DIGITAL CONVERTER



FEATURES

- 2.7V TO 3.6V OPERATION
- GUARANTEED NO MISSING CODES
- 200kHz SAMPLING RATE
- I²C INTERFACE SUPPORTS STANDARD, FAST AND HIGH SPEED MODES
- TWO EXTERNAL ADDRESS PINS
- AUTO POWER DOWN
- MSOP-8 PACKAGE



Analog-to-Digital Converters—New Products

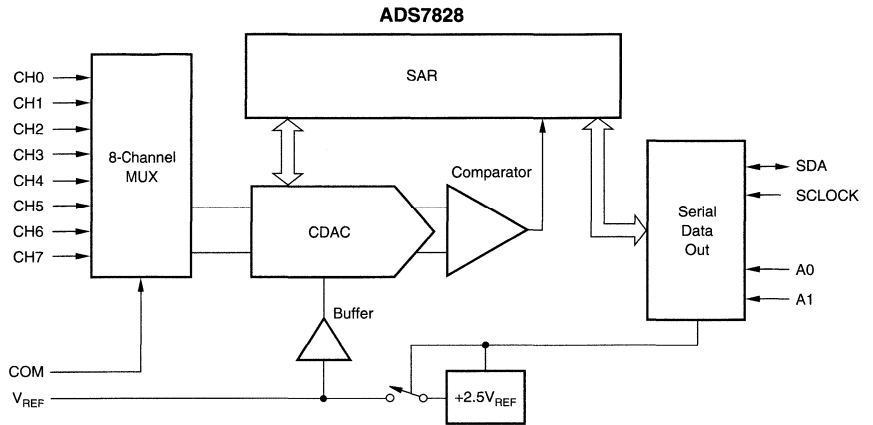
ADS7828



12-Bit, 8-Channel,
With I²C Interface
MULTIPLEXER

FEATURES

- 8-CHANNEL MUX
- 2.5V REFERENCE
- 2.7V TO 3.6V OPERATION
- GUARANTEED NO MISSING CODES
- 200kHz SAMPLING RATE
- I²C INTERFACE SUPPORTS STANDARD, FAST AND HIGH SPEED MODES
- TWO EXTERNAL ADDRESS PINS
- AUTO POWER DOWN
- MSOP-8 PACKAGE



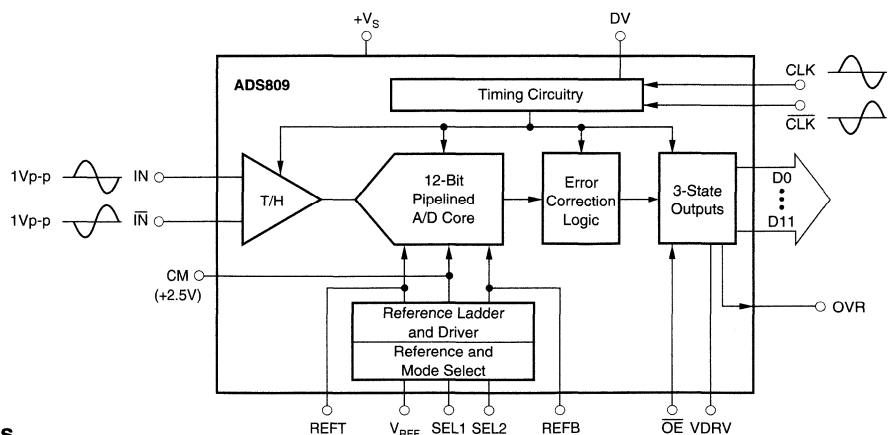
ADS809



SpeedPLUS 12-Bit, 80MSPS Sampling
ANALOG-TO-DIGITAL CONVERTER

FEATURES

- **HIGH DYNAMIC RANGE:**
High SFDR: 80dB at 20MHz f_{IN}
High SNR: 68dB at 20MHz f_{IN}
- **PREMIUM TRACK/HOLD:**
High Bandwidth: 1GHz
Low Jitter: 0.25ps rms
Differential or Single-Ended Inputs
Selectable Full-Scale Input Range
- **FLEXIBLE CLOCKING:**
Differential or Single-Ended
Accepts Sine or Square Wave Clocking
Down to 0.5Vp-p
Variable Threshold Level



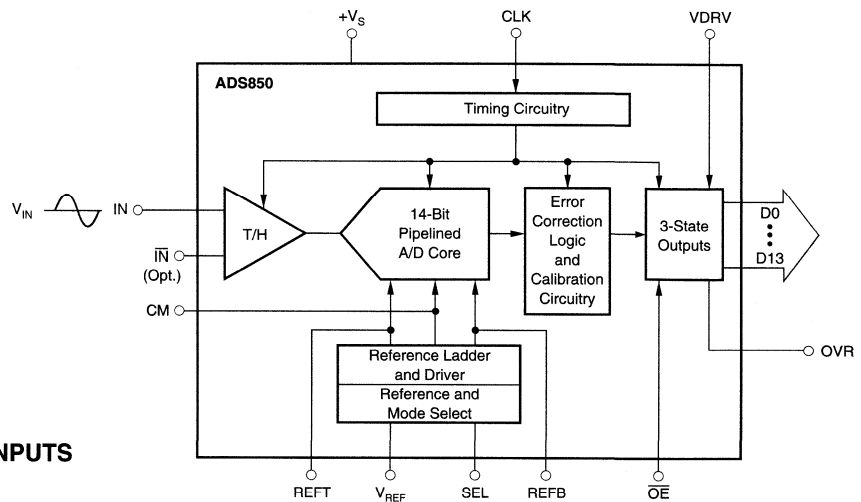
Analog-to-Digital Converters—New Products

ADS850

SpeedPLUS 14-Bit, 10MSPS Self-Calibrating ANALOG-TO-DIGITAL CONVERTER

FEATURES

- SELF-CALIBRATING
- HIGH SFDR: 85dB at NYQUIST
- HIGH SNR: 76dB
- LOW POWER: 220mW
- LOW DLE: 0.25LSB
- DIFFERENTIAL OR SINGLE-ENDED INPUTS
- +3V/+5V LOGIC I/O COMPATIBLE
- FLEXIBLE INPUT RANGE
- OVER-RANGE INDICATOR
- INTERNAL OR EXTERNAL REFERENCE



Analog-to-Digital Converters

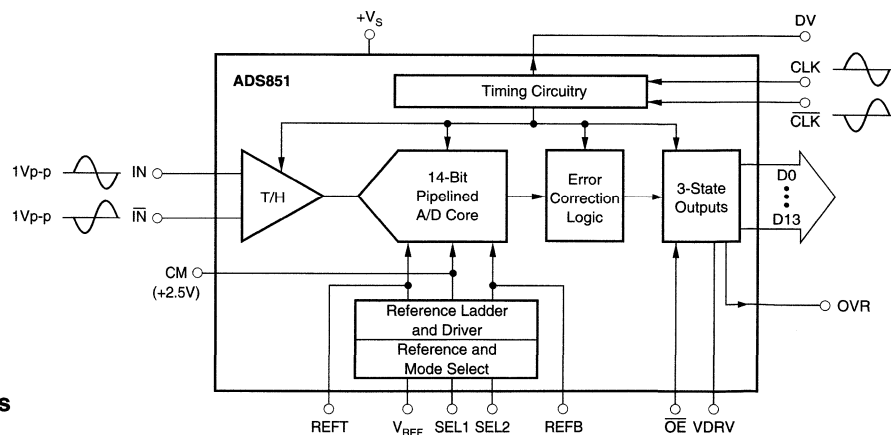
ADS851

SpeedPLUS 14-Bit, 40MSPS Sampling ANALOG-TO-DIGITAL CONVERTER



FEATURES

- HIGH DYNAMIC RANGE:
High SFDR: 100dB at 20MHz f_{IN}
High SNR: 75dB at 20MHz f_{IN}
- PREMIUM TRACK/HOLD:
High Bandwidth: 1GHz
Low Jitter: 0.25ps rms
Differential or Single-Ended Inputs
Selectable Full-Scale Input Range
- LOW POWER: 400mW
- FLEXIBLE CLOCKING:
Differential or Single-Ended
Accepts Sine or Square Wave Clocking
Down to 0.5Vp-p
Variable Threshold Level

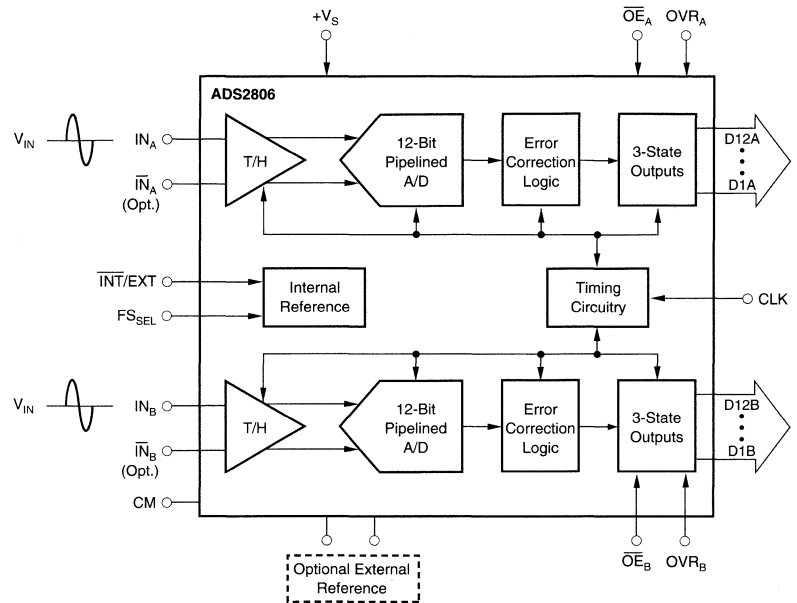


Analog-to-Digital Converters—New Products

ADS2806



Speed_{PLUS} Dual, 12-Bit, 30MSPS Sampling ANALOG-TO-DIGITAL CONVERTER



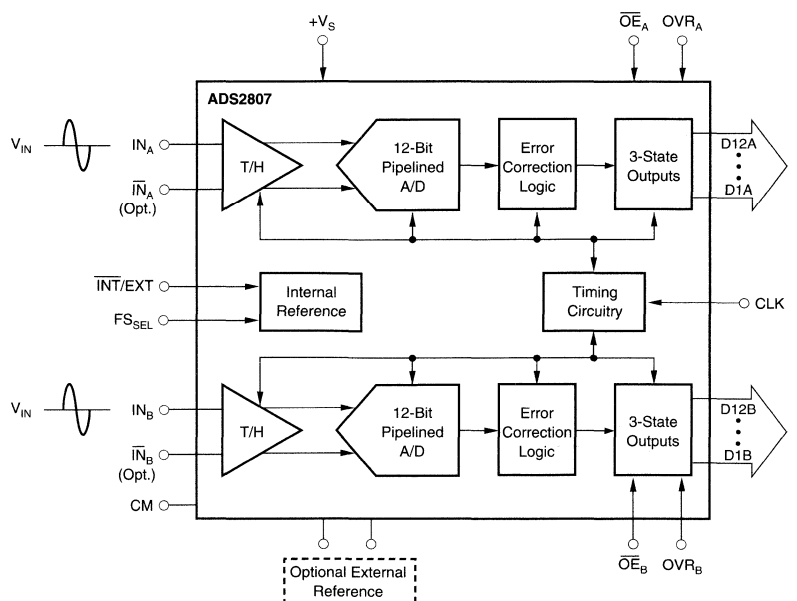
FEATURES

- SPURIOUS FREE DYNAMIC RANGE: 82dB at 10MHz f_{IN}
- HIGH SNR: 67.5dB (2Vp-p), 69dB (3Vp-p)
- LOW POWER: 485mW
- INTERNAL OR EXTERNAL REFERENCE
- LOW DNL: 0.5LSB
- FLEXIBLE INPUT RANGE: 2Vp-p to 3Vp-p
- LQFP-64 PACKAGE

ADS2807



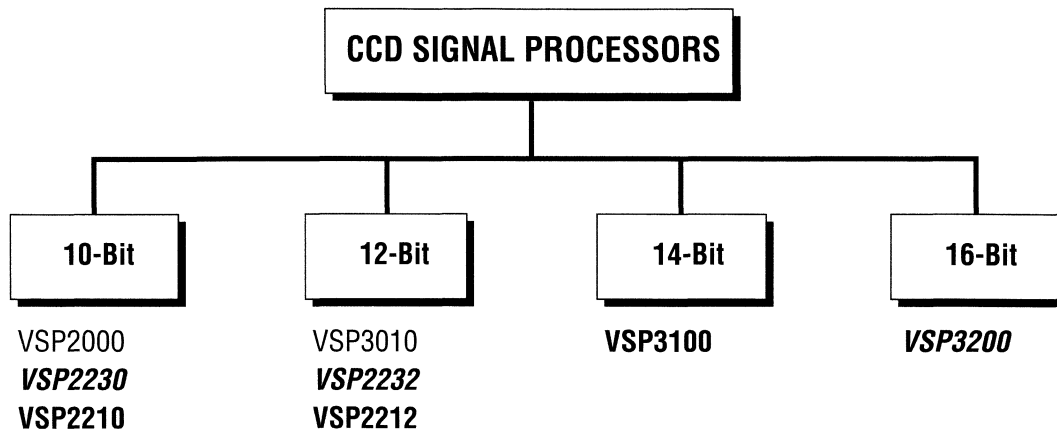
Speed_{PLUS} Dual, 12-Bit, 50MSPS Sampling ANALOG-TO-DIGITAL CONVERTER



FEATURES

- SPURIOUS FREE DYNAMIC RANGE: 82dB at 10MHz f_{IN}
- HIGH SNR: 67.5dB (2Vp-p), 69dB (3Vp-p)
- LOW POWER: 670mW
- INTERNAL OR EXTERNAL REFERENCE
- LOW DNL: 0.5LSB
- FLEXIBLE INPUT RANGE: 2Vp-p to 3Vp-p
- LQFP-64 PACKAGE

CCD Signal Processors—Selection Tree and Guide



CCD Signal Processors

Product	Description	Resolution Bits	Channel	Conversion Rate MHz	SNR dB (min)	Gain Range dB (typ)	Digitally Controlled Gain	Power Supply V	Power Dissipation mW (typ)	Package(s)	Price* 1kpcs
VSP2000	CCD Signal Processor	10	1	18	53	0 to 34	—	2.7 to 3.3	150	LQFP-48	\$5.75
VSP2210	CCD Signal Processor	10	1	20	79	-6 to 42	✓	2.7 to 3.6	97 at +3V	LQFP-48	5.00
VSP2212	CCD Signal Processor	12	1	20	79	-6 to 42	✓	2.7 to 3.6	99 at +3V	LQFP-48, VQFN-48	8.00
VSP2230	CCD Signal Processor	10	1	36	76	-6 to 42	—	2.7 to 3.6	120 at +3V	LQFP-48	9.50
VSP2232	CCD Signal Processor	12	1	36	76	-6 to 42	—	2.7 to 3.6	130 at +3V	LQFP-48	11.50
VSP3010	3-Channel CCD/CIS Digitization	12	3	12	—	0 to 13	✓	4.7 to 5.3	500	LQFP-48	5.75
VSP3100	1- or 3-Channel CCD/CIS Digitization	14	1, 3	10	—	0 to 13	✓	4.7 to 5.3	375 at +5V	LQFP-48	5.00
VSP3200	1- or 3-Channel CCD	16	1, 3	8	—	0 to 13	—	4.7 to 5.3	300 at +5V	LQFP-48	6.00

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

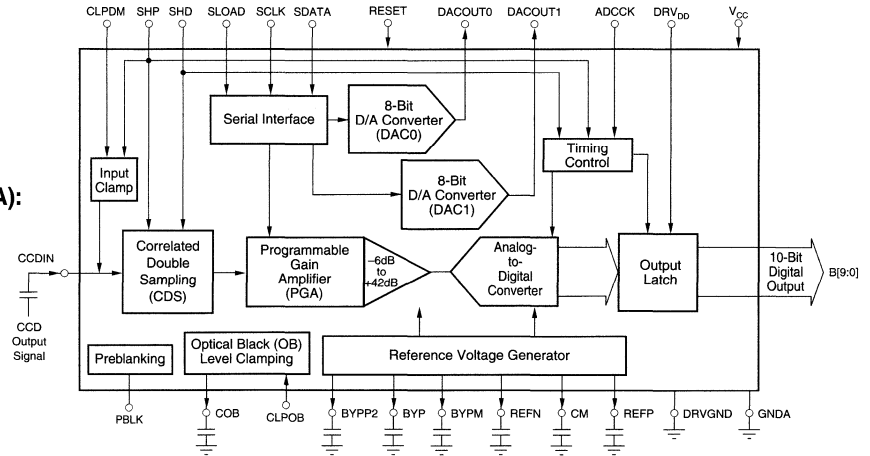
CCD Signal Processors—New Products

VSP2210

SpeedPLUS CCD SIGNAL PROCESSOR
For Digital Cameras

FEATURES

- **CCD SIGNAL PROCESSING:**
Correlated Double Sampling (CDS)
Programmable Black Level Clamping
- **PROGRAMMABLE GAIN AMPLIFIER (PGA):**
-6 to +42dB Gain Ranging
- **10-BIT DIGITAL DATA OUTPUT:**
Up to 20MHz Conversion Rate
No Missing Codes
- **79dB SIGNAL-TO-NOISE RATIO**
- **ON-CHIP GENERAL-PURPOSE 8-BIT DIGITAL-TO-ANALOG CONVERTERS**
- **PORTABLE OPERATION:**
Low Voltage: 2.7V to 3.6V
Low Power: 97mW (typ) at 3.0V
Stand-By Mode: 6mW

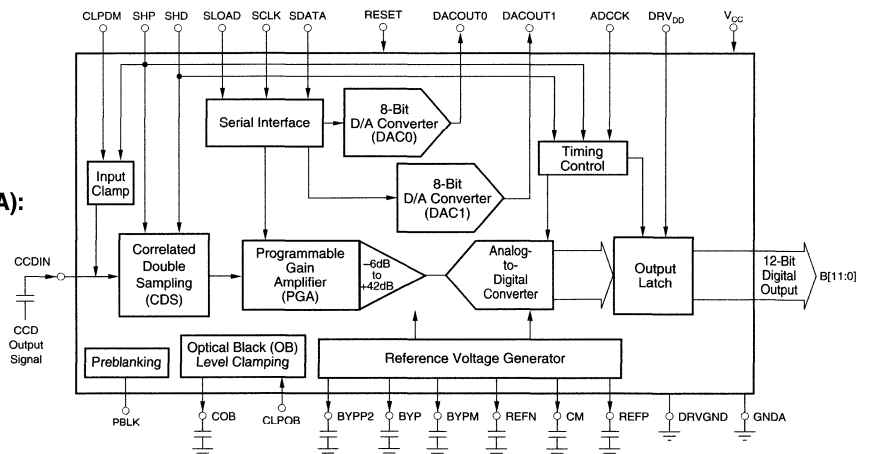


VSP2212

SpeedPLUS CCD SIGNAL PROCESSOR
For Digital Cameras

FEATURES

- **CCD SIGNAL PROCESSING:**
Correlated Double Sampling (CDS)
Programmable Black Level Clamping
- **PROGRAMMABLE GAIN AMPLIFIER (PGA):**
-6 to +42dB Gain Ranging
- **12-BIT DIGITAL DATA OUTPUT:**
Up to 20MHz Conversion Rate
No Missing Codes
- **79dB SIGNAL-TO-NOISE RATIO**
- **ON-CHIP GENERAL-PURPOSE 8-BIT DIGITAL-TO-ANALOG CONVERTERS**
- **PORTABLE OPERATION:**
Low Voltage: 2.7V to 3.6V
Low Power: 99mW (typ) at 3.0V
Stand-By Mode: 6mW



CCD Signal Processors—New Products

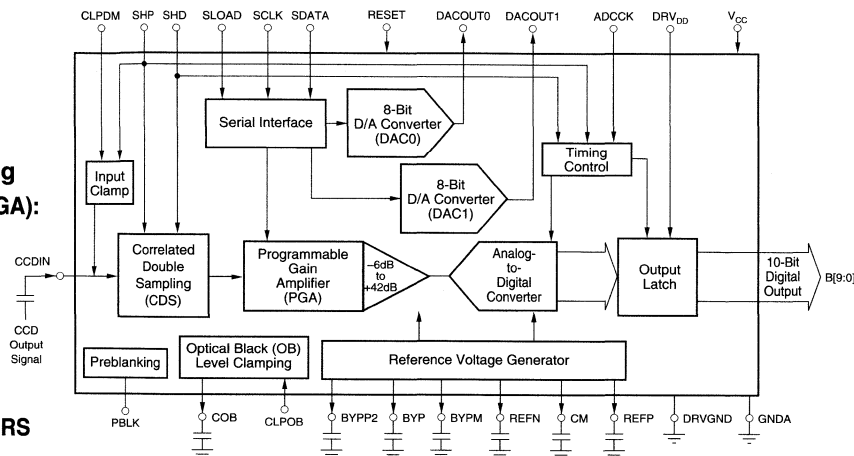
VSP2230



SpeedPLUS CCD SIGNAL PROCESSOR
For Digital Cameras

FEATURES

- **CCD SIGNAL PROCESSING:**
Correlated Double Sampling (CDS)
Programmable Black Level Clamping
- **PROGRAMMABLE GAIN AMPLIFIER (PGA):**
-6 to +42dB Gain Ranging
- **10-BIT DIGITAL DATA OUTPUT:**
Up to 36MHz Conversion Rate
No Missing Codes
- **76dB SIGNAL-TO-NOISE RATIO**
- **ON-CHIP GENERAL PURPOSE
8-BIT DIGITAL-TO-ANALOG CONVERTERS**
- **PORTABLE OPERATION:**
Low Voltage: 2.7V to 3.6V
Low Power: 120mW (typ) at 3.0V
Stand-By Mode: 3mW



CCD Signal Processors

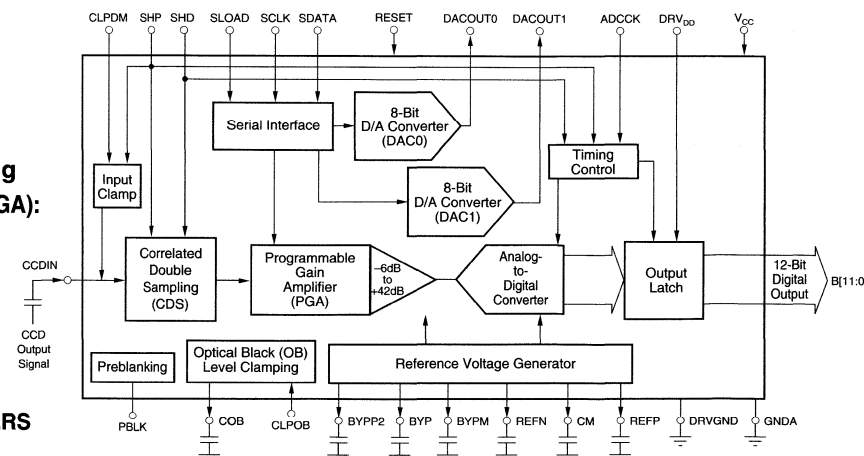
VSP2232



SpeedPLUS CCD SIGNAL PROCESSOR
For Digital Cameras

FEATURES

- **CCD SIGNAL PROCESSING:**
Correlated Double Sampling (CDS)
Programmable Black Level Clamping
- **PROGRAMMABLE GAIN AMPLIFIER (PGA):**
-6 to +42dB Gain Ranging
- **12-BIT DIGITAL DATA OUTPUT:**
Up to 36MHz Conversion Rate
No Missing Codes
- **76dB SIGNAL-TO-NOISE RATIO**
- **ON-CHIP GENERAL PURPOSE
8-BIT DIGITAL-TO-ANALOG CONVERTERS**
- **PORTABLE OPERATION:**
Low Voltage: 2.7V to 3.6V
Low Power: 130mW (typ) at 3.0V
STAND-BY MODE: 3mW



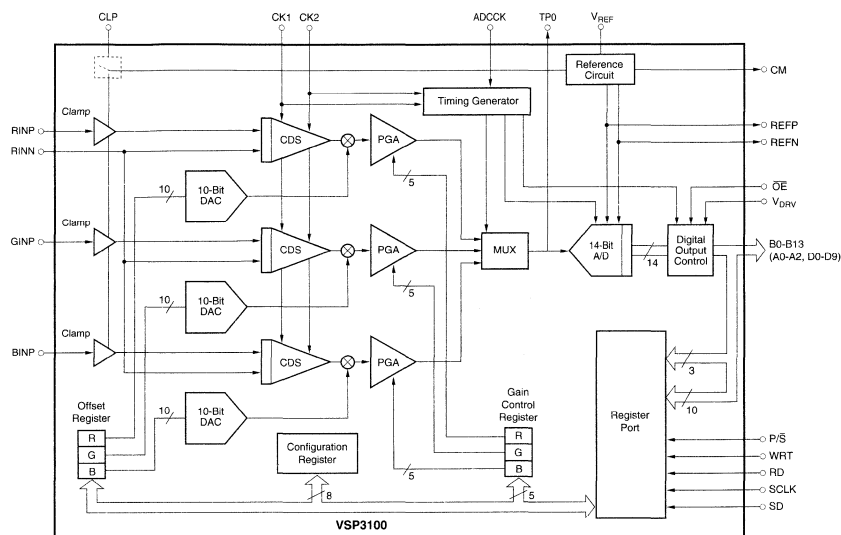
CCD Signal Processors—New Products

VSP3100

SpeedPLUS™ 14-BIT, 10MHz
CCD/CIS SIGNAL PROCESSOR

FEATURES

- INTEGRATED TRIPLE CORRELATED DOUBLE SAMPLER
- OPERATION MODE SELECTABLE: 1/3-Channel, 10Msps (typ), CCD/CIS Mode
- PROGRAMMABLE GAIN AMPLIFIER: 0dB to +13dB
- SELECTABLE OUTPUT MODE: Normal/Demultiplexed
- OFFSET CONTROL RANGE: ±400mV
- +3V OR +5V DIGITAL OUTPUT
- LOW POWER: 500mW (typ)
- LQFP-48 SURFACE-MOUNT PACKAGE



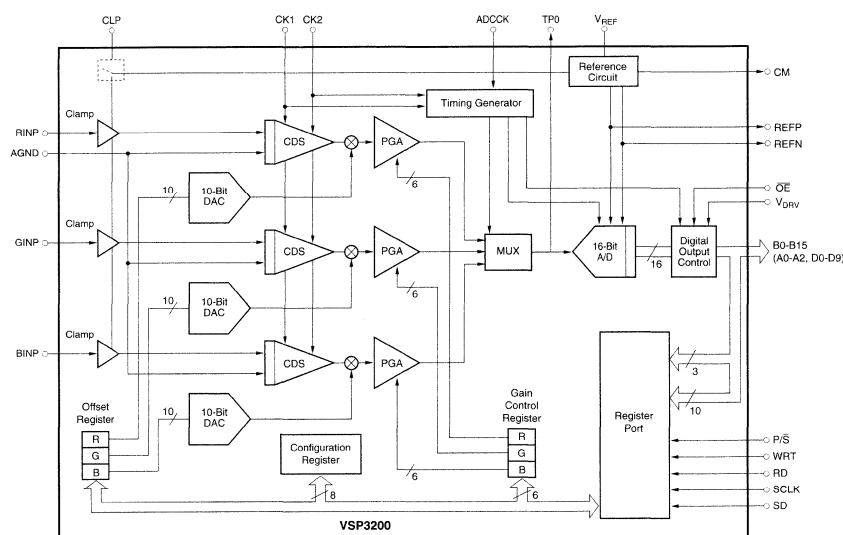
VSP3200

SpeedPLUS™ 16-BIT, 8MHz
CCD/CIS SIGNAL PROCESSOR

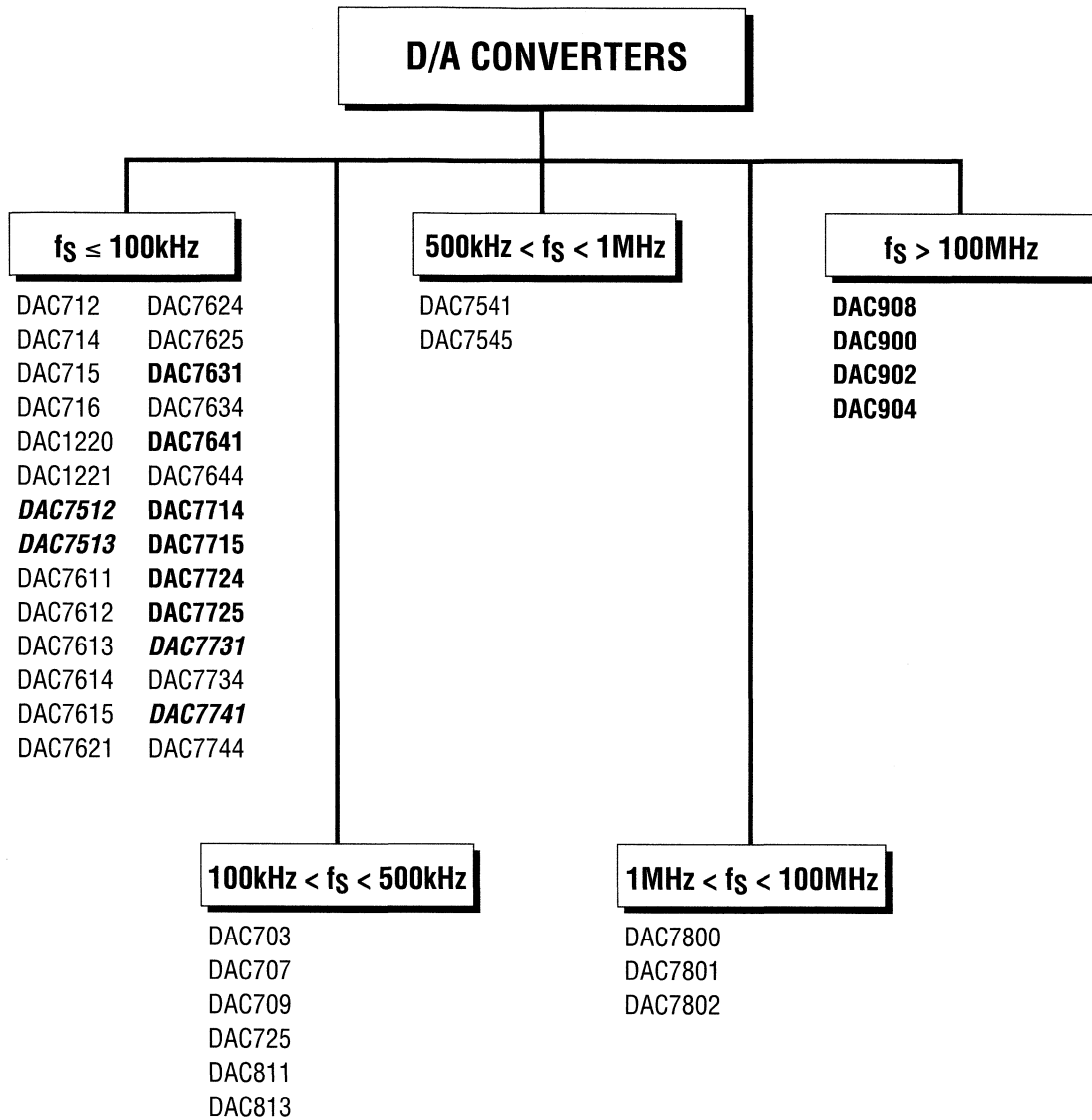


FEATURES

- INTEGRATED TRIPLE CORRELATED DOUBLE SAMPLER
- OPERATION MODE SELECTABLE: 1/3-Channel, 8Msps (typ), CCD Mode
- PROGRAMMABLE GAIN AMPLIFIER: 0dB to +14dB
- SELECTABLE OUTPUT MODE: Normal/Demultiplexed
- OFFSET CONTROL RANGE: ±400mV
- +3V OR +5V DIGITAL OUTPUT
- LOW POWER: 300mW (typ)
- LQFP-48 SURFACE-MOUNT PACKAGE

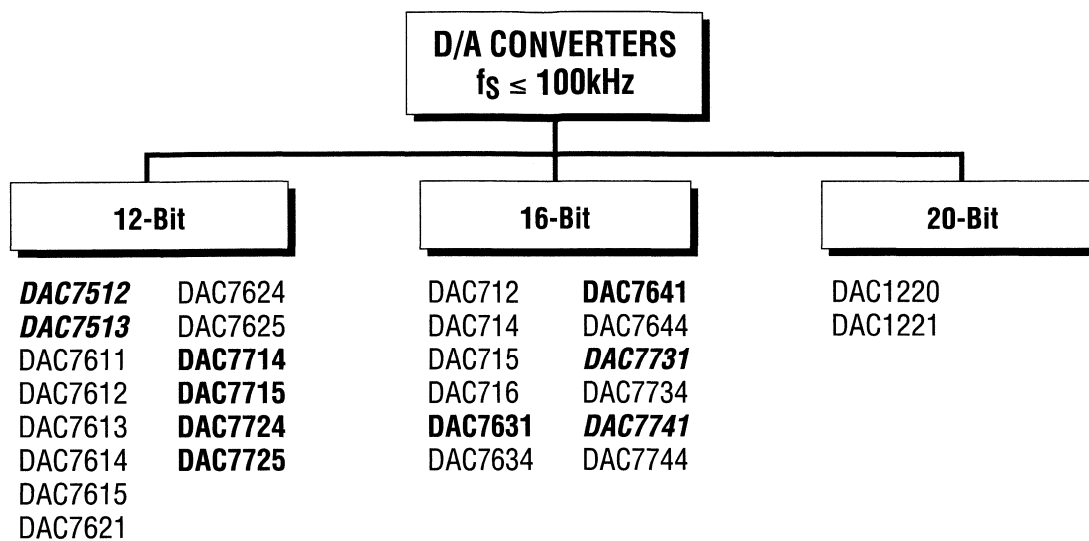


Digital-to-Analog Converters—Main Selection Tree



Digital-to-Analog Converters

Digital-to-Analog Converters—Selection Tree and Guide

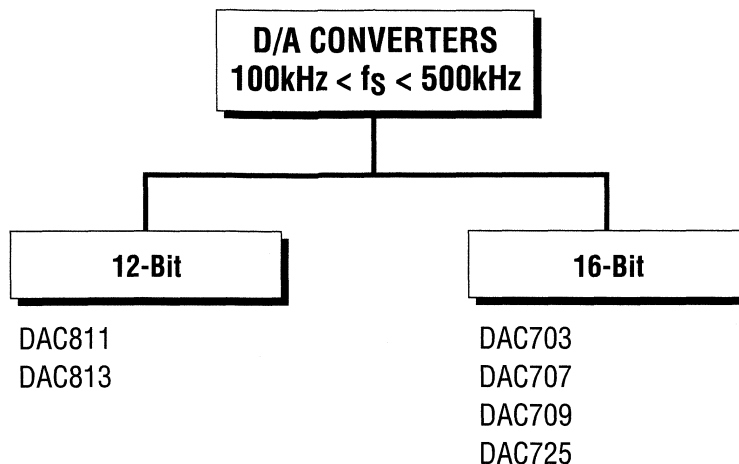


Product	Res. (Bit)	Settling Time (μs)	# Output D/A's	Interface	Output	V_{REF}	Linearity	Monotonic (Bits)	Power Voltage(s)	Package(s)	Price* 1kpcs
DAC1220	20	15ms	1	Serial	+5V	No	$\pm 0.0015\%$	20	3mW, +5V	SSOP-16	\$ 6.25
DAC1221	16	2ms	1	Serial	+2.5V	No	$\pm 0.003\%$	16	1mW, +3V	SSOP-16	4.95
DAC712	16	10	1	Parallel	$\pm 10\text{V}$	Yes	$\pm 0.003\%$	15	600mW, $\pm 15\text{V}$	DIP-28, SO-28	12.38
DAC714	16	10	1	Serial	$\pm 10\text{V}$	Yes	$\pm 0.0015\%$	16	625mW, $\pm 15\text{V}$	DIP-16, SO-16	12.38
DAC715	16	10	1	Parallel	+10V	Yes	$\pm 0.003\%$	16	600mW, $\pm 15\text{V}$	DIP-28, SO-28	12.38
DAC716	16	10	1	Serial	+10V	Yes	$\pm 0.003\%$	16	625mW, $\pm 15\text{V}$	DIP-16, SO-16	12.38
DAC7631	16	10	1	Serial	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.0015\%$	15	20mW, +5V, $\pm 5\text{V}$	SSOP-28	5.50
DAC7634	16	10	4	Serial	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.0015\%$	15	20mW, +5V, $\pm 5\text{V}$	SSOP-48	18.75
DAC7641	16	10	1	Parallel	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.0015\%$	15	20mW, +5V, $\pm 5\text{V}$	TQFP-32	5.85
DAC7644	16	10	4	Parallel	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.0015\%$	15	20mW, +5V, $\pm 5\text{V}$	SSOP-48	18.75
DAC7731	16	5	1	Serial	+10V, $\pm 10\text{V}$	Yes	$\pm 0.0015\%$	15	170mW, $\pm 15\text{V}$	TQFP-48	7.80
DAC7734	16	10	4	Serial	$\pm V_{\text{REF}}$	No	$\pm 0.0015\%$	16	170mW, $\pm 15\text{V}$	SSOP-48	27.10
DAC7741	16	5	1	Parallel	+10V, $\pm 10\text{V}$	Yes	$\pm 0.0015\%$	15	170mW, $\pm 15\text{V}$	TQFP-48	8.30
DAC7744	16	10	4	Parallel	$\pm V_{\text{REF}}$	No	$\pm 0.0015\%$	16	170mW, $\pm 15\text{V}$	SSOP-48	29.58
DAC7512	12	10	1	Serial	+V_{CC}	No	$\pm 0.38\%$	12	0.7mW, +2.7V, +5V	SOT23-6, MSOP-8	1.35
DAC7513	12	10	1	Serial	+V_{REF}	No	$\pm 0.38\%$	12	0.7mW, +2.7V, +5V	SOT23-8, MSOP-8	1.35
DAC7611	12	10	1	Serial	+4V	Yes	$\pm 0.012\%$	12	5mW, +5V	SO-8	2.36
DAC7612	12	10	2	Serial	+4V	Yes	$\pm 0.012\%$	12	7mW, +5V	SO-8	2.49
DAC7613	12	10	1	Parallel	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	2.5mW, +5V, $\pm 5\text{V}$	SSOP-24	2.10
DAC7614	12	10	4	Serial	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	20mW, +5V, $\pm 5\text{V}$	DIP-16, SO-16	9.15
DAC7615	12	10	4	Serial	$+V_{\text{REF}}, \pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	20mW, +5V, $\pm 5\text{V}$	DIP-16, SO-16	9.15
DAC7621	12	10	1	Parallel	+4V	Yes	$\pm 0.012\%$	12	5mW, +5V	SSOP-20	2.55
DAC7624	12	10	4	Parallel	$\pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	20mW, +5V, $\pm 5\text{V}$	DIP-28, SO-28	9.15
DAC7625	12	10	4	Parallel	$+V_{\text{REF}}$	No	$\pm 0.012\%$	12	20mW, +5V, $\pm 5\text{V}$	DIP-28, SO-28	9.15
DAC7714	12	10	4	Serial	$\pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	170mW, $\pm 15\text{V}$	SSOP-16, SO-20	8.80
DAC7715	12	10	4	Serial	$\pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	170mW, $\pm 15\text{V}$	DIP-20, SSOP-20	8.80
DAC7724	12	10	4	Parallel	$\pm V_{\text{REF}}$	No	$\pm 0.012\%$	12	170mW, $\pm 15\text{V}$	SO-28, PLCC-28	11.75
DAC7725	12	10	4	Parallel	+V_{REF}	No	$\pm 0.012\%$	12	170mW, $\pm 15\text{V}$	SO-28, PLCC-28	11.75

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Digital-to-Analog Converters—Selection Tree and Guide

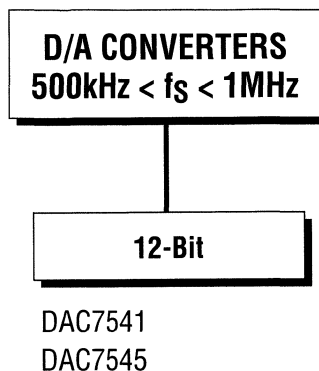


Product	Res. (Bit)	Settling Time (μs)	# Output D/A's	Interface	Output	V _{REF}	Linearity	Monotonic (Bits)	Power Voltage(s)	Packages(s)	Price* 1kpcs
DAC703	16	8	1	Parallel	±10V	Yes	±0.0015%	15	940mW, ±15V	DIP-24, HERMETIC-24	\$23.09
DAC707	16	8	1	Parallel	±10V	Yes	±0.003%	14	950mW, ±15V	DIP-28	28.38
DAC709	16	8	1	Parallel	±5, 10V	Yes	±0.003%	14	950mW, ±15V	HERMETIC-24	52.88
DAC725	16	8	2	Parallel	±10V	Yes	±0.003%	14	1175mW, ±15V	DIP-28	41.21
DAC811	12	4	1	Parallel	±5, 10V	Yes	±0.006%	12	800mW, ±15V	DIP-28, SO-28, HERMETIC-28	9.85
DAC813	12	4	1	Parallel	±5, 10V	Yes	±0.006%	12	330mW, ±15V	DIP-28, SO-28	10.83

