



Look What 40 Years of Analog Leadership Does for Power Management ICs

Power Management

MAKE**AD**IFFERENCE

analog.com/power



Look What 40 Years of Analog Leadership Does for Power Management ICs

Analog Devices has set the standard for high performance signal processing semiconductors for over four decades. Our power management products continue that tradition, exceeding the high expectations of reliability, innovation, and value you've come to expect from Analog Devices. After all, who better to understand the power requirements of high performance signal processing chains than ADI?

This brochure provides an overview of our power management product families for applications including industrial, instrumentation, imaging, communications and computing infrastructure, and consumer electronics. We understand that complete solutions must include products that address real-world needs, design aids that decrease your time to market, and a world-class organization that stands behind its products. So, in addition to great products, we have developed best-in-class Web tools for product selection, design, simulation, optimization, and evaluation board customization. We have also established a corps of power management experts in locations around the world with access to our customer applications centers to help you develop effective solutions quickly.

Power Development Centers

- Longmont, CO (New)
- San Jose, CA
- Seattle, WA
- Edinburgh, Scotland
- Limerick, Ireland
- Oulu, Finland (New)
- Shanghai, China
- Bundang, Korea (New)
- Tokyo, Japan



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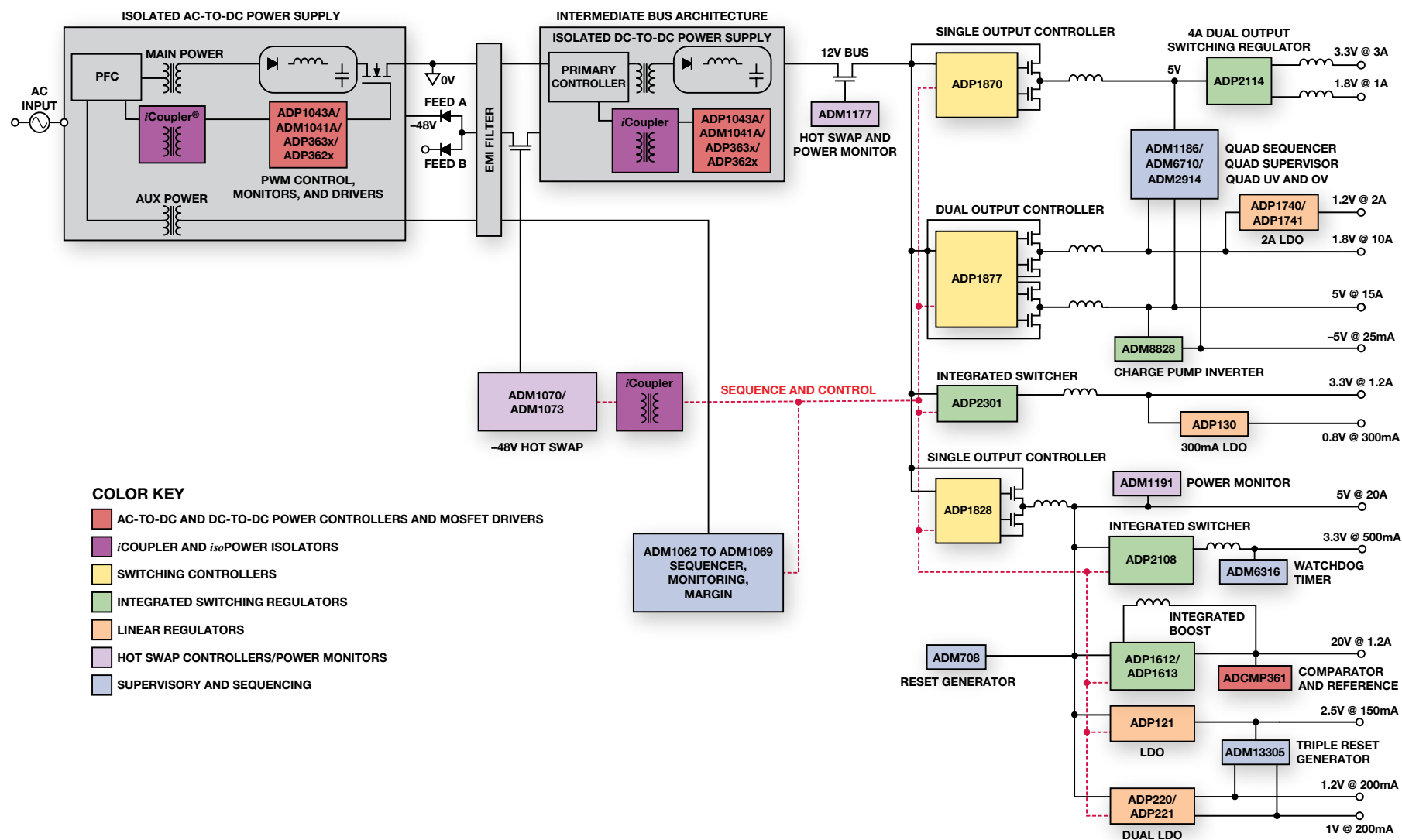
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Power Chain



ADIsimPower Online Design Tool: Expert Voltage Regulator Design Help Available 24/7

Step 1: Enter Your Design Criteria

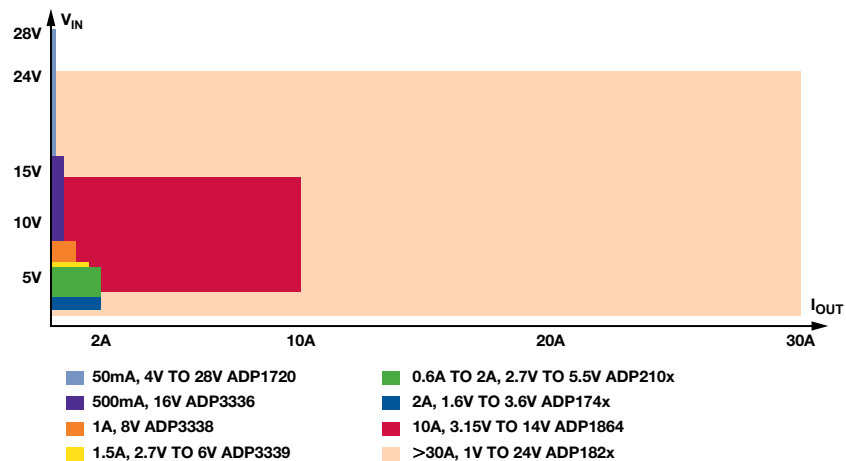
- Enter 5 inputs for a single channel design
- If 2 outputs are needed press the dual channel button
- Enter V_{OUT} and I_{OUT} for Channel 2
- Press the **Find Solution** button

All fields are required.

Vinmin (V)	Vinmax (V)	Vout (V)	Iout (A)	Tmax (°C)
4.5	5.5	1.2	0.3	55
$1.00 \leq x \leq 80$	$1.00 \leq x \leq 80$	$0.6 \leq x \leq 100$	$0.01 \leq x \leq 30$	$-40 \leq x \leq 125$

Find Solutions Use Dual Channel Device Clear Fields

The ADIsimPower™ design tool provides complete designs for $1 < V_{IN} < 24$ V, $1 < V_{OUT} < 21$ and $I_{OUT} < 30$ A today. Inputs outside this range may result in a suggested IC and topology that will work and, if ADI has no parts to recommend, then View 2 will show no solutions. All solutions are limited to 125°C operating temperature for the ICs used. This means the T_{MAX} entered will reduce the number of solutions displayed to zero as T_{MAX} approaches 125°C.