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Digital-to-Analog Converters—Selection Tree and Guide

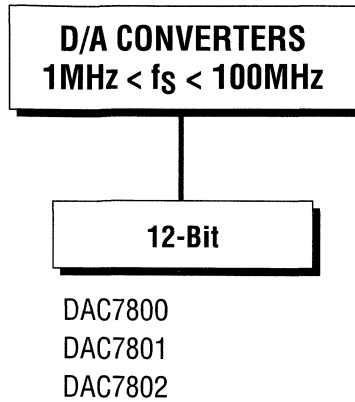


Product	Res. (Bit)	Settling Time (μs)	# Output D/A's	Interface	Output	V _{REF}	Linearity	Monotonic (Bits)	Power Voltage(s)	Packages(s)	Price* 1kpcs
DAC7541	12	1	1	Parallel	+1mA	No	±0.012%	12	30mW, +15V	DIP-18, SO-18	\$6.32
DAC7545	12	2	1	Parallel	+1mA	No	±0.012%	12	30mW, +15V	DIP-20, SO-20	6.10

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Digital-to-Analog Converters—Selection Tree and Guide



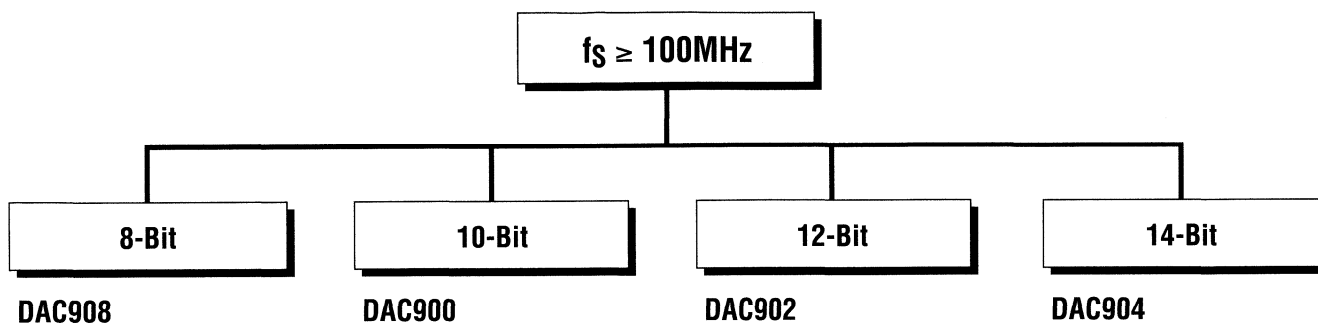
Digital-to-Analog Converters

Product	Res. (Bit)	Settling Time (μs)	# Output D/A's	Interface	Output mA	V _{REF}	Linearity	Monotonic (Bits)	Power Voltage(s)	Package(s)	Price* 1kpc
DAC7800	12	0.8	2	Serial	1	No	±0.012%	12	1mW, 5V	DIP-16, SO-16	\$11.76
DAC7801	12	0.8	2	Parallel	1	No	±0.012%	12	1mW, 5V	DIP-24, SO-24	14.09
DAC7802	12	0.8	2	Parallel	1	No	±0.012%	12	1mW, 5V	DIP-24, SO-24	11.76

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Digital-to-Analog Converters—Selection Tree and Guide



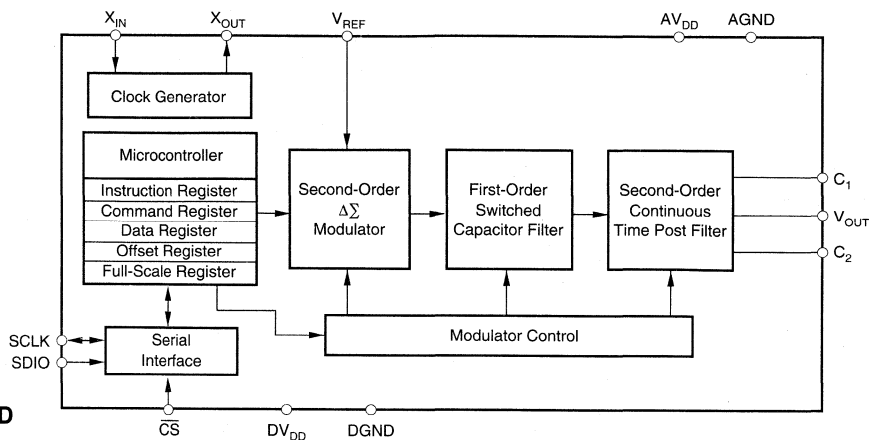
Product	Res. (Bit)	Update Rate MSPS	Power Supply V	Settling Time ns	Analog Output mA	Power mW	SFDR at f_{OUT} dB MHz	Package(s)	Price* 1kpc
DAC904	14	200	+2.7 to +5.5	30 to 0.1%	2 to 20	170	68 at 20	SO-28, TSSOP-28	\$14.95
DAC902	12	200	+2.7 to +5.5	30 to 0.1%	2 to 20	170	68 at 20	SO-28, TSSOP-28	9.95
DAC902	10	200	+2.7 to +5.5	30 to 0.1%	2 to 20	170	68 at 5	SO-28, TSSOP-28	5.15
DAC908	8	200	+2.7 to +5.5	30 to 0.1%	2 to 20	170	67 at 5	SO-28, TSSOP-28	3.15

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DAC1221

20-Bit, Low Power DIGITAL-TO-ANALOG CONVERTER

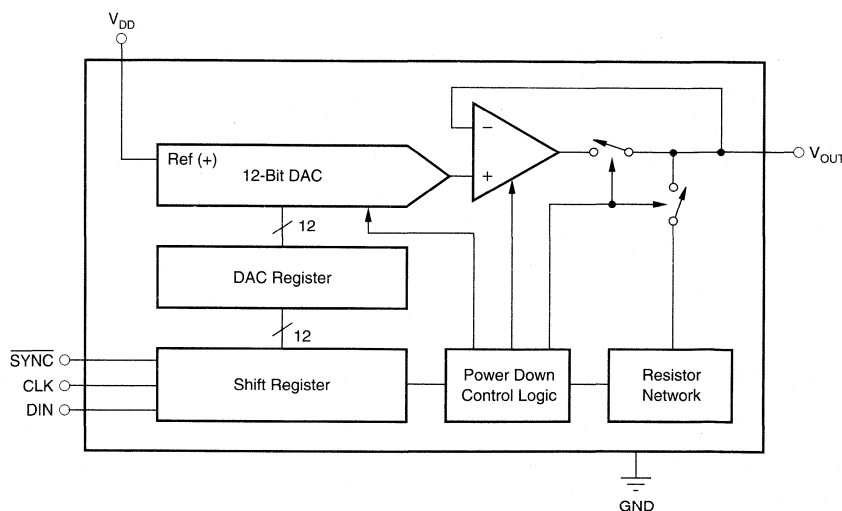


FEATURES

- 16-BIT MONOTONICITY GUARANTEED OVER -40°C TO $+85^{\circ}\text{C}$
- LOW POWER: 1.5mW
- VOLTAGE OUTPUT (0V to +2.5V)
- SETTLING TIME: 2ms to 0.012%
- MAX LINEARITY ERROR: $\pm 0.0015\%$
- ON-CHIP CALIBRATION

DAC7512

12-Bit DIGITAL-TO-ANALOG CONVERTER



FEATURES

- LOW POWER: 0.7mW
- RAIL-TO-RAIL OUTPUT
- SETTLING TIME: 10 μs to 1LSB
- 12-BIT LINEARITY: t_{MIN} to t_{MAX}
- PACKAGE: SOT23-6
- POWER-ON RESET TO ZERO
- 30MHz DATA RATE
- 12-BIT MONOTONICITY: t_{MIN} to t_{MAX}

Digital-to-Analog Converters—New Products

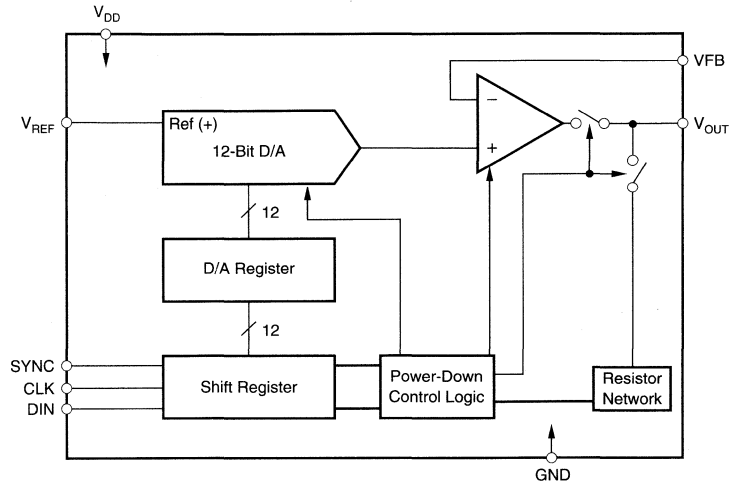
DAC7513



Low Power, Rail-to-Rail Output, 12-Bit, Serial Input
DIGITAL-TO-ANALOG CONVERTER

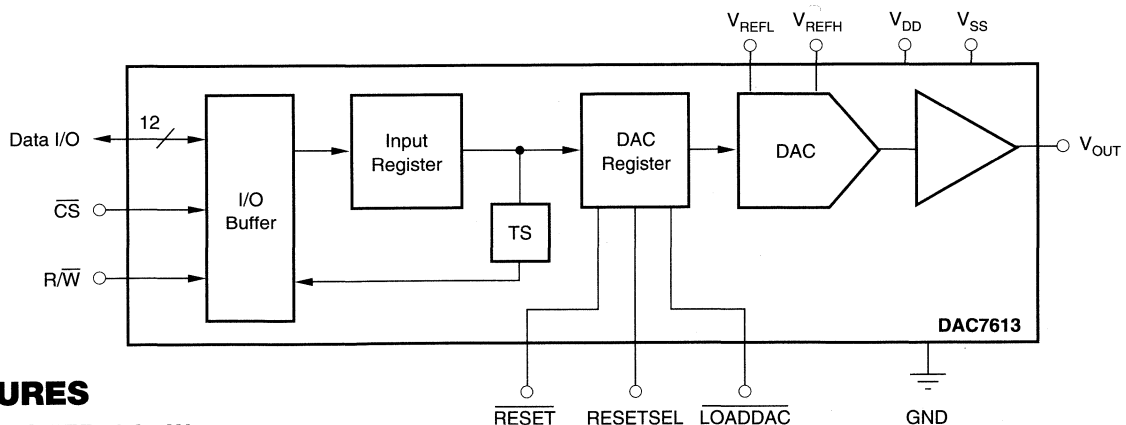
FEATURES

- MICROPOWER OPERATION: 140 μ A at 5V
- POWER-ON RESET TO ZERO
- POWER SUPPLY: +2.7V to +5.5V
- GUARANTEED MONOTONIC BY DESIGN
- SETTLING TIME: 10 μ s to 1LSB
- MULTIPLY MODE BANDWIDTH: 1MHz
- LOW POWER SERIAL INTERFACE WITH SCHMITT-TRIGGERED INPUTS
- ON-CHIP OUTPUT BUFFER AMPLIFIER, RAIL-TO-RAIL OPERATION
- SYNC INTERRUPT FACILITY
- SOT23-8 AND MSOP-8 PACKAGES



DAC7613

12-Bit, Voltage Output
DIGITAL-TO-ANALOG CONVERTER

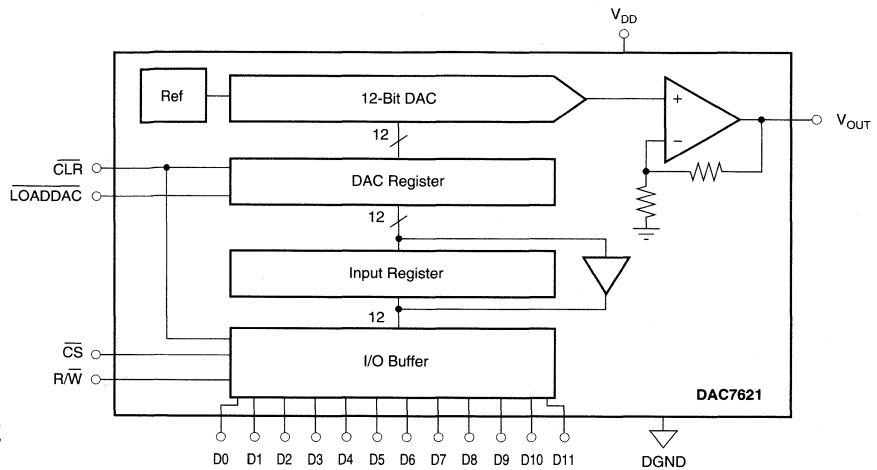


FEATURES

- LOW POWER: 1.8mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 10 μ s to 0.01%
- 12-BIT LINEARITY AND MONOTONICITY: -40°C to +85°C
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUT
- SSOP-24 PACKAGE

DAC7621

12-Bit, Parallel Input DIGITAL-TO-ANALOG CONVERTER

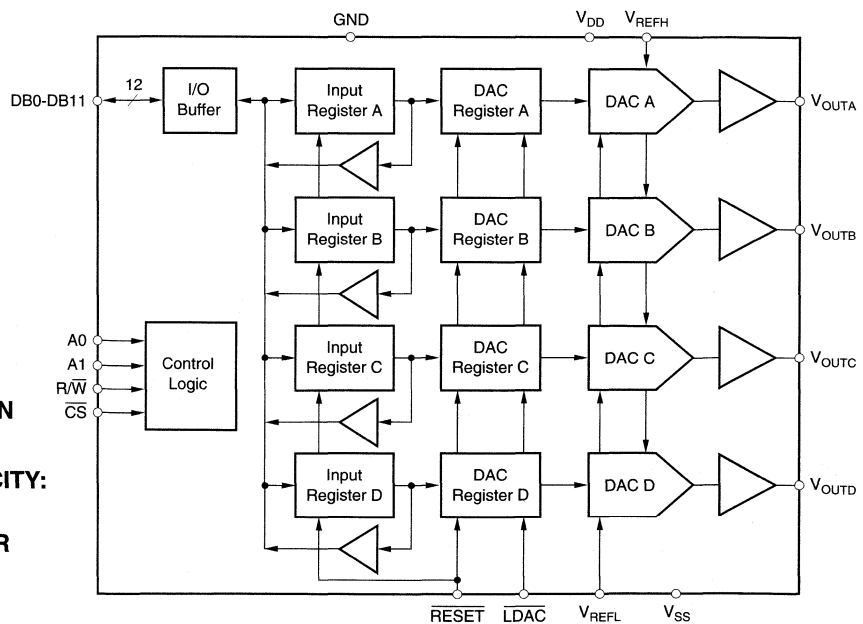


FEATURES

- LOW POWER: 2.5mW
- FAST SETTLING: 7 μ s to 1LSB
- 1mVLSB WITH 4.095V FULL-SCALE RANGE
- COMPLETE WITH REFERENCE
- 12-BIT LINEARITY AND MONOTONICITY OVER INDUSTRIAL TEMP RANGE
- ASYNCHRONOUS RESET TO 0V

DAC7624, DAC7625

12-Bit, Quad, Voltage Output DIGITAL-TO-ANALOG CONVERTER



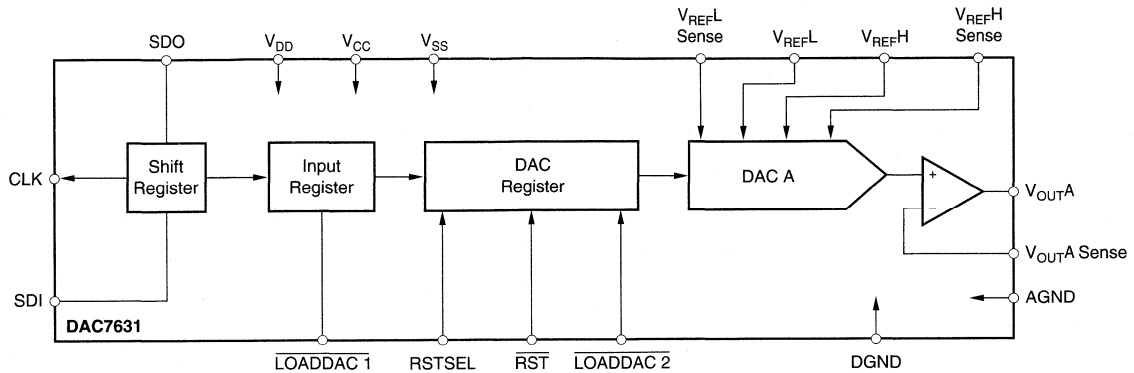
FEATURES

- LOW POWER: 20mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 10 μ s to 0.012%
- 12-BIT LINEARITY AND MONOTONICITY: -40°C to $+85^{\circ}\text{C}$
- RESET TO MID-SCALE (DAC7624) OR ZERO-SCALE (DAC7625)
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUTS

Digital-to-Analog Converters—New Products

DAC7631

Serial Input, 16-Bit, Voltage Output
DIGITAL-TO-ANALOG CONVERTER

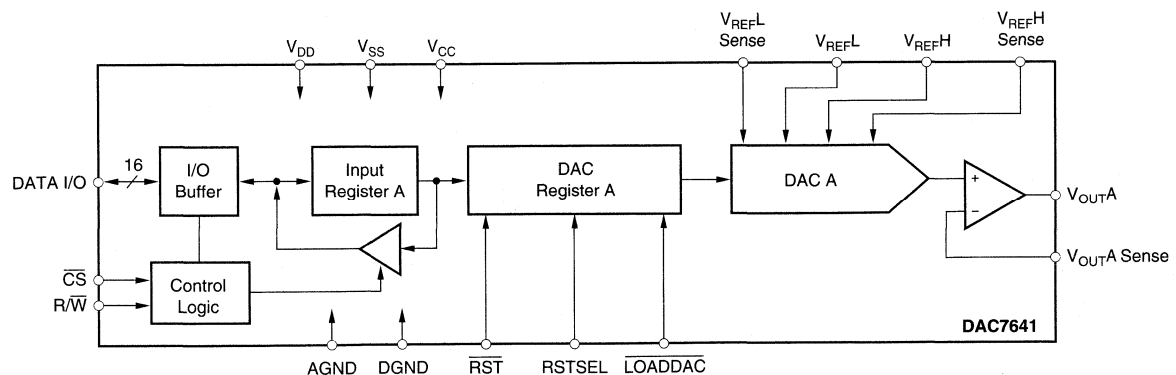


FEATURES

- LOW POWER: 2.5mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 10 μ s to 0.003%
- 16-BIT LINEARITY AND MONOTONICITY: -40°C to +85°C
- USER-SELECTABLE RESET TO MID-SCALE OR ZERO-SCALE
- SMALL SSOP-20 PACKAGE

DAC7641

16-Bit, Voltage Output
DIGITAL-TO-ANALOG CONVERTER



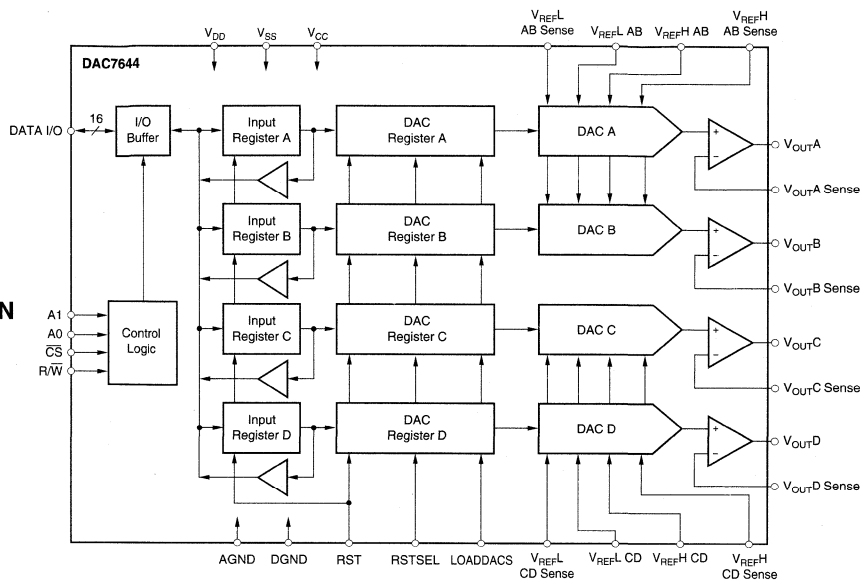
FEATURES

- LOW POWER: 2.5mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 10 μ s to 0.003%
- 16-BIT LINEARITY AND MONOTONICITY: -40°C to +85°C
- PROGRAMMABLE RESET TO MID-SCALE OR ZERO-SCALE
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUTS

Digital-to-Analog Converters—New Products

DAC7644

16-Bit, Quad DIGITAL-TO-ANALOG CONVERTER

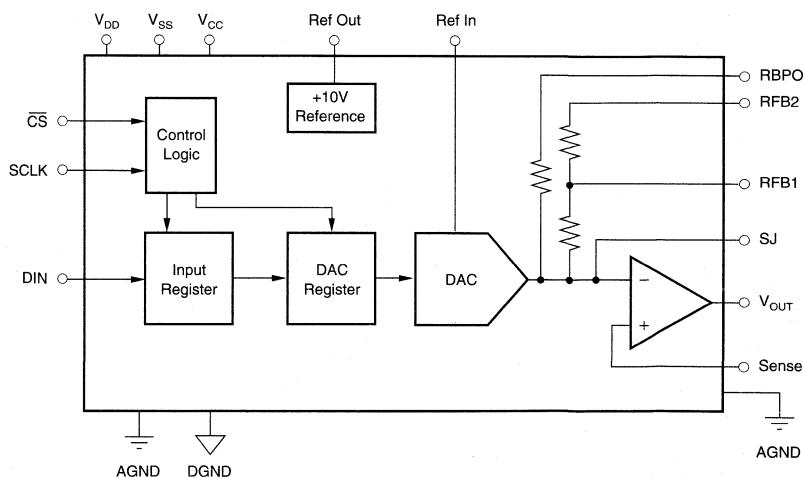


FEATURES

- LOW POWER: 10mW Single Supply
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 10 μ s to 0.003%
- 15-BIT LINEARITY: t_{MIN} to t_{MAX}
- RESET TO MIN VALUE OR CENTER-SCALE
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUTS
- 15-BIT MONOTONICITY: t_{MIN} to t_{MAX}
- SSOP-48 PACKAGE

DAC7731

16-Bit DIGITAL-TO-ANALOG CONVERTER



FEATURES

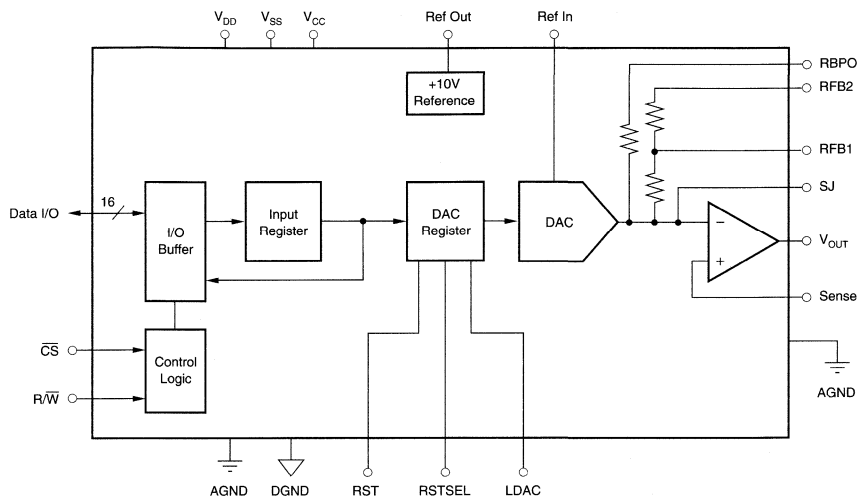
- LOW POWER: 60mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 5 μ s to 0.003%
- 16-BIT LINEARITY: t_{MIN} to t_{MAX}
- PACKAGE: TQFP-48
- RESET TO MIN VALUE OR CENTER-SCALE
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUTS
- 16-BIT MONOTONICITY: t_{MIN} to t_{MAX}

Digital-to-Analog Converters—New Products

DAC7741



16-Bit, Parallel Input, Unipolar or Bipolar Output DIGITAL-TO-ANALOG CONVERTER

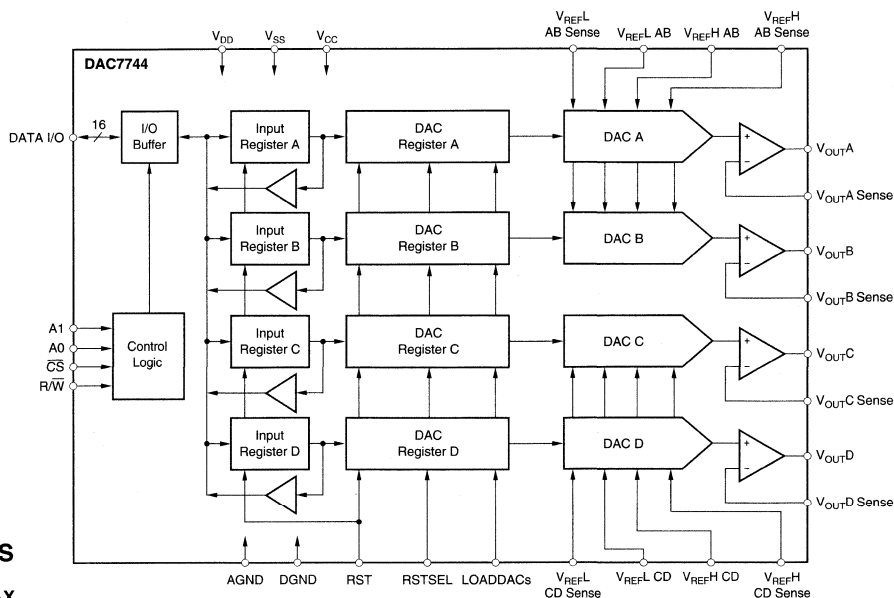


FEATURES

- LOW POWER: 60mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 5 μ s to 0.003%
- 16-BIT LINEARITY: t_{MIN} to t_{MAX}
- PACKAGE: TQFP-48
- RESET TO MIN VALUE OR CENTER-SCALE
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUTS
- 16-BIT MONOTONICITY: t_{MIN} to t_{MAX}

DAC7744

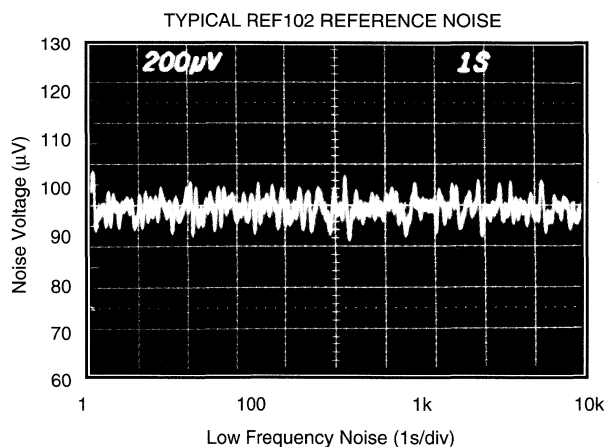
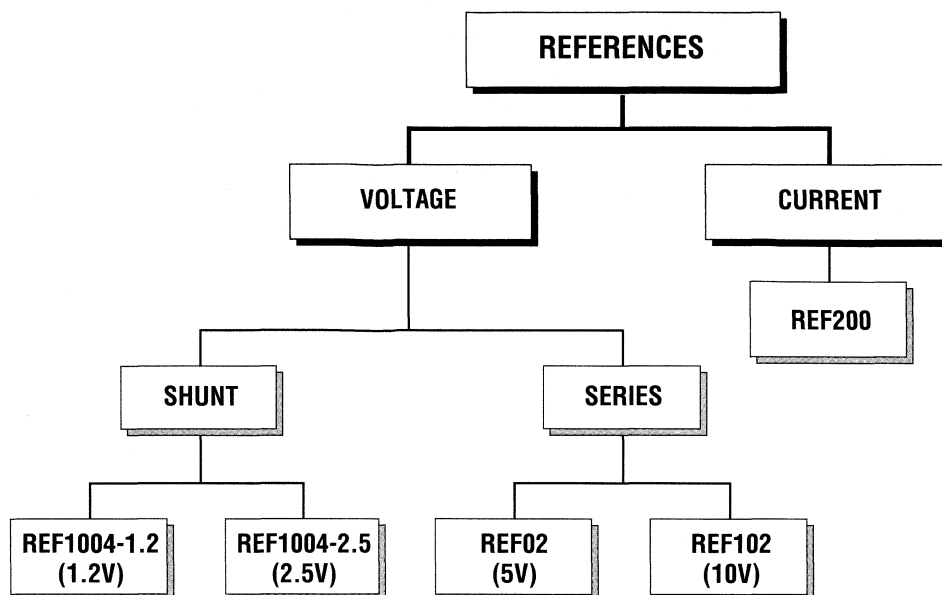
16-Bit, Quad DIGITAL-TO-ANALOG CONVERTER



FEATURES

- LOW POWER: 185mW
- UNIPOLAR OR BIPOLAR OPERATION
- SETTLING TIME: 10 μ s to 0.003%
- 16-BIT LINEARITY: t_{MIN} to t_{MAX}
- RESET TO MIN VALUE OR CENTER-SCALE
- DATA READBACK
- DOUBLE-BUFFERED DATA INPUTS
- 16-BIT MONOTONICITY: t_{MIN} to t_{MAX}
- PACKAGE: SSOP-48

References—Selection Tree and Guide



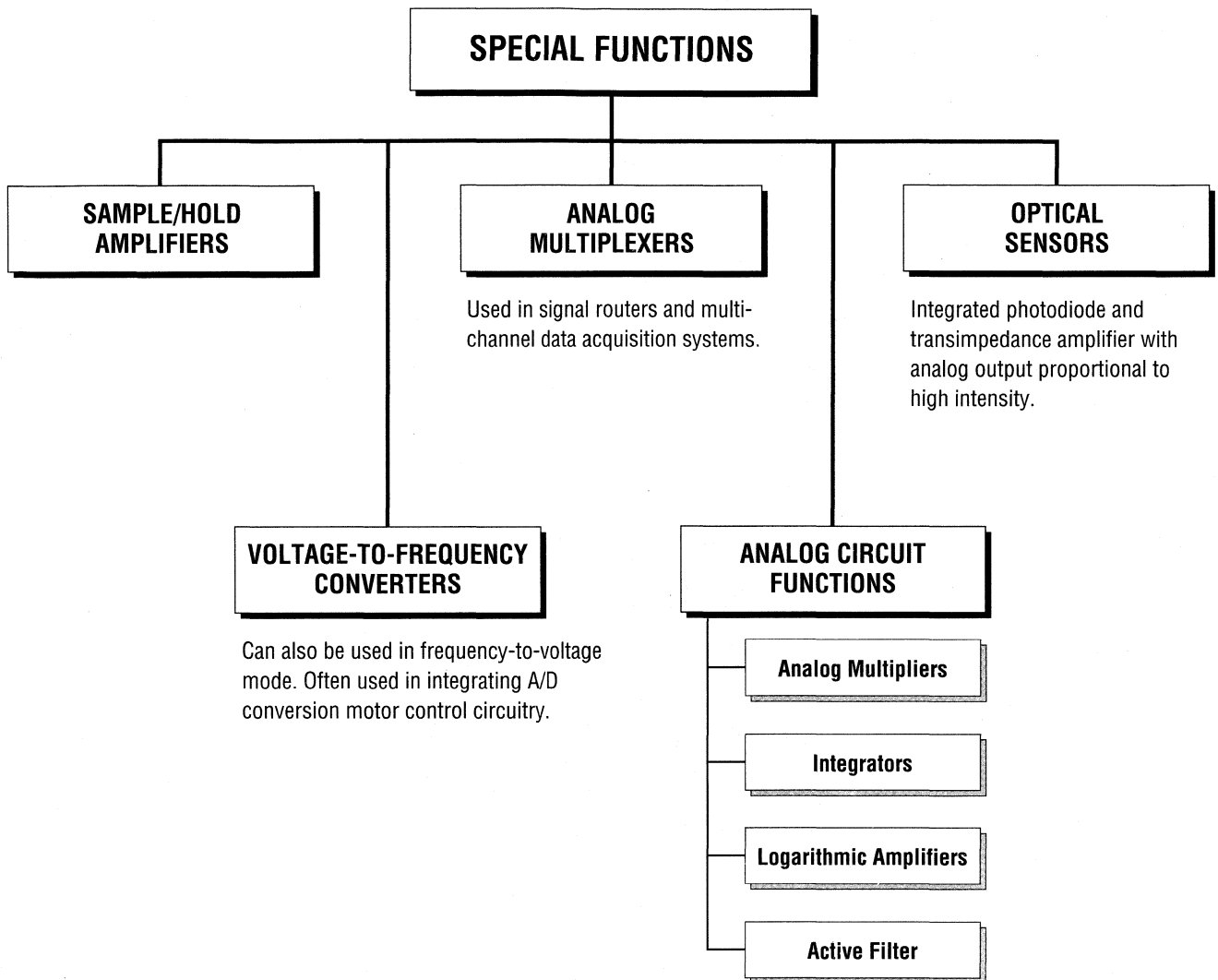
References

Product	Description	Output	Initial Accuracy (max)	Drift ppm/°C (max)	Long Term Stability ppm/kHr (typ)	Noise 0.1Hz to 10Hz μ Vp-p (typ)	I_Q mA (max)	Temperature Range °C	Package(s)	Price* 1kpcs
Voltage References										
REF02	Low Drift, Low Noise	5V	± 10 mV	10	50	4	1.4	-40 to +85	DIP-8, SO-8	\$1.64
REF102	Very-Low Drift, Low Noise	10V	± 2.5 mV	2.5	5	5	1.4	-40 to +85	DIP-8, SO-8	2.25
REF1004-1.2	Shunt, microPower	1.235V	± 4 mV	20 (typ)	20	—	0.01	-40 to +85	SO-8	1.22
REF1004-2.5	Shunt, microPower	2.5V	± 11 mV	20 (typ)	20	—	0.01	-40 to +85	SO-8	1.22
Current References										
REF200	Dual-Current Reference	Two 100 μ A	± 1 μ A	25 (typ)	—	—	—	-25 to +85	DIP-8, SO-8	2.38

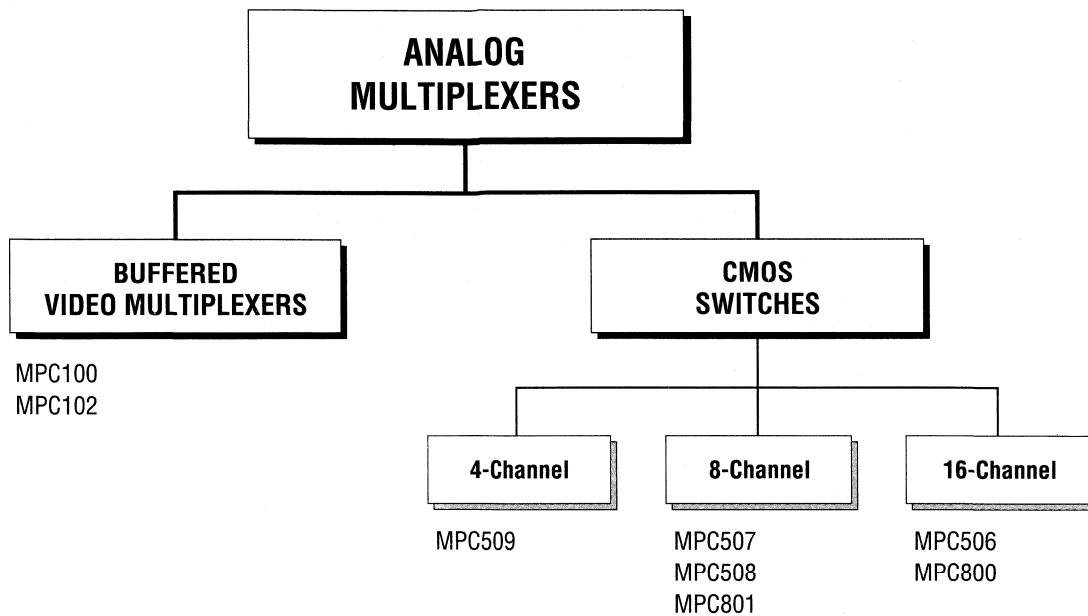
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Special Functions—Main Selection Tree



Special Functions—Selection Tree and Guide

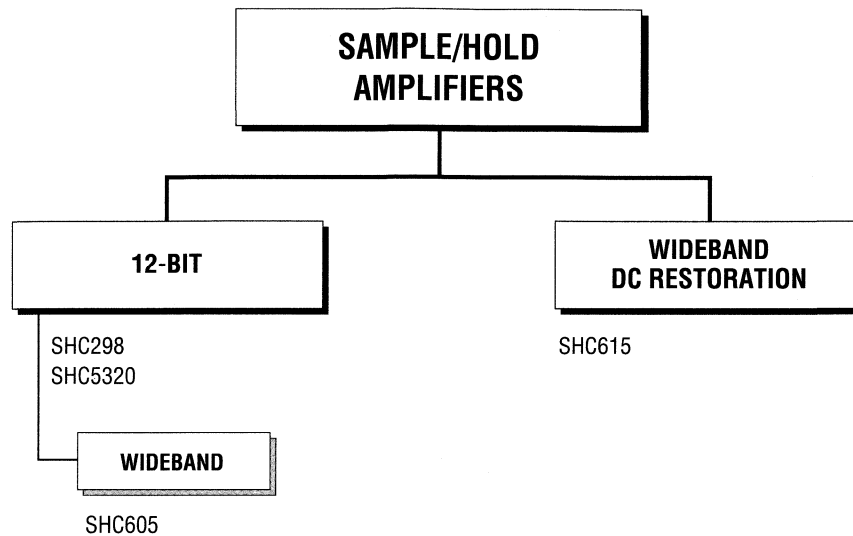


Product	Description	Channels	Input Range (V) typ	On Resistance (Ω) max	Settling Time (to 0.01%) typ	Temp Range (°C) min to max	Package(s)	Price* 1kpcs
MPC100	4x1 Video, Single-Ended	4-Channel	±4.2	—	—	−40 to +85	SO-14, DIP-14	\$5.29
MPC102	2x1, Dual Differential	2-Channel	±3.6	—	—	−40 to +85	SO-14, DIP-14	4.79
MPC506	Protected Inputs, CMOS	16-Channel, Single-Ended	±15	1.8k	3.5μs	−40 to +85	DIP-28, SO-28	5.33
MPC507	Protected Inputs, CMOS	8-Channel, Differential	±15	1.8k	3.5μs	−40 to +85	DIP-28, SO-28	5.33
MPC508	Protected Inputs, CMOS	8-Channel, Single-Ended	±15	1.8k	3.5μs	−40 to +85	DIP-16, SOL-16	2.62
MPC509	Protected Inputs, CMOS	4-Channel, Differential	±15	1.8k	3.5μs	−40 to +85	DIP-16, SOL-16	2.62
MPC800	High Speed, CMOS	16 Single-Ended or 8 Differential	±15	750	800ns	0 to +70	CerDIP-28	23.76
MPC801	High Speed, CMOS	8 Single-Ended or 4 Differential	±15	750	800ns	0 to +70	CerDIP-28	14.40

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Special Functions—Selection Tree and Guide



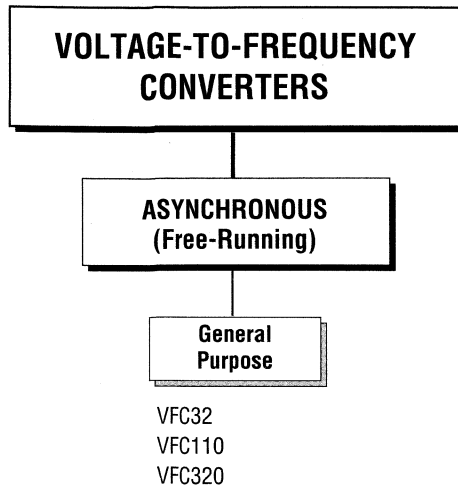
Product	Description	Gain Error (%) max	Offset Error (mV) max	Small-Signal Bandwidth (MHz) typ	Acquisition Time to 0.01% (μs) max	Droop Rate (μV/μs) max	Input Range (Vp-p) max	Temp Range ⁽¹⁾	Package(s)	Price* 1kpcs
SHC298	Lowest Cost, Industry Standard	±0.005	±7	0.125	10	±100000	23	Com, Ind	TO-99, DIP-8, SO-8	\$2.35
SHC605	Low Cost, Wideband	±0.005 ⁽²⁾	±7.5	200	0.02 ⁽²⁾	±8000	4	Ext	SO-16	23.80
SHC615	Wideband DC Restoration Circuit	±0.1 ^(2,3)	8 ⁽²⁾	750	15ns ⁽³⁾	±33000 ⁽³⁾	2	Ext	DIP-14, SO-14	5.95
SHC5320	Low Cost	NA	±0.5	2	1.5	±0.5	20	Com, Mil	DIP-14, CerDIP-14, SOL-16	7.64

NOTE: (1) Temperature range: Com = 0°C to +70°C, Ind = -25°C to +85°C, Ext = -40°C to +85°C, Mil = -55°C to +125°C. (2) Denotes typical. (3) With 27pF external hold capacitor.