Step 2: View All Design Solutions

- Select a recommended solution or sort for features you prefer
- ADI solutions not yet supported by the design tool are shown with grey backlight

- Designs up to 24 V in and 30 A out
- Single or dual channel
- LDOs, buck switchers, and buck controllers

	Criteria	IC	Topology
View Solution	LC Lowest Cost	ADP1715	Linear
View Solution	SS Smallest Size	ADP2108	Buck
View Solution	LPC Least Part Count	ADP1707	Linear
View Solution	ME Most Efficient	ADP2106	Buck

	Criteria	IC	IC Description	Solution Cost ** (USD\$)	Solution Size (mm²)	Efficiency * (at Iout)	Component Count	Topology	Features Show all features (17)				
									Enable / Shutdown	Power Good	Tracking	Light Load Efficiency	Synchronizable
View Solution	ME	ADP2106	Regulator	1.98	46	0.91	10	Buck	✓	-	✓	✓	-
View Solution		ADP2107	Regulator	2.05	46	0.91	10	Buck	✓	-	✓	✓	-
View Solution		ADP2105	Regulator	1.86	46	0.90	10	Buck	✓	-	✓	✓	-
View Solution		ADP2102	Regulator	1.82	23	0.89	5	Buck	✓	-	-	✓	-
View Solution	SS	ADP2108	Regulator	1.42	17	0.83	4	Buck	✓	-	-	✓	-
View Solution		ADP1821	Controller + Driver	2.77	180	0.80	29	Buck	✓	✓	✓	-	✓
View Solution		ADP1822	Controller + Driver	2.87	213	0.80	34	Buck	✓	✓	✓	-	✓
View Solution		ADP1828	Controller + Driver	2.85	205	0.80	22	Buck	✓	✓	✓	-	✓
View Solution		ADP1864	Controller + Driver	2.12	111	0.72	11	Buck	✓	-	-	✓	-
View Solution		ADP3050	Regulator	2.64	54	0.71	11	Buck	✓	-	-	✓	-
View Solution		ADP1706	LDO	1.16	34	0.22	4	Linear	✓	-	-	-	-
View Solution	LPC	ADP1707	LDO	1.18	34	0.22	3	Linear	✓	-	✓	-	-
View Solution		ADP1708	LDO	1.20	35	0.22	5	Linear	✓	-	-	-	-
View Solution	LC	ADP1715	LDO	0.92	29	0.22	8	Linear	✓	-	-	-	-

Start using ADIsimPower today at www.analog.com/ADIsimPower

Step 3: View Solution Details

View your solution and fine tune the design if needed

- User selects max height, ripple, and step response
- BOM calls out vendor part numbers
- PCBs stocked for fast prototyping

All fields are required.

Vinmin (V) 4.5 Vinmax (V) 5.5 Vout (V) 1.2 Iout (A) 0.3 Tmax (°C) 55

2.7 ≤ Vinmax Vinmin ≤ 5.5 0.8 ≤ Vout Vinmin 0.01 ≤ Iout 1.00 -40 ≤ Tmax 125

[Update Solution](#) [Modify Advanced Settings](#)

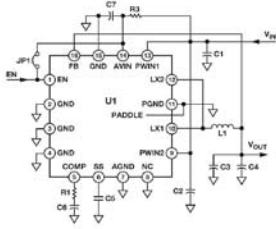
Skip down to: [Bill Of Materials](#) | [Graphs](#) |

User Input Data & Solution Schematic

Designed for: ☐ Lowest cost ☐ Part count ☒ Efficiency ☐ Size

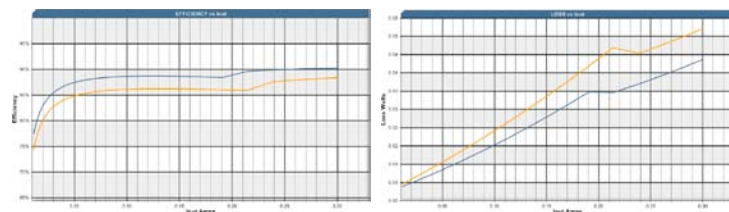
[User Target Specs](#) [Default Design Specs](#) [Operational Estimates](#) [Dissipation Estimates](#) [Temperature Estimates](#)

Spec	Vinmin	Vinmax	Units
PWM frequency	1.200	1.200	MHz
PFM Threshold	0.204	0.217	A
Don	0.278	0.227	Ton/Tpd
Doft	0.722	0.773	Tot/Tpd
IpkL1	0.504	0.517	Apk
IrippleL1	0.407	0.434	Appk
IrmsL1	0.322	0.325	AmpRMS
Vout ripple		0.002	Vppk
Iin average	0.089	0.074	Amps



Bill of Materials [Download Bill of Materials](#) [Build This Solution!](#) [Back to Top](#)

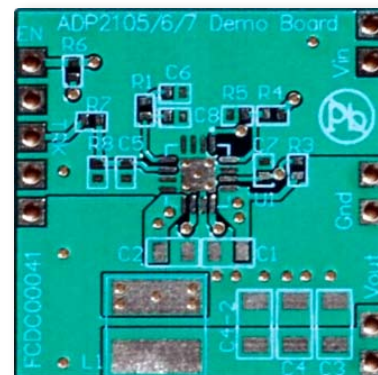
Item #	Des	Mfg	Part Number	Component Specs	Pkg	Part Qty	Area(mm²)	Hgt(mm)	Cost(\$)*
1	U1	ADI	ADP2105ACPZ-1.2-R7	Integrated Switching Regulator	LFCSP_VQ-15L	1	16.00	1	1.25
2	L1	Coilcraft	LP55015-182	1.8µH, 84mΩ, 2.84pk	shielded	1	25	1.5	0.41
3	C7	Vishay	VJ0603Y104K00A	0.1µF, X7R, 25V	603	1	1.3	0.8	0.01
4	C1, C2	Murata	GRM32ER1A226K	22µF, 10V, 0.8mΩ	1210	2	16	1	0.60
5	C3	Taiyo Yuden	JKM212 6J475KG-T	4.7µF, 6.3V, 12mΩ	805	1	2.5	1.25	0.02
6	C4	Taiyo Yuden	JKM212 6J105MG-T	10µF, 6.3V, 7mΩ	805	1	2.5	1.25	0.03
7	C6	Vishay	10% tolerance	100pF	603	1	1.3	0.8	0.01
8	R1	Vishay	5% tolerance	75Ω	603	1	1.3	0.8	0.01
9	C5	Vishay	VJ0603Y102K00A	1nF, X7R, 25V	603	1	1.3	0.8	0.01
10	R3	Vishay	10% tolerance	10Ω	603	1	1.3	0.8	0.01
Totals						11	68.50	1.5	\$2.34



Step 4: Build Your Design

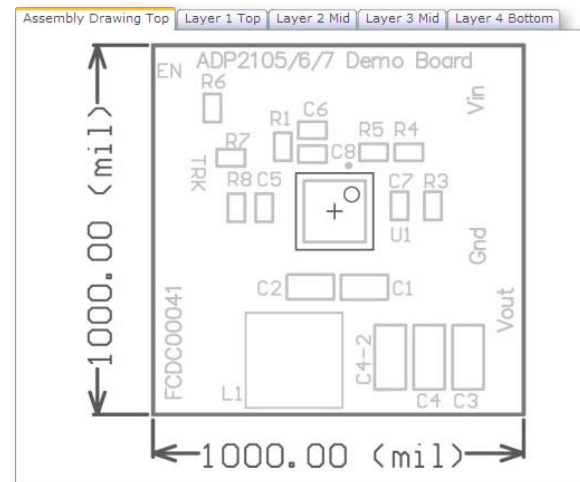
Use links to get IC samples, buy a matching PCB to prototype the circuit, see artwork to guide your own layout, email your design to a coworker, or convert the design to a PDF to print or archive.

Additional Links [Start New Design](#) [Email Your Design](#) [Convert Design to PDF](#)



Purchase Information: ADP2106

Model	Sample	Purchase
ADP2106ACPZ-1.2-R7	Add to Cart	Add to Cart
ADP2106-BL1-EVZ	Contact ADI	Add to Cart

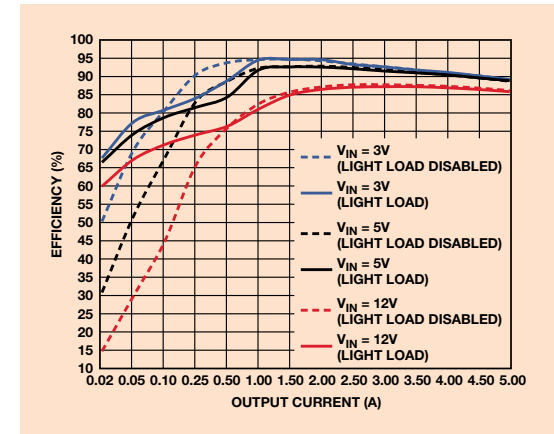


Switching Controllers

Switching Controllers that Deliver Highly Efficient and Easy to Use Solutions

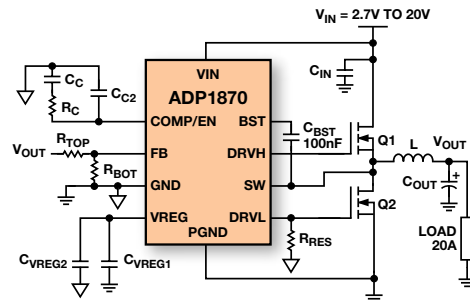
Analog Devices offers a range of synchronous and asynchronous switching controllers to provide efficient voltage rails down to voltages as low as 0.6 V and up to 50 A. Analog Devices makes power management design simple by providing easy to use design software, ADIsimPower, to provide schematics and BOM with a few easy steps. This, added to industry-leading application support and over 40 years of experience in high performance signal processing, makes ADI a reliable and efficient supplier of power management.

ADI has a very broad selection of switching controllers to deliver high current to your point of load. The simple asynchronous ADP1864 switching controller can deliver a very compact and efficient solution up to 6 A. The ADP1870 is a synchronous controller that uses very few external components to allow the user to deliver up to 25 A to the load. This part also has the option of a light load efficient mode. The ADP1828 is a fully featured switching controller with integrated tracking, resistor adjustable switching frequency, and the ability to synchronize other regulators to this clock. There are also a number of multioutput regulators like the ADP1829, which generates two separate outputs running 180 degrees out of phase.



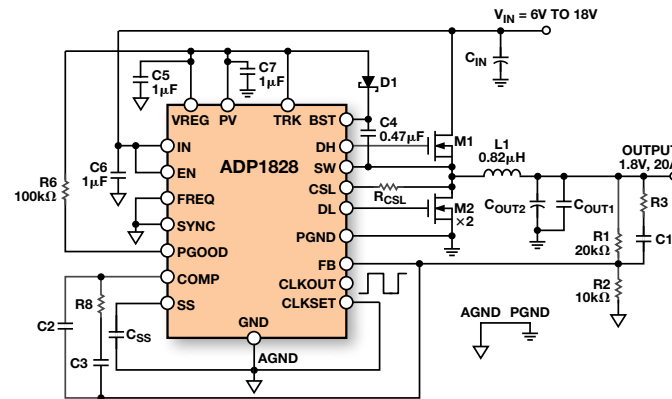
ADP1870 efficiency plot.

Single Output



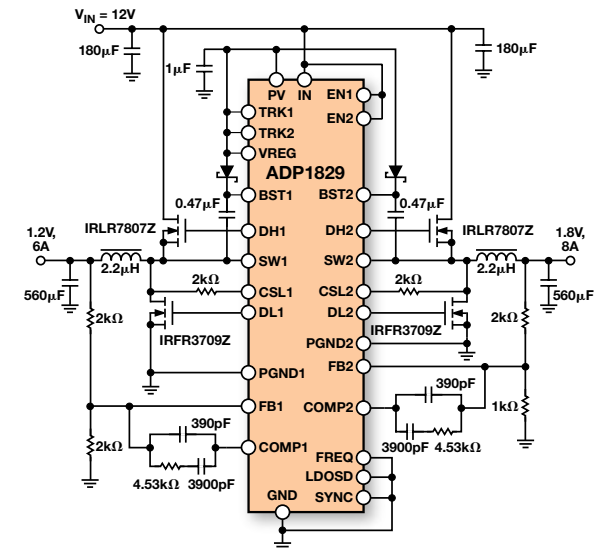
ADP1870: integrated soft start, fixed frequency, integrated boost diode, light load efficient.

Single Output, Advanced Functionality



ADP1828: resistor adjustable frequency, clock synchronize output, tracking, adjustable soft start.

Dual Output, Advanced Functionality

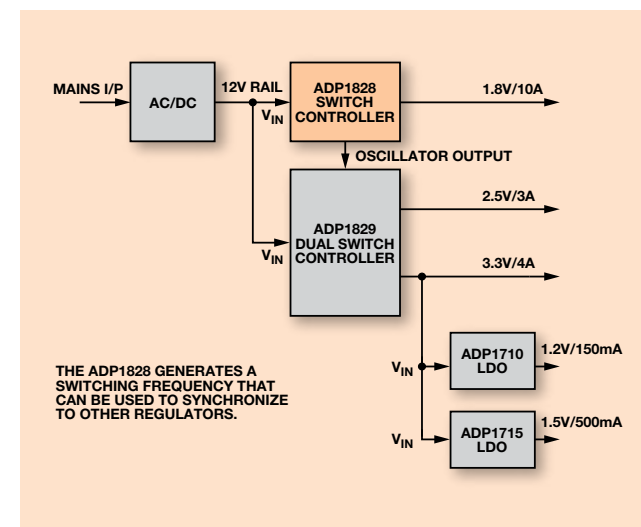


ADP1829: dual interleaved output, tracking, adjustable soft start, voltage mode, separate power goods.

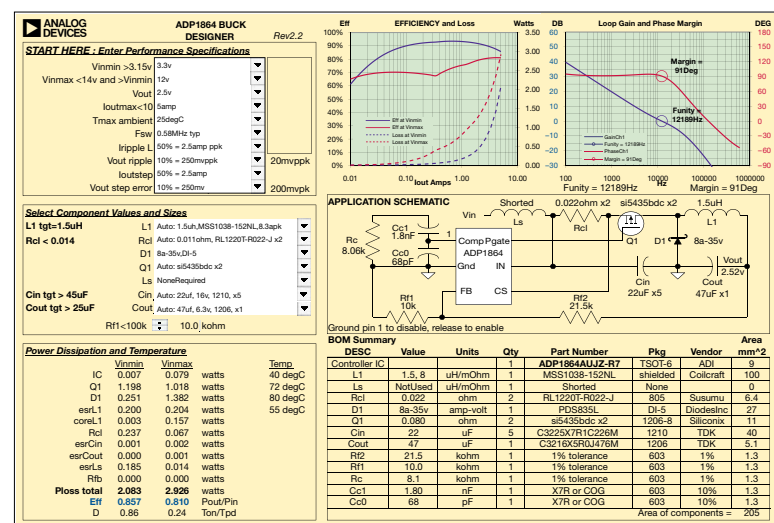
Using ADIsimPower, a full schematic, BOM, and performance plots can be generated online. Also, downloadable versions of the tools are available (example shown below for ADP1864). Once the input requirements have been entered, in a matter of seconds the full solution is provided. Evaluation boards for the parts can be ordered online.