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BOLD DENOTES NEW PRODUCT. BOLD, ITALIC DENOTES PRODUCT IN DEVELOPMENT. Some specifications have been estimated for comparison purposes. Refer to data sheets for guaranteed specifications.

Special Functions—Selection Tree and Guide



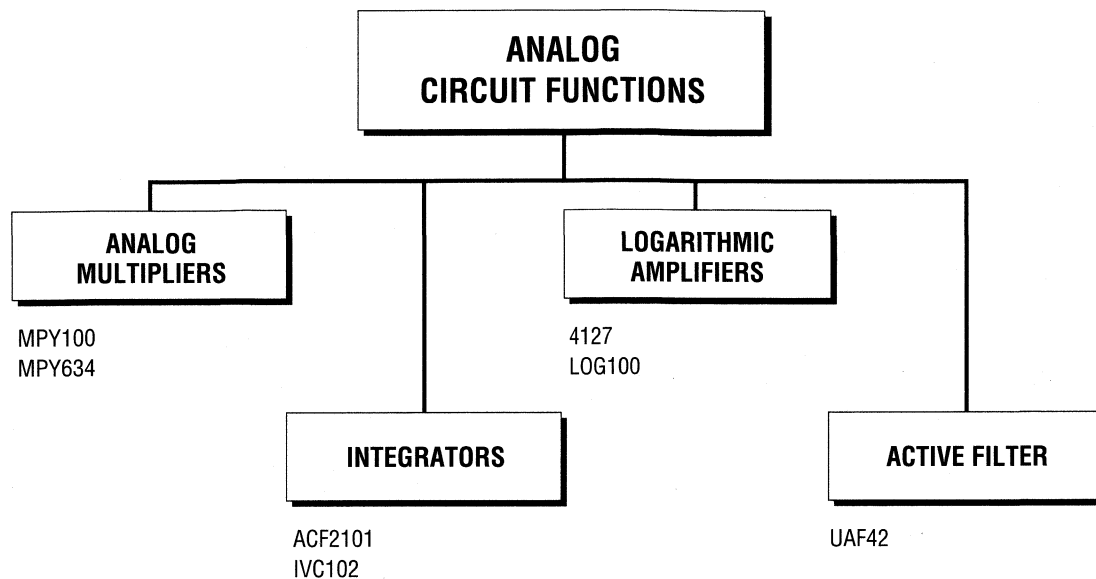
Product	Description	Frequency Range (kHz)	Linearity (% of FSR) max	Quiescent Current (mA) typ	Temp Range ⁽¹⁾	Package(s)	Price* 1kpcs
VFC32	Low Cost	User-Selected 500kHz max	±0.01 at 10kHz ±0.05 at 100kHz	5.5	Com, Ind	DIP-14, SO-14,	\$5.76
VFC110	High Performance, Low Jitter	User-Selected, 4MHz max	±0.05 at 1MHz	13	Ind	CerDIP-14, DIP-14	11.87
VFC320	Precision, 20ppm/°C Gain Drift	User-Selected, 1MHz max	±0.002 at 10kHz	6.5	Ind	CerDIP-14,	12.55

NOTE: (1) Com = 0°C to +70°C, Ind = -25°C to +85°C, Mil = -55°C to +125°C.

*Price in 1000s; lowest grade price for single channel version; recommended resale in USD; FOB USA.

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Special Functions—Selection Tree and Guide



ANALOG MULTIPLIERS

Product	Description	Transfer Function	Error at +25°C (%) max	BW (MHz) typ	Temp Range ⁽¹⁾	Package(s)	Price* 1kpcs
MPY100	General Purpose	$[(X1 - X2)(Y1 - Y2)/10] + Z2$	±0.5	70kHz	Ind, Mil	CerDIP-14	\$16.11
MPY634	Scale Factor, Wide Bandwidth	$[(X1 - X2)(Y1 - Y2)/10] + Z2$	±0.5	10	Com, Ind	DIP-14, SOL-16	11.03

OTHER ANALOG CIRCUIT FUNCTIONS

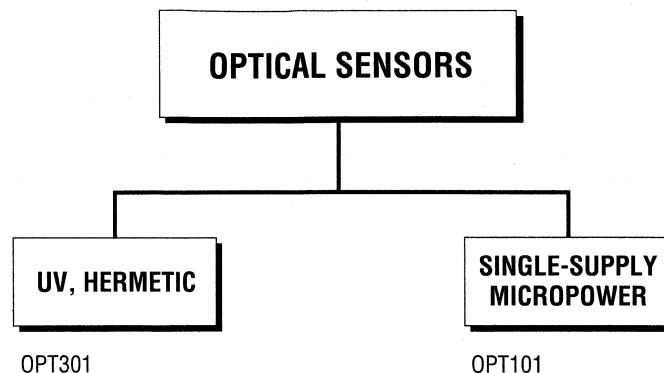
Product	Description	Function	Comments	Temp Range ⁽¹⁾	Package(s)	Price* 1kpcs
4127	Logarithmic Amplifier	$K \text{ Log } (I_V/I_{REF})$	Internal reference and a current inverter. 1% and 0.5% accuracy.	Com	Double Wide CerDIP-24	\$73.51
ACF2101	Dual Switched Integrator	Dual, transimpedance amplifier converts input current to voltage by integrating input for a user-determined period. $V_{OUT} = -(1/C) I_{IN} dt$	Includes HOLD and RESET switches and output multiplexer. Eliminates large feedback resistor of traditional I-to-V converter.	Ext	SO-24	14.62
IVC102	Switched Integrator	Single integrating amplifier with integrating capacitors and low leakage FET switches.	Ideal for amplifying low-level sensors such as photodiodes and ionization chambers.	Ext	SO-14	4.25
LOG100	Logarithmic Amplifier	$K \text{ Log } (I_V/I_2)$	Specified over six decades of input (1nA to 1mA), 55mV total error, 0.25% log conformity.	Com	Double Wide CerDIP-14	82.00
UAF42	Universal Active Filter	Configurable for a wide range of low-pass, high-pass, and band-pass filters.	Classical state-variable analog architecture.	Ind	DIP-14, SOL-16	7.07

NOTE: (1) Temperature range: Com = 0°C to +70°C, Ind = -25°C to +85°C, Ext = -40°C to +85°C.

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Special Functions—Selection Tree and Guide

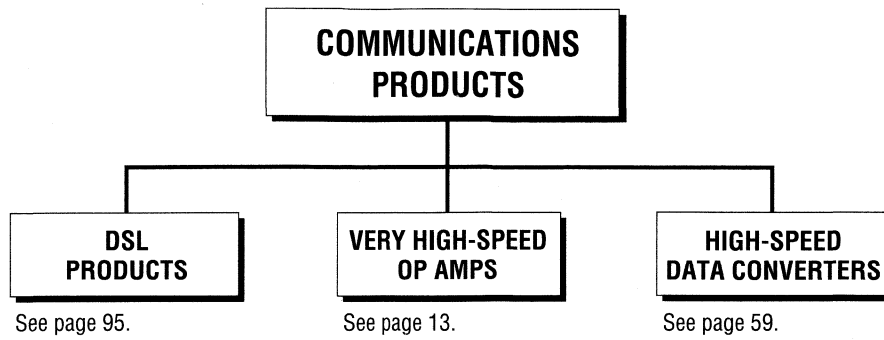


Product	Description	Small-Signal Bandwidth (kHz) typ	Photodiode Dimensions	Feedback Resistor	Power Supply Range (V)	Quiescent Current (μA) max	Package(s)	Price* 1kpcs
OPT101	Low cost, general purpose, single-supply operation with nominal 7.5mV output offset pedestal.	14	0.09" x 0.09"	1MΩ	+2.7 to +36	240	Clear DIP-8, Clear DIP-8 with J-formed leads	\$2.55
OPT301	Hermetic, general purpose, extended ultraviolet response, Wide temperature range.	4	0.09" x 0.09"	1MΩ	±2.25 to ±18	500	TO99-8	10.59

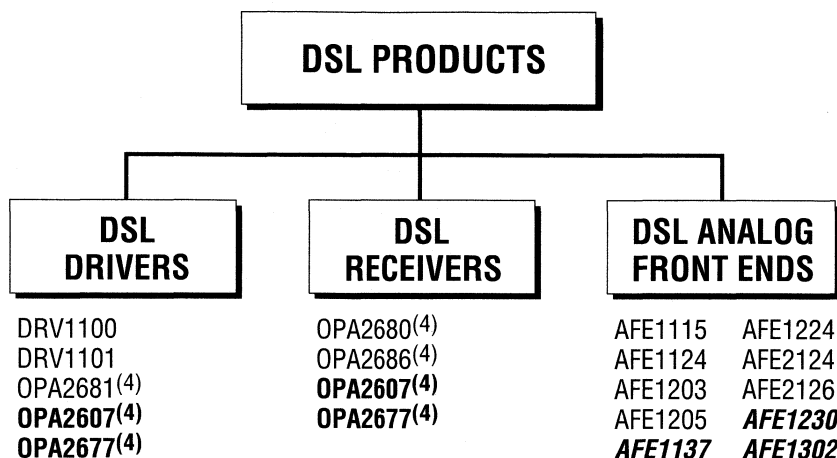
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Communications Products—Main Selection Tree



Communications Products—Selection Tree and Guide



DSL ANALOG FRONT ENDS

Product	Type	Design Speed kbps	Minimum Speed kbps	Scaleable Data Rate	Line Code	Power Dissipation mW	Power ⁽¹⁾ Supply V	VCXO	Package(s)	Price* 1kpcs
AFE1302	ADSL	1536	—	—	DMT	500	+5	Yes	TQFP-48	\$11.00
AFE1230	G.SHDSL/HDSL2	2320	64	Yes	PAM	700	+5	No	SSOP-28	14.40
AFE1137	DSL	1000	160	Yes	QAM	300	+5	Yes	SSOP-56	14.40
AFE1144	HDSL	1168	64	Yes	2B1Q	250	+5	No	SSOP-28	9.00
AFE1115	HDSL/SDSL	1168	192	Yes	2B1Q	300	+5	Yes	SSOP-56	12.00
AFE1124	HDSL/SDSL	1168	64	Yes	2B1Q	250	+5	No	SSOP-28	9.00
AFE1203	HDSL/SDSL	2320	160	Yes	2B1Q	400	+5	No	SSOP-48	14.40
AFE1205	HDSL/SDSL	2320	160	Yes	2B1Q	400	+5	No	SSOP-48	14.40
AFE1224	HDSL/SDSL	2320	64	Yes	2B1Q	355	+5	No	SSOP-28	14.40
AFE2124	SDSL/HDSL	1168	64	Yes	2B1Q	250 ⁽²⁾	+5	No	SSOP-48	18.00
AFE2126	HDSL/SDSL	1168	64	Yes	2B1Q	280 ⁽²⁾	+5	No	SSOP-48	18.00

DSL DRIVERS AND RECEIVERS

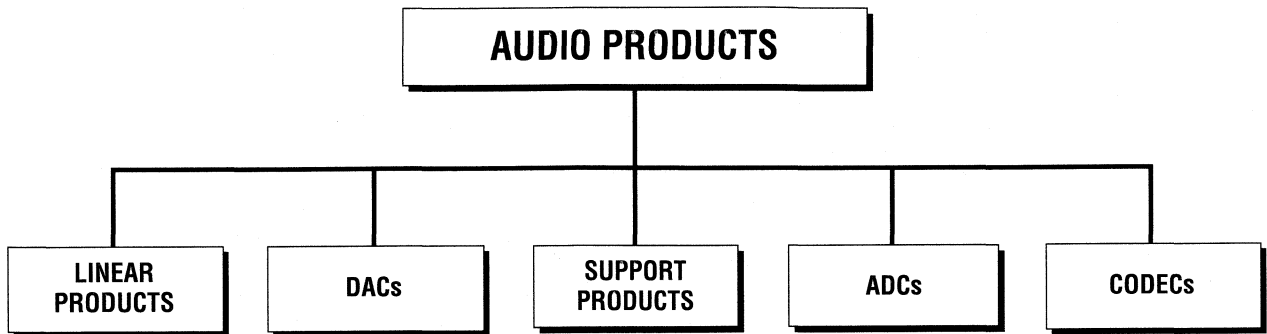
Product	-3dB BW ⁽³⁾ MHz (typ)	I _{OUT} mA (min)	Diff. SR V/μs (typ)	THD ⁽³⁾ dBc (typ)	e _{ni} nV/√Hz (typ)	Input V _{OS} mV (max)	CMRR dB (typ)	PSRR dB (typ)	Gain Error dB (max)	I _Q mA (typ)	V _S V (nom)	Package(s)	Price* 1kpcs
DRV1100	5	230	80	-65	30	5	62	76	±0.25	11	+5	SO-8, DIP-8	\$2.95
DRV1101	24	230	100	-71	15	3	46	76	±0.25	25	+5	SO-8	2.95
OPA2607⁽⁴⁾	25	150	1200	—	1.6	10	52	60	—	17	±12	SO-8, SO-14	2.85
OPA2677⁽⁴⁾	200	280	2200	—	1.7	1.5	54	60	—	18	+12	SO-8, SO-14	2.29
OPA2680 ⁽⁴⁾	220	135	3600	—	4.8	4.5	59	65	—	13	+5, +12	SO-8, SO-14	2.89
OPA2681 ⁽⁴⁾	220	135	4200	—	2.5	5.0	52	58	—	12	+5, +12	SO-8, SO-14	2.89
OPA2686 ⁽⁴⁾	250	60	1200	—	1.4	1.0	100	78	—	24	+12	SO-8	4.59

NOTES: (1) Analog is +5V; digital is +3.3V to +5V. (2) Per channel; HDSL is high bit rate DSL; MDSL is medium speed DSL; SDSL is symmetrical DSL. (3) R_L = 15Ω, V_O = 6Vp-p. (4) See Very High Speed Op Amps on page 13.

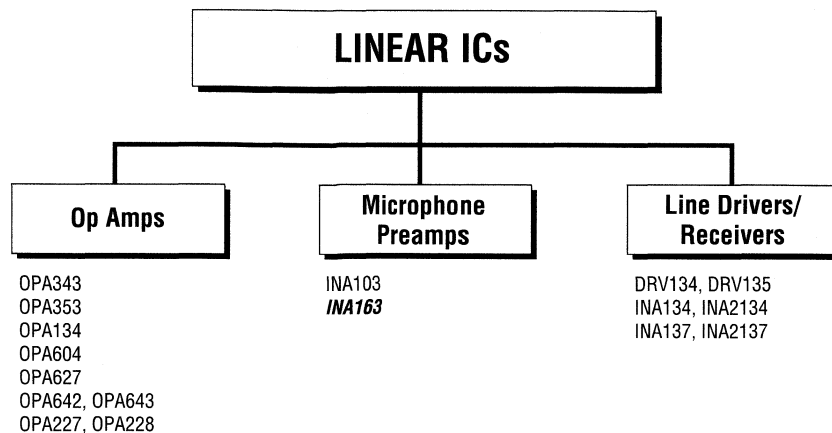
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Audio Products—Main Selection



Audio Products—Selection Tree and Guide



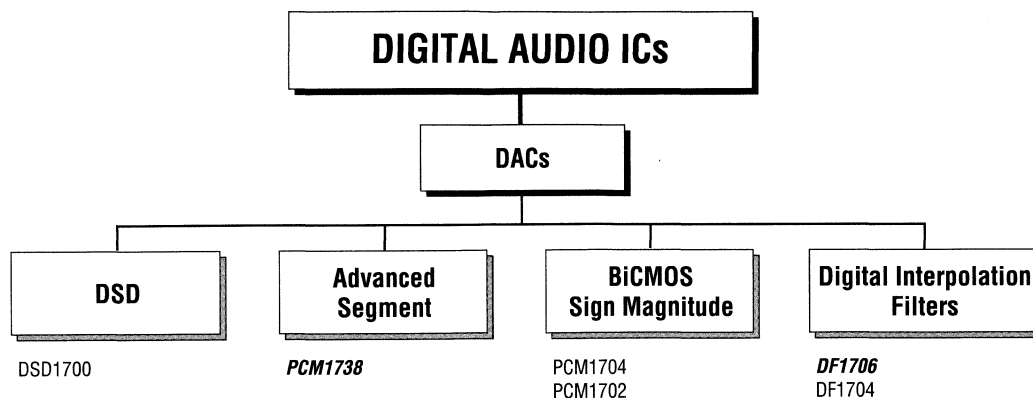
Product	Description	Supply Voltage V	THD+N %	Slew Rate V/ μ s	BW MHz	Single, Dual, Quad	Package(s)	Price 1kpcs
Op Amps								
OPA343	CMOS, Single-Supply Op Amp	+2.5 to +5.5	0.0007	6	5.5	S, D, Q	SO, MSOP, SSOP, SOT-23	\$0.57
OPA353	High Speed, CMOS Op Amp	+2.7 to +5.5	0.0005	20	35	S, D, Q	DIP, SO, MSOP, SSOP	0.96
OPA604	FET, Audio Op Amp	\pm 4.5 to \pm 24	0.0003	25	20	S, D	DIP, SO	0.90
OPA134	FET, Audio Op Amp	\pm 2.5 to \pm 18	0.00008	20	8	S, D, Q	DIP, SO	0.87
OPA227, OPA228	Low Noise Op Amp	\pm 2.5 to \pm 18	0.00005	2.3	8	S, D, Q	DIP, SO	1.00
OPA627, OPA637	Ultra Audio <i>Difet</i> [®] Op Amp	\pm 4.5 to \pm 18	0.00003	55	16	S	DIP, SO	9.52
OPA642, OPA643	High Speed Op Amp	\pm 4.5 to \pm 5.5	—	380/1000	450	S	DIP, SO	3.75
Line Drivers/Receivers								
DRV134, DRV135	Professional Line Transmitter	\pm 4.5 to \pm 18	0.0005	13	1.2	S	DIP, SO	1.80
INA134	Professional Line Receiver, G = 1	\pm 4 to \pm 18	0.0005	14	3.1	S, D	DIP, SO	0.99
INA137	Professional Line Receiver, G = 1/2 or 2	\pm 4 to \pm 18	0.0005	14	4.0	S, D	DIP, SO	0.99
Microphone Preamps								
INA103	Low-Noise Microphone Preamp	\pm 9 to \pm 25	0.0009	15	6.0	S	DIP, SO	4.60
INA163	Low-Noise Microphone Preamp	\pm5 to \pm18	0.0009	15	6.0	S	SO-14	1.95

Difet[®] is a registered trademark of Burr-Brown Corporation.

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Audio Products—Selection Tree and Guide

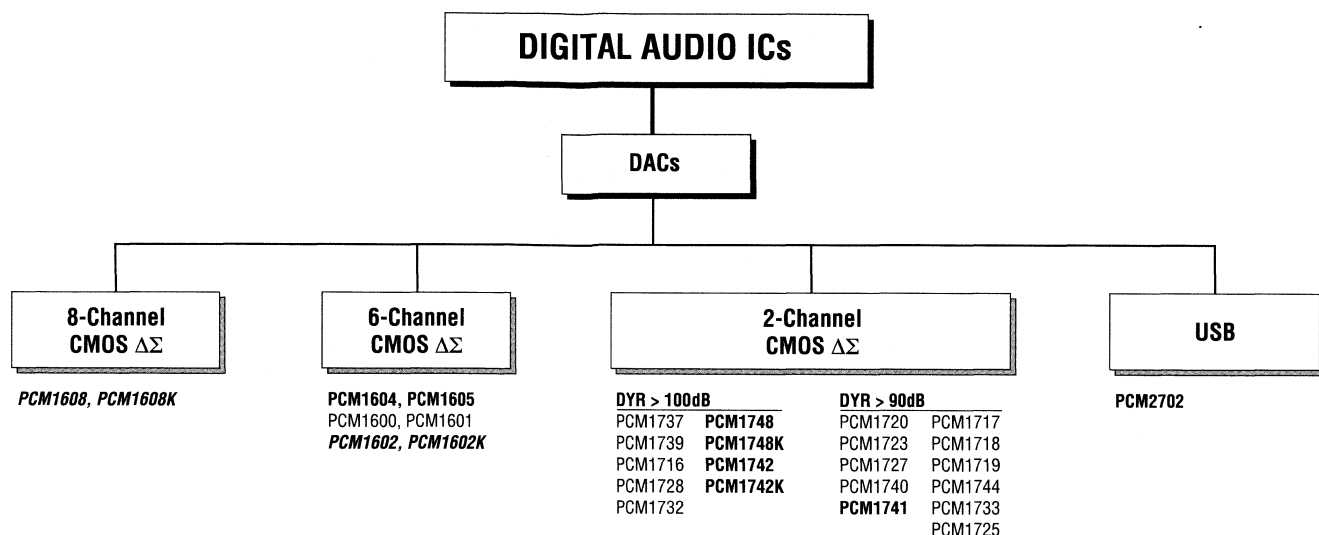


Product	Description	Dynamic Range dB	Resolution Bits (max)	Sampling Rate kHz (max)	Configuration	Audio Data Format	Power Supply V	Package(s)	Price* 1kpcs
Direct Stream Digital (DSD) DAC									
DSD1700	Direct Stream Digital (DSD) DAC	110	—	—	Mono	DSD	+5	SSOP-28	\$9.95
Advanced Segment DACs									
PCM1738	Advanced Segment DAC	117	24	192	Stereo	Normal, I ² S, DSD	+3.3 and +5	SSOP-28	4.95
Sign Magnitude DACs									
PCM1704	BiCMOS Sign-Magnitude DAC	112	24	768	Mono	Serial Latched	±5	SO-20	12.80
PCM1702	BiCMOS Sign-Magnitude DAC	110	20	768	Mono	Serial Latched	±5	DIP-16, SO-20	11.65
Digital Interpolation Filters									
DF1706	8x Oversampling Filter, supports up to 192kHz	—	24	192	Stereo	Normal, I ² S	+3.3	SSOP-28	10.95
DF1704	8x Oversampling Filter, supports up to 96kHz	—	24	96	Stereo	Normal, I ² S	+5	SSOP-28	9.95

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Audio Products—Selection Tree and Guide



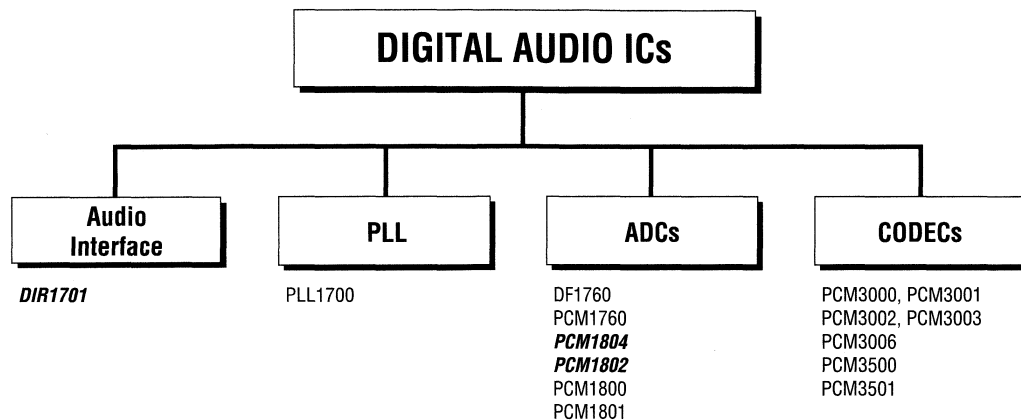
Product	Description	Dynamic Range dB	Resolution Bits (max)	Sampling Rate kHz (max)	Configuration	Audio Data Format	Power Supply V	Package(s)	Price* 1kpcs
DACs									
PCM1608	24-Bit, 8-Channel DAC, up to 192kHz	100	24	192	8-ch	Normal, I ² S	+3.3 and +5	LQFP-48	\$6.25
PCM1608K	24-Bit, 8-Channel DAC, up to 192kHz	105	24	192	8-ch	Normal, I ² S	+3.3 and +5	LQFP-48	7.45
PCM1604, 05	24-Bit, 6-Channel DAC, up to 192kHz Sampling	105	24	192	6-ch	Normal, I ² S	+3.3 and +5	LQFP/MQFP-48	6.95
PCM1600, 01	24-Bit, 6-Channel DAC, up to 96kHz Sampling	105	24	96	6-ch	Normal, I ² S	+3.3 and +5	LQFP/MQFP-48	6.45
PCM1602	24-Bit, 6-Channel DAC, up to 192kHz Sampling	100	24	192	6-ch	Normal, I ² S	+3.3 and +5	LQFP-48	4.95
PCM1602K	24-Bit, 6-Channel DAC, up to 192kHz Sampling	105	24	192	6-ch	Normal, I ² S	+3.3 and +5	LQFP-48	5.95
PCM1737, 39	24-Bit, 192kHz DAC with Volume Control	106	24	192	Stereo	Normal, I ² S	+3.3 and +5	SSOP-28	3.45
PCM1716, 28	24-Bit, 96kHz DAC with Volume Control	106	24	96	Stereo	Normal, I ² S	+5	SSOP-28	2.95
PCM1732 ⁽¹⁾	24-Bit, 96kHz with HDCD [®] Filter	104	24	96	Stereo	Normal, I ² S	+5	SO-28	5.33
PCM1748	24-Bit, 96kHz Delta-Sigma DAC w/Volume Control	100	24	96	Stereo	Normal, I ² S	+3.3 and +5	SSOP-16	2.45
PCM1748K	24-Bit, 96kHz Delta-Sigma DAC w/Volume Control	105	24	96	Stereo	Normal, I ² S	+3.3 and +5	SSOP-16	2.95
PCM1742	24-Bit, 96kHz Delta-Sigma DAC w/Volume Control	100	24	192	Stereo	Normal, I ² S	+3.3 and +5	SSOP-16	2.60
PCM1742K	24-Bit, 96kHz Delta-Sigma DAC w/Volume Control	105	24	192	Stereo	Normal, I ² S	+3.3 and +5	SSOP-16	3.10
PCM1741	24-Bit, 96kHz Delta-Sigma DAC w/Volume Control	98	24	96	Stereo	Normal, I ² S	+3.3	SSOP-16	2.45
PCM1720	24-Bit, 96kHz DAC with Volume Control	96	24	96	Stereo	Normal, I ² S	+5	SSOP-20	2.25
PCM1723	DAC with Int. PLL, generates DVD/MPEG clocks	94	24	96	Stereo	Normal, I ² S	+5	SSOP-24	4.15
PCM1727	DAC with Int. Dual-PLL for DVD/MPEG-Systems	92	24	96	Stereo	Normal, I ² S	+5	SSOP-24	4.95
PCM1740	DAC with internal VCXO and PLL	94	24	96	Stereo	Normal, I ² S	+5	SSOP-24	4.95
PCM1717, 18	Stereo Audio DAC with Wide Supply Range	96	18	48	Stereo	Normal, I ² S	+2.7 to +5.5	SSOP-20	3.15
PCM1719	Stereo DAC with Headphone Amplifier	96	18	48	Stereo	Normal, I ² S	+5	SSOP-28	4.15
PCM1744	Low-Cost DAC, 24-Bit, 96kHz Sampling	95	24	96	Stereo	I ² S	+5	SO-14	1.95
PCM1733	Low-Cost DAC, 18-Bit, 96kHz Sampling	95	18	96	Stereo	Normal, I ² S	+5	SO-14	1.95
PCM1725	Low-Cost DAC, 16-Bit, 96kHz Sampling	95	16	96	Stereo	Normal, I ² S	+5	SO-14	1.95
PCM2702	High-Performance USB DAC	100	16	48	Stereo	USB Rev 1.0	+3.3 and +5	SSOP-28	5.45

NOTE: (1) HDCD[®] is a registered trademark of Pacific Microsonics. An HDCD[®] license from Pacific Microsonics Inc. is required to purchase the PCM1732.

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Audio Products—Selection Tree and Guide



Product	Description	Jitter ps	Sampling Rate kHz (max)	Power Supply V	Package(s)	Price* 1kpcs
Audio Interface						
DIR1701	Digital Audio Interface Receiver	100	96	+3.3	SSOP-28	\$3.95

PLL						
PLL1700	Multi-Clock Generator	150	192	+3.3 and +5	SSOP-20	1.95

Product	Description	Dynamic Range dB	Resolution Bits (max)	Sampling Rate kHz (max)	Configuration	Audio Data Format	Power Supply V	Package(s)	Price* 1kpcs
ADCs									
DF1760	Digital Decimation Filter (1/64 Decimation)	—	20	48	Stereo	Normal	+5	SO-28	\$13.80
PCM1760	Audio A/D Converter	108	20	48	Stereo	Normal	±5	DIP-28, SO-28	14.25
PCM1804	Delta-Sigma Audio ADC	110	24	192	Stereo	Normal, I²S, DSD	+3.3 and +5	SSOP-28	4.95
PCM1802	Delta-Sigma Audio ADC	100	24	96	Stereo	Normal, I²S	+3.3 and +5	SSOP-20	3.95
PCM1800	Delta-Sigma Audio ADC	95	20	48	Stereo	Normal, I ² S	+5	SSOP-24	2.95
PCM1801	Low-Cost Audio ADC	93	16	48	Stereo	Left Justified, I ² S	+5	SO-14	2.25

CODECs									
PCM3000, 01	Stereo Audio CODEC	96	18	48	Stereo	Normal, I ² S	+5	SSOP-28	4.95
PCM3002, 03	Low-Power, Stereo Audio CODEC	94	20	48	Stereo	Normal, I ² S	+2.7 to +3.6	SSOP-24	4.95
PCM3006	16-Bit CODEC in TSSOP Package	93	16	48	Stereo	Normal	+2.7 to +3.6	TSSOP-24	4.95
PCM3500, 01	16-Bit Voice/Modem Mono CODEC	88	16	26	Mono	DSP	+2.7 to +3.6	SSOP-24	3.45

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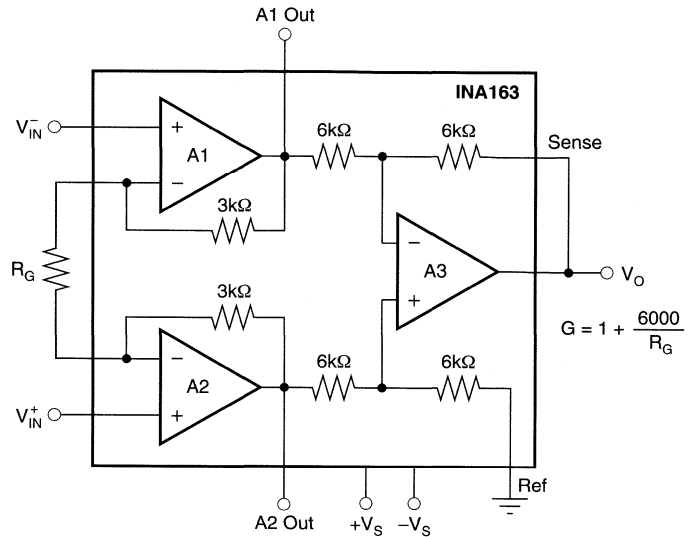
INA163

MICROPHONE PREAMPLIFIER



FEATURES

- LOW NOISE: $1\text{nV}/\sqrt{\text{Hz}}$ at 1kHz
- LOW DISTORTION: 0.0009%
- HIGH BW: 100kHz at $G = 60\text{dB}$
- WIDE SUPPLY RANGE: $\pm 4\text{V}$ to $\pm 18\text{V}$
- HIGH CMR: $> 100\text{dB}$
- EASY GAIN SET WITH EXTERNAL RESISTOR
- SO-14 PACKAGE

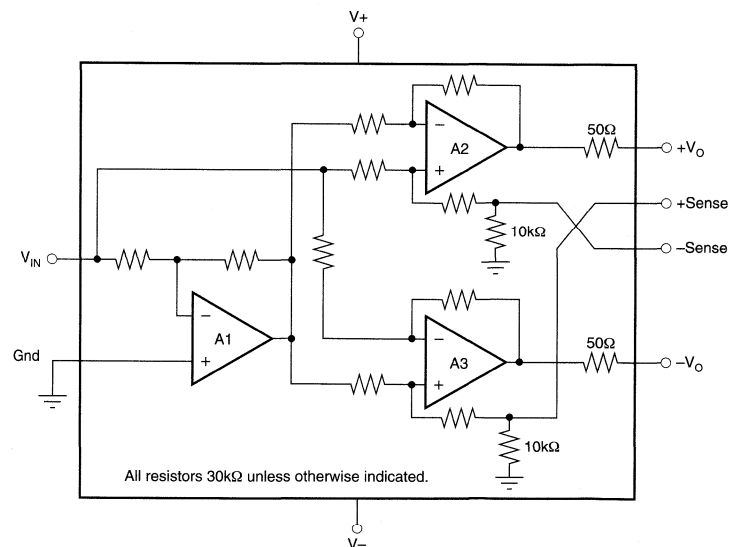


DRV134, DRV135

LINE TRANSMITTER

FEATURES

- LOW DISTORTION: 0.0005% at 1kHz
- BALANCED OUTPUT
- EXCELLENT CAPACITIVE LOAD DRIVE
- WIDE SUPPLY RANGE: $\pm 4.5\text{V}$ to $\pm 18\text{V}$
- WIDE OUTPUT SWING: 17V_{rms} into 600Ω
- HIGH SLEW RATE: $15\text{V}/\mu\text{s}$
- LOW QUIESCENT CURRENT: $\pm 5.2\text{mA}$
- PACKAGES: DIP-8, SO-8, and SOL-16
- COMPANION TO AUDIO DIFFERENTIAL LINE Receivers: INA134 and INA137
- IMPROVED REPLACEMENT FOR SSM2142



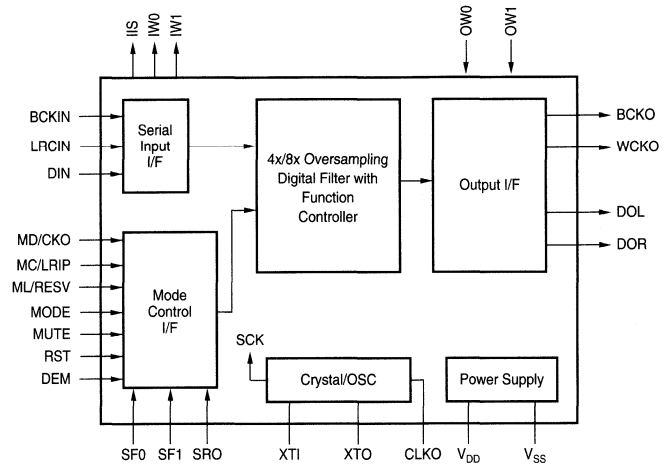
DF1706

SoundPLUS™ 24-Bit, 192kHz,
Digital Interpolation Filter



FEATURES

- SAMPLING FREQUENCY (f_s): Up to 192kHz
- INPUT AUDIO DATA WORD: 16-, 20-, 24-Bit
- OUTPUT AUDIO DATA WORD: 16-, 18-, 20-, 24-Bit
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- STOP BAND ATTENUATION: -115dB
- PASSBAND RIPPLE: ± 0.00005 dB
- MULTIFUNCTIONS:
L/R INDEPENDENT DIGITAL ATTENUATION
DIGITAL DE-EMPHASIS
SOFT MUTE
SELECTABLE SHARP OR SLOW ROLL OFF
FILTER RESPONSE
- SINGLE +3.3V POWER SUPPLY
- SSOP-28 PACKAGE

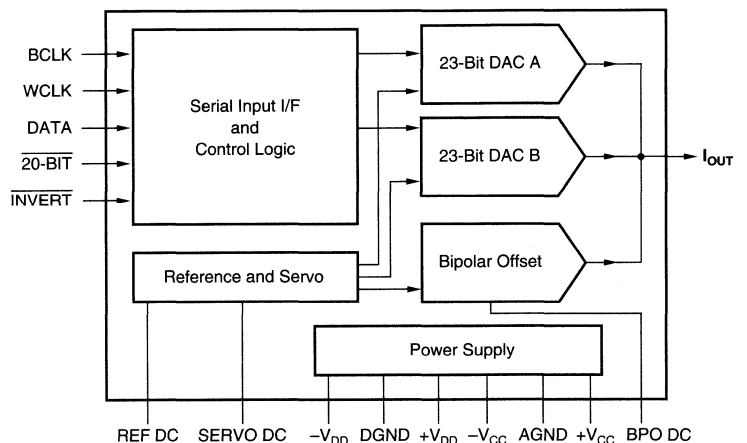


PCM1704

SoundPLUS™ BiCMOS Sign Magnitude
AUDIO DAC

FEATURES

- SAMPLING FREQUENCY (f_s): 768kHz max
(192kHz x 4 or 96kHz x 8)
- INPUT AUDIO DATA WORD: 20-, 24-Bit
- DYNAMIC RANGE: 112dB
- SNR: 120dB
- THD+N: U GRADE = 0.0025%
J GRADE = 0.0015%
K GRADE = 0.0008%
- FAST CURRENT OUTPUT: (± 1.2 mA/200ns)
- EXCELLENT LOW LEVEL LINEARITY
- ± 5 V SUPPLY
- SO-20 PACKAGE



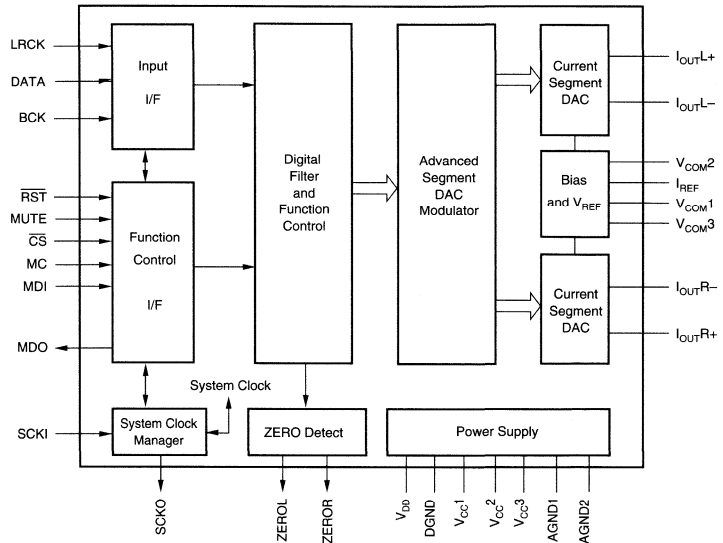
PCM1738



SoundPLUS™ 24-Bit, 192kHz, Stereo
AUDIO DAC

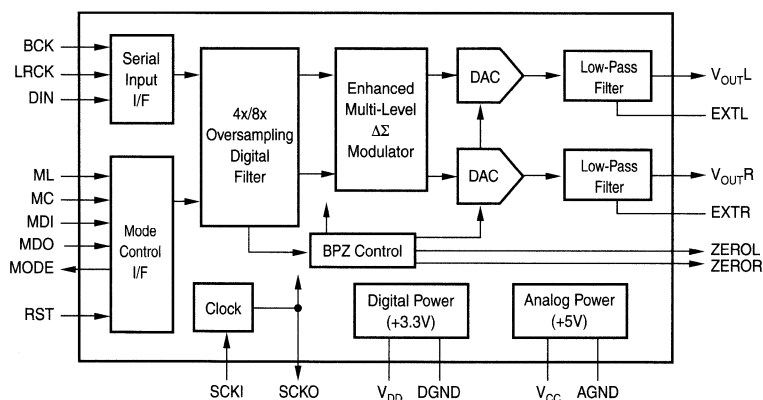
FEATURES

- ADVANCED SEGMENT DAC ARCHITECTURE
- SAMPLING FREQUENCY (f_s): Up to 192kHz
- INPUT AUDIO DATA WORD: 16-, 20-, 24-Bit
- DYNAMIC RANGE: 117dB
- SNR: 117dB
- THD+N: 0.0004%
- 8x OVERSAMPLING DIGITAL FILTER
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- DIFFERENTIAL CURRENT OUTPUT: ± 2.5 mA
- OPTIONAL DIGITAL FILTER PASS THROUGH MODE
- OPTIONAL DSD PLAYBACK MODE
- DUAL POWER SUPPLIES: +3.3V and 5V
- SSOP-28 PACKAGE



PCM1737, PCM1739

SoundPLUS™ 24-Bit, 192kHz, Stereo
AUDIO DAC



FEATURES

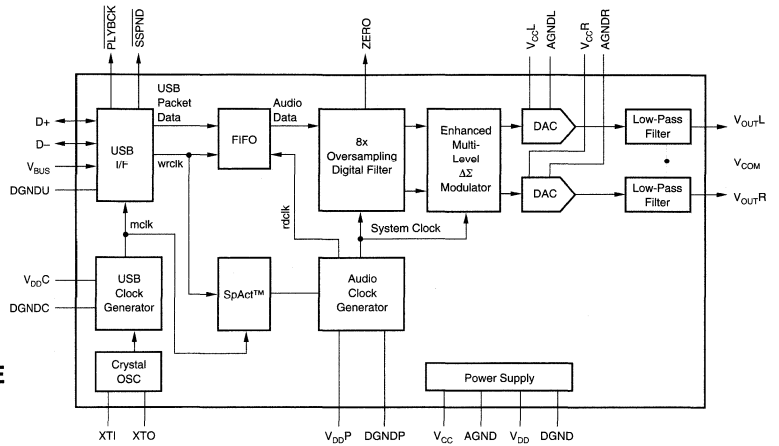
- PCM1737: Software Controlled
- PCM1739: Hardware Controlled
- SAMPLING FREQUENCY (f_s): up to 192kHz
- INPUT AUDIO DATA WORD: 16-, 18-, 20-, 24-Bit
- DYNAMIC RANGE: 106dB
- SNR: 106dB
- THD+N: -96dB
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- 4x/8x OVERSAMPLING DIGITAL FILTER
Stop Band Attenuation: -82dB
Passband Ripple: ± 0.002 dB
- DUAL POWER SUPPLIES: +3.3V and +5V
- SSOP-28 PACKAGE