Switching Controllers

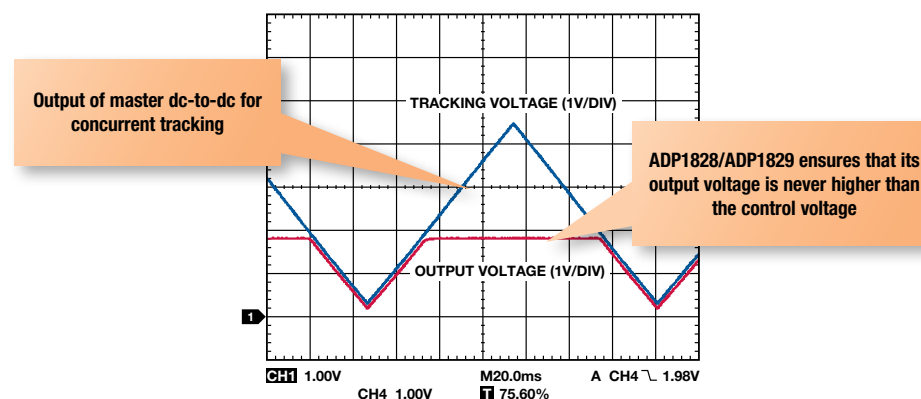
Part Number	V _{IN} Range (V)	Switching Frequency	V _{OUT} Options	I _{OUT} Max (A)	Step-Up	Step-Down	Supply Current Max	Shutdown	Package	Price (\$U.S.)
ADP1621	2.9 to 5.5	100 kHz to 1.5 MHz	Adj	—	Yes	No	3 mA	Yes	10-lead MSOP	1.75
ADP1821	3.7 to 5.5	300 kHz to 600 kHz, sync up to 1 MHz	Adj	25	No	Yes	2 mA	Yes	16-lead QSOP	1.40
ADP1822	3.7 to 5.5	300 kHz to 600 kHz, sync up to 1 MHz	Adj	25	No	Yes	2 mA	Yes	24-lead QSOP	1.80
ADP1823	3.7 to 20	300 kHz to 600 kHz, sync up to 1 MHz	Adj	25	No	Yes	3 mA	Yes	32-lead LFCSP	2.10
ADP1828	3.0 to 18	300 kHz to 600 kHz, sync up to 1 MHz	Adj	25	No	Yes	3 mA	Yes	20-lead QSOP	1.50
ADP1829	3.0 to 18	300 kHz to 600 kHz, sync up to 1 MHz	Dual adj	25	No	Yes	3 mA	Yes	32-lead LFCSP	2.10
ADP1864	3.15 to 14	580 kHz	Adj 0.8 V to V _{IN}	5	No	Yes	350 μ A	Yes	6-lead TSOT	1.05
ADP1872/ ADP1873	3.0 to 20	300 kHz, 600 kHz, 1 MHz	Adj	25	No	Yes	1 mA	Yes	10-lead MSOP	1.03
ADP1877	3.0 to 14	300 kHz to 1.5 MHz	Dual adj	Dual 25	No	Yes	3 mA	Yes	32-lead LFCSP	1.85



Typical application diagram of the ADP1828.



Screen shot of the downloadable version of the ADP1864 design tool.

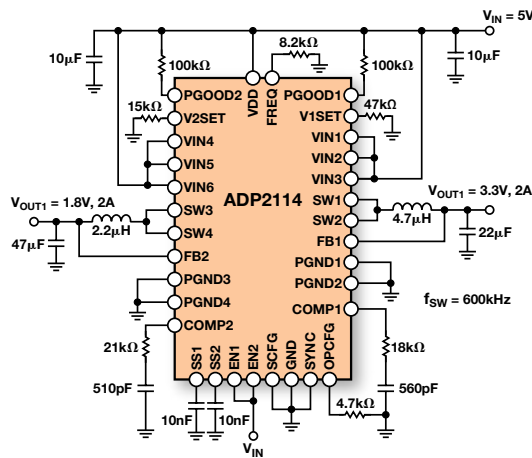


Switching Regulators (with Integrated Switching MOSFET)

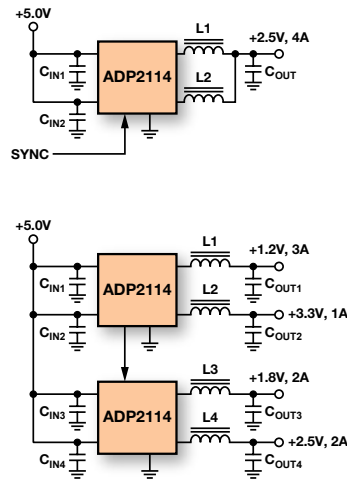
ADI provides a wide range of switching regulators with integrated FETs for step-up (boost) and step-down (buck) applications with fixed and adjustable output voltage options. This highly integrated, versatile family of products is intended to minimize external components for space challenged applications. The switching regulator devices combine with Analog Devices online ADIsim design tools to offer extremely easy to use solutions.

Featured Product: ADP2114—Configurable, Dual 2 A or Single 4 A Switching Regulator

- Dual output 2 A per channel or dual output 3 A/1 A per channel
- Configurable as single output interleaved 4 A
- Optimized gate drive for low noise generation
- Synchronization
- Parallel and interleaved multiphase operation with phase shift
- High conversion efficiency to 95%
- Light load efficiency mode
- Power-good and enable functions for simplified sequencing



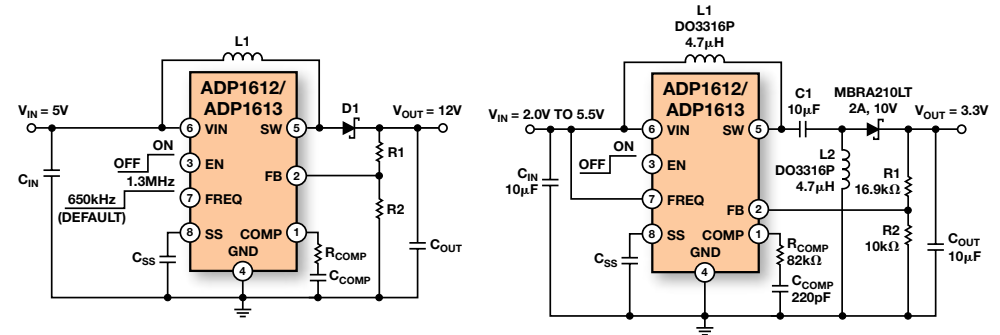
ADP2114: configurable, dual output, 2 A switching regulator.



Top: ADP2114: single, interleaved 4 A output.
Bottom: ADP2114: four power rails, phase shifted.

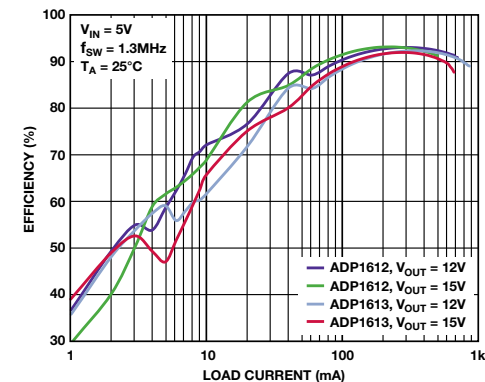
Featured Product: ADP1612/ADP1613—Step-Up, Boost, Integrated Switching Regulators

- ADP1612: 1.8 V minimum V_{IN} with up to 1.4 A output current
- ADP1613: 2.5 V minimum V_{IN} with up to 2 A output current
- Adjustable output voltage up to 20 V
- Adjustable soft start
- Logic enable
- Optimized for space constrained systems
- Applications include TFT LCD bias supplies, portable applications, industrial/instrumentation equipment



ADP1612/ADP1613: step-up, boost switching regulator.

ADP1612/ADP1613: configured as a SEPIC converter.



ADP1612/ADP1613: high efficiency conversion.

Step-Up (Boost) Switching Regulators

Part Number	V _{IN} Range (V)	V _{OUT} Preset Options (V)	V _{OUT} Adj Options	Switch Current Max (A)	Switching Frequency	Package	Price (\$U.S.)
ADP1111 ¹	2 to 30	3.3, 5.0, 12.0	—	1.5	70 kHz	8-lead PDIP, 8-lead SOIC	2.06
ADP1610	2.5 to 5.5	—	V _{IN} to 12	1.2	700 kHz or 1.2 MHz	8-lead MSOP	1.25
ADP1611	2.5 to 5.5	—	V _{IN} to 20	1.2	1.2 MHz	8-lead MSOP	1.35
ADP1612	1.8 to 5.5	—	V _{IN} to 20	1.4	650 kHz or 1.3 MHz	8-lead MSOP	1.50
ADP1613	2.5 to 5.5	—	V _{IN} to 20	2	650 kHz or 1.3 MHz	8-lead MSOP	1.20

¹Can be configured for boost or buck.

Step-Down (Buck) Switching Regulators

Part Number	V _{IN} Range (V)	V _{OUT} Preset Options (V)	V _{OUT} Adj Options	I _{OUT} Max (A)	Typical I _Q (μA)	Switching Frequency (MHz)	Package	Price (\$U.S.)
ADP2102	2.7 to 5.5	0.8, 1.0, 1.25, 1.2, 1.375, 1.5, 1.875, 1.8	0.8 to 1.2, 1.2 to 1.5, 1.5 to 1.8, 2.5 to 3.3	0.6	70	3	8-lead LFCSP	1.47
ADP2105	2.7 to 5.5	1.2, 1.5, 1.8, 3.3	0.8 to V _{IN}	1	20	1.2	16-lead LFCSP	2.25
ADP2106	2.7 to 5.5	1.2, 1.5, 1.8, 3.3	0.8 to V _{IN}	1.5	20	1.2	16-lead LFCSP	2.25
ADP2107	2.7 to 5.5	1.2, 1.5, 1.8, 3.3	0.8 to V _{IN}	2	20	1.2	16-lead LFCSP	2.25
ADP2108	2.3 to 5.5	1.0, 1.1, 1.2, 1.3, 1.5, 1.8, 1.82, 2.3, 2.5, 3.0, 3.3	—	0.6	19	3.0	5-ball WLCSP, 5-lead TSOT	0.60
ADP2109 (with load discharge switch)	2.3 to 5.5	1.0, 1.2, 1.5, 1.8	—	0.6	19	3.0	5-ball WLCSP	0.70
ADP2114 (dual output)	2.75 to 5.5	0.8, 1.2, 1.5, 1.8, 2.5, 3.3	0.6 to 3.3	2.0, 4.0	1.7 mA	300 kHz, 600 kHz, 1200 kHz	32-lead LFCSP	2.50
ADP2121	2.3 to 5.5	1.80, 1.82, 1.85, 1.875	—	0.5	38	6.0	6-ball WLCSP	0.80
ADP3050	3.6 to 30	3.3, 5.0	—	1.5	0.7 mA	200 kHz	8-lead SOIC	1.78

Buck-Boost Switching Regulators

Part Number	V _{IN} Range (V)	V _{OUT} Preset Options (V)	V _{OUT} Adj Options	I _{OUT} Max (A)	Typical I _Q (μA)	Switching Frequency (MHz)	Package	Price (\$U.S.)
ADP2503	2.3 to 5.5	2.8, 3.3, 3.5, 4.2, 4.5, 5.0	—	0.6	38	2.5	10-lead LFCSP	1.30
ADP2504	2.3 to 5.5	2.8, 3.3, 3.5, 4.2, 4.5, 5.0	—	1	38	2.5	10-lead LFCSP	1.40

Low Dropout (LDO) Regulator Family

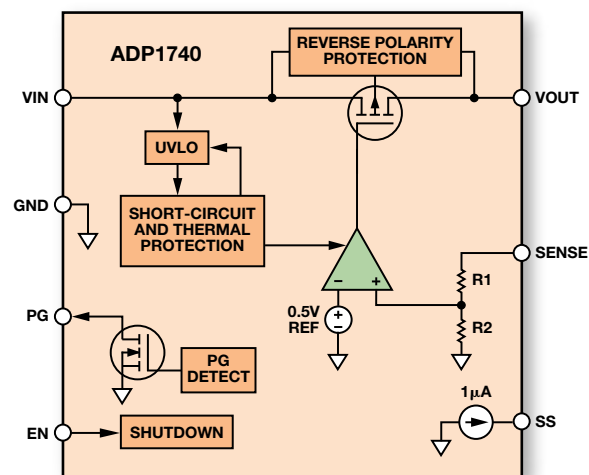
ADI offers a wide variety of low dropout (LDO) regulators providing clean power to high performance analog and digital signal processing applications. ADI regulators offer high accuracy, low dropout for increased efficiency, small package footprint, and features such as thermal overload protection, safety current limits, reverse protection, and shutdown mode to drastically reduce energy consumption. ADI offers fixed and adjustable output voltages up to 2.0 A of output current and dropout voltages down to 80 mV.

Featured Product Family: ADP1740/ADP1741, 2 A Low Dropout Regulator

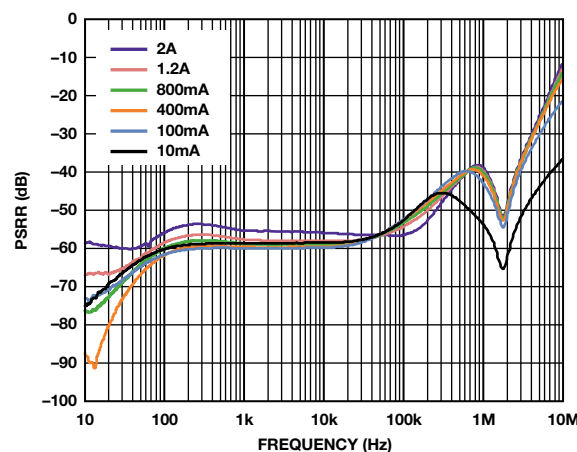
- Superior PSRR for high performance signal chain applications, typically 65 dB at 10 kHz
- Low noise performance: 23 μV rms at 0.75 V output
- Designed for low input voltages down to 1.6 V without the need for a second supply rail
- Low voltage dropout for increased energy efficiency
- Fixed ADP1740 and adjustable ADP1741 options
- Soft start for reduced inrush current
- Enable and power good
- Reverse current protection

Related Products

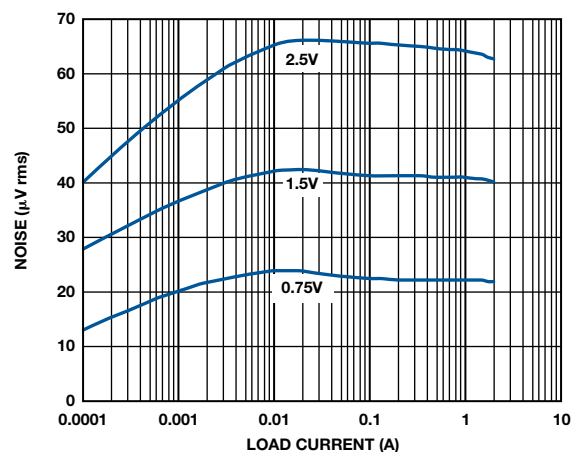
- ADP1752/ADP1753: 0.8 A low dropout regulator
- ADP1754/ADP1755: 1.2 A low dropout regulator



ADP1740/ADP1741: 2 A low dropout regulator with low input voltage to 1.6 V.



ADP1740/ADP1741: High PSRR at 100 kHz frequency.



ADP1740/ADP1741: Noise vs. load current and output voltage.

Low Input Voltage Operation, Low Noise Performance

Part Number	V _{IN} Range (V _{MIN} to V _{MAX})	V _{OUT} Options (V)	I _{OUT}	Supply Current (mA)	Shutdown Current (μA)	V _{DROPOUT} @ Rated I _{OUT} (mV)	Total Accuracy (±%)	PSRR ¹ (dB)	Package	Special Operating Characteristics	Price (\$U.S.)
ADP1740	1.6 to 3.6	0.75, 1, 1.1, 1.2, 1.5, 1.8, 2.5	2 A	2	3	350	2	65	4 mm × 4 mm, 16-lead LFCSP	Low V _{IN} , soft start, power good, reverse voltage protected	1.20
ADP1741	1.6 to 3.6	Adjustable 0.75 to 3	2 A	2	3	350	2	65	4 mm × 4 mm, 16-lead LFCSP	Low V _{IN} , soft start, power good, reverse voltage protected	1.20
ADP1752	1.6 to 3.6	0.75, 1, 1.1, 1.2, 1.5, 1.8, 2.5	800 mA	1.2	3	160	2	65	16-lead LFCSP	Low V _{IN} , soft start, power good, reverse voltage protected	0.90
ADP1753	1.6 to 3.6	Adjustable 0.75 to 3	800 mA	1.2	3	160	2	65	16-lead LFCSP	Low V _{IN} , soft start, power good, reverse voltage protected	0.90
ADP1754	1.6 to 3.6	0.75, 1, 1.1, 1.2, 1.5, 1.8, 2.5	1.2 A	1.4	3	240	2	65	16-lead LFCSP	Low V _{IN} , soft start, power good, reverse voltage protected	0.95
ADP1755	1.6 to 3.6	Adjustable 0.75 to 3	1.2 A	1.4	3	240	2	65	16-lead LFCSP	Low V _{IN} , soft start, power good, reverse voltage protected	0.95