PCM2702

SoundPLUS™ USB DAC

FEATURES

- ON-CHIP USB INTERFACE (Compliant with USB 1.0 Spec)
- DYNAMIC RANGE: 100dB
- SNR: 105dB
- THD+N: 0.002%
- 8x OVERSAMPLING DIGITAL FILTER: Passband Ripple: ± 0.002 dB Stopband Attenuation: -82 dB
- SAMPLING RATE (f_s): 32, 44.1, 48kHz
- ON-CHIP CLOCK GENERATOR WITH SINGLE 12MHz CLOCK SOURCE
- MULTI-FUNCTIONS: Digital Attenuation, Soft Mute, Zero Flag, Suspend Flag, and Playback Flag
- DUAL POWER SUPPLIES: +3.3V and +5V
- SSOP-28 PACKAGE

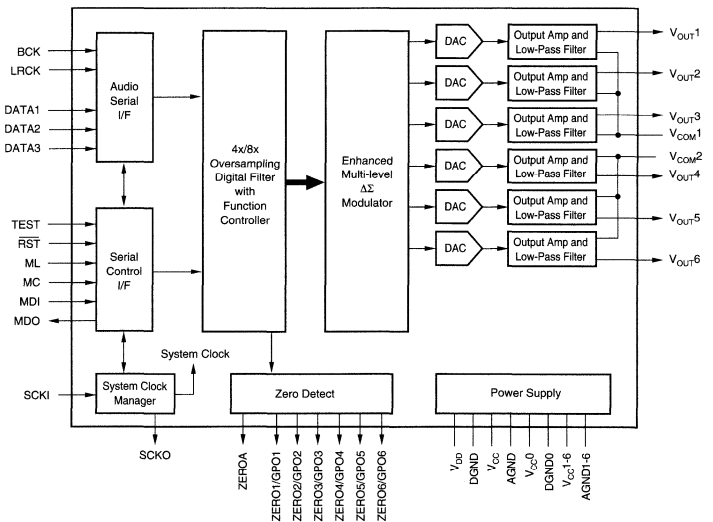


PCM1604, PCM1605

SoundPLUS™ 24-Bit, 192kHz, 6 Ch $\Delta\Sigma$ AUDIO DAC

FEATURES

- PIN COMPATIBLE WITH PCM1600, PCM1601
- INPUT AUDIO DATA WORD: 16-, 18-, 20-, 24-Bit
- SAMPLING FREQUENCY (f_s): Up to 192kHz
- DYNAMIC RANGE: 105dB
- SNR: 104dB
- THD+N: -95 dB
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- 4x/8x OVERSAMPLING DIGITAL FILTER Stop Band Attenuation: -82 dB Passband Ripple: ± 0.002 dB
- DIGITAL ATTENUATION, MUTE, AND ZERO FLAG FOR EACH CHANNEL
- ZERO FLAG PINS MAY BE USED AS GENERAL PURPOSE LOGIC OUTPUTS
- DUAL POWER SUPPLIES: +3.3V and +5V
- LQFP-48 AND MQFP-48 PACKAGES



PCM1602, PCM1602K

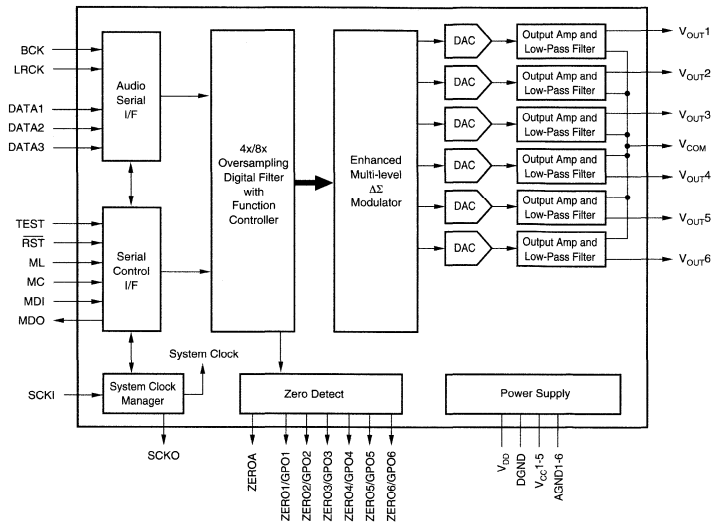
SoundPLUS

24-Bit, 192kHz, 6-Ch $\Delta\Sigma$
AUDIO DAC



FEATURES

- PIN COMPATIBLE WITH PCM1600, PCM1604
- SAMPLING FREQUENCY (f_s): Up to 192kHz
- INPUT AUDIO DATA WORD: 16-, 18-, 20-, 24-Bit
- DYNAMIC RANGE: 100dB (K-grade = 105dB)
- SNR: 100dB (K-grade = 105dB)
- THD+N: -90dB (K-grade = -94dB)
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- 4x/8x OVERSAMPLING DIGITAL FILTER
Stop Band Attenuation: -55dB
Passband Ripple: ± 0.04 dB
- DIGITAL ATTENUATION, MUTE, AND ZERO FLAG FOR EACH CHANNEL
- ZERO FLAG PINS MAY BE USED AS GENERAL PURPOSE LOGIC OUTPUTS
- DUAL POWER SUPPLIES: +3.3V and +5V
- LQFP-48 PACKAGE



PCM1608, PCM1608K

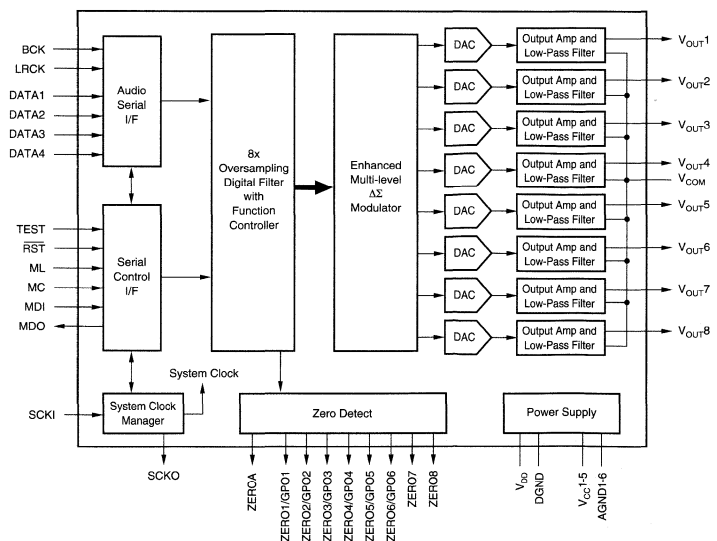
SoundPLUS

24-Bit, 192kHz, 8-Ch $\Delta\Sigma$
AUDIO DAC



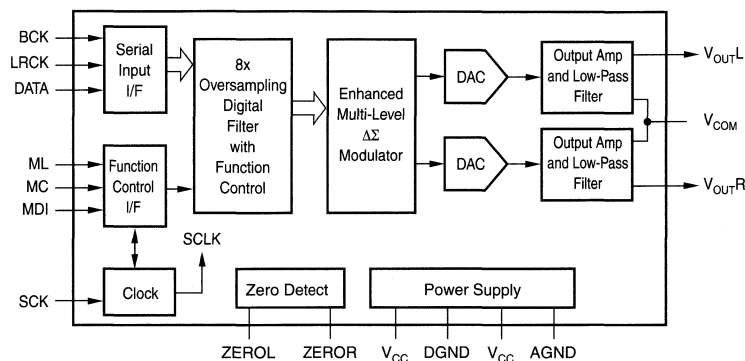
FEATURES

- SAMPLING FREQUENCY (f_s): Up to 192kHz
- INPUT AUDIO DATA WORD: 16-, 18-, 20-, 24-Bit
- DYNAMIC RANGE: 100dB (K-grade = 105dB)
- SNR: 100dB (K-grade = 105dB)
- THD+N: -90dB (K-grade = -94dB)
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- 4x/8x OVERSAMPLING DIGITAL FILTER
Stop Band Attenuation: -55DB
Passband Ripple: ± 0.04 DB
- DIGITAL ATTENUATION, MUTE, AND ZERO FLAG FOR EACH CHANNEL
- ZERO FLAG PINS MAY BE USED AS GENERAL PURPOSE LOGIC OUTPUTS
- DUAL POWER SUPPLIES: +3.3V and +5V
- LQFP-48 PACKAGE



PCM1748

SoundPLUS™ 24-Bit, 96kHz, Stereo
AUDIO DAC

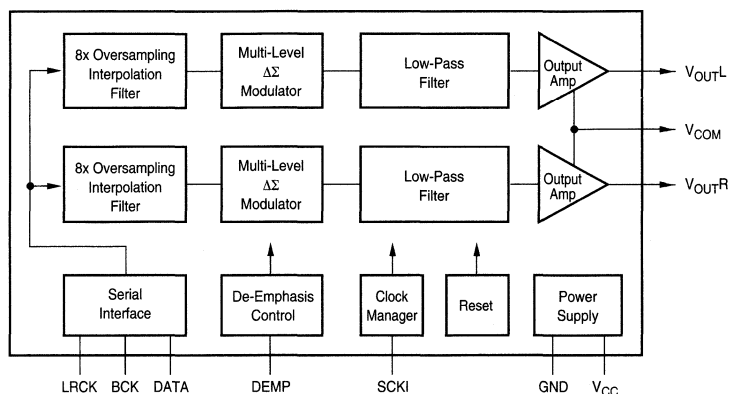


FEATURES

- INPUT AUDIO DATA WORD: 16-, 18-, 20-, 24-Bit
- SAMPLING FREQUENCY (f_s): Up to 96kHz
- DYNAMIC RANGE: 100dB (K-grade = 105dB)
- SNR: 100dB (K-grade = 105dB)
- THD+N: -90dB (K-grade = -94dB)
- SYSTEM CLOCK: 256/384/512/768 f_s
- 8x OVERSAMPLING DIGITAL FILTER
- MULTIFUNCTIONS: DIGITAL ATTENUATION AND MUTE
- DUAL POWER SUPPLIES: +3.3V and +5V
- SSOP-16 PACKAGE

PCM1744

SoundPLUS™ Low-Cost, 24-Bit, 96kHz DAC



FEATURES

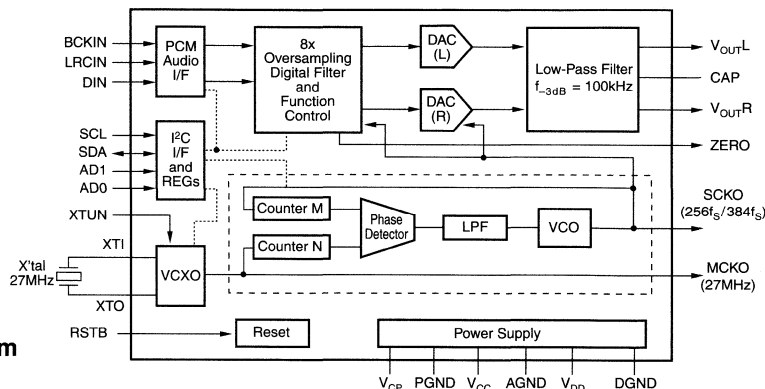
- PIN COMPATIBLE WITH PCM1725 AND PCM1733
- INPUT AUDIO DATA FORMAT: 24-Bit I²S
- SAMPLING FREQUENCY (f_s): up to 96kHz
- DYNAMIC RANGE: 95dB
- 8x OVERSAMPLING DIGITAL FILTER
- SYSTEM CLOCK: 256/384 f_s
- SMALL SO-14 PACKAGE

PCM1740

SoundPLUS 24-Bit, 96kHz DAC with VCXO and PLL

FEATURES

- INPUT AUDIO DATA WORD: 16-, 20-, 24-Bit
- SAMPLING FREQUENCY (f_s): Up to 96kHz
- DYNAMIC RANGE: 92dB
- I²C CONTROL INTERFACE
- PROGRAMMABLE PLL CIRCUIT:
256 f_s /384 f_s from 27MHz Master Clock
- ON-CHIP VCXO GENERATES 27MHz \pm 150ppm WITH A 0-3V CONTROL VOLTAGE
- NORMAL OR I²S DATA INPUT FORMATS
- SELECTABLE FUNCTIONS:
Soft Mute
Digital Attenuator (256 Steps)
Digital De-emphasis
- OUTPUT MODE: Left, Right, Mono, Mute
- SSOP-24 PACKAGE

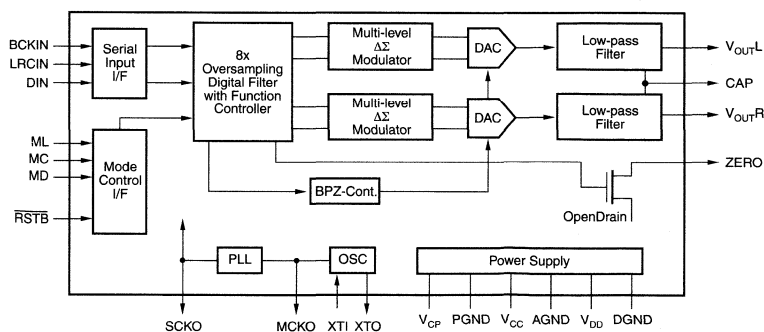


PCM1723

SoundPLUS 24-Bit, 96kHz DAC with PLL

FEATURES

- INPUT AUDIO DATA WORD 16-, 20-, 24-BIT
- DYNAMIC RANGE: 94dB
- MULTIPLE SAMPLING FREQUENCIES:
16kHz, 22.05kHz, 24kHz
32kHz, 44.1kHz, 48kHz
64kHz, 88.2kHz, 96kHz
- PROGRAMMABLE PLL CIRCUIT:
256/384 f_s from 27MHz Master Clock
- NORMAL OR I²S DATA INPUT FORMATS
- SELECTABLE FUNCTIONS:
Soft Mute
Digital Attenuator (256 Steps)
Digital De-emphasis
- SSOP-24 PACKAGE



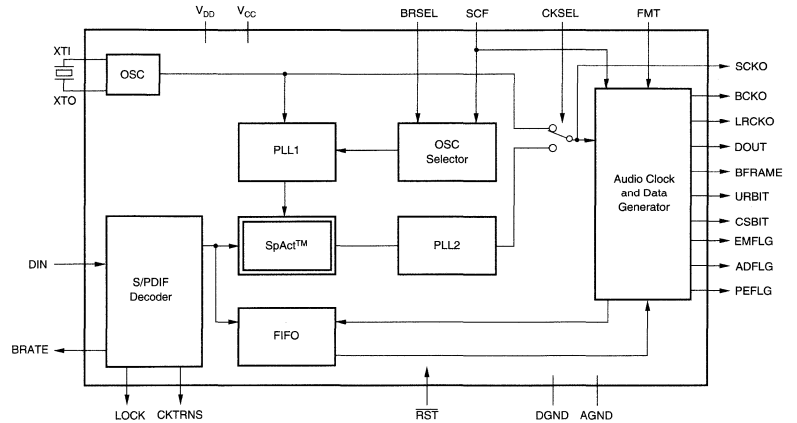
DIR1701



SoundPLUS™ 24-Bit, 96kHz, Digital Audio Interface Receiver

FEATURES

- SAMPLING FREQUENCY (f_s): Up to 96kHz
- VERY LOW JITTER: 100ps
- RECOVERS 128/256/384/512/ f_s SYSTEM CLOCKS
- SELECTABLE PCM AUDIO OUTPUT DATA FORMAT
- SELECTABLE CRYSTAL CLOCK OR PLL CLOCK MODES
- SINGLE +3.3V SUPPLY
- SSOP-28 PACKAGE



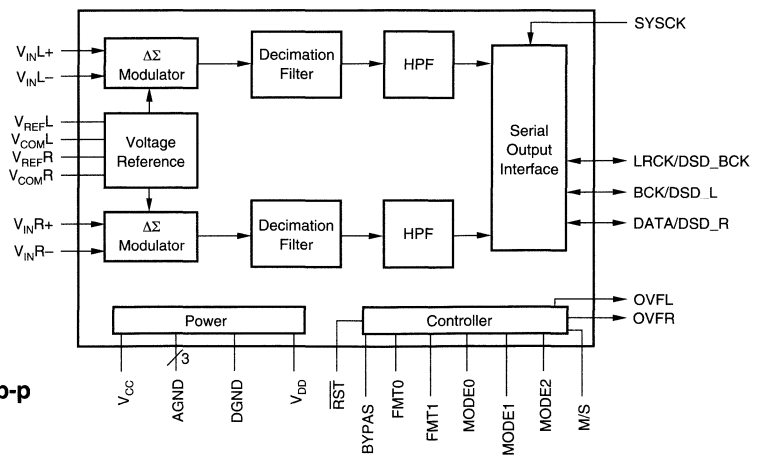
PCM1804



SoundPLUS™ 24-Bit, 192kHz, Stereo Audio ADC

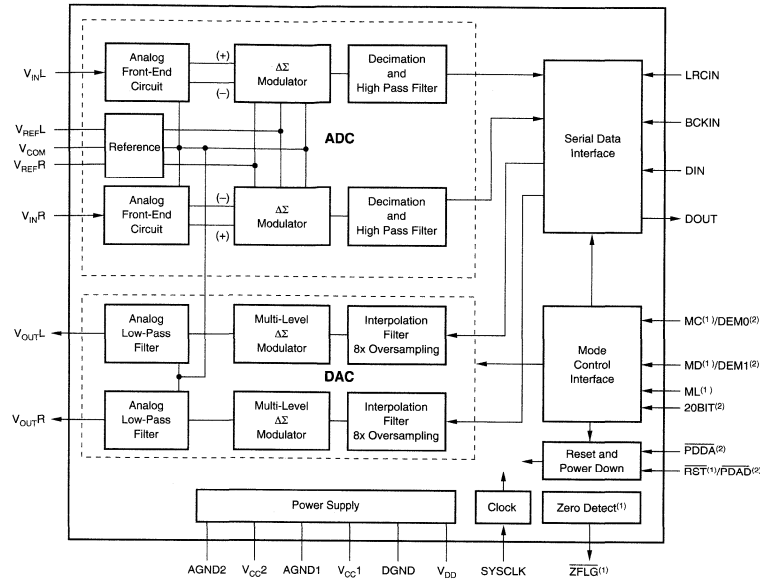
FEATURES

- SAMPLING FREQUENCY (f_s): up to 192kHz
- DYNAMIC RANGE: 110dB
- SNR: 110dB
- THD+N: -100dB
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- HIGH PERFORMANCE LINEAR PHASE ANTI-ALIASING DIGITAL FILTER
Passband Ripple: ± 0.005 dB
Stopband Attenuation: -100dB
- FULLY DIFFERENTIAL ANALOG INPUT: ± 2.0 Vp-p
- AUDIO INTERFACE:
Master/Slave Mode Selectable Output Data
Formats: Left Justified, I²S, Normal, DSD (1-Bit)
- SYSTEM CLOCK: 128/192/256/384/512/768 f_s
- DUAL POWER SUPPLIES: +5V for Analog, +3.3V for Digital
- SSOP-28 PACKAGE



PCM3002, PCM3003

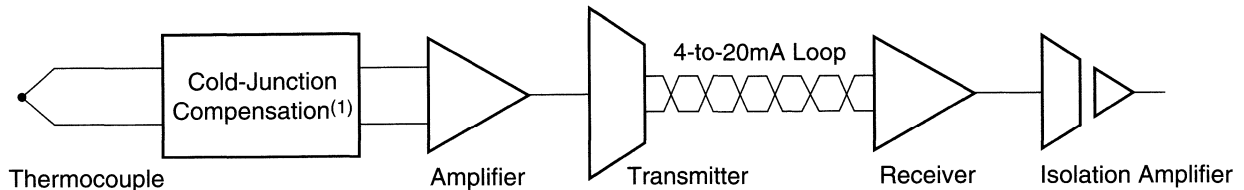
SoundPLUS Low-Power Stereo
Audio CODEC



FEATURES

- PCM3002: Software Controlled
- PCM3003: Hardware Controlled
- INPUT AUDIO DATA WORD: 16-, 20-Bit
- SAMPLING FREQUENCY (f_s): Up to 48kHz
- DYNAMIC RANGE: 94dB
- THD+N: -86dB
- SYSTEM CLOCK: $256/384/512f_s$
- INDEPENDANT ADC AND DAC POWERDOWN
- SINGLE POWER SUPPLY: +2.7V to +3.6V
- SSOP-24 PACKAGE

INDUSTRIAL AND PROCESS CONTROL SENSOR ELECTRONICS COMPONENTS—THERMOCOUPLE



AMPLIFIERS—typical sensor interface circuit elements.

- Operational Amplifier—basic building block for signal processing. Circuit transfer function set by user-selected components. See page 5.
- Instrumentation Amplifier—gain up to 10000 set by pin strapping or fixed resistor. Very high common-mode rejection. See page 25.
- Difference Amplifier—fixed gain of 1/2 to 10 set by pin strapping. High common-mode rejection. See page 26.
- Programmable Gain Amplifier—digitally programmed gain version of instrumentation amp. See page 30.

4-to-20mA CURRENT LOOP TRANSMITTER—converts applied signal voltage into current on supply line. May contain sensor support circuits such as references and linearization circuits. See page 31.

4-to-20mA CURRENT LOOP RECEIVER—difference amplifier which is adjusted to convert the 4-to-20mA signal into a 0V to 5V voltage level. See page 31.

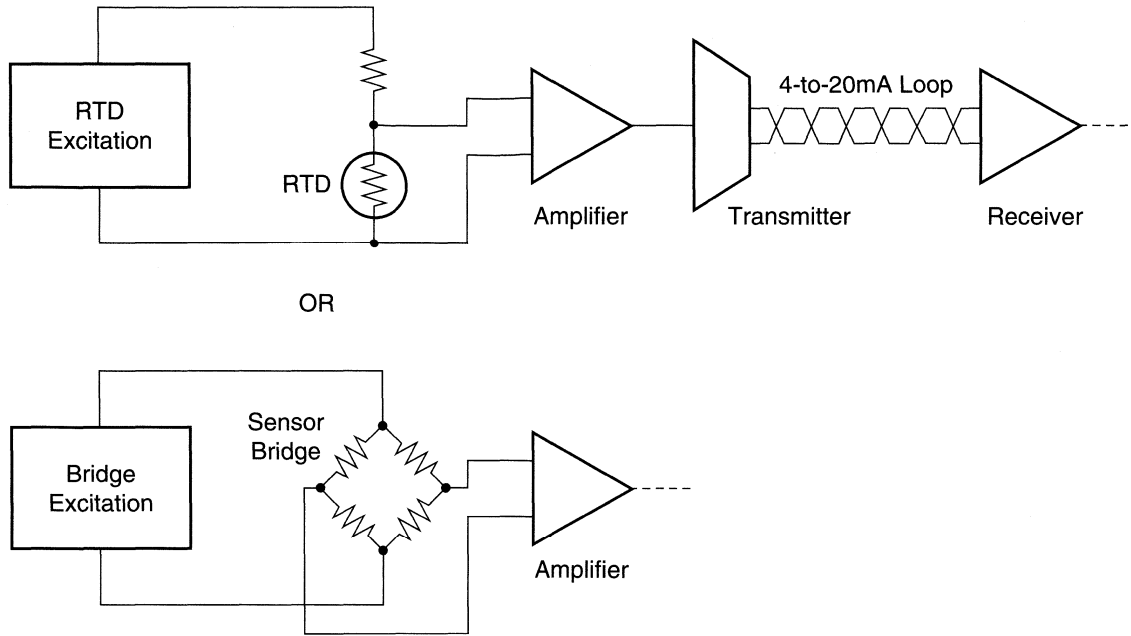
POWER CONVERSION—DC/DC Converters provide isolated power for amplifier stages. See page 40.

ISOLATION—provides galvanic isolation in signal path.

- Amplifier—transmits analog signals across a galvanically isolated barrier. See page 53.

NOTE: (1) See INA114 or XTR106 for cold-junction compensation technique.

INDUSTRIAL AND PROCESS CONTROL SENSOR ELECTRONICS COMPONENTS—RTD + BRIDGE



SENSOR EXCITATION—voltage and current references or regulators may be needed in conjunction with instrumentation or op amps to obtain optimized performance. For references, see page 87. For regulators, see page 39.

AMPLIFIERS—typical sensor interface circuit elements.

- Operational Amplifier—basic building block for signal processing. Circuit transfer function set by user-selected components. See page 5.
- Instrumentation Amplifier—gain up to 10000 set by pin strapping or fixed resistor. Very high common-mode rejection. See page 25.
- Difference Amplifier—fixed gain of 1/2 to 10 set by pin strapping. High common-mode rejection. See page 26.
- Programmable Gain Amplifier—digitally programmed gain version of instrumentation amp. See page 30.

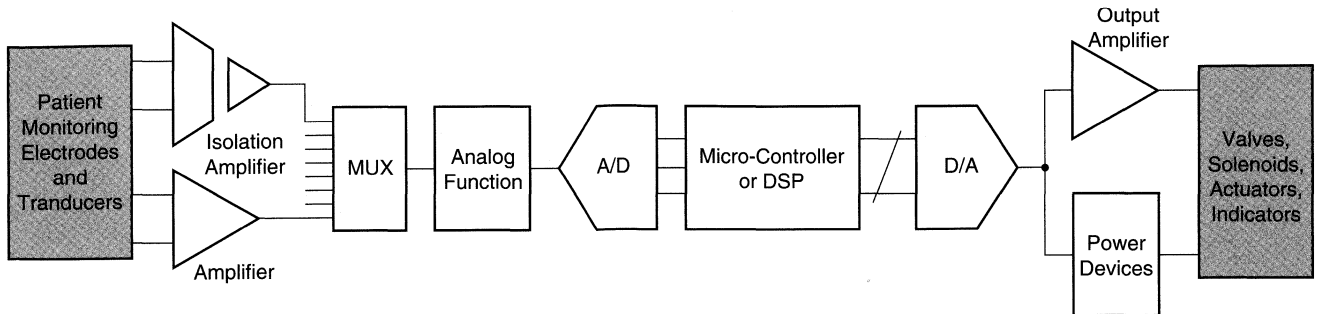
4-to-20mA CURRENT LOOP

TRANSMITTER—converts applied signal voltage into current on supply line. May contain sensor support circuits such as references and linearization circuits. See page 31.

4-to-20mA CURRENT LOOP

RECEIVER—difference amplifier which is adjusted to convert the 4-to-20mA signal into a 0V to 5V voltage level. See page 31.

MEDICAL INSTRUMENTATION



POWER CONVERSION

DC/DC Converters provide isolated power for amplifier stages. See page 40.

ISOLATION—provides galvanic isolation in signal path.

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AMPLIFIERS—typical sensor interface circuit elements.

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- Programmable Gain Amplifier—digitally programmed gain version of instrumentation amp. See page 30.

MULTIPLEXER—signal selector (several inputs, one output). Signal selection is by logic levels. See page 89.

ANALOG FUNCTIONS—complex and non-linear signal processing includes active filters, log amps, analog multipliers, etc. See page 92.

ANALOG/DIGITAL CONVERTERS—a complete line of converters that provide flexibility (various input ranges, serial/parallel interface, multiple channels, sampling rates, etc.), and a complete solution (V_{REF} , sample-and-hold, internal clock all on one chip), along with 12- and 16-bit pin-for-pin compatibility in selected models. See page 54.

DIGITAL/ANALOG CONVERTERS—these products provide up to 20 bits of resolution, current or voltage output, serial or parallel interface, and up to four DACs on a chip, along with other key features for medical applications. See page 75.

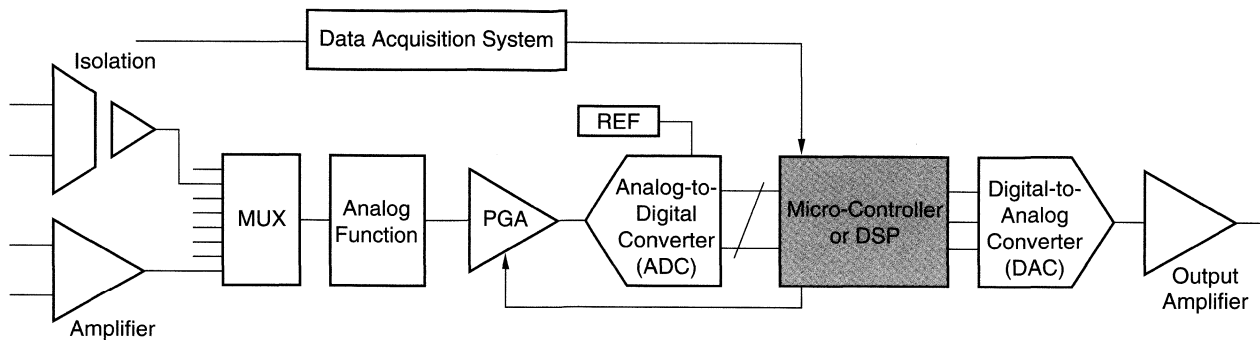
DATA ACQUISITION SYSTEM—complete A/D solution (multiplexer, PGA, reference, delta-sigma modulator/filter) all in one package with 24 bits of resolution on selected models. See page 55.

REFERENCE AND REGULATORS—provides controlled voltages and currents. See page 87 (references), or page 39 (regulators).

OUTPUT DEVICES—unique output capabilities.

- Power Amplifiers—high-voltage and high-current op amps. See page 14.
- Buffer Amplifiers—high-speed drivers. See page 13.
- Switchers—PWM Drivers. See page 38.

INDUSTRIAL AND PROCESS CONTROL



POWER CONVERSION—DC/DC Converters provide isolated power for analog and digital circuitry. See page 40.

ISOLATION—provides galvanic isolation in signal path.

- **Amplifier**—transmits analog signals across a galvanically isolated barrier. See page 53.

AMPLIFIERS—typical sensor interface circuit elements.

- **Operational Amplifier**—basic building block for signal processing. Circuit transfer function set by user-selected components. See page 5.
- **Instrumentation Amplifier**—gain up to 10000 set by pin strapping or fixed resistor. Very high common-mode rejection. See page 25.
- **Difference Amplifier**—fixed gain of 1/2 to 10 set by pin strapping. High common-mode rejection. See page 26.
- **Programmable Gain Amplifier**—digitally programmed gain version of instrumentation amp. See page 30.

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ANALOG/DIGITAL CONVERTERS—a complete line of converters that provide flexibility (various input ranges, serial/parallel interface, multiple channels, sampling rates, etc.), and a complete solution (V_{REF} , sample-and-hold, internal clock all on one chip), along with 12- and 16-bit pin-for-pin compatibility in selected models. See page 54.

DIGITAL/ANALOG CONVERTERS—these products provide up to 20 bits of resolution, current or voltage output, serial or parallel interface, and up to four DACs on a chip, along with other key features for Industrial and Process Control applications. See page 75.

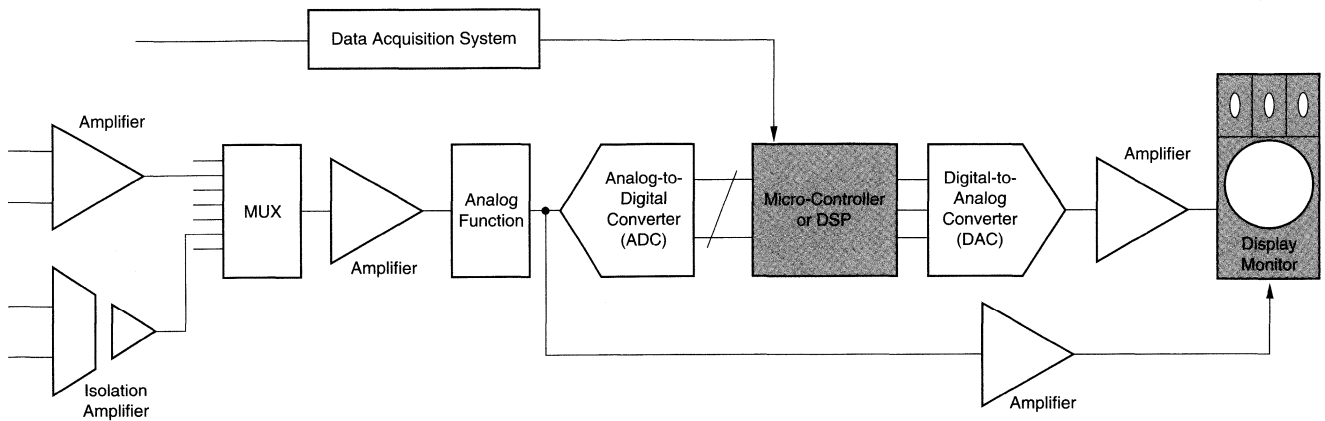
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REFERENCE AND REGULATORS—provides controlled voltages and currents. See page 87 (references), or page 39 (regulators).

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- **Power Amplifiers**—high-voltage and high-current op amps. See page 14.
- **Buffer Amplifiers**—high-speed drivers. See page 13.
- **Switchers**—PWM Drivers. See page 38.

DATA ACQUISITION AND MONITORING APPLICATIONS



POWER CONVERSION—DC/DC Converters provide isolated power for analog and digital circuitry. See page 40.

ISOLATION—provides galvanic isolation in signal path.

- Amplifier—transmits analog signals across a galvanically isolated barrier. See page 53.

AMPLIFIERS—typical sensor interface circuit elements.

- Operational Amplifier—basic building block for signal processing. Circuit transfer function set by user-selected components. See page 5.
- Instrumentation Amplifier—gain up to 10000 set by pin strapping or fixed resistor. Very high common-mode rejection. See page 25.
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- Programmable Gain Amplifier—digitally programmed gain version of instrumentation amp. See page 30.

MULTIPLEXER—signal selector (several inputs, one output). Signal selection is by logic levels. See page 89.

ANALOG FUNCTIONS—complex and non-linear signal processing includes active filters, log amps, analog multipliers, etc. See page 92.

ANALOG/DIGITAL CONVERTERS—a complete line of converters that provide flexibility (various input ranges, serial/parallel interface, multiple channels, sampling rates, etc.), and a complete solution (V_{REF} , sample-and-hold, internal clock all on one chip), along with 12- and 16-bit pin-for-pin compatibility in selected models. See page 54.

DIGITAL/ANALOG CONVERTERS—these products provide up to 20 bits of resolution, current or voltage output, serial or parallel interface, and up to four DACs on a chip, along with other key features for Industrial and Process Control applications. See page 75.

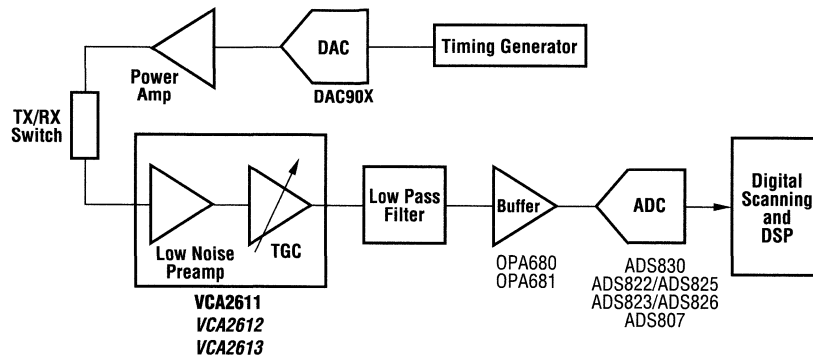
DATA ACQUISITION SYSTEM—complete A/D solution (multiplexer, PGA, reference, delta-sigma modulator/filter) all in one package with 24 bits of resolution on selected models. See page 55.

REFERENCE AND REGULATORS—provides controlled voltages and currents. See page 87 (references), or page 39 (regulators).

OUTPUT DEVICES—unique output capabilities.

- Power Amplifiers—high-voltage and high-current op amps. See page 14.
- Buffer Amplifiers—high-speed drivers. See page 13.
- Switchers—PWM Drivers. See page 38.

DIGITAL ULTRASOUND CIRCUIT COMPONENTS



AMPLIFIERS—typical transceiver channel circuit elements.

- Operational Amplifiers—basic building block for signal processing, e.g., impedance transformation and amplification. See page 5.

ANALOG-TO-DIGITAL CONVERTERS

(ADC)—interface between analog and digital domain.

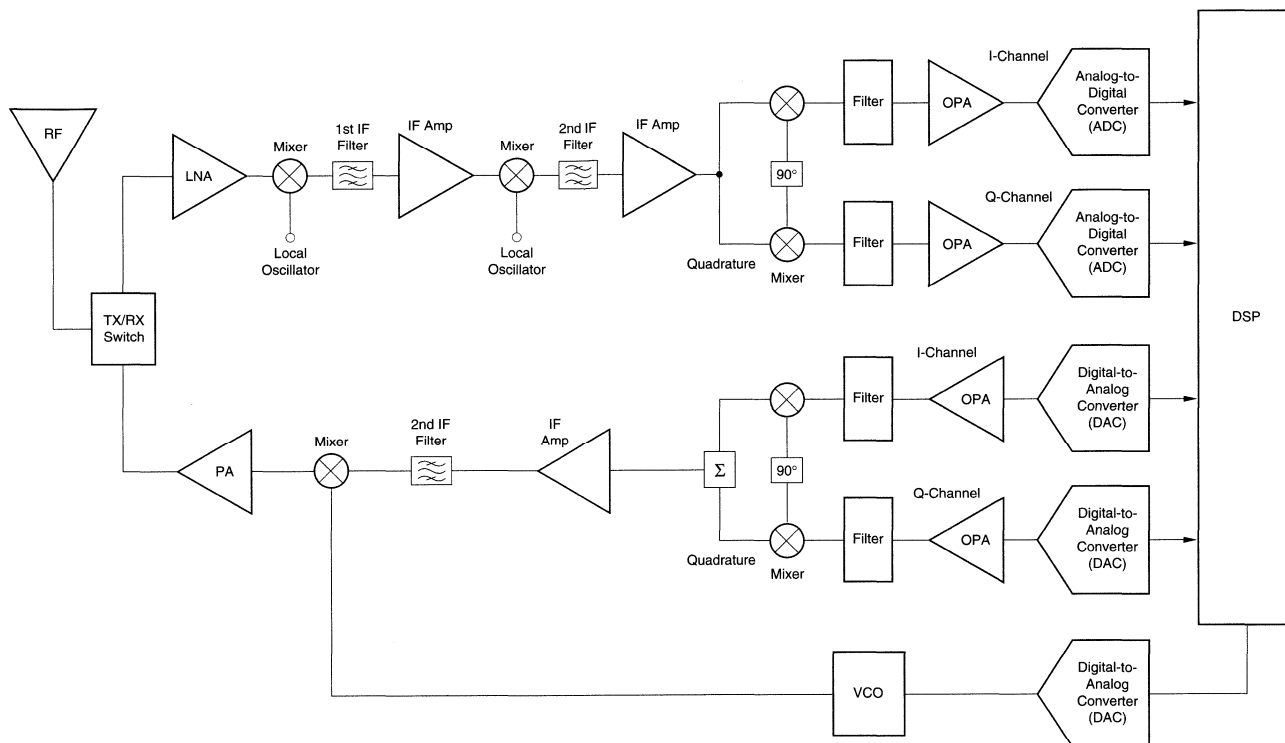
- A/D converter digitizes an analog signal into a digital format of N-bits. See page 54.

DIGITAL-TO-ANALOG CONVERTERS

(DAC)—interface between digital and analog domain.

- D/A converter accepts N-bit digital data and produces an analog output signal. See page 75.

WIRELESS COMMUNICATIONS TRANSCEIVER CIRCUIT COMPONENT



AMPLIFIERS—typical transceiver channel circuit elements.

- Operational Amplifiers (OPA)—basic building block for signal processing, e.g., impedance transformation and amplification. See page 5.

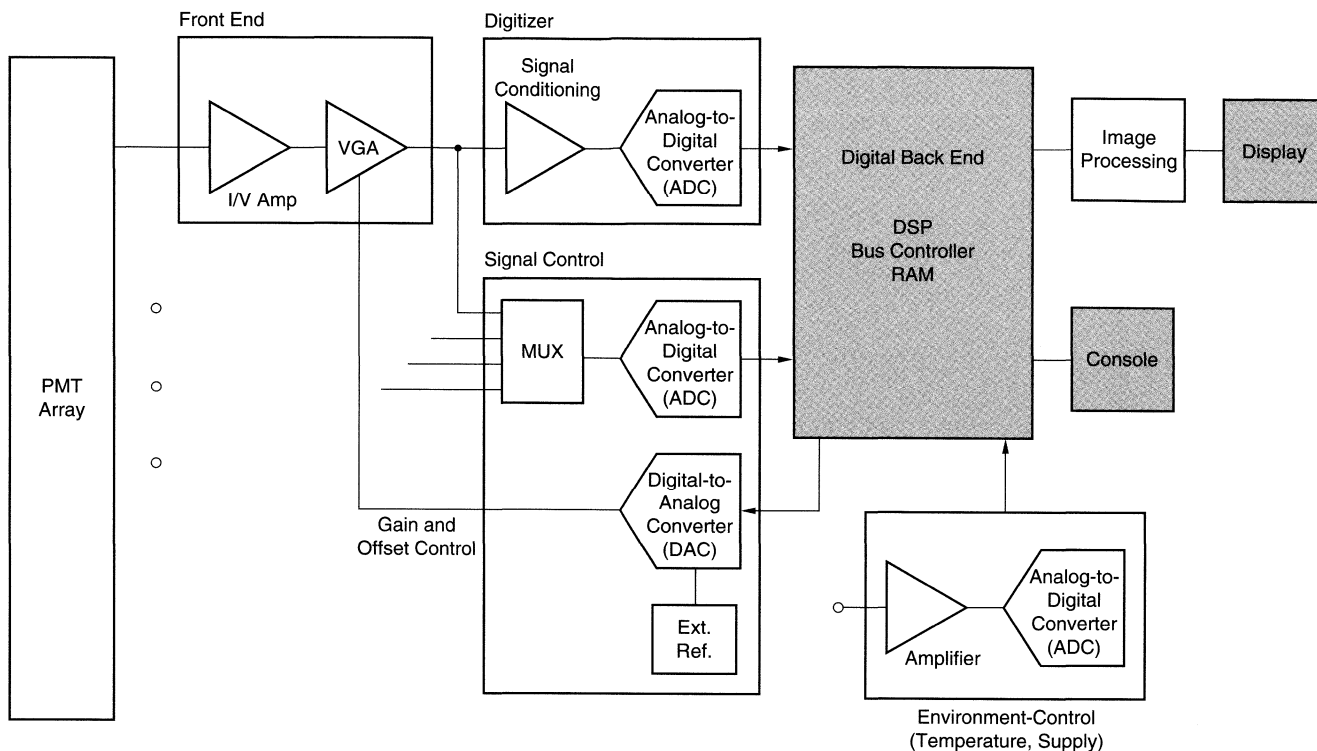
ANALOG-TO-DIGITAL CONVERTERS (ADC)—interface between analog and digital domain.

- A/D converter digitizes an analog signal into a digital format of N-bits. See page 54.

DIGITAL-TO-ANALOG CONVERTERS (DAC)—interface between digital and analog domain.

- D/A converter accepts N-bit digital data and produces an analog output signal. See page 75.

GAMMA CAMERA CIRCUIT COMPONENTS



AMPLIFIERS—typical transceiver channel circuit elements.

- Operational Amplifiers—basic building block for signal processing, e.g., impedance transformation and amplification. See page 5.

ANALOG-TO-DIGITAL CONVERTERS

(ADC)—interface between analog and digital domain.

- A/D converter digitizes an analog signal into a digital format of N-bits. See page 54.

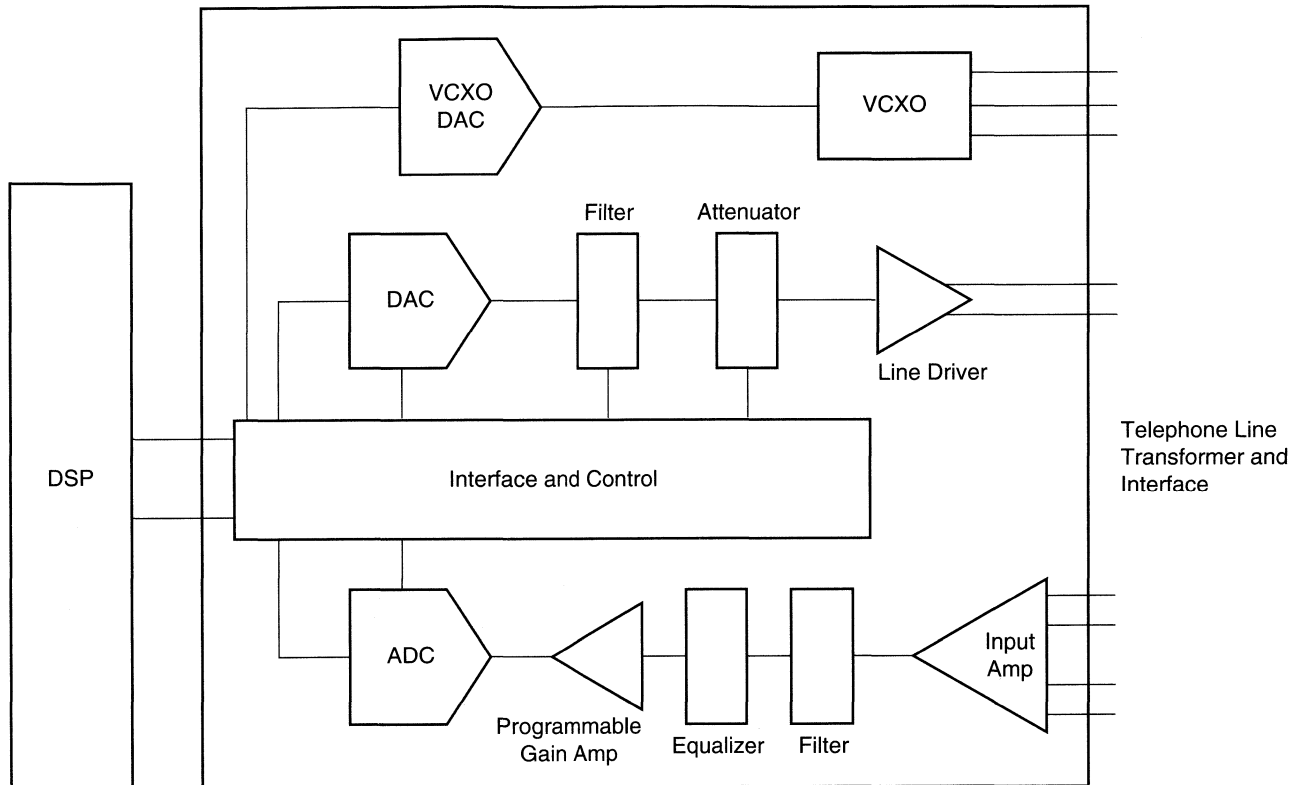
DIGITAL-TO-ANALOG CONVERTERS

(DAC)—interface between analog and digital domain.

- D/A converter accepts N-bit digital data and produces an analog output signal. See page 75.

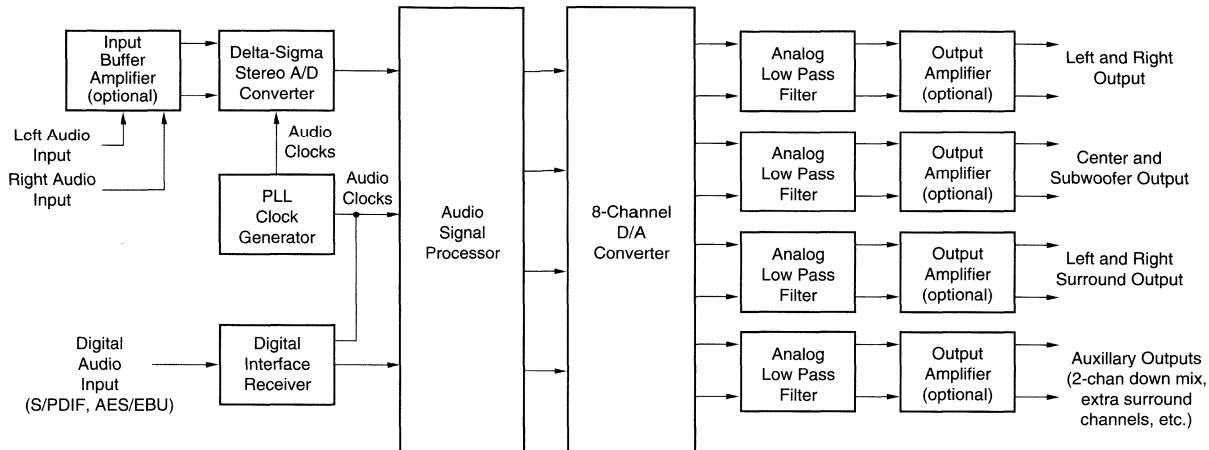
MULTIPLEXERS—signal selector (multiple inputs, one out-put). Signal selection is by logic levels. See page 89.

DSL ANALOG FRONT-END



This is an example of a full-featured DSL Analog Front End using TI's "core" cell approach. TI can design new analog front-end products using critical circuit blocks which already exist, for fast turnaround time with relatively low risk.

DIGITAL AUDIO PROCESSING APPLICATION



AUDIO A/D CONVERTER—provides high resolution, low noise digitizing of audio inputs from various sources (line, microphone preamp, etc.).

PLL CLOCK GENERATOR—phase Lock Loop-based clock generator provides low jitter clocks for audio, video, and DSP subsystems.

DIGITAL AUDIO INTERFACE—receivers audio data and low-jitter clocks from standard digital interface input.

AUDIO SIGNAL PROCESSOR—third party product for performing decodig, effects, and surround-sound processing.

AUDIO D/A CONVERTERS—provides high resolution, low noise, and high dynamic range analog reproduction of digital audio data.

ANALOG LOW PASS FILTER—usually second-order or higher. Filtering is required to band limit the output signal and remove out-of-band energy produced by delta-sigma D/As.

Demonstration Boards

APPLICATION PRODUCT	DEMO BOARD PART NUMBER	DEVICE INCLUDED	DEVICE ATTACH	SOFTWARE INCLUDED	CABLES	SUPPORT CARD SUPPLIED
ADS800E	DEM-ADS8xxE		Solder			
ADS800U	DEM-ADS800U	Y	Solder			
ADS801E	DEM-ADS8xxE		Solder			
ADS801U	DEM-ADS801U	Y	Solder			
ADS802E	DEM-ADS8xxE		Solder			
ADS802U	DEM-ADS802U	Y	Solder			
ADS803U	DEM-ADS80xU		Solder			
ADS804U	DEM-ADS80xU		Solder			
ADS805U	DEM-ADS80xU		Solder			
ADS807E	DEM-ADS807E	Y	Solder			
ADS820E	DEM-ADS8xxE		Solder			
ADS820U	DEM-ADS820U	Y	Solder			
ADS821E	DEM-ADS8xxE		Solder			
ADS821U	DEM-ADS821U	Y	Solder			
ADS822E	DEM-ADS822E	Y	Solder			
ADS823E	DEM-ADS823E	Y	Solder			
ADS824E	DEM-ADS824E	Y	Solder			
ADS830E	DEM-ADS830E	Y	Solder			
ADS831E	DEM-ADS831E	Y	Solder			
ADS900E	DEM-ADS9xxE		Solder			
ADS901E	DEM-ADS9xxE		Solder			
ADS902E	DEM-ADS9xxE		Solder			
ADS930E	DEM-ADS9xxE		Solder			
ADS931E	DEM-ADS9xxE		Solder			
ADS1201U	DEM-ADS1201U		Socket			
ADS1201U	DEM-ADS1201UADP		Socket			
ADS1210P	DEM-ADS1210/11		Socket	Y	Y	
ADS1211P	DEM-ADS1210/11	Y	Socket	Y	Y	
ADS1212P	DEM-ADS1210/11		Socket	Y	Y	
ADS1213P	DEM-ADS1210/11	Y	Socket	Y	Y	
ADS1250U	DEM-ADS1250U		Socket			
ADS1286P	DEM-ADS78DIP		Socket			
ADS78xx	DEM-CIB		Computer Interface	Y		
ADS7811U	DEM-ADS7815U	Y	Socket			
ADS7812P	DEM-ADS7812/13P		Socket			
ADS7813P	DEM-ADS7812/13P	Y	Socket			
ADS7815U	DEM-ADS7815U	Y	Socket			
ADS7816P	DEM-ADS78DIP	Y	Socket			
ADS7817P	DEM-ADS78DIP	Y	Socket			
ADS7818P	DEM-ADS78DIP		Socket			
ADS7822P	DEM-ADS78DIP	Y	Socket			
ADS7833N	DEM-ADS7833-C	Y	Socket			
ADS7834P	DEM-ADS78DIP		Socket			
ADS7870	DEM-ADS7870	Y	Solder	Y	Y	
DAC1220E	DEM-DAC1220E		Socket			
DDC112U	DEM-DDC112U-C	Y	Socket	Y	Y	
DSD1700	DEM-DSD1700	Y	Solder Mount			
OPA263xN	DEM-OPA268xN (MKT-353)		Solder			
OPA263xU	DEM-OPA268xU (MKT-352)		Solder			
OPA265xE	DEM-OPA26xxE (MKT-349)		Solder			
OPA265xU	DEM-OPA268xU (MKT-352)		Solder			
OPA2652E	DEM-OPA2652E (MKT-365)		Solder			
OPA268xN	DEM-OPA268xN (MKT-353)		Solder			
OPA268xU	DEM-OPA268xU (MKT-352)		Solder			
OPA368xE	DEM-OPA368xE (MKT-354)		Solder			
OPA368xU	DEM-OPA368xU (MKT-364)		Solder			
OPA603P	DEM-OPA68xP (MKT-350)		Solder			
OPA603U	DEM-OPA68xU (MKT-351)		Solder			
OPA62xP	DEM-OPA68xP (MKT-350)		Solder			
OPA62xU	DEM-OPA68xU (MKT-351)		Solder			
OPA63xN	DEM-OPA6xxN (MKT-348)		Solder			
OPA63xU	DEM-OPA68xU (MKT-351)		Solder			
OPA64xN	DEM-OPA6xxN (MKT-348)		Solder			

Demonstration Boards

APPLICATION PRODUCT	DEMO BOARD PART NUMBER	DEVICE INCLUDED	DEVICE ATTACH	SOFTWARE INCLUDED	CABLES	SUPPORT CARD SUPPLIED
OPA64xP	DEM-OPA68xP (MKT-350)		Solder			
OPA64xU	DEM-OPA68xU (MKT-351)		Solder			
OPA65xN	DEM-OPA6xxN (MKT-348)		Solder			
OPA65xP	DEM-OPA68xP (MKT-350)		Solder			
OPA65xU	DEM-OPA68xU (MKT-351)		Solder			
OPA68xN	DEM-OPA6xxN (MKT-348)		Solder			
OPA68xP	DEM-OPA68xP (MKT-350)		Solder			
OPA68xU	DEM-OPA68xU (MKT-351)		Solder			
PCM1600	DEM-DAI1600	Y	Solder Mount	Y		
PCM1702	DEM-1702	Y	Socket			
PCM1702	EVM-1702	Y	Socket			
PCM1704/DF1704	DEM-DAI1704	Y	Socket	Y	Y	
PCM1704/DF1706	DEM-DAI1706	Y	Soldered	Y		
PCM1710	DEM-PCM1710	Y	Socket			
PCM1710	DEM-DAI1710	Y	Socket			
PCM1716	DEM-PCM1716	Y	Socket			
PCM1716	DEM-PCM1716-1	Y	Socket	Y	Y	
PCM1716	DEM-DAI1716	Y	Socket			Y
PCM1716	DEM-DAI1716-1	Y	Socket	Y	Y	Y
PCM1717	DEM-PCM1717	Y	Socket			
PCM1717	DEM-PCM1717-1	Y	Socket	Y	Y	
PCM1717	DEM-DAI1717	Y	Socket	Y	Y	
PCM1718	DEM-PCM1718	Y	Socket			
PCM1718	DEM-DAI1718	Y	Socket			
PCM1719	DEM-PCM1719	Y	Socket			
PCM1719	DEM-PCM1719-1	Y	Socket	Y	Y	
PCM1720	DEM-PCM1720	Y	Socket			
PCM1720	DEM-PCM1720-1	Y	Socket	Y	Y	
PCM1720	DEM-DAI1720	Y	Socket			Y
PCM1720	DEM-DAI1720-1	Y	Socket	Y	Y	Y
PCM1723	DEM-PCM1723	Y	Socket			
PCM1723	DEM-PCM1723-1	Y	Socket	Y	Y	
PCM1725	DEM-PCM1725	Y	Socket			
PCM1725	DEM-DAI1725	Y	Socket			Y
PCM1728	DEM-PCM1728	Y	Socket			
PCM1728	DEM-DAI1728	Y	Socket			Y
PCM1732	DEM-DAI1732	Y	Socket	Y	Y	
PCM1737	DEM-DAI1737	Y	Socket	Y		
PCM1738	DEM-DAI1738	Y	Soldered	Y		
PCM1739	DEM-DAI1739	Y	Socket			
PCM1740	DEM-PCM1740	Y	Solder Mount			
PCM1742	DEM-DAI1742	Y	Soldered	Y		
PCM1748	DEM-DAI1748	Y	Soldered	Y		
PCM1602	DEM-DAI1602	Y	Soldered	Y		
PCM1608	DEM-DAI1608	Y	Soldered	Y		
PCM1760/DF1760	DEM-PCM1760	Y	Socket			
PCM1800	DEM-PCM1800	Y	Socket			
PCM1800	DEM-DAI1800	Y	Socket			Y
PCM1801	DEM-PCM1801	Y	Socket			
PCM1801	DEM-DAI1801	Y	Socket			Y
PCM1804	DEM-DAI1804	Y	Soldered	Y		
PCM3000	DEM-PCM3000	Y	Socket			
PCM3000	DEM-PCM3000-1	Y	Socket	Y	Y	
PCM3001	DEM-DAI3001	Y	Socket			Y
PCM3001	DEM-PCM3001	Y	Socket			
PCM3002	DEM-PCM3002	Y	Socket			
PCM3002	DEM-PCM3002-1	Y	Socket	Y	Y	
PCM3002	DEM-DAI3002	Y	Socket			Y
PCM3002	DEM-DAI3002-1	Y	Socket	Y	Y	Y
PCM3003	DEM-PCM3003	Y	Socket			
PCM3003	DEM-DAI3003	Y	Socket			Y
PCM3500	DEM-PCM3500	Y	Socket			

Demonstration Boards

Tape and Reel Information

TAPE AND REEL MODEL NUMBERING SYSTEM

Model numbers for products on tape and reel include the reel quantities as a suffix to the core model number separated by a slash, such as: OPA2237UA/2K5. The slash ("/") is the unique indicator for tape and reel.

To determine the complete model number for a given product, first note the package number that is given for each product in its respective product data sheet. Then look up that package number in Table I to determine the quantity of devices per reel and the suffix.

To shorten tape and reel delivery times, all products will be stocked already taped and reeled. Therefore, no partial or odd size reels will be allowed. The quantity ordered must be equal to, or a multiple of, the suffix quantity.

Some Burr-Brown products (such as those in SOT-23 packages) are only available on tape and reel. In general, these products will also be available on the small 250-piece reel (/250) for pre-production purposes. If the product is available in rails, only the larger full production reel size will be offered.

When entering an order for a part on tape and reel, please request the part number complete with the slash suffix along with the quantity of units desired. Thus, an order for 5000 pieces of OPA2237UA on tape and reel would be entered as:

MATERIAL	QTY
OPA2237UA/2K5	5000

This would be supplied as two 2500-piece reels. It is always a good idea to confirm tape and reel model numbers with your nearest TI Sales Office.

PACKAGE NUMBER ⁽¹⁾	DESCRIPTION	TAPE WIDTH, W (mm)	PITCH, P (mm)	DEVICES PER REEL	REEL DIAMETER (mm)	SUFFIX
010-2	14 pin plastic with Gull wing leads	32	16	700	330	/700
178	SO-24	24	16	1000	330	/1K
182	SO-8	12	8	2500	330	/2K5
211	SOL-16	16	12	1000	330	/1K
217	SO-28	24	12	1000	330	/1K
			16 ⁽²⁾	1000	330	/1K
219	SOL-18	24	16	1000	330	/1K
221	SOL-20	24	12	1000	330	/1K
235	SO-14	16	8	2500	330	/2K5
				2000 ⁽³⁾	250	/2K
239	SOL-24	24	12	1000	330	/1K
248	SO-20	24	12	1000	330	/1K
				2000 ⁽⁴⁾	330	/2K
265	SO-16	16	8	2500	330	/2K5
311	SOT223-3	12	8	2500	330	/2K5
322	SSOP-16	12	8	2500	330	/2K5
				250	178	/250
324	SSOP-28	16	12	1000	330	/1K
				2000 ⁽⁵⁾	330	/2K
325	DDPak-5	24	16	500	330	/500
328	DDPak-7	24	16	500	330	/500
331	SOT23-5	8	4	3000	178	/3K
				250	178	/250
332	SOT23-6	8	4	3000	178	/3K
				250	178	/250
333	SSOP-48	32	16	1000	330	/1K
334	SSOP-20	16	16	1000	330	/1K
			12 ⁽⁶⁾	2000	330	/2K
337	MSOP-8	12	8	2500	330	/2K5
				250	178	/250
338	SSOP-24	16	12	1000	330	/1K
				2000 ⁽⁷⁾	330	/2K
339	DDPak-3	24	16	500	330	/500
340	LQFP-48	16	12	2000	330	/2K
				250	330	/250
341	SO-28	24	16	1000	330	/1K
346	SSOP-56	32	16	1000	330	/1K
348	SOT23-8	8	4	3000	178	/3K
				250	178	/250
349	SSOP-20 (QSOP-20)	16	8	2500	330	/2K5
350	TSSOP-24	16	12	1000	330	/1K
				2000 ⁽⁸⁾	330	/2K
351	TQFP-32	16	12	2000	330	/2K
				250	330	/250
352	SSOP-24	16	8	2500	330	/2K5
355	TQFP-48	16	12	2000	330	/2K
				250	330	/250
357	TSSOP-14	12	8	2500	330	/2K5
				250	178	/250
360	TSSOP-28	16	8	2500	330	/2K5
361	LQFP-64	24	16	1500	330	/1K5
363	TSSOP-16	12	8	2500	330	/2K5
364	SOT223-5	12	8	2500	330	/2K5

NOTES: (1) Package numbers can be found in individual product data sheets in the "Package Information" table. Some package numbers are followed by a dash number in which case the information given above is the same as that given for the non-dash number. (2) For all PCM1760U models only. (3) For all PCM1725U, PCM1733U, PCM1744U, and PCM1801U models only. (4) For all PCM1702U, PCM1704U, and PCM69AU models only. (5) For all DF1704E, PCM1716E, PCM1719E, PCM1728E, PCM1737E, PCM1739E, PCM2702E, PCM3000E, and PCM3001E models only. (6) For all PCM1717E, PCM1718E, PCM1720E, and PLL models only. (7) For all PCM1723E, PCM1727E, PCM1800E, PCM3500E, PCM3501E, PCM1740E, PCM3002E, and PCM3003E models only. (8) For all PCM3006T models only.

TABLE I. Tape and Reel Reference Information.

Tape and Reel Information

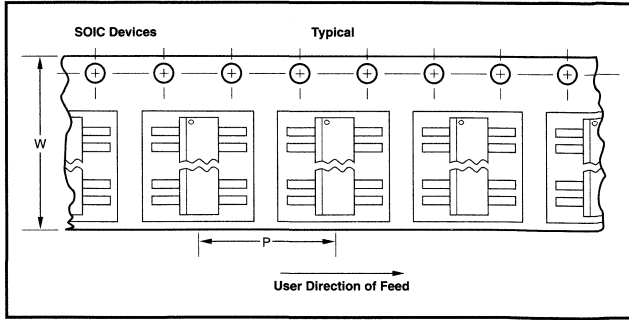


FIGURE 1.

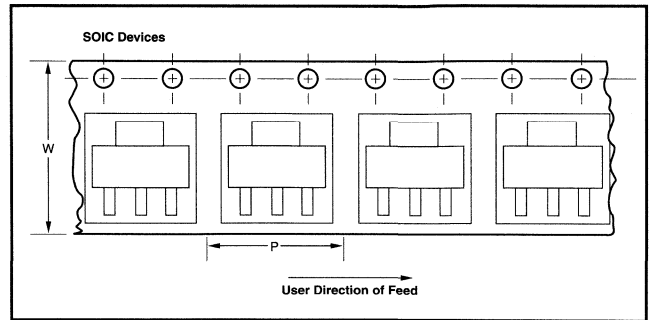


FIGURE 2.

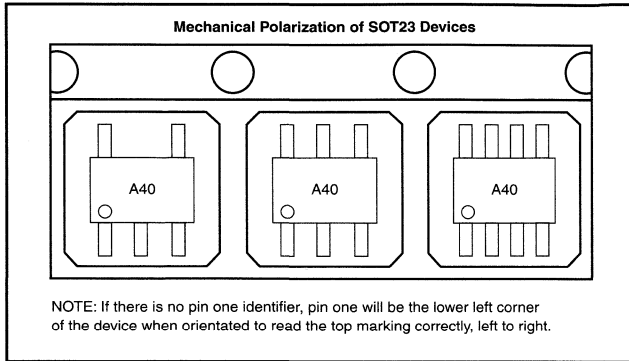


FIGURE 3.

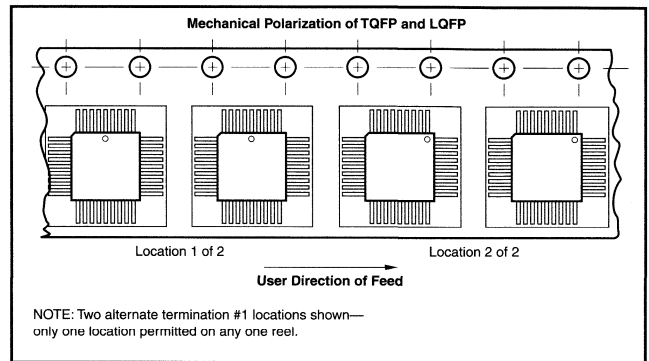


FIGURE 4.

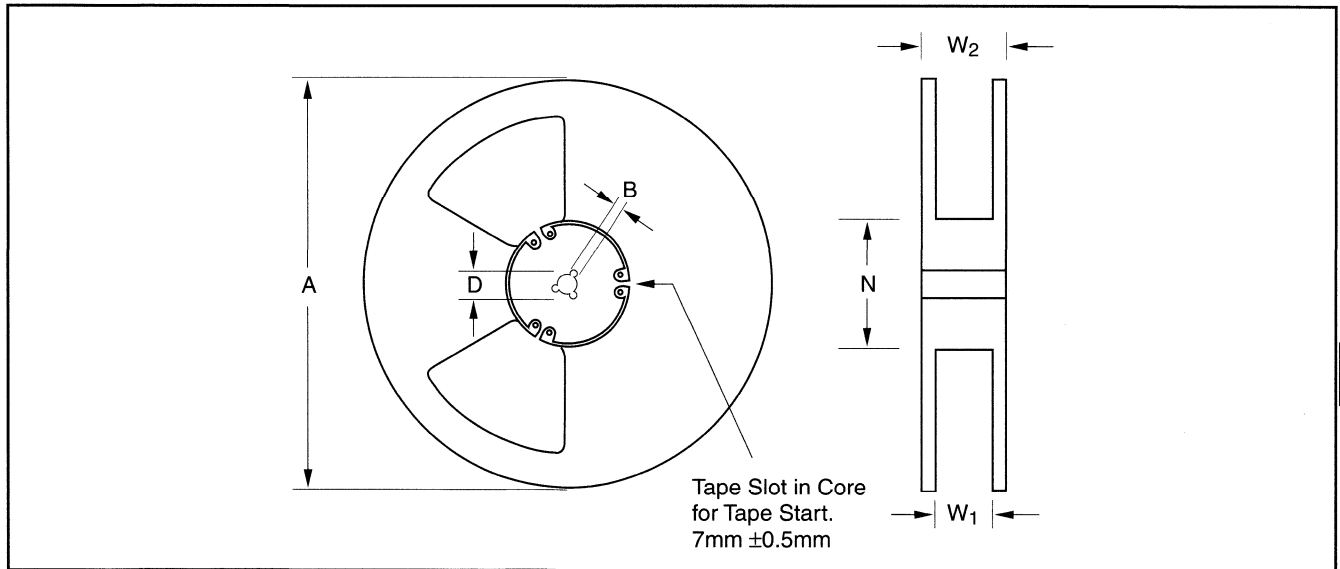


FIGURE 5.

TAPE SIZE	A	B MIN.	D	N	W1	W2 MAX
8mm	178mm Max.	1.524mm	20.2mm	61.976mm Min.	8.4 +1.6/-0.0mm	14.4mm
12mm	330mm +0.25mm/-4.00mm	1.8mm	20.2mm	100mm ±2.0mm	12.4 +2.0mm/-0.0mm	20mm
12mm	178mm Max.	1.524mm	20.2mm	61.976mm Min.	12.4 +1.0/-0.0mm	18.4mm
16mm	330mm +0.25mm/-4.00mm	1.8mm	20.2mm	100mm ±2.0mm	16.4mm +2.0mm/-0.0mm	24 mm
16mm	178mm Max.	1.524mm	20.2mm	61.976mm Min.	16.4 +1.0/-0.08mm	22.4mm
24mm	330mm +0.25mm/-4.00mm	1.8mm	20.2mm	100mm ±2.0mm	24.4mm +2.0/-0.00mm	32mm
32mm	330mm +0.25mm/-4.00mm	1.8mm	20.2mm	100mm ±2.0mm	32.4mm +2.0mm/-0.00mm	40mm

TABLE II.

Tools for Designers

ACTIVE FILTER DESIGN SOFTWARE

The FilterPro™ active filter design package, available from TI, makes it easy to design high-performance active filters. Filter designs are time continuous, free from the digital switching noise and aliasing of switched-capacitor types. Graphics capabilities allow easy comparison of filter types. Program outputs include print-outs of standard real-world component values.

FILTER1 designs Sallen-Key low-pass filters, FILTER2 is for multiple feedback (MFB) low-pass filters, and FILTER42 is for state-

variable low-pass, high-pass, band-pass and band-reject (notch) filters built using TI's UAF42 monolithic Universal Active Filter integrated circuit.

The package comes with complete documentation for each module, including measurements of actual representative filters designed by the program. A DOS-compatible 3.5" disk contains all three filter design programs and other supporting software. This software can also be found at the TI web site: www.ti.com/sc/uaf42



Applications Bulletins

APPLICATIONS LIBRARY

The following applications information and CD-ROM is available from Burr-Brown at no charge.

Call your local TI Product Information Center (see inside back cover) to order, or to download, type the URL:

www.ti.com/sc/docs/p sheets/abstract/apps/LITNUMBER.htm

and replace **LITNUMBER** with the corresponding literature number.

APPLICATIONS LIBRARY

Increasing INA117 Differential Input Range	.SBOA001
Make a Precision Current Source or Current Sink	.SBVA001
Voltage-Reference Filters	.SBVA003
Make a Precision -10V Reference	.SBVA006
Make a Precision ±10V Reference	.SBVA007
Make a -10V to +10V Adjustable Precision Voltage Source	.SBOA052
Classical Op Amp or Current-Feedback Op Amp? This Composite Op Amp Gives you the Best of Both Worlds	.SBOA002
AC Coupling Instrumentation and Difference Amplifiers	.SBOA003
Single-Supply Operation of Isolation Amplifiers	.SBOA004
±200V Difference Amplifier with Common-Mode Voltage Monitor	.SBOA005
Low Power Supply Voltage Operation of REF102 10V Precision Voltage Reference	.SBVA008
Boost ISO120 Bandwidth to More Than 100kHz	.SBOA006
Increasing ADC603 Input Range	.SBOA007
Input Overload Protection for the RCV420 4-20mA Current-Loop Receiver	.SBVA003
Extending the Common-Mode Range of Difference Amplifiers	.SBOA008
Boost Amplifier Output Swing With Simple Modification	.SBOA009
0-20mA Receiver Using the RCV420	.SBVA004
Using the ADS7800 12-Bit ADC with Unipolar Input Signals	.SBAA044
Operational Amplifier and Instrumentation Amplifier Macromodels	.SBFA009
Synchronization of ISO120/ISO121 Isolation Amplifiers	.SBOA010
Fast Settling Low-Pass Filter	.SBOA011
Simple Output Filter Eliminates ISO Amp Output Ripple and Keeps Full Bandwidth	.SBOA012
Analog Isolation with Power	.SBOA013
Boost Instrumentation Amp CMR with Common-Mode Driven Supplies	.SBOA014
A Low Noise, Low Distortion Design for Anti-Aliasing and Anti-Imaging Filters	.SBAA001
High-Speed Data Conversion	.SBAA045
Feedback Plots Define Op Amp AC Performance	.SBOA015
Input Filtering the INA117 ±200V Difference Amplifier	.SBOA016
Thermal and Electrical Properties of Selected Packaging Materials	.SBFA010
4-20mA to 0-20mA Converter and Current Summing	.SBOA053
IC Building Blocks Form Complete Isolated 4-20mA Current-Loop Systems	.SBOA017
Single-Supply, Low-Power Measurements of Bridge Networks	.SBOA018
MFB Low-Pass Filter Design Program	.SBFA001

Filter Design Program for the UAF42 Universal Active Filter	.SBFA002
Diode-Based Temperature Measurement	.SBOA019
Mounting Consideration for TO-3 Package	.SBOA020
Heat Sinking—TO-3 Thermal Model	.SBOA021
Power Amplifier Stress and Power Handling Limitations	.SBOA022
Frequency-to-Voltage Conversion	.SBVA005
Single-Supply 4-20mA Current Loop Receiver	.SBOA023
Programmable Gain Instrumentation Amplifiers	.SBOA024
Use Low-Impedance Bridges on 4-20mA Current Loops	.SBOA025
Improved Device Noise Performance for the 3650 Isolation Amplifier	.SBOA026
Op Amp Performance Analysis	.SBOA054
Operational Amplifier Macromodels: A Comparison	.SBOA027
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The ACF2101 Used as a Bipolar Switched Integrator	.SBOA029
The MPC100 Analog Multiplexer Improves RF Signal Distribution	.SBOA030
Compensate Transimpedance Amplifiers Intuitively	.SBOA055
Double the Output Current to a Load with the Dual OPA2604 Audio Op Amp	.SBOA031
OPA660 Drives Magnetic Recording Head	.SBOA056
Improved Noise Performance of the ACF2101 Switched Integrator	.SBOA032
Clamping Amplifiers Track Power Supplies	.SBOA078
Precision IA Swings Rail-to-Rail on Single 5V Supply	.SBOA033
Comparison of Noise Performance Between a FET Transimpedance Amplifier and a Switched Integrator	.SBOA034
Simple Filter Turns Square Waves into Sine Waves	.SBFA003
MTTF, Failrate, Reliability and Life Testing	.SBFA011
Careful Layout Tames Sample-Hold Pedestal Errors	.SBFA004
OPT201 Photodiode-Amplifier Rejects Ambient Light	.SBFA001
Digitally Programmable, Time-Continuous Active Filter	.SBFA005
Voltage-to-Frequency Converters Offer Useful Options in A/D Conversion	.SBVA009
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The Key to Understanding Sources of Error in the ISO100 Isolation Amplifier	.SBOA063
Hybrid Isolation Amps Zap Prices and Voltage Barriers	.SBOA036
Principles of Data Acquisition and Conversion	.SBAA051
10MHz Analog Multiplier Carries Output Amp Breaks Bandwidth Barrier	.SBFA006
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Simple Circuit Delivers 38Vp-p at 5A from 28V Unipolar Supply	.SBOA035
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Level Shifting Signals with Differential Amplifiers	.SBOA038
Improved Voltage Filter has Several Advantages	.SBVA010
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Extract and Digitize AC Signals with a Single A/D Converter ..	.SBAA015	External Open-Loop Gain Adjustment: Check It Out with the Demo Boards for the OPA623 and OPA622SBOA080
A "Getting Started" Guide for the DS Converters: ADS1210, ADS1211, ADS1212, ADS1213, ADS1214 and ADS1215SBAA016	Building a 400MHz Wide-Band Differential Amp: It's a Breeze with the Diamond Transistor OPA660SBOA049
How to Get 23 Bits of Effective Resolution From Your 24-Bit ConverterSBAA017	Macromodels for RF Operational Amplifiers are a Powerful Design ToolSBOA074
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Solder Pad Recommendations for Surface-Mount DevicesSBFA015		
The DDC112's Test ModeSBAA025		
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Add Current Limit to the BUF634SBOA042		

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Advanced Linear Devices	ALD2711	OPA2342	C/P	Analog Devices	AD1853	PCM1704/DF1706	C/P
Advanced Linear Devices	ALD2711	OPA342	P/E	Analog Devices	AD1854	PCM1737/39	C/P
AKM	AK4309	PCM1725	C/P	Analog Devices	AD1855	PCM1737/39	C/P
AKM	AK4310	PCM1717	F/E	Analog Devices	AD1856	PCM56	P/P
AKM	AK4311A	PCM1717	F/E	Analog Devices	AD1856N	PCM56P	P/P
AKM	AK4312B	PCM1717	C/P	Analog Devices	AD1856N-J	PCM56P-J	P/P
AKM	AK4315	PCM1717	C/P	Analog Devices	AD1856N-K	PCM56P-K	P/P
AKM	AK4316	PCM1717	F/E	Analog Devices	AD1859	PCM1723	C/P
AKM	AK4317	PCM1717	C/P	Analog Devices	AD1860N	PCM61P	P/P
AKM	AK4318	PCM1718	C/P	Analog Devices	AD1860N-J	PCM61P-J	P/P
AKM	AK4319A	PCM1717	C/P	Analog Devices	AD1860N-K	PCM61P-K	P/P
AKM	AK4320	PCM1720	C/P	Analog Devices	AD1861	PCM61	P/E
AKM	AK4321	PCM1720	C/P	Analog Devices	AD1862	PCM1702	F/E
AKM	AK4323	PCM1723	F/E	Analog Devices	AD1862	PCM63P	F/E
AKM	AK4324	PCM1716/28	F/E	Analog Devices	AD1864	PCM1700	F/E
AKM	AK4351	PCM1717	C/P	Analog Devices	AD1865	PCM1700P	F/E
AKM	AK4352	PCM1717	C/P	Analog Devices	AD1876	ADS7809	F/E
AKM	AK4356	PCM1604	C/P	Analog Devices	AD1876	PCM78P	F/E
AKM	AK4363	PCM1723	C/P	Analog Devices	AD1877	"PCM1800, PCM1801"	C/P
AKM	AK4380	PCM1720	C/P	Analog Devices	AD1879	PCM1760	C/P
AKM	AK4393	PCM1704/DF1704	C/P	Analog Devices	AD202	ISO122	C/P
AKM	AK4394	PCM1704/DF1706	C/P	Analog Devices	AD202	ISO212	C/P
AKM	AK4512	PCM3006	F/E	Analog Devices	AD203	ISO103	C/P
AKM	AK4516A	PCM3002/3	C/P	Analog Devices	AD203N	ISO103	F/E
AKM	AK4532	PCM3000/1	C/P	Analog Devices	AD204	ISO124	C/P
AKM	AK5390	PCM1760/DF1760	C/P	Analog Devices	AD204	ISO212	C/P
AKM	AK5506	ADS1210	C/P	Analog Devices	AD208	ISO175	C/P
AKM	AK5545	ADS1211	C/P	Analog Devices	AD208	ISO175	C/P
Allegro	VLN3755	OPA2541	C/P	Analog Devices	AD208	ISO212	C/P
Alpha Semiconductor	AS1004S-1.2V	REF10041-1.2	P/P	Analog Devices	AD210	3656	F/E
Analog Devices	1822	ISO113	C/P	Analog Devices	AD210	ISO103	C/P
Analog Devices	286J	3656	F/E	Analog Devices	AD2701	REF102	C/P
Analog Devices	436	MPY100	F/E	Analog Devices	AD2702	REF102	C/P
Analog Devices	AD ADC84-12	ADC84KG-12	P/P	Analog Devices	AD2710	REF10JM	C/P
Analog Devices	AD ADC85-12	ADC85H-12	P/P	Analog Devices	AD2712	REF102	C/P
Analog Devices	AD ADC85C-12	ADC85H-12	P/P	Analog Devices	AD289	ISO102	C/P
Analog Devices	AD ADC85S-12	ADC87H-12	P/P	Analog Devices	AD290A	ISO122	C/P
Analog Devices	AD DAC85-CBI-I	DAC85H-CBI-I	P/P	Analog Devices	AD293	ISO102	C/P
Analog Devices	AD DAC85-CBI-V	DAC85H-CBI-V	P/P	Analog Devices	AD294	ISO102	C/P
Analog Devices	AD DAC85C-CBI-I	DAC85H-CBI-I	P/P	Analog Devices	AD295	3656	F/E
Analog Devices	AD DAC85C-CBI-V	DAC85H-CBI-V	P/P	Analog Devices	AD346	SHC5320	F/E
Analog Devices	AD DAC87-CBI-I	DAC87H-CBI-V	P/P	Analog Devices	AD346	SHC605	C/P
Analog Devices	AD DAC87-CBI-V	DAC87H-CBI-V	P/P	Analog Devices	AD386	SHC702	C/P
Analog Devices	AD09	OPA4227	C/P	Analog Devices	AD3860	DAC811AH	P/E
Analog Devices	AD11	OPA4131	C/P	Analog Devices	AD390	DAC4813	F/E
Analog Devices	AD1139	DAC729JH	F/E	Analog Devices	AD420	DAC7611+ XTR110	C/P
Analog Devices	AD1145	DAC709KH	F/E	Analog Devices	AD4813	DAC4813	F/E
Analog Devices	AD1147	DAC729JH	C/P	Analog Devices	AD4820	DAC4814	C/P
Analog Devices	AD1148	DAC729JH	C/P	Analog Devices	AD515	OPA128	P/P
Analog Devices	AD1154	SHC605	C/P	Analog Devices	AD515	OPA129	F/E
Analog Devices	AD1154	SHC76	P/E	Analog Devices	AD521	INA101AG	F/E
Analog Devices	AD12	OPA277	C/P	Analog Devices	AD522	INA101AM	F/E
Analog Devices	AD1376	ADC75	P/E	Analog Devices	AD524	INA110	P/E
Analog Devices	AD1376	ADC76JG	P/E	Analog Devices	AD5240	ADC84KG-12	P/E
Analog Devices	AD1376JD	ADC76JG	P/P	Analog Devices	AD5240	ADC85	P/E
Analog Devices	AD1376KD	ADC76KG	P/P	Analog Devices	AD526	PGA102	F/E
Analog Devices	AD1377	ADC76	F/E	Analog Devices	AD526	PGA203	C/P
Analog Devices	AD1377	ADS7805	F/E	Analog Devices	AD526	PGA204	C/P
Analog Devices	AD1377	ADS7809	F/E	Analog Devices	AD526	PGA206	C/P
Analog Devices	AD1380	ADC700JH	C/P	Analog Devices	AD526	PGA207	C/P
Analog Devices	AD1382KD (1 grade)	ADS7815U	C/P	Analog Devices	AD5320	DAC7611	C/P
Analog Devices	AD1385KD	ADS7815U	C/P	Analog Devices	AD532JD	MPY100	P/E
Analog Devices	AD1385TD	ADS7815U	C/P	Analog Devices	AD532KD	MPY100	P/E
Analog Devices	AD1671	ADS7810	C/P	Analog Devices	AD533	MPY100	F/E
Analog Devices	AD1671	ADS7819	C/P	Analog Devices	AD534JD	MPY534JD	P/P
Analog Devices	AD1671	ADS802	C/P	Analog Devices	AD534JH	MPY534JH	P/P
Analog Devices	AD1674	ADS574	P/E	Analog Devices	AD534KD	MPY534KD	P/P
Analog Devices	AD1674	ADS774JP	F/E	Analog Devices	AD534KH	MPY534KH	P/P
Analog Devices	AD1674	ADS7804	C/P	Analog Devices	AD534LD	MPY534LD	P/P
Analog Devices	AD1678	ADS7800AH	F/E	Analog Devices	AD534SD	MPY534SD	P/P
Analog Devices	AD1711	ADS1211	C/P	Analog Devices	AD534SH	MPY534SH	P/P
Analog Devices	AD181	OPA241	C/P	Analog Devices	AD534TD	MPY534TD	P/P
Analog Devices	AD183	OPA227	C/P	Analog Devices	AD534TH	MPY534TH	P/P
Analog Devices	AD183	OPAA227	C/P	Analog Devices	AD535	MPY534JD	F/E
Analog Devices	AD1851	PCM56	P/E	Analog Devices	AD537	VFC32	C/P