High PSRR, Low Noise Performance

Part Number	V _{IN} Range (V _{MIN} to V _{MAX})	V _{OUT} Options (V)	I _{OUT} (mA)	Supply Current (mA)	Shutdown Current (μA)	V _{DROPOUT} @ Rated I _{OUT} (mV)	Total Accuracy (±%)	PSRR ¹ (dB)	Package	Special Operating Characteristics	Price (\$U.S.)
ADP121	2.3 to 5.5	16 options 1.2 to 3.3	150	35 μA	1	150	3	70 @ 10 kHz	5-lead TSOT, 4-ball WLCSP	Low quiescent current, low noise, high PSRR	0.25
ADP130	1.2 to 3.6	33 options 0.8 to 3.0	350	25 μA	1	150	3	70 @ 10 kHz	5-lead TSOT	Low quiescent current, low dropout, high PSRR	0.27
ADP170	1.6 to 3.6	31 options 0.8 to 3.0	300	120 μA	1	70	3	70 @ 10 kHz	5-lead TSOT	Low quiescent current, low noise, high PSRR	0.27
ADP171	1.6 to 3.6	Adjustable	300	120 μA	1	70	3	70 @ 10 kHz	5-lead TSOT	Low quiescent current, low noise, high PSRR	0.27
ADP1706	2.5 to 5.5	16 options 0.75 to 3.3	1 A	1.55	1	630	2	70	8-lead SOIC, 8-lead LFCSP	Low dropout	1.08
ADP1707	2.5 to 5.5	16 options 0.75 to 3.3	1 A	1.55	1	630	2	70	8-lead SOIC, 8-lead LFCSP	Low dropout with tracking	1.11
ADP1708	2.5 to 5.5	Adjustable 0.8 to 5	1 A	1.55	1	630	2	70	8-lead SOIC, 8-lead LFCSP	Low dropout	1.08
ADP1710	2.5 to 5.5	16 options 0.75 to 3.3, adjustable 0.8 to 5	150	1.3	1	300	2	69	5-lead TSOT	Low dropout, low noise, high PSRR	0.37
ADP1711	2.5 to 5.5	16 options 0.75 to 3.3	150	1.3	1	300	2	69	5-lead TSOT	Low dropout, low noise, high PSRR	0.42
ADP1712	2.5 to 5.5	16 options 0.75 to 3.3, adjustable 0.8 to 5	300	420 μA	1	235	2	72	5-lead TSOT	Low dropout, low noise, high PSRR	0.64
ADP1713	2.5 to 5.5	16 options 0.75 to 3.3	300	420 μA	1	235	2	72	5-lead TSOT	Low dropout, low noise, high PSRR	0.67
ADP1714	2.5 to 5.5	16 options 0.75 to 3.3	300	420 μA	1	235	2	72	5-lead TSOT	Low dropout, low noise, high PSRR	0.70
ADP1715	2.5 to 5.5	16 options 0.75 to 3.3, adjustable 0.8 to 5	500	650 μA	1	320	2	67	8-lead MSOP	Low dropout with soft start	0.92
ADP1716	2.5 to 5.5	16 options 0.75 to 3.3	500	650 μA	1	320	2	67	8-lead MSOP	Low dropout with soft start	0.96
ADP1720	4.0 to 28	3.3; 5; adjustable 1.2 to 5	50	2.115	5	300	2	80	8-lead MSOP	Wide range V _{IN} , low dropout	0.41
ADP220	2.5 to 5.5	Options 0.8 to 3.3	200	120 μA	1.5	150	2	76	6-ball WLCSP	Dual LDO, low noise, high PSRR	0.48
ADP221	2.5 to 5.5	Options 0.8 to 3.3	200	120 μA	1.5	150	2	76	6-ball WLCSP	Dual LDO, low noise, high PSRR with active pull-down	0.48

High Accuracy, Low Dropout, Stable with Any Output Capacitance

Part Number	V _{IN} Range (V _{MIN} to V _{MAX})	V _{OUT} Options (V)	I _{OUT} (mA)	Supply Current (mA)	Shutdown Current (μA)	V _{DROPOUT} @ Rated I _{OUT} (mV)	Total Accuracy (±%)	PSRR ¹ (dB)	Package	Special Operating Characteristics	Price (\$U.S.)
ADP3300	3.0 to 12	2.7, 2.85, 3.0, 3.2, 3.3, 5	50	1.7	1	80	1.4	60	6-lead SOT-23	Low dropout, stable with any capacitance	0.73
ADP3301	3.0 to 12	2.7, 3, 3.2, 3.3, 5	100	2	1	100	1.4	60	8-lead SOIC	Low dropout, stable with any capacitance	1.13
ADP3303	3.2 to 12	2.7, 3.0, 3.2, 3.3, 5	200	4	1	180	1.4	60	8-lead SOIC	Low dropout, stable with any capacitance	1.35
ADP3330	2.9 to 12	3, 3.6, 5	200	4	2	140	1.4	60	6-lead SOT-23	Low dropout, stable with any capacitance	0.88
ADP3331	2.6 to 12	Adjustable 1.5 to 10	200	4	2	140	1.4	60	6-lead SOT-23	Low dropout, stable with any capacitance	0.88
ADP3333	2.6 to 12	1.5, 1.8, 2.5, 2.77, 3, 3.15, 3.3, 5	300	5.5	1	140	1.8	60	8-lead MSOP	Low dropout, stable with any capacitance, low I _Q	0.95
ADP3334	2.6 to 11	Adjustable 1.5 to 10	500	10	3	200	1.8	60	8-lead LFCSP, 8-lead MSOP, 8-lead SOIC	Low dropout, stable with any capacitance, low I _Q	0.99
ADP3335	2.6 to 12	1.8, 2.5, 2.85, 3.3, 5	500	10	1	200	1.8	60	8-lead LFCSP, 8-lead MSOP	Low dropout, stable with any capacitance, low I _Q	1.32
ADP3336	2.6 to 12	Adjustable 1.5 to 10	500	10	1	200	1.8	60	8-lead MSOP	Low dropout, stable with any capacitance	1.46
ADP3338	2.7 to 8.0	3.0, 3.3, 5	1 A	30	—	190	1.4	60	SOT-223	Low dropout, stable with any capacitance, low I _Q	1.40
ADP3339	2.8 to 6.0	3.3, 5	1.5 A	40	—	230	1.5	60	SOT-223	Low dropout, stable with any capacitance, low I _Q	1.65

Low Quiescent Current with Low Battery Detector

Part Number	V _{IN} Range (V _{MIN} to V _{MAX})	V _{OUT} Options (V)	I _{OUT} (mA)	Supply Current (mA)	Shutdown Current (μA)	V _{DROPOUT} @ Rated I _{OUT} (mV)	Total Accuracy (±%)	Package	Special Operating Characteristics	Price (\$U.S.)
ADP3367	2.5 to 16.5	5.0 or adjustable 1.3 to 16	300	5	0.2	300	2	8-lead SOIC	Low battery detect, low quiescent current	1.79
ADP667	3.5 to 16.5	5.0 or adjustable 1.3 to 16	250	5	0.2	150	4	8-lead PDIP, 8-lead SOIC	Low battery detect, low quiescent current	1.74

¹PSRR at 1 kHz unless stated. See spec for details.