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Analog Devices	AD539	MPY634	C/P	Analog Devices	AD626	INA122	C/P
Analog Devices	AD542	OPA131	P/E	Analog Devices	AD627	INA122	P/P
Analog Devices	AD542	OPA132	P/E	Analog Devices	AD627	INA128	P/E
Analog Devices	AD544	OPA131	P/E	Analog Devices	AD627	INA129	P/P
Analog Devices	AD544	OPA132	P/E	Analog Devices	AD629	INA117	P/P
Analog Devices	AD545	OPA131	P/E	Analog Devices	AD632	MPY534	P/E
Analog Devices	AD545	OPA132	P/E	Analog Devices	AD633	MPY634	C/P
Analog Devices	AD546	OPA130	P/E	Analog Devices	AD642	OPA2131	P/E
Analog Devices	AD546	OPA131	P/E	Analog Devices	AD642	OPA2132	P/E
Analog Devices	AD547	OPA130	P/E	Analog Devices	AD644	OPA2132	P/E
Analog Devices	AD547	OPA131	P/E	Analog Devices	AD645	OPA131	F/E
Analog Devices	AD548	OPA137	P/E	Analog Devices	AD645	OPA132	F/E
Analog Devices	AD548	OPA130	P/E	Analog Devices	AD645SH	OPA111SM	P/P
Analog Devices	AD549	OPA128	P/P	Analog Devices	AD647	OPA2131	F/E
Analog Devices	AD549	OPA129	F/E	Analog Devices	AD6470	AFE1105	C/P
Analog Devices	AD549	OPA130	P/E	Analog Devices	AD648	OPA2130	P/P
Analog Devices	AD5539	OPAG21KP	F/E	Analog Devices	AD650	VFC110	C/P
Analog Devices	AD562	DAC80-CBI-V	C/P	Analog Devices	AD651	VFC100	P/E
Analog Devices	AD562	DAC85	C/P	Analog Devices	AD654	VFC121	C/P
Analog Devices	AD563	DAC80-CBI-V	C/P	Analog Devices	AD654	VFC32	C/P
Analog Devices	AD563	DAC85	C/P	Analog Devices	AD660	DAC714	F/E
Analog Devices	AD565	DAC80-CBI-I	C/P	Analog Devices	AD662	DAC667JP	C/P
Analog Devices	AD565A	DAC80-CBI-I	C/P	Analog Devices	AD664	DAC4813	C/P
Analog Devices	AD565A	DAC85	C/P	Analog Devices	AD6640	ADS807	C/P
Analog Devices	AD566	DAC80-CBI-I	C/P	Analog Devices	AD667AD	DAC667AH	P/P
Analog Devices	AD566A	DAC80-CBI-I	C/P	Analog Devices	AD667BD	DAC667BH	P/P
Analog Devices	AD566A	DAC85	C/P	Analog Devices	AD667JN	DAC667JP	P/P
Analog Devices	AD567	DAC811AH	F/E	Analog Devices	AD667KN	DAC667KP	P/P
Analog Devices	AD569	DAC709KH	C/P	Analog Devices	AD669	DAC712	F/E
Analog Devices	AD572	ADC84KG-12	F/E	Analog Devices	AD669	DAC715	F/E
Analog Devices	AD573	ADSS74	C/P	Analog Devices	AD671	ADS7800	F/E
Analog Devices	AD574ADJ	ADC574AJH	P/P	Analog Devices	AD671	ADS802	C/P
Analog Devices	AD574AJN	ADC674AJH	P/P	Analog Devices	AD671	ADS803	C/P
Analog Devices	AD574AKD	ADC574AKH	P/P	Analog Devices	AD674AJD	ADC674AJP	P/P
Analog Devices	AD574AKP	ADC574AKN	P/P	Analog Devices	AD674AKD	ADC674AKH	P/P
Analog Devices	AD574ANJ	ADC574AJP	P/P	Analog Devices	AD674AKN	ADC674AKP	P/P
Analog Devices	AD578	ADC80AG-12	F/E	Analog Devices	AD676	ADS7805	F/E
Analog Devices	AD579	ADC601JG	C/P	Analog Devices	AD676	ADS7807	F/E
Analog Devices	AD581	REF102	F/E	Analog Devices	AD676	ADS7821	C/P
Analog Devices	AD582	SHC298AM	C/P	Analog Devices	AD677	ADS7807	C/P
Analog Devices	AD583	SHC5320KH	F/E	Analog Devices	AD677	ADS7809	F/E
Analog Devices	AD584	REF02	C/P	Analog Devices	AD677	ADS7821	C/P
Analog Devices	AD584	REF1004-2.5	C/P	Analog Devices	AD678	ADS7800AH	F/E
Analog Devices	AD584	REF102	C/P	Analog Devices	AD683	SHC605	C/P
Analog Devices	AD585	SHC5320KH	F/E	Analog Devices	AD693	XTR105	F/E
Analog Devices	AD586	REF02	P/E	Analog Devices	AD694	XTR110	F/E
Analog Devices	AD587	REF102	C/P	Analog Devices	AD704	OPA4277	C/P
Analog Devices	AD587JN	REF102AP	P/P	Analog Devices	AD705	OPA277	C/P
Analog Devices	AD587JR	REF102AU	P/P	Analog Devices	AD706	OPA2277	C/P
Analog Devices	AD587KN	REF102BP	P/P	Analog Devices	AD707	OPA277	P/P
Analog Devices	AD587LN	REF102BP	P/P	Analog Devices	AD708	OPA2277	P/P
Analog Devices	AD588	REF102	C/P	Analog Devices	AD711	OPA131	P/E
Analog Devices	AD600	VCA610	C/P	Analog Devices	AD711	OPA132	P/E
Analog Devices	AD601	VCA610	C/P	Analog Devices	AD711	OPA134	P/E
Analog Devices	AD6012	DAC80-CBI-V	C/P	Analog Devices	AD712	OPA2107	P/E
Analog Devices	AD602	VCA610	C/P	Analog Devices	AD712	OPA2131	P/E
Analog Devices	AD603	VCA610	C/P	Analog Devices	AD712	OPA2134	P/E
Analog Devices	AD603AR	VCA610	C/P	Analog Devices	AD712	OPA2604	P/E
Analog Devices	AD606	INA101AM	F/E	Analog Devices	AD713	OPA4131	P/E
Analog Devices	AD611	OPA132	F/E	Analog Devices	AD713	OPA4132	P/E
Analog Devices	AD612	PGA204	C/P	Analog Devices	AD713	OPA4134	P/E
Analog Devices	AD614	PGA204	C/P	Analog Devices	AD7225	DAC7624	F/E
Analog Devices	AD620	INA114	P/E	Analog Devices	AD7225	DAC7625	C/P
Analog Devices	AD620	INA118	P/E	Analog Devices	AD7233	DAC4813	C/P
Analog Devices	AD620	INA128	P/E	Analog Devices	AD7245	DAC667JP	C/P
Analog Devices	AD620	INA129	P/P	Analog Devices	AD7247	DAC2815	C/P
Analog Devices	AD620AR	INA129UA	P/E	Analog Devices	AD7248	DAC667JP	C/P
Analog Devices	AD621	INA141	C/P	Analog Devices	AD734	MPY600	C/P
Analog Devices	AD622	INA129	P/P	Analog Devices	AD734	MPY634	C/P
Analog Devices	AD623	INA122	F/E	Analog Devices	AD741	OPA277	P/E
Analog Devices	AD623	INA126	F/E	Analog Devices	AD743	OPA132	P/E
Analog Devices	AD624	INA110	F/E	Analog Devices	AD743	OPA134	P/E
Analog Devices	AD624	INA111	C/P	Analog Devices	AD743	OPA627AP	F/E
Analog Devices	AD625	INA103	F/E	Analog Devices	AD744	OPA602	F/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Analog Devices	AD744	OPA627AP	C/P	Analog Devices	AD7870	ADS7804	C/P
Analog Devices	AD744KN	OPA132	P/E	Analog Devices	AD7870	ADS7808	C/P
Analog Devices	AD745	OPA132	P/E	Analog Devices	AD7874	ADS7800	C/P
Analog Devices	AD745	OPA134	P/E	Analog Devices	AD7874	ADS7824	C/P
Analog Devices	AD745	OPA627	C/P	Analog Devices	AD7874	ADS7833	F/E
Analog Devices	AD745	OPA637	P/E	Analog Devices	AD7874	ADS7842	C/P
Analog Devices	AD746	OPA2107	P/E	Analog Devices	AD7875	ADS7804	C/P
Analog Devices	AD746	OPA2132	P/E	Analog Devices	AD7875	ADS7808	C/P
Analog Devices	AD7501	MPC508	F/E	Analog Devices	AD7876	ADS7804	C/P
Analog Devices	AD7502	MPC509	F/E	Analog Devices	AD7876	ADS7808	C/P
Analog Devices	AD7503	MPC508	C/P	Analog Devices	AD7878	ADS774JP	F/E
Analog Devices	AD7506	MPC506	P/E	Analog Devices	AD7884A	ADS7815U	C/P
Analog Devices	AD7507	MPC507	P/E	Analog Devices	AD7884B	ADS7815U	C/P
Analog Devices	AD7521	DAC7541AJP	P/E	Analog Devices	AD7884T	ADS7815U	C/P
Analog Devices	AD7524	DAC7801	C/P	Analog Devices	AD7885	ADS7805	C/P
Analog Devices	AD7528	DAC7528	P/P	Analog Devices	AD7885A	ADS7815U	C/P
Analog Devices	AD7528	DAC7528	P/P	Analog Devices	AD7885B	ADS7815U	C/P
Analog Devices	AD7531	DAC7541AJP	P/E	Analog Devices	AD7885C	ADS7815U	C/P
Analog Devices	AD7537	DAC7801	P/P	Analog Devices	AD7886	ADS7810	C/P
Analog Devices	AD7537JN	DAC7801KP	P/P	Analog Devices	AD7886	ADS7819	C/P
Analog Devices	AD7537LN	DAC7801LP	P/P	Analog Devices	AD7891	ADS7800	C/P
Analog Devices	AD7538	DAC702	C/P	Analog Devices	AD7891	ADS7833	F/E
Analog Devices	AD7541AJN	DAC7541AJP	P/P	Analog Devices	AD7891	ADS7852	C/P
Analog Devices	AD7541AKN	DAC7541AKP	P/P	Analog Devices	AD7892	ADS7831	C/P
Analog Devices	AD7542	DAC811AH	C/P	Analog Devices	AD7892-1	ADS7810	C/P
Analog Devices	AD7543	DAC7800KP	C/P	Analog Devices	AD7892-1	ADS7819	C/P
Analog Devices	AD7545AQ	DAC7545KP	P/E	Analog Devices	AD7892-3	ADS7810	C/P
Analog Devices	AD7545BQ	DAC7545KP	P/E	Analog Devices	AD7892-3	ADS7819	C/P
Analog Devices	AD7545CQ	DAC7545KP	P/E	Analog Devices	AD7893	ADS7808	C/P
Analog Devices	AD7545GCQ	DAC7545KP	P/E	Analog Devices	AD7893	ADS7816	C/P
Analog Devices	AD7545GLN	DAC7545GLP	P/P	Analog Devices	AD7893	ADS7831	C/P
Analog Devices	AD7545GUQ	DAC7545KP	P/E	Analog Devices	AD7896	ADS7816	C/P
Analog Devices	AD7545JN	DAC7545JP	P/P	Analog Devices	AD7896	ADS7817/ADS7818	C/P
Analog Devices	AD7545KN	DAC7545KP	P/P	Analog Devices	AD795	OPA124	P/E
Analog Devices	AD7545LN	DAC7545LP	P/P	Analog Devices	AD795	OPA131	P/E
Analog Devices	AD7545SQ	DAC7545KP	P/E	Analog Devices	AD795	OPA132	P/E
Analog Devices	AD7545TQ	DAC7545KP	P/E	Analog Devices	AD8001	OPA658	P/P
Analog Devices	AD7545UQ	DAC7545KP	P/E	Analog Devices	AD8002	OPA2658	P/P
Analog Devices	AD7546	DAC707KH	F/E	Analog Devices	AD8004	OPA4658	P/E
Analog Devices	AD7547	DAC7802	P/E	Analog Devices	AD8005	OPA681	C/P
Analog Devices	AD7548	DAC811AH	C/P	Analog Devices	AD8009	OPA658	C/P
Analog Devices	AD7549	DAC7802KP	F/E	Analog Devices	AD8009	OPA685	P/E
Analog Devices	AD7572	ADS774	F/E	Analog Devices	AD8010	OPA681	P/E
Analog Devices	AD7578	ADC7802BP	C/P	Analog Devices	AD8011	OPA681	P/E
Analog Devices	AD7579	ADS574JP	C/P	Analog Devices	AD8012	OPA2681	P/E
Analog Devices	AD7580	ADS574JP	C/P	Analog Devices	AD8013	OPA3681	F/E
Analog Devices	AD7582	ADC7802BP	F/E	Analog Devices	AD8023	OPA3681	F/E
Analog Devices	AD7582	ADS7824	C/P	Analog Devices	AD8031A	OPA350	C/P
Analog Devices	AD7582	ADS7842	C/P	Analog Devices	AD8031A	OPA353	C/P
Analog Devices	AD759	LOG100	C/P	Analog Devices	AD8032A	OPA2350	C/P
Analog Devices	AD760	DAC715	C/P	Analog Devices	AD8032A	OPA2353	C/P
Analog Devices	AD766	DAC56	P/E	Analog Devices	AD8036	OPA688	P/E
Analog Devices	AD766	PCM56P	F/E	Analog Devices	AD8037	OPA688	P/E
Analog Devices	AD767	DAC667JP	F/E	Analog Devices	AD8041	OPA632	P/E
Analog Devices	AD767	DAC811	F/E	Analog Devices	AD8041	OPA635	C/P
Analog Devices	AD7672	ADS7800JP	F/E	Analog Devices	AD8041	OPA680	C/P
Analog Devices	AD768	DAC702	C/P	Analog Devices	AD8042	OPA2631	P/E
Analog Devices	AD7703	DDC101	C/P	Analog Devices	AD8042	OPA2634	C/P
Analog Devices	AD7710	ADS1211	C/P	Analog Devices	AD8042	OPA2680	C/P
Analog Devices	AD7712	ADS1210	C/P	Analog Devices	AD8044	OPA4650	C/P
Analog Devices	AD7712	ADS1211	C/P	Analog Devices	AD8047	OPA680	P/E
Analog Devices	AD7714	ADS1210	C/P	Analog Devices	AD8048	OPA680	P/E
Analog Devices	AD775	ADS930	C/P	Analog Devices	AD8051	OPA631	P/E
Analog Devices	AD7772	ADC804BH	C/P	Analog Devices	AD8051	OPA634	C/P
Analog Devices	AD779	ADS7805	C/P	Analog Devices	AD8051	OPA680	C/P
Analog Devices	AD780AR	REF1004I-2.5	C/P	Analog Devices	AD8052	OPA2631	P/E
Analog Devices	AD7845	DAC667JP	C/P	Analog Devices	AD8052	OPA2634	C/P
Analog Devices	AD7846	DAC715	C/P	Analog Devices	AD8052	OPA2680	C/P
Analog Devices	AD7848	DAC667JP	C/P	Analog Devices	AD8054	OPA3680	C/P
Analog Devices	AD7849	DAC715	F/E	Analog Devices	AD8055	OPA650	P/P
Analog Devices	AD7861	ADS7862	C/P	Analog Devices	AD8055	OPA680	P/E
Analog Devices	AD7862	ADS7862	C/P	Analog Devices	AD8056	OPA2650	P/P
Analog Devices	AD7863	ADS7862	C/P	Analog Devices	AD8056	OPA2680	P/E
Analog Devices	AD7870	ADS774JP	F/E	Analog Devices	AD8057	OPA680	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Analog Devices	AD8058	OPA2680	P/E	Analog Devices	AD9632	OPA642	P/E
Analog Devices	AD8072	OPA2681	P/P	Analog Devices	AD976	ADS7805	P/P
Analog Devices	AD8073	OPA3681	F/E	Analog Devices	AD976A	ADS7815U	F/E
Analog Devices	AD8079A	OPA2682	F/E	Analog Devices	AD976AxR	ADS7805xU	P/E
Analog Devices	AD8079B	OPA2682	F/E	Analog Devices	AD977	ADS7809	C/P
Analog Devices	AD80Z-12	ADC80AGZ-12	C/P	Analog Devices	AD9802	VSP2000	F/E
Analog Devices	AD810	OPA603	C/P	Analog Devices	ADADC71JD	ADC71JG	P/P
Analog Devices	AD810	OPA681	C/P	Analog Devices	ADADC71KD	ADC71KG	P/P
Analog Devices	AD812	OPA2681	C/P	Analog Devices	ADADC72AD	ADC71AG	P/P
Analog Devices	AD813	OPA3681	F/E	Analog Devices	ADADC72BD	ADC71BG	P/P
Analog Devices	AD817	OPA603	C/P	Analog Devices	ADADC72JD	ADC71JG	P/P
Analog Devices	AD817	OPA681	C/P	Analog Devices	ADADC72KD	ADC71KG	P/P
Analog Devices	AD818	OPA680	C/P	Analog Devices	ADADC80-12	ADC80AG-12	P/P
Analog Devices	AD820	OPA130	C/P	Analog Devices	ADADC85	ADC85	P/E
Analog Devices	AD820	OPA131	C/P	Analog Devices	ADC1103	ADC80AG-12	F/E
Analog Devices	AD822	OPA2130	C/P	Analog Devices	ADC1130	ADC71JG	C/P
Analog Devices	AD823	OPA2132	C/P	Analog Devices	ADC1131	ADC71JG	C/P
Analog Devices	AD823	OPA2134	C/P	Analog Devices	ADC1140	ADC71JG	C/P
Analog Devices	AD824	OPA4130	P/E	Analog Devices	ADC910	ADS7800	C/P
Analog Devices	AD828	OPA2680	C/P	Analog Devices	ADC912	ADS774	C/P
Analog Devices	AD829	OPA642	C/P	Analog Devices	ADDAC71	DAC71-COB-V	P/E
Analog Devices	AD829	OPA650	C/P	Analog Devices	ADDAC72	DAC72BH-COB-V	P/E
Analog Devices	AD834	MPY600	C/P	Analog Devices	ADDAC72-COB-I	DAC72BH-COB-I	P/E
Analog Devices	AD840	OPA686	C/P	Analog Devices	ADDAC80	DAC80-CBI-V	P/E
Analog Devices	AD841	OPA671	C/P	Analog Devices	ADDAC80D-CBI-V	DAC80-CBI-V	P/P
Analog Devices	AD842	OPA651	C/P	Analog Devices	ADDAC80N-CBI-I	DAC80-CBI-I	P/P
Analog Devices	AD843	OPA671	P/E	Analog Devices	ADDAC80N-CBI-V	DAC80P-CBI-V	P/P
Analog Devices	AD844	OPA603	P/E	Analog Devices	ADG408	MPC508	P/P
Analog Devices	AD845	OPA671	P/E	Analog Devices	ADG506	MPC506	P/E
Analog Devices	AD846	OPA603	F/E	Analog Devices	ADG506A	MPC506	C/P
Analog Devices	AD847	OPA671	C/P	Analog Devices	ADG507	MPC506	P/E
Analog Devices	AD847	OPA680	C/P	Analog Devices	ADG507A	MPC507	C/P
Analog Devices	AD848	OPA651	C/P	Analog Devices	ADG508A	MPC508	C/P
Analog Devices	AD849	OPA651	C/P	Analog Devices	ADG509A	MPC509	C/P
Analog Devices	AD849	OPA686	C/P	Analog Devices	ADLH0033	OPA633KP	F/E
Analog Devices	AD8531	OPA343	C/P	Analog Devices	ADP3301	REG101UA	P/E
Analog Devices	AD8532	OPA2343	C/P	Analog Devices	ADP3303	REG102UA	P/E
Analog Devices	AD8534	OPA4343	C/P	Analog Devices	ADREF01	REF102AP	P/E
Analog Devices	AD8541	OPA336	P/E	Analog Devices	ADVFC32	VFC32	P/E
Analog Devices	AD8541	OPA342	P/E	Analog Devices	AMP01	INA128	F/E
Analog Devices	AD8541	OPA344	P/P	Analog Devices	AMP02	INA103	C/P
Analog Devices	AD8542	OPA2336	P/E	Analog Devices	AMP02	INA111	P/E
Analog Devices	AD8542	OPA2342	P/E	Analog Devices	AMP02	INA114	P/E
Analog Devices	AD8544	OPA4336	P/E	Analog Devices	AMP02	INA118	P/P
Analog Devices	AD8544	OPA4342	P/E	Analog Devices	AMP03	INA105	P/E
Analog Devices	AD876	ADS820	C/P	Analog Devices	AMP04	INA118	C/P
Analog Devices	AD876	ADS820	C/P	Analog Devices	AMP05	INA110	F/E
Analog Devices	AD876-8	AD931	F/E	Analog Devices	BUF03	BUF634	C/P
Analog Devices	AD9005	ADS804	C/P	Analog Devices	BUF03	OPA633	C/P
Analog Devices	AD9042	ADS807	F/E	Analog Devices	BUF04	OPA682	C/P
Analog Devices	AD9049	ADS902	C/P	Analog Devices	DAC1136	DAC729JH	P/E
Analog Devices	AD9050	ADS822/ADS825	C/P	Analog Devices	DAC1138	DAC729KH	F/E
Analog Devices	AD9050	ADS823/ADS826	C/P	Analog Devices	DAC8043xP	DAC8043P	P/P
Analog Devices	AD9051	ADS823/ADS826	F/E	Analog Devices	DAC8221	DAC7802KP	F/E
Analog Devices	AD9057	ADS830	C/P	Analog Devices	DAC8222	DAC7802KP	F/E
Analog Devices	AD9057	ADS831	C/P	Analog Devices	DAC8412	DAC4815	F/E
Analog Devices	AD9058	ADS830	F/E	Analog Devices	DAC8412	DAC7624	P/E
Analog Devices	AD9059	ADS830	F/E	Analog Devices	DAC8412	DAC7724	P/E
Analog Devices	AD9071	ADS828	C/P	Analog Devices	DAC8413	DAC7625	P/E
Analog Devices	AD9101	SHC615	C/P	Analog Devices	DAC8413	DAC7725	P/E
Analog Devices	AD9200	ADS900	C/P	Analog Devices	DAC8420	DAC7614	P/E
Analog Devices	AD9220	ADS804	F/E	Analog Devices	DAC8420	DAC7615	F/E
Analog Devices	AD9221	ADS803	F/E	Analog Devices	DAC8420	DAC7714	P/E
Analog Devices	AD9223	ADS803	F/E	Analog Devices	DAC8512	DAC7611	P/P
Analog Devices	AD9224	ADS807	F/E	Analog Devices	HAS-1202	ADC80AG-12	F/E
Analog Devices	AD9225	ADS805	C/P	Analog Devices	HAS-1202A	ADC80AG-12	C/P
Analog Devices	AD9280	ADS930	C/P	Analog Devices	HOS-100	OPA633KP	P/E
Analog Devices	AD9300	MPC100AP	C/P	Analog Devices	HOS-200	OPA633KP	F/E
Analog Devices	AD9610	OPA600	C/P	Analog Devices	HTC0300	SHC804BM	P/E
Analog Devices	AD9617	OPA681	P/E	Analog Devices	MUX08	MPC508	P/E
Analog Devices	AD9618	OPA681	P/E	Analog Devices	MUX16	MPC506	P/E
Analog Devices	AD9620	BUF601	C/P	Analog Devices	MUX24	MPC509	P/E
Analog Devices	AD9630	BUF601	P/E	Analog Devices	MUX28	MPC507	P/E
Analog Devices	AD9631	OPA642	P/E				

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Analog Devices	OP01	OPA227	P/E	Analog Devices	OP290	OPA2241	P/E
Analog Devices	OP01	OPA27	P/E	Analog Devices	OP290	OPA2251	P/E
Analog Devices	OP02	OPA237	C/P	Analog Devices	OP291	OPA2340	C/P
Analog Devices	OP04	OPA2237	P/E	Analog Devices	OP296	OPA2241	C/P
Analog Devices	OP05	OPA277	P/E	Analog Devices	OP296	OPA2244	C/P
Analog Devices	OP06	OPA237	C/P	Analog Devices	OP297	OPA2277	P/E
Analog Devices	OP06	OPA241	C/P	Analog Devices	OP37	OPA228	P/P
Analog Devices	OP07	OPA277	P/P	Analog Devices	OP37	OPA37	C/P
Analog Devices	OP09	OPA4227	C/P	Analog Devices	OP400	OPA4234	P/E
Analog Devices	OP10	OPA2277	C/P	Analog Devices	OP400	OPA4277	P/E
Analog Devices	OP11	OPA4131	C/P	Analog Devices	OP41	OPA131	P/E
Analog Devices	OP113	OPA227	C/P	Analog Devices	OP413	OPA4227	P/E
Analog Devices	OP12	OPA277	C/P	Analog Devices	OP42	OPA134	C/P
Analog Devices	OP14	OPA2131	C/P	Analog Devices	OP420	OPA4243	C/P
Analog Devices	OP15	OPA132	P/E	Analog Devices	OP420	OPA4251	P/E
Analog Devices	OP16	OPA132	P/E	Analog Devices	OP421	OPA4237	P/E
Analog Devices	OP162	OPA350	C/P	Analog Devices	OP44	OPA602	C/P
Analog Devices	OP162	OPA353	C/P	Analog Devices	OP450	OPA4342	P/P
Analog Devices	OP17	OPA637	F/E	Analog Devices	OP462	OPA4350	C/P
Analog Devices	OP176	OPA134	P/E	Analog Devices	OP470	OPA4227	P/P
Analog Devices	OP176	OPA627	P/E	Analog Devices	OP471	OPA4227	P/P
Analog Devices	OP177	OPA177	P/P	Analog Devices	OP471	OPA4228	P/E
Analog Devices	OP177	OPA277	P/E	Analog Devices	OP481	OPA4241	C/P
Analog Devices	OP181	OPA241	C/P	Analog Devices	OP481	OPA4336	C/P
Analog Devices	OP181	OPA349	C/P	Analog Devices	OP482	OPA4134	C/P
Analog Devices	OP183	OPA227	C/P	Analog Devices	OP484	OPA4227	C/P
Analog Devices	OP184	OPA227	C/P	Analog Devices	OP490	OPA4241	P/E
Analog Devices	OP186	OPA349	C/P	Analog Devices	OP490	OPA4243	C/P
Analog Devices	OP191	OPA237	C/P	Analog Devices	OP490	OPA4251	P/E
Analog Devices	OP191	OPA337	C/P	Analog Devices	OP491	OPA4340	C/P
Analog Devices	OP191	OPA340	C/P	Analog Devices	OP491	OPA4343	C/P
Analog Devices	OP191	OPA343	C/P	Analog Devices	OP492	OPA4227	C/P
Analog Devices	OP191	OPA344	C/P	Analog Devices	OP493	OPA4241	C/P
Analog Devices	OP193	OPA241	P/E	Analog Devices	OP493	OPA4241	C/P
Analog Devices	OP193	OPA251	P/E	Analog Devices	OP493	OPA4251	C/P
Analog Devices	OP196	OPA241	C/P	Analog Devices	OP495	OPA4130	C/P
Analog Devices	OP196	OPA336	C/P	Analog Devices	OP496	OPA4241	C/P
Analog Devices	OP20	OPA241	P/E	Analog Devices	OP496	OPA4244	C/P
Analog Devices	OP20	OPA251	P/E	Analog Devices	OP497	OPA4277	P/E
Analog Devices	OP200	OPA1013	C/P	Analog Devices	OP50	OPA228	P/E
Analog Devices	OP200	OPA2277	P/P	Analog Devices	OP50	OPA37	P/E
Analog Devices	OP207	OPA2277	P/E	Analog Devices	OP77	OPA177	P/E
Analog Devices	OP213	OPA2227	C/P	Analog Devices	OP77	OPA277	P/P
Analog Devices	OP213	OPA2277	P/E	Analog Devices	OP80	OPA337	C/P
Analog Devices	OP215	OPA2132	P/E	Analog Devices	OP80	OPA342	C/P
Analog Devices	OP220	OPA2241	P/E	Analog Devices	OP90	OPA241	P/E
Analog Devices	OP220	OPA2251	P/E	Analog Devices	OP90	OPA251	P/E
Analog Devices	OP221	OPA2234	P/E	Analog Devices	OP97	OPA277	P/E
Analog Devices	OP221	OPA2237	C/P	Analog Devices	PM155A	OPA132	C/P
Analog Devices	OP221	OPA344	C/P	Analog Devices	PM156A	OPA132	C/P
Analog Devices	OP227	OPA2227	P/E	Analog Devices	PM157A	OPA637	C/P
Analog Devices	OP249	OPA2107	P/E	Analog Devices	PM7524GP	DACT7528PB	C/P
Analog Devices	OP249	OPA2132	P/P	Analog Devices	PM7528	DACT7528	P/E
Analog Devices	OP250	OPA2343	P/P	Analog Devices	PM7541FP	DACT7541AJP	P/P
Analog Devices	OP260	OPA603	C/P	Analog Devices	PM7541GP	DACT7541AKP	P/P
Analog Devices	OP262	OPA2340	C/P	Analog Devices	PM7545AR	DACT7545KP	P/E
Analog Devices	OP262	OPA2343	C/P	Analog Devices	PM7545BR	DACT7545KP	P/E
Analog Devices	OP262	OPA2350	C/P	Analog Devices	PM7545ER	DACT7545KP	P/E
Analog Devices	OP262	OPA2353	C/P	Analog Devices	PM7545FR	DACT7545KP	P/E
Analog Devices	OP27	OPA227	P/P	Analog Devices	PM7545GP	DACT7545GLP	P/P
Analog Devices	OP27	OPA27	P/E	Analog Devices	PM7645AR	DACT7545KP	P/E
Analog Devices	OP275	OPA2132	P/E	Analog Devices	PM7645GP	DACT7545GLP	P/P
Analog Devices	OP275	OPA2134	P/E	Analog Devices	PM8012	DACT7545KP	F/E
Analog Devices	OP275	OPA2604	P/E	Analog Devices	REF01AJ	REF102	C/P
Analog Devices	OP279	OPA2337	C/P	Analog Devices	REF01CS	REF102	C/P
Analog Devices	OP279	OPA2338	C/P	Analog Devices	REF01CS	REF102	C/P
Analog Devices	OP279	OPA2340	P/E	Analog Devices	REF01EJ	REF102	C/P
Analog Devices	OP279	OPA2343	C/P	Analog Devices	REF01EJ	REF102	C/P
Analog Devices	OP281	OPA2241	C/P	Analog Devices	REF01EJ	REF102	C/P
Analog Devices	OP282	OPA2132	P/E	Analog Devices	REF01HP	REF102	C/P
Analog Devices	OP283	OPA2227	C/P	Analog Devices	REF01HP	REF102	C/P
Analog Devices	OP284	OPA2227	C/P	Analog Devices	REF02	REF02	C/P
Analog Devices	OP284	OPA2340	C/P	Analog Devices	REF02AJ	REF02	F/E
Analog Devices	OP285	OPA2132	P/E	Analog Devices	REF02CP	REF02BP	P/P

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Analog Devices	REF02CS	REF02BU	P/P	Calex	176K	INA101AM	F/E
Analog Devices	REF02CZ	REF02AP	C/P	Calex	176L	INA101AM	F/E
Analog Devices	REF02DP	REF02AP	P/P	Calex	178	INA101AM	F/E
Analog Devices	REF02DZ	REF02AP	C/P	Comlinear	CLC109	OPA682	F/E
Analog Devices	REF02EZ	REF02BP	C/P	Comlinear	CLC110	BUF601	C/P
Analog Devices	REF02HP	REF02BP	P/P	Comlinear	CLC111	BUF601	C/P
Analog Devices	REF02HZ	REF02BP	C/P	Comlinear	CLC300	OPA620	F/E
Analog Devices	REF05	REF02	C/P	Comlinear	CLC400	OPA681	P/E
Analog Devices	REF-05A	REF02AP	C/P	Comlinear	CLC401	OPA685	C/P
Analog Devices	REF05B	REF02AP	C/P	Comlinear	CLC401	OPA687	F/E
Analog Devices	REF10AJ	REF10RM	P/P	Comlinear	CLC402	OPA681	P/E
Analog Devices	REF10BJ	REF10RM	P/P	Comlinear	CLC404	OPA685	P/E
Analog Devices	SHA1A	SHC85	F/E	Comlinear	CLC405	OPA681	P/E
Analog Devices	SHA21	SHC605	C/P	Comlinear	CLC406	OPA681	P/E
Analog Devices	SHA2A-5A	SHC605	C/P	Comlinear	CLC407	OPA682	P/E
Analog Devices	SHC85	SHC85	P/E	Comlinear	CLC408	OPA681	P/E
Analog Devices	SMP-10	SHC298AM	F/E	Comlinear	CLC409	OPA658	P/E
Analog Devices	SMP-11	SHC298AM	F/E	Comlinear	CLC409	OPA681	P/E
Analog Devices	SMP-81	SHC5320KH	C/P	Comlinear	CLC409	OPA685	P/E
Analog Devices	SSM2015	INA103	C/P	Comlinear	CLC410	OPA681	P/E
Analog Devices	SSM2016	INA103	C/P	Comlinear	CLC411	OPA603	C/P
Analog Devices	SSM2017	INA103	C/P	Comlinear	CLC412	OPA2681	P/E
Analog Devices	SSM2017P	INA103	F/E	Comlinear	CLC414	OPA4658	P/E
Analog Devices	SSM2135	OPA2134	C/P	Comlinear	CLC415	OPA4658	P/E
Analog Devices	SSM2135	OPA2227	C/P	Comlinear	CLC416	OPA2681	P/E
Analog Devices	SSM2141	INA105	P/E	Comlinear	CLC417	OPA2682	P/E
Analog Devices	SSM2141	INA134	P/P	Comlinear	CLC418	OPA2681	P/E
Analog Devices	SSM2141	INA154	P/P	Comlinear	CLC420	OPA680	P/E
Analog Devices	SSM2142P	DRV134PA	P/P	Comlinear	CLC422	OPA687	P/E
Analog Devices	SSM2142S	DRV134UA	P/P	Comlinear	CLC423	OPA680	P/E
Analog Devices	SSM2143	INA137	P/P	Comlinear	CLC425	OPA687	P/E
Analog Devices	SSM2143	INA157	P/P	Comlinear	CLC426	OPA2680	P/E
Analog Devices	SSM2275	OPA2134	C/P	Comlinear	CLC427	OPA2680	P/E
Analog Devices	SSM2475	OPA4134	C/P	Comlinear	CLC428	OPA2680	P/E
Analog Microelectronics	AM422	INA125	C/P	Comlinear	CLC430	OPA681	P/E
Analogic	MP8014	ADC76JG	F/E	Comlinear	CLC431	OPA2681	C/P
Analogic	MP8016	ADC76JG	F/E	Comlinear	CLC432	OPA2681	C/P
Analogic	MP8116	DAC729JH	F/E	Comlinear	CLC436	OPA671	C/P
Analogic	MPI814	DAC70BH-COB-I	F/E	Comlinear	CLC440	OPA680	P/E
Analogic	MPI914	DAC70BH-COB-I	F/E	Comlinear	CLC446	OPA680	P/E
Apex	PA01	OPA541	C/P	Comlinear	CLC449	OPA658	C/P
Apex	PA01	OPA549	F/E	Comlinear	CLC449	OPA681	C/P
Apex	PA02	OPA541	C/P	Comlinear	CLC449	OPA685	P/E
Apex	PA07	OPA512	C/P	Comlinear	CLC450	OPA681	P/E
Apex	PA08	3583JM	C/P	Comlinear	CLC452	OPA631	C/P
Apex	PA10	OPA512	F/E	Comlinear	CLC452	OPA634	C/P
Apex	PA11	OPA541AM	P/E	Comlinear	CLC452	OPA681	P/E
Apex	PA12	OPA502	P/E	Comlinear	CLC501	OPA689	C/P
Apex	PA12	OPA512BM	P/E	Comlinear	CLC502	OPA688	P/E
Apex	PA12	OPA549	F/E	Comlinear	CLC5602	OPA2681	P/E
Apex	PA12A	OPA512SM	P/E	Comlinear	CLC5612	OPA2682	P/E
Apex	PA13	OPA549	F/E	Comlinear	CLC5622	OPA2681	P/E
Apex	PA16	OPA549	F/E	Comlinear	CLC5623	OPA3681	F/E
Apex	PA21	OPA2544T	C/P	Comlinear	CLC5632	OPA2682	P/E
Apex	PA25	OPA2541	C/P	Comlinear	CLC5633	OPA3682	F/E
Apex	PA25	OPA2544T	C/P	Comlinear	CLC5644	OPA4658	P/E
Apex	PA26	OPA2544T	C/P	Comlinear	CLC5654	OPA4658	P/E
Apex	PA51	OPA501AM	P/E	Comlinear	CLC5665	OPA603	C/P
Apex	PA51	OPA549	F/E	Comlinear	CLC949	ADS805	C/P
Apex	PA51A	OPA501SM	P/E	Crystal Semiconductor	CS4226/7/8	PCM16xx + PCM1800	C/P
Apex	PA61	OPA512	C/P	Crystal Semiconductor	CS4303	PCM1716/28	C/P
Apex	PA73	OPA549	F/E	Crystal Semiconductor	CS4327	PCM1720	F/E
Apex	PA81	3581J	P/E	Crystal Semiconductor	CS4328	PCM1716/28	C/P
Apex	PA82	OPA541	C/P	Crystal Semiconductor	CS4329	PCM1716/28	F/E
Apex	PA83	3583AM	P/E	Crystal Semiconductor	CS433x	PCM1725/33/44	F/E
Apex	PA84	3584	P/E	Crystal Semiconductor	CS4340	PCM1720	C/P
Beckman	7580	DAC80-CBI-V	P/E	Crystal Semiconductor	CS4341	PCM1720	C/P
Beckman	877-80	DAC80-CBI-V	P/E	Crystal Semiconductor	CS4390	PCM1716/28	F/E
Beckman	877-85	DAC85H-CBI-V	P/E	Crystal Semiconductor	CS4391	PCM1737/39	F/E
Burr-Brown	OPA103AM	OPA111AM	P/P	Crystal Semiconductor	CS4396/7	"PCM1704/DF1704, PCM1737/39"	C/P
Burr-Brown	OPA103CM	OPA111AM	P/E	Crystal Semiconductor	CS5012A	ADS7804	C/P
Calex	175	INA101AM	F/E	Crystal Semiconductor	CS5016	ADS7805	F/E
Calex	175L	INA101AM	F/E	Crystal Semiconductor	CS5016	ADS7807	C/P
Calex	176J	INA101AM	F/E				

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Crystal Semiconductor	CS5016	ADS7821	F/E	Elantec	EL2007	OPA541AM	C/P
Crystal Semiconductor	CS5032	ADS7810	C/P	Elantec	EL2008	BUF634	C/P
Crystal Semiconductor	CS5032	ADS7819	C/P	Elantec	EL2009	BUF634	C/P
Crystal Semiconductor	CS5032	ADS7831	C/P	Elantec	EL2020	OPA603	C/P
Crystal Semiconductor	CS5101	ADS7805	F/E	Elantec	EL2020	OPA658	C/P
Crystal Semiconductor	CS5101	ADS7821	F/E	Elantec	EL2030	OPA603	C/P
Crystal Semiconductor	CS5101A	ADS7809	C/P	Elantec	EL2030	OPA658	C/P
Crystal Semiconductor	CS5101A	ADS7825	C/P	Elantec	EL2030C	OPA658	P/E
Crystal Semiconductor	CS5102A	ADS7807	C/P	Elantec	EL2041	OPA650	C/P
Crystal Semiconductor	CS5102A	ADS7825	C/P	Elantec	EL2044	OPA631	P/E
Crystal Semiconductor	CS5126	ADS7805	C/P	Elantec	EL2044	OPA634	C/P
Crystal Semiconductor	CS5326	PCM1760P	C/P	Elantec	EL2044	OPA650	C/P
Crystal Semiconductor	CS5327	PCM1750P	C/P	Elantec	EL2045	OPA651	C/P
Crystal Semiconductor	CS5328	PCM1750P	C/P	Elantec	EL2070C	OPA681	F/E
Crystal Semiconductor	CS5329	PCM1750P	C/P	Elantec	EL2071C	OPA681	P/E
Crystal Semiconductor	CS5336	PCM1750P	C/P	Elantec	EL2072	BUF601	P/E
Crystal Semiconductor	CS5337	PCM1750P	C/P	Elantec	EL2073	OPA650	C/P
Crystal Semiconductor	CS5338	PCM1750P	C/P	Elantec	EL2073	OPA658	C/P
Crystal Semiconductor	CS533P	PCM1750P	C/P	Elantec	EL2073C	OPA650	P/E
Crystal Semiconductor	CS533x	PCM1800/PCM1801	F/E	Elantec	EL2074	OPA651	P/E
Crystal Semiconductor	CS5389	PCM1760	P/P	Elantec	EL2074	OPA658	C/P
Crystal Semiconductor	CS5412	ADS7810	C/P	Elantec	EL2090	SHC615	F/E
Crystal Semiconductor	CS5412	ADS7819	C/P	Elantec	EL2110C	OPA650	P/E
Crystal Semiconductor	CS7615	VSP2100	C/P	Elantec	EL2111C	OPA651	P/E
Dallas Semiconductor	DS2107S	REG117-2.85	C/P	Elantec	EL2150	OPA631	C/P
Datel	ADC511	ADC601JG	F/E	Elantec	EL2150	OPA634	C/P
Datel	ADC810	ADC80AG-12	F/E	Elantec	EL2157	OPA632	C/P
Datel	ADC811	ADC80AG-12	F/E	Elantec	EL2157	OPA635	C/P
Datel	ADC817	ADC80AG-12	F/E	Elantec	EL2160C	OPA658	P/E
Datel	ADC827	ADC80AG-12	F/E	Elantec	EL2171	OPA658	C/P
Datel	ADC-EH12B3	ADC80AG-12	C/P	Elantec	EL2171C	OPA658	P/E
Datel	ADC-HX12B	ADC84KG-12	P/E	Elantec	EL2211	OPA2650	C/P
Datel	ADS130	ADS804	C/P	Elantec	EL2220C	OPA2650	P/E
Datel	DAC612	DAC811AH	C/P	Elantec	EL2221C	OPA2650	P/E
Datel	DAC-71	DAC71-COB-V	P/P	Elantec	EL2223	OPA2650	C/P
Datel	DAC-72	DAC72BH-COB-V	P/E	Elantec	EL2224	OPA2650	C/P
Datel	DAC-HK12B	DAC811AH	F/E	Elantec	EL2245	OPA2650	C/P
Datel	DAC-HP16BCG	DAC71-CSB-V	P/P	Elantec	EL2250C	OPA2650	P/E
Datel	DAC-HP16BMC	DAC71-CSB-V	P/P	Elantec	EL2260C	OPA2658	P/E
Datel	DAC-HP16BMC-1	DAC71-COB-V	P/P	Elantec	EL2360	OPA3681	F/E
Datel	DAC-HY12	DAC80-CBI-V	P/E	Elantec	EL2386	OPA3681	C/P
Datel	DAC-HZ12BMC	DAC85H-CBI-V	P/E	Elantec	EL2386C	OPA3681	F/E
Datel	DAC-HZ12BMM	DAC87H-CBI-V	P/P	Elantec	EL2410	OPA4650	C/P
Datel	MX-1606	MPC506AP	P/P	Elantec	EL2411	OPA4650	C/P
Datel	MX1616	MPC800	P/E	Elantec	EL2420C	OPA4650	P/E
Datel	MX1616	MPC800KG	P/E	Elantec	EL2421C	OPA4650	P/E
Datel	MX-808	MPC508AP	P/P	Elantec	EL2424	OPA4650	C/P
Datel	MX818	MPC801	P/E	Elantec	EL2444	OPA4650	C/P
Datel	MX-818	MPC801KG	P/E	Elantec	EL2445	OPA4650	C/P
Datel	MXD-409	MPC509AP	P/P	Elantec	EL2450	OPA4650	P/E
Datel	MXD-807	MPC507AP	P/P	Elantec	EL2460	OPA4658	C/P
Datel	SHM-20C	SHC5320KH	P/P	Elantec	EL2460C	OPA4658	P/E
Datel	SHM-20M	SHC5320SH	P/P	Elantec	EL4089	SHC615	F/E
Datel	SHM-4860MC	SHC804CM	P/P	Elantec	EL4393C	OPA3681	F/E
Datel	SHM-6	SHC5320KH	C/P	Gennum	6M4314	MPC100AP	C/P
Datel	SHM-9	SHC5320KH	C/P	Gennum	6M8108	MPC100AP	C/P
Datel	SHM-HU	SHC804BM	C/P	Gennum	6X414A	MPC100AP	F/E
Datel	SHM-IC-1	SHC298AM	C/P	Gennum	6X4201	MPC100AP	C/P
Datel	SHM-LM-2	SHC298AM	P/P	Gennum	6X4304	MPC100AP	C/P
DDC	ADC00401	ADC80AG-12	F/E	Gennum	6X434	MPC100AP	F/E
DDC	ADC00403	ADC80AG-12	F/E	Harris	AD7521JD	DAC7541AJP	P/E
DDC	ADC4450	ADC80AG-12	F/E	Harris	AD7521JN	DAC7541AJP	P/P
DDC	ADH051	ADC80AG12	C/P	Harris	AD7521KD	DAC7541AJP	P/P
DDC	ADH8516	ADC80AG-12	F/E	Harris	AD7521KN	DAC7541AJP	P/P
DDC	ADH8585	ADC85H-12	P/E	Harris	AD7521LD	DAC7541AJP	P/E
DDC	ADH8586	ADC85H-12	F/E	Harris	AD7521LN	DAC7541AJP	P/P
DDC	DAC02701	DAC811AH	F/E	Harris	AD7531JD	DAC7541AJP	P/E
DDC	DAC87	DAC87H-CBI-V	P/E	Harris	AD7531JN	DAC7541AJP	P/P
DDC	DAC-S	DAC85H-CBI-V	P/E	Harris	AD7531KD	DAC7541AJP	P/E
DDC	DAC-SL	DAC811AH	F/E	Harris	AD7531KN	DAC7541AJP	P/P
DDC	THA0523	SHC804BM	P/E	Harris	AD7531LD	DAC7541AJP	P/E
Elantec	EL2001	BUF634	C/P	Harris	AD7531LN	DAC7541AJP	P/P
Elantec	EL2002	BUF634	C/P	Harris	AD7541AD	DAC7541AJP	P/E
Elantec	EL2003	OPA633KP	P/E	Harris	AD7541BD	DAC7541AJP	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Harris	AD7541JN	DAC7541AJP	P/E	Harris	HFA1105	OPA658	P/E
Harris	AD7541KN	DAC7541AKP	P/P	Harris	HFA1109	OPA658	P/E
Harris	AD7541LN	DAC7541AKP	P/P	Harris	HFA1112	BUF601	C/P
Harris	HA1-5320-4	SHC5320KH	P/P	Harris	HFA1120	OPA658	C/P
Harris	HA1-5320-5	SHC5320KH	P/P	Harris	HFA1130	OPA658	C/P
Harris	HA1-5320-9	SHC5320KH	P/P	Harris	HFA1130	OPA688	P/E
Harris	HA2-2525-5	OPA640	C/P	Harris	HFA1135	OPA658	C/P
Harris	HA2-2620-5	OPA640	C/P	Harris	HFA1135	OPA688	P/E
Harris	HA-2400	OPA678	F/E	Harris	HFA1145	OPA658	C/P
Harris	HA-2420	SHC5320KH	C/P	Harris	HFA1145	OPA681	P/E
Harris	HA-2425	SHC5320KH	C/P	Harris	HFA1205	OPA2658	P/E
Harris	HA2500	OPA640	C/P	Harris	HFA1245	OPA2681	P/E
Harris	HA-2505	OPA602	P/E	Harris	HFA1405	OPA4658	P/E
Harris	HA2510	OPA640	C/P	Harris	HFA5033	BUF600	C/P
Harris	HA2520	OPA640	C/P	Harris	HI1-0506A-5	MPC506AG	P/P
Harris	HA-2520	3507J	P/P	Harris	HI1-0507A-5	MPC507AG	P/P
Harris	HA-2546	MPY600	C/P	Harris	HI1-0508A-5	MPC508AG	P/P
Harris	HA-2547	MPY600	C/P	Harris	HI1-0509A-5	MPC509AG	P/P
Harris	HA2600	OPA640	C/P	Harris	HI1-0516-2	MPC800KG	C/P
Harris	HA2605	OPA640	C/P	Harris	HI1-0516-5	MPC800KG	P/P
Harris	HA2625	OPA640	C/P	Harris	HI1-0518-2	MPC801KG	C/P
Harris	HA2640	OPA445	P/E	Harris	HI1-546-5	MPC506AP	P/P
Harris	HA2640	OPA452	C/P	Harris	HI1-547-5	MPC507AP	P/P
Harris	HA2640	OPA551	C/P	Harris	HI1-574AJD-5	ADC574AJH	P/P
Harris	HA2640	OPA552	C/P	Harris	HI1-574AKD-5	ADC574AKH	P/P
Harris	HA2645	OPA445	P/E	Harris	HI1-574ASD-2	ADC574ASH	P/P
Harris	HA-2650	OPA2111AM	C/P	Harris	HI1-574ATD-2	ADC574ATH	P/P
Harris	HA2840/1/2	OPA658	C/P	Harris	HI1-674AJD-5	ADC674AJH	P/P
Harris	HA3-5033-5	OPA633KP	P/P	Harris	HI1-674AKD-5	ADC674AKH	P/P
Harris	HA3-5320-4	SHC5320KP	P/P	Harris	HI1-674ASD-2	ADC674ASH	P/P
Harris	HA3-5320-5	SHC5320KP	P/P	Harris	HI1-674ATD-2	ADC674ATH	P/P
Harris	HA3-5320-9	SHC5320KP	P/P	Harris	HI1-774JD-5	ADC774JP	P/P
Harris	HA-4156	OPA404AG	C/P	Harris	HI1-774KD-5	ADC774KP	P/P
Harris	HA-4741	OPA404AG	C/P	Harris	HI1-774SD-2	ADS7804PB	F/E
Harris	HA-5002	OPA633KP	C/P	Harris	HI1-774TD-2	ADS7804PB	F/E
Harris	HA-5004	OPA603AP	C/P	Harris	HI2-0518-5	MPC801KG	P/P
Harris	HA5013	OPA3681	F/E	Harris	HI3-0506A-5	MPC506AP	P/P
Harris	HA5020	OPA681	P/E	Harris	HI3-0507A-5	MPC507AP	P/P
Harris	HA5022	OPA2681	P/E	Harris	HI3-0508A-5	MPC508AP	P/P
Harris	HA5023	OPA2658	P/E	Harris	HI3-0509A-5	MPC509AP	P/P
Harris	HA5024	OPA4658	C/P	Harris	HI3-546-4	MPC506AG	P/P
Harris	HA5025	OPA4658	P/E	Harris	HI3-547-4	MPC507AG	P/P
Harris	HA5033	BUF634	C/P	Harris	HI5023	OPA2650	C/P
Harris	HA5033	OPA658	C/P	Harris	HI5127	OPA27	P/E
Harris	HA-5062	OPA2111AM	C/P	Harris	HI-5137	OPA37	P/E
Harris	HA-5064	OPA404AG	F/E	Harris	HI-518	MPC801KG	P/E
Harris	HA-5082	OPA2111AM	F/E	Harris	HI-5660	DAC80-CBI-V	C/P
Harris	HA-5084	OPA404AG	F/E	Harris	HI-5680	DAC80-CBI-V	P/E
Harris	HA-5100	OPA606KM	C/P	Harris	HI-5685	DAC85H-CBI-V	P/E
Harris	HA-5102	OPA2111AM	C/P	Harris	HI-5687	DAC87H-CBI-V	P/E
Harris	HA-5104	OPA404AG	F/E	Harris	HI-5690	DAC80-CBI-V	C/P
Harris	HA-5112	OPA2111AM	C/P	Harris	HI-5695	DAC85H-CBI-V	C/P
Harris	HA-5114	OPA404AG	F/E	Harris	HI5702	ADS822	F/E
Harris	HA5130	OPA27GP	F/E	Harris	HI5703	ADS822	F/E
Harris	HA5135	OPA277	P/E	Harris	HI5710	ADS822	C/P
Harris	HA5135	OPA27GP	F/E	Harris	HI5714	ADS830	F/E
Harris	HA-5142	OPA2111AM	C/P	Harris	HI5714/80	ADS831	F/E
Harris	HA-5144	OPA404AG	C/P	Harris	HI-574	ADS7806	C/P
Harris	HA5147	OPA37GP	F/E	Harris	HI5766	ADS823/ADS826	F/E
Harris	HA-5160	OPA602	F/E	Harris	HI5767/40	ADS822/ADS825	F/E
Harris	HA-5170	OPA1111AM	F/E	Harris	HI5767/60	ADS823/ADS826	F/E
Harris	HA-5170	OPA602	C/P	Harris	HI-5811	DAC811AH	P/E
Harris	HA5177	OPA277	P/E	Harris	HI-674A	ADS7804	C/P
Harris	HA-5180	OPA111	P/E	Harris	HI-774A	ADS7804	C/P
Harris	HA-5320-5	SHC5320KH	P/P	Harris	HI-DAC16	DAC71-COB-V	F/E
Harris	HA-5330	SHC605	C/P	Harris	ICL7112	ADS7806	C/P
Harris	HA6033	BUF634	C/P	Harris	IH5108CPE	MPC508AP	P/P
Harris	HA-OP27	OPA27GP	F/E	Harris	IH5108IJE	MPC508AG	P/P
Harris	HA-OP37	OPA37GP	F/E	Harris	IH5108MJE	MPC801KG	C/P
Harris	HFA0001	OPA658	C/P	Harris	IH5208CPE	MPC509AP	P/P
Harris	HFA005	OPA658	C/P	Harris	IH5208IJE	MPC507AG	P/E
Harris	HFA1100	OPA658	C/P	Harris	IH6108	MPC508	P/E
Harris	HFA1100	OPA685	P/E	Harris	IH6116	MPC506	P/E
Harris	HFA1105	OPA658	C/P	Harris	IH6208	MPC509	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Harris	IH6216	MPC507	P/E	Linear Technology	LT1021DCH-10	REF102AM	P/P
Harris	ILC7112	ADS7800	C/P	Linear Technology	LT1021DCN8-10	REF102AP	P/P
Harris	LF353	OPA2111AM	P/E	Linear Technology	LT1021DMH-10	REF102RM	P/P
Harris	LM118	OPA640	C/P	Linear Technology	LT1022	OPA132	P/E
Hewlett Packard	HCPL2430	ISO150	C/P	Linear Technology	LT1024	OPA2277	P/E
Hewlett Packard	HCPL7101	ISO150	C/P	Linear Technology	LT1027	REF02	C/P
Hewlett Packard	HCPL7800	ISO130	P/P	Linear Technology	LT1028	OPA227	C/P
Hewlett Packard	HCPL-7860	ADS1201	C/P	Linear Technology	LT1035	REG1117	C/P
Hybrid	DAC331	DAC7541AJP	F/E	Linear Technology	LT1036	REG1117	C/P
Hybrid	DAC336-12	DAC811AH	F/E	Linear Technology	LT1037	OPA228	P/P
Hybrid	DAC347	DAC7541AJP	F/E	Linear Technology	LT1037	OPA37	P/P
Hybrid	DAC377	DAC729JH	C/P	Linear Technology	LT1055	OPA132	P/E
Hybrid	DAC9332-16	DAC709KH	F/E	Linear Technology	LT1056	OPA132	P/E
Hybrid	DAC9349	DAC80-CBI-V	C/P	Linear Technology	LT1057	OPA2111AM	C/P
Hybrid	DAC9377	DAC707KH	F/E	Linear Technology	LT1057	OPA2132	P/E
Hybrid	HS3120	DAC811AH	F/E	Linear Technology	LT1058	OPA4132	P/E
Hybrid	HS3160	DAC703KH	C/P	Linear Technology	LT1062	UAF42	C/P
Hybrid	HS346	SHC5320KH	C/P	Linear Technology	LT1077	OPA241	P/E
Hybrid	HS3860	DAC811AH	F/E	Linear Technology	LT1077	OPA244	P/E
Hybrid	HS7541	DAC7541AJP	P/E	Linear Technology	LT1077	OPA251	P/E
Hybrid	HS7545	DAC7545KP	P/E	Linear Technology	LT1078	OPA2241	P/E
Hybrid	HS9338	DAC811AH	F/E	Linear Technology	LT1078	OPA2244	P/E
Hybrid	HS9377	DAC707KH	F/E	Linear Technology	LT1078	OPA2251	P/E
Hybrid	HS9378	DAC707KH	F/E	Linear Technology	LT1079	OPA4241	P/E
Hybrid	HS9576	ADC76JG	P/E	Linear Technology	LT1079	OPA4244	P/E
Hybrid	HSDAC80	DAC80-CBI-V	P/E	Linear Technology	LT1097	OPA277	P/E
Hybrid	HSDAC87	DAC87H-CBI-V	P/E	Linear Technology	LT1101	INA122	P/E
Hytex	HY6110	PGA204	C/P	Linear Technology	LT1112	OPA2277	P/E
ICS/MicroClock	MK715	ADS7843	C/P	Linear Technology	LT1113	OPA2132	P/E
Intersil (Harris)	ICH8515	OPA541AM	C/P	Linear Technology	LT1113	OPA2134	P/E
Intersil (Harris)	ICL7134	DAC709KH	C/P	Linear Technology	LT1114	OPA4277	P/E
Intersil (Harris)	ICL7145	DAC707KH	C/P	Linear Technology	LT1115	OPA227	C/P
Intersil (Harris)	ICL7146	DAC811AH	C/P	Linear Technology	LT1117CST	REG1117	P/P
Intersil (Harris)	ICL7605	INA101AM	F/E	Linear Technology	LT1117CST-2.85	REG1117-2.85	P/P
Intersil (Harris)	ICL7606	INA101AM	F/E	Linear Technology	LT1117CST-3.3	REG1117-3.3	P/P
Intersil (Harris)	ICL8013	MPY100	F/E	Linear Technology	LT1117CST-5	REG1117-5	P/P
Intersil (Harris)	IH5110-15	SHC298AM	C/P	Linear Technology	LT1122	OPA132	C/P
Linear Technology	LCT1050	OPA277	C/P	Linear Technology	LT1122	OPA627	C/P
Linear Technology	LF355	OPA134	P/E	Linear Technology	LT1124	OPA2132	C/P
Linear Technology	LF356	OPA134	P/E	Linear Technology	LT1125	OPA4132	C/P
Linear Technology	LF412	OPA2132	P/E	Linear Technology	LT1126	OPA2228	P/P
Linear Technology	LM185	REF1004	F/E	Linear Technology	LT1127	OPA4228	P/P
Linear Technology	LM358S8-1.2	REF1004C-1.2	P/P	Linear Technology	LT1128	OPA227	C/P
Linear Technology	LM358S8-2.5	REF1004C-2.5	P/P	Linear Technology	LT1129	REG103	C/P
Linear Technology	LT1001	OPA177	P/P	Linear Technology	LT1167	INA129	P/E
Linear Technology	LT1001	OPA27	F/E	Linear Technology	LT1169	OPA2132	P/E
Linear Technology	LT1001	OPA277	P/P	Linear Technology	LT1178	OPA2241	P/E
Linear Technology	LT1002	OPA2277	P/P	Linear Technology	LT1178	OPA2251	P/E
Linear Technology	LT1004CS8-1.2	REF1004C-1.2	P/P	Linear Technology	LT1179	OPA4241	P/E
Linear Technology	LT1004CS8-1.2v	REF1004C-1.2	P/P	Linear Technology	LT1179	OPA4251	P/E
Linear Technology	LT1004CS8-2.5	REF1004C-2.5	P/P	Linear Technology	LT1191	OPA680	C/P
Linear Technology	LT1004IS-1.2	REF1004I-1.2	P/P	Linear Technology	LT1192	OPA680	C/P
Linear Technology	LT1004IS-2.5	REF1004I-2.5	P/P	Linear Technology	LT1201	OPA2227	C/P
Linear Technology	LT1005	REG1117	C/P	Linear Technology	LT1202	OPA4227	C/P
Linear Technology	LT1006	OPA234	P/E	Linear Technology	LT1203	MPC104	C/P
Linear Technology	LT1006	OPA237	P/E	Linear Technology	LT1207	OPA2658	C/P
Linear Technology	LT1007	OPA227	P/P	Linear Technology	LT1207CS	OPA2677T	C/P
Linear Technology	LT1007	OPA27	P/P	Linear Technology	LT1211	OPA2227	C/P
Linear Technology	LT1008	OPA277	P/E	Linear Technology	LT1212	OPA4227	C/P
Linear Technology	LT1010	BUF634	C/P	Linear Technology	LT1212	OPA4350	C/P
Linear Technology	LT1012	OPA277	P/E	Linear Technology	LT1213	OPA2227	C/P
Linear Technology	LT1013	OPA1013	P/P	Linear Technology	LT1214	OPA4227	C/P
Linear Technology	LT1013	OPA2234	P/E	Linear Technology	LT1215	OPA2227	C/P
Linear Technology	LT1013	OPA2237	P/E	Linear Technology	LT1216	OPA4227	C/P
Linear Technology	LT1014	OPA4234	P/E	Linear Technology	LT1218	OPA241	C/P
Linear Technology	LT1014	OPA4237	P/E	Linear Technology	LT1218	OPA251	C/P
Linear Technology	LT1019	REF10JM	C/P	Linear Technology	LT1219	OPA241	C/P
Linear Technology	LT1021ACH-10	REF102CM	P/P	Linear Technology	LT1219	OPA251	C/P
Linear Technology	LT1021BCH-10	REF102BM	P/P	Linear Technology	LT1221	OPA603	C/P
Linear Technology	LT1021BCN8-10	REF102AP	P/P	Linear Technology	LT1222	OPA603	C/P
Linear Technology	LT1021BMH-10	REF102SM	P/P	Linear Technology	LT1223	OPA658	C/P
Linear Technology	LT1021CCH-10	REF102BM	P/P	Linear Technology	LT1225	OPA686	C/P
Linear Technology	LT1021CCN8-10	REF102BP	P/P	Linear Technology	LT1226	OPA643	C/P
Linear Technology	LT1021CMH-10	REF102SM	P/P	Linear Technology	LT1228	SHC615	F/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Linear Technology	LT1252	OPA658	C/P	Linear Technology	LTC1279	ADS7819	C/P
Linear Technology	LT1253	OPA2658	C/P	Linear Technology	LTC1285	ADS7816	C/P
Linear Technology	LT1259	OPA2680	C/P	Linear Technology	LTC1286	ADS1286	P/E
Linear Technology	LT1260	OPA4650	C/P	Linear Technology	LTC1287	ADS7806	C/P
Linear Technology	LT1361	OPA2680	C/P	Linear Technology	LTC1289	ADS7844	C/P
Linear Technology	LT1362	OPA4650	C/P	Linear Technology	LTC1290	ADS7844	C/P
Linear Technology	LT1364	OPA2680	C/P	Linear Technology	LTC1292	ADS7816	C/P
Linear Technology	LT1365	OPA4650	C/P	Linear Technology	LTC1522	ADS7841	C/P
Linear Technology	LT1366	OPA2234	C/P	Linear Technology	LTC1605	ADS7805	P/P
Linear Technology	LT1366	OPA2237	C/P	Linear Technology	LTC490	ISO485	C/P
Linear Technology	LT1367	OPA4234	C/P	Linear Technology	OP05	OPA277	P/E
Linear Technology	LT1367	OPA4237	C/P	Linear Technology	OP07	OPA277	P/P
Linear Technology	LT1413	OPA2234	P/E	Linear Technology	OP15	OPA132	P/E
Linear Technology	LT1413	OPA2237	C/P	Linear Technology	OP16	OPA132	P/E
Linear Technology	LT1413C	OPA2344	C/P	Linear Technology	OP17	OPA637	F/E
Linear Technology	LT1457	OPA2131	P/E	Linear Technology	OP27	OPA227	P/E
Linear Technology	LT1462	OPA2130	C/P	Linear Technology	OP27	OPA27	P/E
Linear Technology	LT1463	OPA4130	C/P	Linear Technology	OP37	OPA37	P/E
Linear Technology	LT1464	OPA2130	P/E	Linear Technology	REF-01	REF102AM	F/E
Linear Technology	LT1464	OPA2137	P/E	Linear Technology	REF01AH	REF102	C/P
Linear Technology	LT1465	OPA4130	P/E	Linear Technology	REF01EH	REF102	C/P
Linear Technology	LT1466	OPA2342	C/P	Linear Technology	REF01EH	REF102	C/P
Linear Technology	LT1467	OPA4342	C/P	Linear Technology	REF01EH	REF102	C/P
Linear Technology	LT1490	OPA2241	C/P	Linear Technology	REF01EN8	REF102	C/P
Linear Technology	LT1490	OPA2251	C/P	Linear Technology	REF01EN8	REF102	C/P
Linear Technology	LT1490	OPA4243	C/P	Linear Technology	REF02CJ8	REF02AP	C/P
Linear Technology	LT1491	OPA4241	C/P	Linear Technology	REF02CN8	REF02AP	P/P
Linear Technology	LT1491	OPA4251	C/P	Linear Technology	REF02DJ8	REF02AP	C/P
Linear Technology	LT1492	OPA2227	C/P	Linear Technology	REF02DN8	REF02AP	P/P
Linear Technology	LT1493	OPA4227	C/P	Linear Technology	REF02EJ8	REF02BP	C/P
Linear Technology	LT1495	OPA2241	C/P	Linear Technology	REF02EN8	REF02BP	P/P
Linear Technology	LT1495	OPA2349	C/P	Linear Technology	REF02HJ8	REF02BP	C/P
Linear Technology	LT1496	OPA4241	C/P	Linear Technology	REF02HN8	REF02BP	P/P
Linear Technology	LT1498	OPA2340	C/P	LinFinity	SG1536	OPA445	P/P
Linear Technology	LT1499	OPA4340	C/P	LinFinity	SG1536	OPA452	C/P
Linear Technology	LT1630	OPA2350	C/P	LinFinity	SG1536	OPA551	C/P
Linear Technology	LT1631	OPA4350	C/P	LinFinity	SG1536	OPA552	C/P
Linear Technology	LT1632	OPA2350	C/P	LinFinity	SG2273	OPA549	F/E
Linear Technology	LT1632	OPA2353	C/P	L-Ray	RC5532DD	OPA2132	F/E
Linear Technology	LT1633	OPA4350	C/P	M.S.Kennedy	PA2541	OPA2541	P/E
Linear Technology	LT1633	OPA4353	C/P	Maxim	1480AEP1	ISO485	F/E
Linear Technology	LT1636	OPA241	C/P	Maxim	1480BCPI	ISO485	F/E
Linear Technology	LT1637	OPA237	C/P	Maxim	AD565	DAC80-CBI-I	C/P
Linear Technology	LT1638	OPA2237	C/P	Maxim	AM6012	DAC80-CBI-V	C/P
Linear Technology	LT1638	OPA2338	C/P	Maxim	DG506A	MPG506	P/E
Linear Technology	LT1638	OPA2342	C/P	Maxim	DG507A	MPC507	P/E
Linear Technology	LT1638	OPA2342	C/P	Maxim	DG508	MPC508	P/E
Linear Technology	LT1639	OPA4243	C/P	Maxim	DG508A	MPC508	P/E
Linear Technology	LT1639	OPA4237	C/P	Maxim	DG509A	MPC509	P/E
Linear Technology	LT1761	REG101NA	P/E	Maxim	HI1-0508A-5	MPC508AG	P/P
Linear Technology	LT1763	REG103	C/P	Maxim	HI1-0509A-5	MPC509AG	P/P
Linear Technology	LT1783	OPA344	C/P	Maxim	HI3-0508A-5	MPC508AP	P/P
Linear Technology	LT1792	OPA132	P/E	Maxim	HI3-0509A-5	MPC509AP	P/P
Linear Technology	LT1793	OPA132	P/E	Maxim	MAX120	ADS7810	C/P
Linear Technology	LT2078	OPA2241	C/P	Maxim	MAX120	ADS7819	C/P
Linear Technology	LT2078	OPA2244	C/P	Maxim	MAX120	ADS7831	C/P
Linear Technology	LT2078	OPA2251	C/P	Maxim	MAX1247	ADS7841	P/E
Linear Technology	LT2079	OPA4241	C/P	Maxim	MAX146	ADS7822+MPC508A	C/P
Linear Technology	LT2079	OPA4251	C/P	Maxim	MAX147	ADS7844	P/E
Linear Technology	LT2178	OPA2241	C/P	Maxim	MAX1480	ISO485	C/P
Linear Technology	LT2178	OPA2251	C/P	Maxim	MAX170	ADS7808	C/P
Linear Technology	LT2178	OPA2340	C/P	Maxim	MAX170	ADS7809	C/P
Linear Technology	LT2179	OPA4241	C/P	Maxim	MAX180	ADS7852	C/P
Linear Technology	LT2179	OPA4244	C/P	Maxim	MAX182	ADS7842	C/P
Linear Technology	LT2179	OPA4251	C/P	Maxim	MAX187	ADS1286	P/E
Linear Technology	LT323AT	REG1117-5	C/P	Maxim	MAX190	ADS7806	C/P
Linear Technology	LT485CS8	ISO485	C/P	Maxim	MAX190	ADS7808	C/P
Linear Technology	LTC1272	ADS7800	C/P	Maxim	MAX190	ADS7812	C/P
Linear Technology	LTC1272	ADS7804	C/P	Maxim	MAX191	ADS7808	C/P
Linear Technology	LTC1272	ADS7810	C/P	Maxim	MAX195	ADS7809	C/P
Linear Technology	LTC1272	ADS7819	C/P	Maxim	MAX195	ADS7821	C/P
Linear Technology	LTC1278	ADS7810	C/P	Maxim	MAX2 (XX)	UAF42	C/P
Linear Technology	LTC1278	ADS7819	C/P	Maxim	MAX270	UAF42	C/P
Linear Technology	LTC1279	ADS7810	C/P	Maxim	MAX271	UAF42	C/P

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Maxim	MAX274	UAF42	C/P	Maxim	MAX4128	OPA2350	P/E
Maxim	MAX275	UAF42	C/P	Maxim	MAX4129	OPA4340	P/E
Maxim	MAX306	MPC506	P/E	Maxim	MAX4130	OPA337	C/P
Maxim	MAX310	MPC100	C/P	Maxim	MAX4130	OPA338	C/P
Maxim	MAX311	MPC100	C/P	Maxim	MAX4130	OPA340	P/E
Maxim	MAX358CPE	MPC508AP	P/P	Maxim	MAX4132	OPA2340	P/E
Maxim	MAX358CWE	MPC508AU	P/P	Maxim	MAX4134	OPA4340	P/E
Maxim	MAX358EJE	MPC508AG	P/P	Maxim	MAX414	OPA4350	C/P
Maxim	MAX359CPE	MPC509AP	P/P	Maxim	MAX4144	OPA3682	C/P
Maxim	MAX359CWE	MPC509AU	P/P	Maxim	MAX4145	OPA3681	C/P
Maxim	MAX359EJE	MPC509AG	P/P	Maxim	MAX4146	OPA3681	C/P
Maxim	MAX400	OPA277	P/P	Maxim	MAX4177	OPA2682	C/P
Maxim	MAX4005	OPA655	C/P	Maxim	MAX4162	OPA343	P/E
Maxim	MAX4012	OPA631	C/P	Maxim	MAX4162	OPA344	P/E
Maxim	MAX4012	OPA634	C/P	Maxim	MAX4162	OPA4343	P/E
Maxim	MAX4012	OPA650	P/E	Maxim	MAX4163	OPA2343	P/E
Maxim	MAX4012	OPA680	F/E	Maxim	MAX4163	OPA2344	P/E
Maxim	MAX4014	OPA682	P/E	Maxim	MAX4164	OPA4344	P/E
Maxim	MAX4016	OPA2631	C/P	Maxim	MAX4165	OPA338	C/P
Maxim	MAX4016	OPA2634	C/P	Maxim	MAX4165	OPA338	C/P
Maxim	MAX4016	OPA2680	P/E	Maxim	MAX4165	OPA340	P/P
Maxim	MAX4017	OPA2682	P/E	Maxim	MAX4167	OPA2338	C/P
Maxim	MAX4018	OPA3680	F/E	Maxim	MAX4167	OPA2340	C/P
Maxim	MAX4019	OPA3682	F/E	Maxim	MAX4169	OPA4340	C/P
Maxim	MAX402	OPA241	P/E	Maxim	MAX4178	OPA682	P/E
Maxim	MAX402	OPA251	P/E	Maxim	MAX4180	OPA681	P/E
Maxim	MAX4020	OPA4650	F/E	Maxim	MAX4181	OPA681	P/E
Maxim	MAX4022	OPA4650	C/P	Maxim	MAX4194	INA122	P/E
Maxim	MAX403	OPA227	C/P	Maxim	MAX4194	INA155	P/E
Maxim	MAX403	OPA353	C/P	Maxim	MAX4195	INA122	P/E
Maxim	MAX404	OPA651	F/E	Maxim	MAX4195	INA155	P/E
Maxim	MAX4040	OPA336	P/E	Maxim	MAX4196	INA122	P/E
Maxim	MAX4040	OPA344	P/E	Maxim	MAX4196	INA155	P/E
Maxim	MAX4042	OPA2336	P/E	Maxim	MAX4197	INA122	P/E
Maxim	MAX4042	OPA2344	P/E	Maxim	MAX4197	INA155	P/E
Maxim	MAX4044	OPA4336	P/E	Maxim	MAX4198	INA132	P/E
Maxim	MAX4044	OPA4344	P/E	Maxim	MAX4198	INA133	P/E
Maxim	MAX405	OPA680	C/P	Maxim	MAX4198	INA2132	F/E
Maxim	MAX406	OPA349	C/P	Maxim	MAX4198	INA2133	F/E
Maxim	MAX407	OPA349	C/P	Maxim	MAX4199	INA143	P/E
Maxim	MAX409	OPA349	C/P	Maxim	MAX4199	INA2143	F/E
Maxim	MAX409	OPA349	C/P	Maxim	MAX42	OPA244	P/E
Maxim	MAX410	OPA350	C/P	Maxim	MAX4200	OPA682	C/P
Maxim	MAX4100	OPA650	P/E	Maxim	MAX4201	OPA682	C/P
Maxim	MAX4101	OPA651	P/P	Maxim	MAX4202	OPA682	C/P
Maxim	MAX4102	OPA650	P/E	Maxim	MAX4203	OPA2682	C/P
Maxim	MAX4103	OPA651	P/E	Maxim	MAX4204	OPA2682	C/P
Maxim	MAX4104	OPA642	P/E	Maxim	MAX4205	OPA2682	C/P
Maxim	MAX4105	OPA643	P/E	Maxim	MAX4212	OPA631	C/P
Maxim	MAX4106	OPA686	P/E	Maxim	MAX4212	OPA634	C/P
Maxim	MAX4107	OPA686	P/E	Maxim	MAX4212	OPA680	P/E
Maxim	MAX4108	OPA642	P/P	Maxim	MAX4212	OPA632	C/P
Maxim	MAX4109	OPA642	P/P	Maxim	MAX4213	OPA635	C/P
Maxim	MAX4112	OPA658	P/E	Maxim	MAX4213	OPA680	P/E
Maxim	MAX4112	OPA681	P/E	Maxim	MAX4214	OPA682	P/E
Maxim	MAX4113	OPA658	P/E	Maxim	MAX4215	OPA682	P/E
Maxim	MAX4113	OPA685	P/E	Maxim	MAX4216	OPA2631	C/P
Maxim	MAX4117	OPA2658	P/E	Maxim	MAX4216	OPA2634	C/P
Maxim	MAX4117	OPA2681	P/E	Maxim	MAX4216	OPA2680	P/E
Maxim	MAX4118	OPA2658	P/E	Maxim	MAX4217	OPA2682	P/E
Maxim	MAX4118	OPA2681	P/E	Maxim	MAX4218	OPA3680	F/E
Maxim	MAX4119	OPA4650	P/E	Maxim	MAX4219	OPA3682	F/E
Maxim	MAX4119	OPA4658	P/E	Maxim	MAX4220	OPA4650	F/E
Maxim	MAX412	OPA2350	C/P	Maxim	MAX4222	OPA4650	C/P
Maxim	MAX4120	OPA4658	P/E	Maxim	MAX4223	OPA681	P/E
Maxim	MAX4120	OPA4658	P/E	Maxim	MAX4224	OPA681	C/P
Maxim	MAX4122	OPA337	C/P	Maxim	MAX4224	OPA685	P/E
Maxim	MAX4122	OPA338	C/P	Maxim	MAX4225	OPA2681	P/E
Maxim	MAX4122	OPA340	P/E	Maxim	MAX4226	OPA2681	C/P
Maxim	MAX4122	OPA343	P/P	Maxim	MAX4227	OPA2681	P/E
Maxim	MAX4122	OPA343	C/P	Maxim	MAX4228	OPA2681	C/P
Maxim	MAX4124	OPA350	P/E	Maxim	MAX4230	OPA349	P/E
Maxim	MAX4126	OPA2338	C/P	Maxim	MAX4240	OPA336	P/E
Maxim	MAX4126	OPA2340	P/E	Maxim	MAX4240	OPA349	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Maxim	MAX4242	OPA2336	P/E	Maxim	MAX508	MPC508	P/E
Maxim	MAX4244	OPA4336	P/E	Maxim	MAX536	DAC4814	C/P
Maxim	MAX4250	OPA340	P/P	Maxim	MAX543xxPx	DAC8043P	P/P
Maxim	MAX4252	OPA2340	P/P	Maxim	MAX543xxSx	DAC8043P	F/E
Maxim	MAX4254	OPA4340	P/P	Maxim	MAX550	ADST7822+MPC508A	C/P
Maxim	MAX4255	OPA350	P/E	Maxim	MAX603	REG103	C/P
Maxim	MAX4257	OPA2350	P/E	Maxim	MAX604	REG103	C/P
Maxim	MAX427	OPA227	P/E	MAXIM	MAX6160	REG1117	C/P
Maxim	MAX4278	OPA682	P/E	Maxim	MAX735	DCP010505P	C/P
Maxim	MAX428	OPA2650	F/E	Maxim	MAX7537	DAC7801KP	F/E
Maxim	MAX4304	OPA642	P/E	Maxim	MAX7547	DAC7802KP	F/E
Maxim	MAX4305	OPA686	P/E	Maxim	MAX887	DCP-REG1117	C/P
Maxim	MAX4308	OPA643	P/P	Maxim	MAX8877	REG102NA	P/E
Maxim	MAX4309	OPA686	P/E	Maxim	MAX8878	REG102NA	P/E
Maxim	MAX4310	OPA2682	C/P	Maxim	MX174ACP1	ADC774JP	P/P
Maxim	MAX4313	OPA2682	C/P	Maxim	MX174BCP1	ADC774KP	P/P
Maxim	MAX4322	OPA338	C/P	Maxim	MX574AJN	ADC574AJP	P/P
Maxim	MAX4322	OPA343	P/P	Maxim	MX574AJP	ADS574JU	F/E
Maxim	MAX4326	OPA2343	P/P	Maxim	MX574AKN	ADC574AKP	P/P
Maxim	MAX4329	OPA4343	P/P	Maxim	MX574AKP	ADS574KU	F/E
Maxim	MAX4330	OPA337	C/P	Maxim	MX674AJN	ADC674AJP	P/P
Maxim	MAX4330	OPA340	P/E	Maxim	MX674AKN	ADC674AKP	P/P
Maxim	MAX4330	OPA342	P/E	Maxim	MX7521	DAC7541AJP	P/E
Maxim	MAX4332	OPA2337	C/P	Maxim	MX7528	DAC7528	P/P
Maxim	MAX4332	OPA2342	P/E	Maxim	MX7531	DAC7541AJP	P/E
Maxim	MAX4332	OPA2342	P/E	Maxim	MX7541AJCWN	DAC7541AJU	P/P
Maxim	MAX4334	OPA4337	C/P	Maxim	MX7541AJN	DAC7541AJP	P/P
Maxim	MAX4334	OPA4343	P/E	Maxim	MX7541AKCWN	DAC7541AKU	P/P
Maxim	MAX4334	OPA04342	P/E	Maxim	MX7541AKN	DAC7541AKP	P/P
Maxim	MAX435	OPA2662	C/P	Maxim	MX7545AQ	DAC7545KP	P/E
Maxim	MAX436	OPA2662	C/P	Maxim	MX7545BQ	DAC7545KP	P/E
Maxim	MAX437	OPA228	P/P	Maxim	MX7545CQ	DAC7545KP	P/E
Maxim	MAX438	OPA343	C/P	Maxim	MX7545GQ	DAC7545KP	P/E
Maxim	MAX439	OPA353	C/P	Maxim	MX7545GLCWP	DAC7545GLU	P/P
Maxim	MAX439	OPA353	C/P	Maxim	MX7545GLN	DAC7545GLP	P/P
Maxim	MAX441	MPC100	C/P	Maxim	MX7545GUD	DAC7545KP	P/E
Maxim	MAX442	MPC104	C/P	Maxim	MX7545JCV	DAC7545JU	P/P
Maxim	MAX448	OPA4650	F/E	Maxim	MX7545JN	DAC7545JP	P/P
Maxim	MAX450	MPC100	C/P	Maxim	MX7545KCWP	DAC7545KU	P/P
Maxim	MAX452	OPA350	C/P	Maxim	MX7545KN	DAC7545KP	P/P
Maxim	MAX453	MPC104	C/P	Maxim	MX7545LCWP	DAC7545LU	P/P
Maxim	MAX454	MPC100	C/P	Maxim	MX7545LN	DAC7545LP	P/P
Maxim	MAX455	MPC100	N/C	Maxim	REF01	REF102AM	P/E
Maxim	MAX457	OPA2350	C/P	Maxim	REF01AJ	REF102	C/P
Maxim	MAX460	OPA671	C/P	Maxim	REF01EJ	REF102	C/P
Maxim	MAX463	OPA3680	C/P	Maxim	REF01EJ	REF102	C/P
Maxim	MAX464	OPA4650	C/P	Maxim	REF01EJ	REF102	C/P
Maxim	MAX465	OPA3682	C/P	Maxim	REF01HCSA	REF102	C/P
Maxim	MAX466	OPA4650	C/P	Maxim	REF01HCSA	REF102	C/P
Maxim	MAX467	OPA3682	C/P	Maxim	REF01HP	REF102	C/P
Maxim	MAX468	OPA3682	C/P	Maxim	REF01HP	REF102	C/P
Maxim	MAX469	OPA4650	C/P	Maxim	REF02	REF02	C/P
Maxim	MAX470	OPA3682	C/P	Maxim	REF02CCSA	REF02AU	P/P
Maxim	MAX473	OPA343	P/E	Maxim	REF02CP	REF02BP	P/P
Maxim	MAX473	OPA353	P/E	Maxim	REF02CZ	REF02AP	C/P
Maxim	MAX474	OPA2343	P/E	Maxim	REF02DCSA	REF02AU	P/P
Maxim	MAX474	OPA2353	P/E	Maxim	REF02DP	REF02AP	P/P
Maxim	MAX475	OPA4343	P/E	Maxim	REF02DZ	REF02AP	C/P
Maxim	MAX475	OPA4353	P/E	Maxim	REF02EZ	REF02BP	C/P
Maxim	MAX477	OPA680	P/E	Maxim	REF02HCSA	REF02BU	P/P
Maxim	MAX478	OPA2241	P/E	Maxim	REF02HP	REF02BP	C/P
Maxim	MAX478	OPA2251	P/E	Maxim	REF02HZ	REF02BP	C/P
Maxim	MAX479	OPA4241	P/E	Maxim	REF02J	REF02	C/P
Maxim	MAX479	OPA4251	P/E	Micrel	MIC5205	REG102NA	P/E
Maxim	MAX480	OPA241	P/P	Micrel	MIC5206	REG102NA	P/E
Maxim	MAX480	OPA251	P/P	Micrel	MIC5219	REG103	C/P
Maxim	MAX487	ISO150	C/P	Micrel	MIC5245	REG102NA	P/E
Maxim	MAX492	OPA2344	P/P	Micrel	MIC7101	OPA342	C/P
Maxim	MAX494	OPA4344	P/P	Micro Networks	ADC80-12	ADC80MAH-12	P/P
Maxim	MAX495	OPA344	P/P	Micro Networks	ADC84-12	ADC84KG-12	P/P
Maxim	MAX495	OPA344	P/E	Micro Networks	ADC85-12	ADC85-12	P/P
Maxim	MAX496	OPA4658	C/P	Micro Networks	ADC85C-12	ADC85H-12	P/P
Maxim	MAX497	OPA4650	C/P	Micro Networks	ADC87H	ADC87H-12	P/P
Maxim	MAX507	DAC715	C/P	Micro Networks	DAC71-COB-I	DAC71-COB-I	P/P