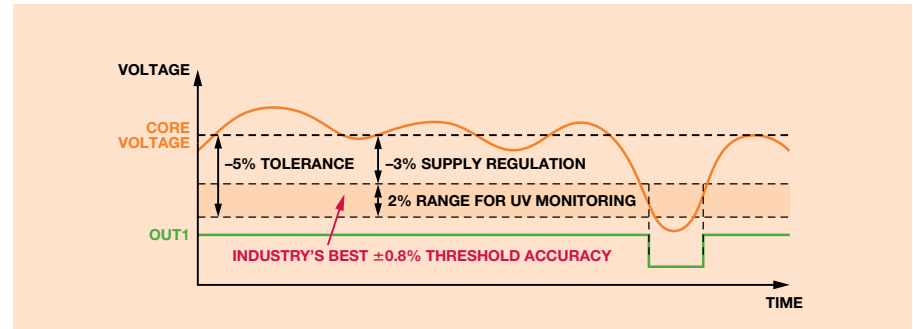
Supervisory

±0.8% Accurate Supervisors that Give Your Customers Safer, More Reliable Operation

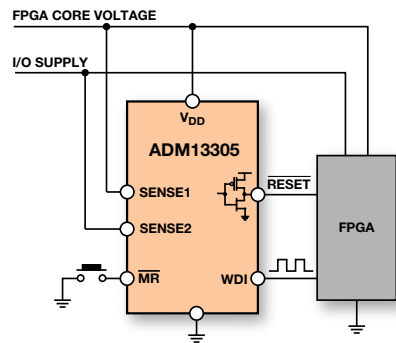
For years, engineers have relied on ADI's analog and mixed-signal ICs to enable their telecommunications, data communications, medical, and instrumentation designs. See how we are applying this design expertise to power management, delivering solutions that not only provide best-in-class functionality but also improve the performance of your analog circuit. Case in point: the ADM1184, integrating ADI's $\pm 0.8\%$ accurate voltage reference technology, offers best-in-class accuracy to prevent data loss and failures in high performance applications.

Industry's Best Threshold Accuracy, 2 to 12 Supplies

High accuracy is critical when monitoring low voltage cores. With up to $2\times$ the accuracy over temperature of competitive parts, these ADI products offer the ability to maintain a much tighter voltage tolerance, thereby maximizing system protection.

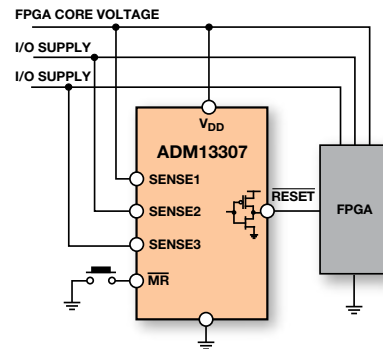


Dual



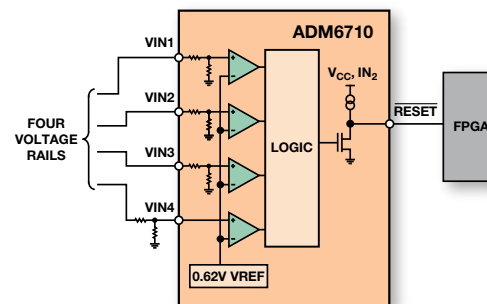
ADM13305: $\pm 0.8\%$ accurate dual processor supervisor with watchdog in 8-lead, narrow-body SOIC package.

Triple



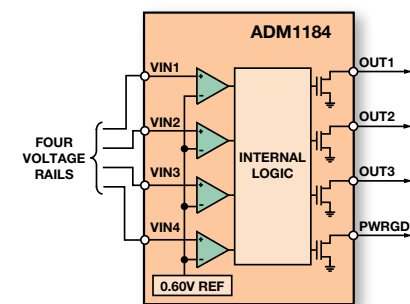
ADM13307: $\pm 0.8\%$ accurate triple processor supervisor in 8-lead, narrow-body SOIC package.

Quad



ADM6710: $\pm 1.5\%$ accurate triple/quad voltage microprocessor supervisor in 6-lead SOT-23 package.

Quad



ADM1184: $\pm 0.8\%$ accurate quad voltage monitor in 10-lead MSOP package.

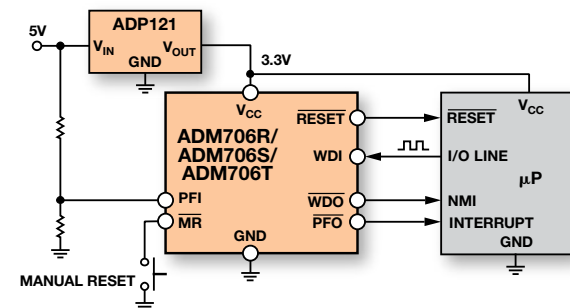
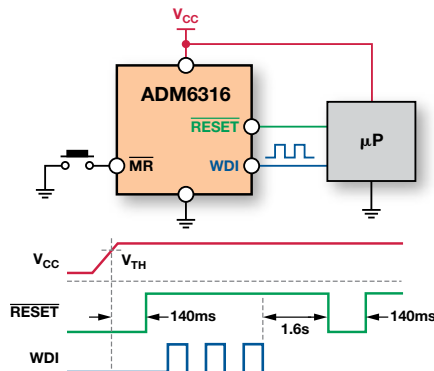
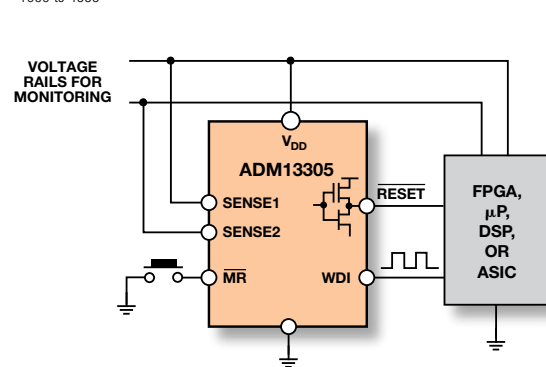
Supervisory—Simple Reset/Power-On Reset