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Micro Networks	DAC71-COB-V	DAC71-COB-V	P/P	Micro Power Systems	MP7622	DAC7545KP	C/P
Micro Networks	DAC71-CSB-I	DAC71-CSB-I	P/P	Micro Power Systems	MP7623	DAC7541AJP	P/E
Micro Networks	DAC71-CSB-V	DAC71-CSB-V	P/P	Micro Power Systems	MP9331-16	DAC709KH	F/E
Micro Networks	DAC80-CBI-I	DAC80-CBI-I	P/P	Micro Power Systems	MP9377-16	DAC707KH	F/E
Micro Networks	DAC80-CBI-V	DAC80-CBI-V	P/P	Micro Power Systems	REF10	REF10KM	P/E
Micro Networks	DAC80-CBI-V	DAC80-CBI-V	P/P	MicroChip	MCP601	OPA344	P/P
Micro Networks	DAC80-CBI-V	DAC800-CBI-V	P/P	Motorola	LF351	OPA604	P/E
Micro Networks	DAC85-CBI-I	DAC85H-CBI-I	P/P	Motorola	LF353	OPA2111	P/E
Micro Networks	DAC85-CBI-V	DAC85H-CBI-V	P/P	Motorola	LF356	OPA602	P/E
Micro Networks	DAC87	DAC87H-CBI-V	P/P	Motorola	LF357	OPA637	C/P
Micro Networks	DAC87H	DAC87H-CBI-V	P/P	Motorola	LF441	OPA606	P/E
Micro Networks	DACHK	DAC811AH	F/E	Motorola	LM11C	OPA602	P/E
Micro Networks	MN0300A	SHC605	C/P	Motorola	LM307	OPA177	P/E
Micro Networks	MN2020	PGA102	C/P	Motorola	LM358	OPA1013	C/P
Micro Networks	MN3210	DAC71-COB-V	P/E	Motorola	LM833	OPA2107	C/P
Micro Networks	MN3300	DAC71-COB-V	P/E	Motorola	MC1436	OPA445	P/P
Micro Networks	MN3310	DAC703KH	P/E	Motorola	MC1436	OPA452	C/P
Micro Networks	MN3660	DAC811AH	C/P	Motorola	MC1436C	OPA551	C/P
Micro Networks	MN375	SHC605	C/P	Motorola	MC1436C	OPA552	C/P
Micro Networks	MN376	SHC804BM	P/P	Motorola	MC1456	OPA2604	C/P
Micro Networks	MN3850	DAC85H-CBI-V	P/E	Motorola	MC1458	OPA2604	C/P
Micro Networks	MN3860	DAC811AH	F/E	Motorola	MC1536	OPA445	C/P
Micro Networks	MN5200	ADC84KG-12	F/E	Motorola	MC1595	MPY600	C/P
Micro Networks	MN5210-14	ADC84KG-12	F/E	Motorola	MC1596	MPY600	C/P
Micro Networks	MN5245	ADC80AG-12	F/E	Motorola	MC1741	OPA177	P/E
Micro Networks	MN5246	ADS804	C/P	Motorola	MC1747	OPA1013	C/P
Micro Networks	MN5248	ADC601	P/E	Motorola	MC24181	OPA137	P/E
Micro Networks	MN5280	ADC71JG	C/P	Motorola	MC33078	OPA2134	P/E
Micro Networks	MN5282	ADC71JG	C/P	Motorola	MC33079	OPA4132	P/E
Micro Networks	MN5290	ADC76JG	C/P	Motorola	MC33171	OPA237	P/E
Micro Networks	MN5291	ADC76JG	C/P	Motorola	MC33201	OPA337	C/P
Micro Networks	MN5610	ADC84KG-12	F/E	Motorola	MC33201	OPA338	C/P
Micro Networks	MN5745AJ	ADC574AJP	P/P	Motorola	MC33201	OPA340	P/E
Micro Networks	MN574A	ADC574AJH	P/E	Motorola	MC33201	OPA343	C/P
Micro Networks	MN574AK	ADC574AKP	P/P	Motorola	MC33202	OPA2340	P/E
Micro Networks	MN574AL	ADC574AKP	P/P	Motorola	MC33204	OPA4340	P/E
Micro Networks	MN574AS	ADC574ASH	P/P	Motorola	MC33502	OPA2337	C/P
Micro Networks	MN574AT	ADC574ATH	P/P	Motorola	MC33502	OPA2338	C/P
Micro Networks	MNADC80	ADC80AG-12	P/E	Motorola	MC34001	OPA602	P/E
Micro Networks	MNADC84	ADC84KG-12	P/E	Motorola	MC34002	OPA2604	C/P
Micro Networks	MNADC85	ADC85H-12	P/E	Motorola	MC34074	OPA404	C/P
Micro Networks	MNADC87	ADC87H-12	P/E	Motorola	MC34074	OPA4131	C/P
Micro Networks	MNDAC80	DAC80-CBI-V	P/E	Motorola	MC34074	OPA4234	F/E
Micro Networks	MNDAC85	DAC85H-CBI-V	P/E	Motorola	MC34080	OPA602	C/P
Micro Networks	MNDAC87	DAC87H-CBI-V	P/E	Motorola	MC34080	OPA604	P/P
Micro Networks	MNDAC88	DAC811AH	F/E	Motorola	MC34080	OPA606	C/P
Micro Power Systems	MP574AJ	ADC574AJP	P/P	Motorola	MC34081	OPA132	P/P
Micro Power Systems	MP574AK	ADC574AKP	P/P	Motorola	MC34081	OPA602	P/E
Micro Power Systems	MP574AS	ADC574ASH	P/P	Motorola	MC34082	OPA2132	P/P
Micro Power Systems	MP574AT	ADC574ATH	P/P	Motorola	MC34082	OPA2604	C/P
Micro Power Systems	MP7506	MPC506	P/E	Motorola	MC34083	OPA2107	P/E
Micro Power Systems	MP7507	MPC507	P/E	Motorola	MC34083	OPA2604	P/P
Micro Power Systems	MP7508	MPC508	P/E	Motorola	MC34084	OPA4132	P/P
Micro Power Systems	MP7509	MPC509	P/E	Motorola	MC34085	OPA4132	C/P
Micro Power Systems	MP7531JD	DAC7541AAH	P/P	Motorola	MC34181	OPA111	F/E
Micro Power Systems	MP7531KD	DAC7541AAH	P/P	Motorola	MC34182	OPA2111	C/P
Micro Power Systems	MP7531KN	DAC7541AJP	P/P	Motorola	MC34268	REG1117-2.85	C/P
Micro Power Systems	MP7531LD	DAC7541AAH	P/P	Motorola	MC3458	OPA1013	C/P
Micro Power Systems	MP7531LN	DAC7541AJP	P/P	Motorola	MC4558	OPA2604	C/P
Micro Power Systems	MP7542	DAC7545KP	C/P	Motorola	TCA0372	OPA2544	C/P
Micro Power Systems	MP7545AD	DAC7545KP	P/E	Motorola	TL071	OPA604	P/E
Micro Power Systems	MP7545BD	DAC7545KP	P/E	Motorola	TL072	OPA2107	C/P
Micro Power Systems	MP7545CD	DAC7545KP	P/E	Motorola	TL081	OPA604	P/E
Micro Power Systems	MP7545JN	DAC7545JP	P/P	National Semiconductor	ACE10154	ADS7824	C/P
Micro Power Systems	MP7545KN	DAC7545KP	P/P	National Semiconductor	AD7521	DAC7541AJP	P/E
Micro Power Systems	MP7545LN	DAC7545LP	P/P	National Semiconductor	AD7531	DAC7541AJP	P/E
Micro Power Systems	MP7545SD	DAC7545KP	P/E	National Semiconductor	ADC1080	ADC80AG-12	P/E
Micro Power Systems	MP7545TD	DAC7545KP	P/E	National Semiconductor	ADC10831	ADS7844	F/E
Micro Power Systems	MP7545UD	DAC7545KP	P/E	National Semiconductor	ADC10832	ADS7844	F/E
Micro Power Systems	MP7616	DAC703KH	C/P	National Semiconductor	ADC10834	ADS7844	F/E
Micro Power Systems	MP7621AD	DAC7541AJP	P/E	National Semiconductor	ADC10838	ADS7844	F/E
Micro Power Systems	MP7621BD	DAC7541AKP	P/E	National Semiconductor	ADC1175	ADS930	F/E
Micro Power Systems	MP7621JN	DAC7541AJP	P/P	National Semiconductor	ADC12062	ADS7810	C/P
Micro Power Systems	MP7621KN	DAC7541AKP	P/P	National Semiconductor	ADC12062	ADS7819	C/P

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
National Semiconductor	ADC1280	ADC80AG-12	P/E	National Semiconductor	LM143	OPA445	C/P
National Semiconductor	ADC386	SHC605	C/P	National Semiconductor	LM143	opa551	C/P
National Semiconductor	CLC5956	ADS807	C/P	National Semiconductor	LM144	OPA445	C/P
National Semiconductor	CLC5956	ADS807	C/P	National Semiconductor	LM148	OPA4130	C/P
National Semiconductor	CLC942	ADS807	C/P	National Semiconductor	LM149	OPA4131	C/P
National Semiconductor	CLC952	ADS807	F/E	National Semiconductor	LM1558	OPA2111	C/P
National Semiconductor	CLC952B	ADS807	F/E	National Semiconductor	LM163	INA101AM	F/E
National Semiconductor	DAC1208	DAC811AH	F/E	National Semiconductor	LM1875	OPA2544T	C/P
National Semiconductor	DAC1218	DAC7541AJP	F/E	National Semiconductor	LM268	REF102	C/P
National Semiconductor	DAC1219	DAC7541AJP	F/E	National Semiconductor	LM272C	OPA338	C/P
National Semiconductor	DAC1230	DAC811AH	F/E	National Semiconductor	LM285AM-1.2	REF1004I-1.2	P/P
National Semiconductor	DAC1280	DAC80-CBI-V	P/E	National Semiconductor	LM285AM-2.5	REF1004I-2.5	P/P
National Semiconductor	DAC1285	DAC85H-CBI-V	P/E	National Semiconductor	LM285AXM-1.2	REF1004I-1.2	P/P
National Semiconductor	DAC1286	DAC80-CBI-V	P/E	National Semiconductor	LM285AXM-2.5	REF1004I-2.5	P/P
National Semiconductor	DAC1287	DAC87H-CBI-V	P/E	National Semiconductor	LM285AYM-1.2	REF1004I-1.2	P/P
National Semiconductor	LF11508	MPC508	P/E	National Semiconductor	LM285AYM-2.5	REF1004I-2.5	P/P
National Semiconductor	LF11509	MPC509	P/E	National Semiconductor	LM285BXM-1.2	REF1004I-1.2	P/P
National Semiconductor	LF157A	OPA606KM	F/E	National Semiconductor	LM285BXM-2.5	REF1004I-2.5	P/P
National Semiconductor	LF298	SHC298	P/E	National Semiconductor	LM285BYM-1.2	REF1004I-1.2	P/P
National Semiconductor	LF298H	SHC298AM	P/P	National Semiconductor	LM285BYM-2.5	REF1004I-2.5	P/P
National Semiconductor	LF347	OPA4134	P/P	National Semiconductor	LM285M-1.2	REF1004I-1.2	P/P
National Semiconductor	LF351	OPA134	P/P	National Semiconductor	LM285M-2.5	REF1004I-2.5	P/P
National Semiconductor	LF353	OPA2131	P/P	National Semiconductor	LM2902	OPA4237	C/P
National Semiconductor	LF353	OPA2134	P/P	National Semiconductor	LM2904	OPA2237	C/P
National Semiconductor	LF355	OPA131	P/P	National Semiconductor	LM2937	REG103	C/P
National Semiconductor	LF355	OPA132	P/P	National Semiconductor	LM2940	REG1117A	C/P
National Semiconductor	LF356	OPA132	P/P	National Semiconductor	LM308	OPA237	P/E
National Semiconductor	LF398AN	SHC298AJP	P/P	National Semiconductor	LM324	OPA4237	P/P
National Semiconductor	LF398H	SHC298AM	P/P	National Semiconductor	LM3303	OPA4237	P/P
National Semiconductor	LF398N	SHC298JP	P/P	National Semiconductor	LM331	VFC32	C/P
National Semiconductor	LF400C	OPA606KM	F/E	National Semiconductor	LM334	REF200	F/E
National Semiconductor	LF411	OPA132	P/P	National Semiconductor	LM340	REG1117	C/P
National Semiconductor	LF412	OPA2132	P/P	National Semiconductor	LM343	OPA445	C/P
National Semiconductor	LF441	OPA137	P/P	National Semiconductor	LM347	OPA4131	P/E
National Semiconductor	LF442	OPA2137	P/P	National Semiconductor	LM347	OPA4132	P/E
National Semiconductor	LF444	OPA4137	P/P	National Semiconductor	LM358	OPA2237	P/P
National Semiconductor	LF451	OPA134	P/P	National Semiconductor	LM363	INA101	F/E
National Semiconductor	LF453	OPA2134	P/P	National Semiconductor	LM368	REF102	C/P
National Semiconductor	LH0003	OPA640	C/P	National Semiconductor	LM385	REF1004-2.5	C/P
National Semiconductor	LH0021	3571	C/P	National Semiconductor	LM385AM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0022	OPA121KM	P/E	National Semiconductor	LM385AM-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0023	SHC298AM	C/P	National Semiconductor	LM385ASM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0033	OPA633KP	F/E	National Semiconductor	LM385AXM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0036	INA114	C/P	National Semiconductor	LM385AXM-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0036	INA118	C/P	National Semiconductor	LM385AYM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0038	INA114	C/P	National Semiconductor	LM385AYM-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0038	INA118	C/P	National Semiconductor	LM385BM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0042	OPA121KM	P/E	National Semiconductor	LM385BM-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0043	SHC298AM	C/P	National Semiconductor	LM385BXM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0044	OPA27GP	F/E	National Semiconductor	LM385BXM-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0052	OPA111AM	P/E	National Semiconductor	LM385BYM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0053	SHC5320KH	C/P	National Semiconductor	LM385BYM-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0053	SHC85	C/P	National Semiconductor	LM385M-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0084	PGA204	F/E	National Semiconductor	LM385M-2.5	REF1004C-2.5	P/P
National Semiconductor	LH0086	PGA102	F/E	National Semiconductor	LM385SM-1.2	REF1004C-1.2	P/P
National Semiconductor	LH0101	OPA541	C/P	National Semiconductor	LM4136	OPA4237	C/P
National Semiconductor	LH2011	OPA2111AM	C/P	National Semiconductor	LM607	OPA227	P/P
National Semiconductor	LH2101A	OPA2111AM	C/P	National Semiconductor	LM6125	BUF634	C/P
National Semiconductor	LH2108A	OPA2111AM	C/P	National Semiconductor	LM6132	OPA2340	C/P
National Semiconductor	LH4001	OPA633KP	C/P	National Semiconductor	LM6132A	OPA2343	C/P
National Semiconductor	LH740A	OPA121KM	P/E	National Semiconductor	LM6134	OPA4340	C/P
National Semiconductor	LM101	OPA277	C/P	National Semiconductor	LM6142	OPA2350	C/P
National Semiconductor	LM107	OPA277	P/P	National Semiconductor	LM6142A	OPA2343	C/P
National Semiconductor	LM11	OPA111	C/P	National Semiconductor	LM6144	OPA4350	C/P
National Semiconductor	LM11	OPA121	C/P	National Semiconductor	LM6152A	OPA2350	C/P
National Semiconductor	LM1117MPX-2.85	REG1117-2.85	P/P	National Semiconductor	LM6152A	OPA2353	C/P
National Semiconductor	LM1117MPX-3.3	REG1117-3.3	P/P	National Semiconductor	LM6154	OPA4353	C/P
National Semiconductor	LM1117MPX-5.0	REG1117-5	P/P	National Semiconductor	LM6154A	OPA4350	C/P
National Semiconductor	LM1117MPX-ADJ	REG1117	P/P	National Semiconductor	LM6181	OPA658	P/E
National Semiconductor	LM112	OPA277	C/P	National Semiconductor	LM6181N	OPA603	C/P
National Semiconductor	LM118	OPA627	C/P	National Semiconductor	LM6182	OPA2658	P/E
National Semiconductor	LM12	OPA541	C/P	National Semiconductor	LM6261	OPA650	P/E
National Semiconductor	LM12	OPA549	F/E	National Semiconductor	LM6262	OPA650	P/E
National Semiconductor	LM131	VFC32	C/P	National Semiconductor	LM6264	OPA651	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
National Semiconductor	LM627	OPA227	P/E	National Semiconductor	LMC6852B	OPA2337	P/E
National Semiconductor	LM627	OPA228	P/E	National Semiconductor	LMC6852B	OPA2338	P/E
National Semiconductor	LM6361	OPA640	C/P	National Semiconductor	LMC7101	OPA343	C/P
National Semiconductor	LM6361	OPA650	P/E	National Semiconductor	LMC7101B	OPA342	P/E
National Semiconductor	LM6362	OPA650	P/E	National Semiconductor	LMC7111	OPA336	C/P
National Semiconductor	LM6364	OPA651	P/E	National Semiconductor	LMV321	OPA337	P/P
National Semiconductor	LM637	OPA228	P/E	National Semiconductor	LMV321	OPA344	P/E
National Semiconductor	LM675	OPA541	C/P	National Semiconductor	LMV324	OPA4342	P/P
National Semiconductor	LM675	OPA548	C/P	National Semiconductor	LMV358	OPA2337	P/P
National Semiconductor	LM709	OPA237	P/E	National Semiconductor	LMV721	OPA343	P/P
National Semiconductor	LM7121	OPA650	P/E	National Semiconductor	LMV722	OPA2343	P/P
National Semiconductor	LM7121	OPA680	F/E	National Semiconductor	LMV722	OPA353	P/P
National Semiconductor	LM7131	OPA631	C/P	National Semiconductor	LMV751	OPA340	P/E
National Semiconductor	LM7131	OPA634	C/P	National Semiconductor	LMV821	OPA338	C/P
National Semiconductor	LM7131	OPA680	F/E	National Semiconductor	LMV821	OPA344	C/P
National Semiconductor	LM725	OPA277	P/E	National Semiconductor	LMV822	OPA2343	P/P
National Semiconductor	LM7301	OPA237	C/P	National Semiconductor	LMV824	OPA4343	P/P
National Semiconductor	LM7301	OPA337	C/P	National Semiconductor	LMV921	OPA342	P/P
National Semiconductor	LM7301	OPA338	C/P	National Semiconductor	LMV921	OPA344	P/E
National Semiconductor	LM741	OPA237	P/E	National Semiconductor	LP2960	REG103	C/P
National Semiconductor	LM747	OPA2237	P/E	National Semiconductor	LP2980	REG101NA	P/E
National Semiconductor	LM748	OPA237	P/E	National Semiconductor	LP2985	REG102NA	P/E
National Semiconductor	LM759	OPA547	C/P	National Semiconductor	LP324	OPA4243	C/P
National Semiconductor	LM77000	OPA551	C/P	National Semiconductor	LP324	OPA4251	P/E
National Semiconductor	LM7805	REG1117	C/P	National Semiconductor	LPC660	OPA4251	C/P
National Semiconductor	LM837	OPA4228	C/P	National Semiconductor	LPC660	OPA4336	C/P
National Semiconductor	LMC272	OPA2343	F/E	National Semiconductor	LPC661	OPA336	C/P
National Semiconductor	LMC272C	OPA2337	C/P	National Semiconductor	LPC661	OPA344	C/P
National Semiconductor	LMC6001	OPA344	P/P	National Semiconductor	LPC662	OPA2241	C/P
National Semiconductor	LMC6001C	OPA337	C/P	National Semiconductor	LPC662	OPA2336	C/P
National Semiconductor	LMC6001C	OPA338	C/P	National Semiconductor	LPV321	OPA349	P/E
National Semiconductor	LMC6022	OPA2342	P/P	National Semiconductor	LPV321	OPA349	P/E
National Semiconductor	LMC6024	OPA4342	P/P	National Semiconductor	SN75176	ISO485	C/P
National Semiconductor	LMC6032	OPA2342	P/P	NEC	UPC1251	OPA1013CN8	P/P
National Semiconductor	LMC6034	OPA4342	P/P	NEC	UPC63200	PCM69	C/P
National Semiconductor	LMC6035B	OPA2337	C/P	Newport	NM485D	ISO485	F/E
National Semiconductor	LMC6041	OPA241	P/E	NJR	NJM062D	OPA2137	P/P
National Semiconductor	LMC6041	OPA336	P/E	NJR	NJM2132	OPA2344	C/P
National Semiconductor	LMC6042	OPA2241	P/E	NJR	NJU7001	OPA241	C/P
National Semiconductor	LMC6042	OPA2336	P/E	NJR	NJU7001	OPA251	C/P
National Semiconductor	LMC6044	OPA4241	P/E	NJR	NJU7022	OPA2130	C/P
National Semiconductor	LMC6044	OPA4336	P/E	NJR	NJU7022	OPA2337	P/E
National Semiconductor	LMC6061	OPA241	P/E	NJR	NJU7032	OPA2337	P/E
National Semiconductor	LMC6061	OPA336	C/P	NPC	SM5872	PCM1717	C/P
National Semiconductor	LMC6062	OPA2241	P/E	NPC	SM5875	PCM1712	C/P
National Semiconductor	LMC6062	OPA2336	P/E	NPC	SM5875	PCM1717	C/P
National Semiconductor	LMC6064	OPA4241	P/E	NPC	SM5876	PCM1712	C/P
National Semiconductor	LMC6064	OPA4336	P/E	NPC	SM5877	PCM1717	C/P
National Semiconductor	LMC6081	OPA337	C/P	Omnirel	OMA2541	OPA2541	P/E
National Semiconductor	LMC6081	OPA338	C/P	Omnirel	OMA501	OPA501	P/E
National Semiconductor	LMC6081	OPA344	C/P	Omnirel	OMA502	OPA502	P/E
National Semiconductor	LMC6082	OPA2344	C/P	Omnirel	OMA511	OPA541	C/P
National Semiconductor	LMC6084	OPA4344	C/P	Omnirel	OMA512	OPA512	P/E
National Semiconductor	LMC6442	OPA2349	C/P	Omnirel	OMA541	OPA541LM	P/E
National Semiconductor	LMC6462	OPA2336	C/P	Philips	NE5532	OPA2134	C/P
National Semiconductor	LMC6464	4336	C/P	Philips	NE5533	OPA2134	C/P
National Semiconductor	LMC6482	OPA2337	P/E	Philips	NE5534	OPA134	C/P
National Semiconductor	LMC6482	OPA2338	C/P	Philips	TDA1305	PCM1710	C/P
National Semiconductor	LMC6482	OPA2340	P/E	Philips	TDA1305	PCM1718	C/P
National Semiconductor	LMC6482	OPA2344	C/P	Philips	TDA1305	PCM1720	C/P
National Semiconductor	LMC6482A	OPA2343	C/P	Philips	TDA1306	PCM1710	C/P
National Semiconductor	LMC6484	OPA4342	C/P	Philips	TDA1306	PCM1718	C/P
National Semiconductor	LMC6484	OPA4344	C/P	Philips	TDA1306	PCM1720	C/P
National Semiconductor	LMC6492	OPA2337	P/E	Philips	TDA1386	PCM1718	C/P
National Semiconductor	LMC6492	OPA2340	P/E	Philips	TDA8762	ADS822/ADS825	F/E
National Semiconductor	LMC6492	OPA2342	C/P	Philips	TDA8762A/60	ADS823/ADS826	F/E
National Semiconductor	LMC6492	OPA2343	C/P	Philips	TDA8762A/80	ADS828	C/P
National Semiconductor	LMC6494	OPA4342	C/P	Philips	TDA8763	ADS823/ADS826	F/E
National Semiconductor	LMC6572	OPA2342	C/P	Philips	TDA8763A	ADS823/ADS826	F/E
National Semiconductor	LMC6582	OPA2344	C/P	Philips	TDA8768	ADS807	C/P
National Semiconductor	LMC6584	OPA4344	C/P	Philips	TDA8786	VSP2000	F/E
National Semiconductor	LMC660	OPA4342	C/P	Philips	TDA8787	VSP2000	F/E
National Semiconductor	LMC662A	OPA2342	C/P	Philips	TDA8790	ADS830	C/P
National Semiconductor	LMC6681A	OPA343	C/P	Raytheon	OP05	OPA277	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Raytheon	OP37	OPA37	P/E	Sipex	SP7800	ADS7800	C/P
Raytheon	OP47	OPA37GP	F/E	Sipex	SP9345	DAC4813	F/E
Raytheon	RC1458	OPA2111AM	C/P	Sony	GSD2652	PCM1710	C/P
Raytheon	RC2041	OPA2111AM	C/P	Sony	CXD2310	ADS820	F/E
Raytheon	RC2043	OPA2111AM	C/P	SPT	SPT1175	ADS930	F/E
Raytheon	RC4136	OPA404AG	C/P	SPT	SPT7734	ADS830	F/E
Raytheon	RC4153	VFC320	C/P	SPT	SPT7850	ADS820	F/E
Raytheon	RC4156	OPA404AG	C/P	SPT	SPT7850	ADS820	C/P
Raytheon	RC4558	OPA2111AM	C/P	SPT	SPT7860	ADS822/ADS825	F/E
Raytheon	RC4559	OPA2111AM	C/P	SPT	SPT7861	ADS822/ADS825	F/E
Raytheon	RC4560	OPA2111AM	C/P	SPT	SPT7863	ADS822/ADS825	F/E
Raytheon	RC4562	OPA2111AM	C/P	SPT	SPT7864	ADS822/ADS825	C/P
Raytheon	RC4739	OPA2111AM	C/P	SPT	SPT7866	ADS823/ADS826	C/P
Raytheon	RC5532	OPA2111AM	C/P	SPT	SPT7868	ADS828	C/P
Raytheon	RC5534	OPA37GP	F/E	SPT	SPT7920	ADS802	C/P
Raytheon	RC714	OPA27GP	F/E	SPT	SPT7920	ADS804	F/E
Raytheon	RC747	OPA2111AM	C/P	SPT	SPT7922	ADS802	C/P
RCA	CA3100	OPA627	C/P	SPT	SPT7922	ADS822	F/E
Sanyo	LC78835	PCM1717	C/P	Telcom	TC1014	REG101NA	P/E
Semtech	EZ1117CST-3.3	REG1117F-3.3	P/P	Telcom	TC1015	REG101NA	P/E
SGS-Thompson	LD2980	REG101NA	P/E	Telcom	TC1070	REG101NA	P/E
SGS-Thompson	TS27L2BC	OPA2244	P/E	Telcom	TC1071	REG101NA	P/E
SGS-Thompson	TS27L2BC	OPA2244	C/P	Telcom	TC1185	REG102NA	P/E
SGS-Thompson	TS3V902	OPA2337	P/E	Telcom	TC1187	REG102NA	P/E
SGS-Thompson	TS3V902	OPA2338	P/E	Telcom	1480	3583JM	P/E
SGS-Thompson	TS3V902	OPA2342	C/P	Teledyne-Philbrick	TP4002	DAC71-COB-V	F/E
SGS-Thompson	TS3V902	OPA2342	C/P	Teledyne-Philbrick	TP4855	SHC605	C/P
SGS-Thompson	TS3V912	OPA2337	P/E	Teledyne-Philbrick	TP4860	SHC8048M	P/E
SGS-Thompson	TS3V912	OPA2338	P/E	Teledyne-Philbrick	TPADC85	ADC85H-12	P/E
SGS-Thompson	TS3V912	OPA2342	C/P	Teledyne-Philbrick	TPADC87	ADC87H-12	P/E
SGS-Thompson	TS3V912	OPA2342	C/P	Texas Instruments	AD7528	DAC7528	P/E
SGS-Thompson	TS3V912	OPA2344	C/P	Texas Instruments	LF198	SHC298	P/E
SGS-Thompson	TS942	OPA2349	C/P	Texas Instruments	LF398	SHC298	P/E
SGS-Thompson	TS951	OPA337	P/E	Texas Instruments	LT1004CD-1.2	REF1004C-1.2	P/P
SGS-Thompson	TS951	OPA338	P/E	Texas Instruments	LT1004CD-2.5	REF1004C-2.5	P/P
SGS-Thompson	UDN2962W	DRV101	C/P	Texas Instruments	LT1013	OPA1013	P/E
SGS-Thompson	UDN2966	DRV101	C/P	Texas Instruments	TCL2252C	OPA2244	P/E
Siemens	IL11	ISO150	C/P	Texas Instruments	TL031AC	OPA137	P/P
Signetics	NE532	OPA2604	P/E	Texas Instruments	TL061AC	OPA137	P/E
Signetics	NE5532N	OPA2604	P/P	Texas Instruments	TL061C	OPA137	P/P
Signetics	NE5534	OPA604	P/E	Texas Instruments	TL062	OPA2137	P/E
Siliconix	D6534	MPC100	C/P	Texas Instruments	TL064	OPA4137	P/E
Siliconix	D6538	MPC100	C/P	Texas Instruments	TL071	OPA131	P/E
Siliconix	D6884	MPC100	C/P	Texas Instruments	TL071	OPA604	P/E
Siliconix	D6894	MPC100	C/P	Texas Instruments	TL072	OPA2131	P/E
Siliconix	DG407	MPC507A	P/P	Texas Instruments	TL072	OPA2604	P/E
Siliconix	DG506	MPC506	P/E	Texas Instruments	TL074	OPA4134	P/P
Siliconix	DG507	MPC507	P/E	Texas Instruments	TL074BC	OPA4131	P/E
Siliconix	DG508	MPC508	P/E	Texas Instruments	TL082	OPA2604	P/E
Siliconix	DG509	MPC509	P/E	Texas Instruments	TL084	OPA404KP	P/E
Sipex	HS ADC85C	ADC85H-12	P/P	Texas Instruments	TL084CD	OPA4131UJ	P/P
Sipex	HS574AA	ADS574ATH	P/P	Texas Instruments	TL087	OPA604	F/E
Sipex	HS574AB	ADS574ATH	P/P	Texas Instruments	TL088	OPA604	F/E
Sipex	HS574AJ	ADS574JP	P/P	Texas Instruments	TLC2201	OPA111	P/E
Sipex	HS574AK	ADS574KP	P/P	Texas Instruments	TLC2202	OPA2111	P/E
Sipex	HS574AS	ADS574ASH	P/P	Texas Instruments	TLC2221	OPA2337	P/E
Sipex	HS574AT	ADS574ATH	P/P	Texas Instruments	TLC2252	OPA2336	C/P
Sipex	HS-7541AAQ	DAC7541ABH	P/P	Texas Instruments	TLC2262	OPA2337	P/E
Sipex	HS-7541ABQ	DAC7541ABH	P/P	Texas Instruments	TLC2262	OPA2344	C/P
Sipex	HS-7541AJN	DAC7541AKP	P/P	Texas Instruments	TLC2262A	OPA2237	P/E
Sipex	HS-7541AKN	DAC7541AKP	P/P	Texas Instruments	TLC2262C	OPA2337	P/E
Sipex	HS9576J	ADC76JG	P/P	Texas Instruments	TLC2262C	OPA2338	P/E
Sipex	HS9576K	ADC76KG	P/P	Texas Instruments	TLC2272	OPA2234	P/E
Sipex	SP111AIH	OPA111AM	P/P	Texas Instruments	TLC2272	OPA2337	P/E
Sipex	SP111AMH	OPA111SM	P/P	Texas Instruments	TLC2274	OPA4234	C/P
Sipex	SP111BIH	OPA111BM	P/P	Texas Instruments	TLC5510	ADS930	F/E
Sipex	SP121ACP	OPA121KP	P/P	Texas Instruments	TLC5540	ADS830	F/E
Sipex	SP121BCH	OPA121KM	P/P	Texas Instruments	TLE2021	OPA344	C/P
Sipex	SP674AA	ADS7804PB	F/E	Texas Instruments	TLE2021A	OPA234	P/E
Sipex	SP674AB	ADS7804PB	F/E	Texas Instruments	TLE2021A	OPA237	P/E
Sipex	SP674AJ	ADS774JP	P/P	Texas Instruments	TLE2022	OPA2234	P/E
Sipex	SP674AK	ADS774KP	P/P	Texas Instruments	TLE2071ACP	OPA132	P/E
Sipex	SP674AS	ADS7804PB	F/E	Texas Instruments	TLE2071ACP	OPA134	F/E
Sipex	SP674AT	ADS7804PB	F/E	Texas Instruments	TLE2072	OPA2134	P/E

Cross Reference

Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.	Competitor	Competitor Part Number	Burr-Brown Part Number	Pin Compat.
Texas Instruments	TLE2072CP	OPA2132	P/E	Texas Instruments	TSL251	OPT101	C/P
Texas Instruments	TLE2074ACN	OPA4132	P/E	Texas Instruments	TSL252	OPT101	C/P
Texas Instruments	TLE2081AC	OPA132	P/E	Texas Instruments	TSL260	OPT101	C/P
Texas Instruments	TLE2084AC	OPA4132	P/E	Texas Instruments	TSL261	OPT101	C/P
Texas Instruments	TLE2141AC	OPA350	C/P	Texas Instruments	TSL262	OPT101	C/P
Texas Instruments	TLE2142AC	OPA353	C/P	Thomson	TEA2114	MPC100AP	C/P
Texas Instruments	TLSCS1285	REG1117-2.85	C/P	Thomson	TEA6415	MPC100AP	C/P
Texas Instruments	TLV2211	OPA2337	P/E	Toko	TK716xx	REG102NA	P/E
Texas Instruments	TLV2211	OPA336	C/P	Toshiba	TC9293	PCM1717	C/P
Texas Instruments	TLV2231C	OPA337	C/P	Toshiba	TC9404	PCM1717	C/P
Texas Instruments	TLV2231C	OPA338	P/E	TriTech	TR88801	ADS7843	C/P
Texas Instruments	TLV2252	OPA2336	C/P	TriTech	TR88802	ADS7843	C/P
Texas Instruments	TLV2262	OPA2234	P/E	TriTech	TR88L803	ADS7843	C/P
Texas Instruments	TLV2262	OPA2344	C/P	Tritech	TR88L804	ADS7843	C/P
Texas Instruments	TLV2262A	OPA2337	C/P	TRW	THC1201	ADS804	C/P
Texas Instruments	TLV2262A	OPA2338	C/P	Unitrode	L295	DRV101	C/P
Texas Instruments	TLV2401	OPA349	C/P	VTC	VA033	OPA633KP	P/E
Texas Instruments	TLV2432	OPA344	C/P	Wolfson	WM8716	PCM1716	P/P
Texas Instruments	TLV2442C	OPA2337	C/P	Wolfson	WM8720	PCM1720	P/P
Texas Instruments	TLV2442C	OPA2338	C/P	Wolfson	WM8725	PCM1725	P/P
Texas Instruments	TLV2461	OPA337	C/P	Wolfson	WM8733	PCM1733	P/P
Texas Instruments	TLV2461	OPA338	C/P	Wolfson	WM8736	PCM16xx	C/P
Texas Instruments	TLV2721	OPA337	C/P	Zeltex	ADA160Q	DAC729JH	F/E
Texas Instruments	TLV2721	OPA338	C/P	Zeltex	ZAD354	DAC71-COB-V	F/E
Texas Instruments	TLV2731	OPA337	F/E	Zeltex	ZAD7100	ADC80AG-12	F/E
Texas Instruments	TLV2731	OPA338	F/E	Zeltex	ZAD7400	ADC76JG	F/E
Texas Instruments	TLV2771	OPA337	C/P	Zeltex	ZAD8000	DAC70BH-COB-I	F/E
Texas Instruments	TLV2771	OPA338	C/P	Zeltex	ZD354	DAC71-COB-V	F/E
Texas Instruments	TPS71xx	REG103	C/P	Zeltex	ZD364	DAC71-COB-V	F/E
Texas Instruments	TPS73xx	REG103	C/P	Zeltex	ZD384	DAC71-COB-V	F/E
Texas Instruments	TPS763xx	REG102NA	P/E	Zeltex	ZD394	DAC71-COB-V	F/E
Texas Instruments	TPS764xx	REG102NA	P/E	Zeltex	ZDA160	DAC729JH	F/E
Texas Instruments	TSL250	OPT101	C/P				

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