Part Number	Reset Threshold (V)	Min Reset Timeout (ms)	Reset Output Stage		Manual Reset Capability	Supply Current Typ (μA)	Package	Price ¹ (\$U.S.)
			Active Low	Active High				
ADM1810	4.35, 4.62	100	Push-pull	—	No	4	3-lead SC70, 3-lead SOT-23	0.45
ADM1811	4.35, 4.62	100	Internal pull-up	—	No	4	3-lead SC70, 3-lead SOT-23	0.45
ADM1812	4.35, 4.62	100	—	Push-pull	No	4	3-lead SC70, 3-lead SOT-23	0.45
ADM1813	4.35, 4.62	100	Internal pull-up	—	Yes	4	3-lead SC70, 3-lead SOT-23	0.39
ADM1815	2.18, 2.31, 2.55, 2.88, 3.06	100	Push-pull	—	No	4	3-lead SC70, 3-lead SOT-23	0.39
ADM1816	2.18, 2.31, 2.55, 2.88, 3.06	100	Internal pull-up	—	No	4	3-lead SC70, 3-lead SOT-23	0.45
ADM1817	2.18, 2.31, 2.55, 2.88, 3.06	100	—	Push-pull	No	4	3-lead SC70, 3-lead SOT-23	0.45
ADM1818	2.18, 2.31, 2.55, 2.88, 3.06	100	Internal pull-up	—	Yes	4	3-lead SC70, 3-lead SOT-23	0.45
ADM6315	2.63, 2.93, 3.08, 4.39, 4.5, 4.63	1, 20, 140, 1120	Open-drain	—	Yes	4	4-lead SOT-143	0.73
ADM6319	2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Push-pull	Push-pull	Yes	5	5-lead SOT-23	0.50
ADM6322	2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Open-drain	Push-pull	Yes	5	5-lead SOT-23	0.50
ADM6326	2.2, 2.32, 2.4, 2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08	100	Push-pull	—	No	0.5	3-lead SOT-23	0.95
ADM6328	2.2, 2.32, 2.4, 2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08	100	Open-drain	—	No	0.5	3-lead SOT-23	0.95
ADM6346	3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.38, 4.5, 4.63	100	Push-pull	—	No	1	3-lead SOT-23	0.95
ADM6348	3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.38, 4.5, 4.63	100	Open-drain	—	No	1	3-lead SOT-23	0.95
ADM6384	1.58, 1.67, 2.19, 2.31, 2.4, 2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Push-pull	—	Yes	3	4-lead SC70	0.94
ADM6711	2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	—	Yes	12	4-lead SC70	0.26
ADM6713	2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Open-drain	—	Yes	12	4-lead SC70	0.28
ADM6825	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	Push-pull	Yes	7	5-lead SOT-23	0.50
ADM698	4.65	140	Push-pull	Push-pull	No	600	8-lead PDIP, 16-lead SOIC	1.35
ADM707	4.65	160	Push-pull	Push-pull	Yes	190	8-lead PDIP, 8-lead SOIC	0.96
ADM708	4.4	160	Push-pull	Push-pull	Yes	190	8-lead PDIP, 8-lead SOIC, 8-lead MSOP	0.84
ADM709	2.63, 2.93, 3.08, 4.4, 4.65	140	Push-pull	—	No	35	8-lead PDIP, 8-lead SOIC	0.70
ADM803	2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Open-drain	—	No	17	3-lead SC70	0.26
ADM809	2.32, 2.63, 2.93, 3.08, 4.0, 4.38, 4.63	140	Push-pull	—	No	17	3-lead SC70, 3-lead SOT-23	0.61
ADM810	2.32, 2.63, 2.93, 3.08, 4.0, 4.38, 4.63	140	—	Push-pull	No	17	3-lead SC70, 3-lead SOT-23	0.60
ADM811	2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	—	Yes	5	4-lead SOT-143	0.45
ADM812	2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	—	Push-pull	Yes	5	4-lead SOT-143	0.45
ADM825	2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	Push-pull	Yes	5	5-lead SC70, 5-lead SOT-23	0.50
ADM8698	4.65	140	Push-pull	Push-pull	No	70	8-lead PDIP, 8-lead NSOIC, 16-lead WSOIC	1.99

¹1000 to 4999

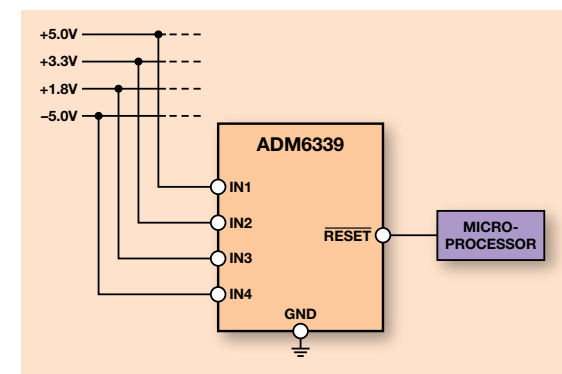
Supervisory—Watchdog Timers

Part Number	Reset Threshold (V)	Min Reset Timeout (ms)	Reset Output Stage		Manual Reset Capability	Typ Watchdog Timeout (ms)	Power-Fail Indicator	Package	Price ¹ (\$U.S.)
			Active Low	Active High					
ADM13305	0.6 (adjustable), 1.68, 2.25, 2.93, 4.55	140	Push-pull	Push-pull	Yes	1600	No	8-lead NSOIC	0.95
ADM1232/ ADM1232A	4.37, 4.62	250	Open-drain	Push-pull	Yes	150/600/1120	No	8-lead PDIP, 8-lead SOIC, 16-lead WSOIC, 8-lead MSOP	0.94
ADM6316	2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Push-pull	—	Yes	6.3/102/1600/25,600	No	5-lead SOT-23	0.50
ADM6318	2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Push-pull	Push-pull	No	6.3/102/1600/25,600	No	5-lead SOT-23	0.50
ADM6320	2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Open-drain	—	Yes	6.3/102/1600/25,600	No	5-lead SOT-23	0.50
ADM6321	2.5, 2.63, 2.7, 2.8, 2.93, 3.0, 3.08, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.0, 4.1, 4.2, 4.3, 4.39, 4.5, 4.63, 4.7, 4.8, 4.9, 5.0	1, 20, 140, 1120	Open-drain	Push-pull	No	6.3/102/1600/25,600	No	5-lead SOT-23	0.50
ADM6821	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	—	Push-pull	Yes	1600	No	5-lead SOT-23	0.75
ADM6822	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Open-drain	—	Yes	1600	No	5-lead SOT-23	0.75
ADM6823	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	—	Yes	1600	No	5-lead SOT-23	0.75
ADM6824	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	Push-pull	No	1600	No	5-lead SOT-23	0.75
ADM699	4.65	140	Push-pull	Push-pull	No	1600	No	8-lead PDIP, 16-lead SOIC	1.66
ADM705	4.65	160	Push-pull	—	Yes	1600	Yes	8-lead PDIP, 8-lead SOIC	1.01
ADM706	4.4	160	Push-pull	—	Yes	1600	Yes	8-lead PDIP, 8-lead SOIC	1.68
ADM823	2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	—	Yes	1600	No	5-lead SC70, 5-lead SOT-23	0.50
ADM824	2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	140	Push-pull	Push-pull	Yes	1600	No	5-lead SC70, 5-lead SOT-23	0.50
ADM8616	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	1, 20, 140, 1120	Push-pull	—	No	6.3/102/1600	No	4-lead SC70	0.85
ADM8617	1.58, 1.67, 2.19, 2.32, 2.63, 2.93, 3.08, 4.38, 4.63	1, 20, 140, 1120	Open-drain	—	No	6.3/102/1600	No	4-lead SC70	0.85
ADM8699	4.65	140	Push-pull	Push-pull	No	1600	No	8-lead PDIP, 8-lead NSOIC, 16-lead WSOIC	1.99
ADM9690	4.31	10 typ, 50 typ	Push-pull	—	No	0.75/1.5/12.5/25	No	8-lead SOIC	1.50

¹1000 to 4999

Multivoltage Supervisors

Part Number	Number of Monitored Voltages	Reset Threshold (V)	Min Reset Timeout (ms)	Reset Output Stage		Manual Reset Capability	Typ Watchdog Timeout (ms)	Package	Price (\$U.S.) ¹
				Active Low	Active High				
ADM13305	2	0.6 (adjustable), 1.68, 2.25, 2.93, 4.55	140	Push-pull	Push-pull	Yes	1600	8-lead NSOIC	0.95
ADM13307	3	0.6 (adjustable), 1.25 (adjustable), 1.68, 2.25, 2.93, 4.55	140	Push-pull	Push-pull	Yes	—	8-lead NSOIC	0.98
ADM6710	3 or 4	0.62 (adjustable), 1.58, 1.67, 2.19, 2.32, 2.63, 2.78, 2.93, 3.08, 4.38, 4.63	140	Open-drain	—	No	—	6-lead SOT-23	1.60
ADM1184	4	0.6 (adjustable)	100	Open-drain	—	No	—	10-lead MSOP	2.39
ADM6339	4	−0.50 (adjustable), 0.62 (adjustable), 1.23 (adjustable), −4.38, −4.63, 1.58, 2.19, 2.63, 2.78, 2.93, 3.08, 4.38, 4.63	140	Open-drain	—	No	—	6-lead SOT-23	1.79

¹1000 to 4999

Quad voltage microprocessor supervisory circuit.

Supervisory—Battery Backup

Part Number	Reset Threshold (V)	Min Reset Timeout (ms)	Reset Output Stage		Backup Battery Switch	Chip Enable Gating	Typ Watchdog Timeout (ms)	Package	Price ¹ (\$U.S.)
			Active Low	Active High					
ADM690	4.65	35	Push-pull	—	Yes	No	100, 1600	8-lead PDIP	2.39
ADM690A	4.65	140	Push-pull	—	Yes	No	1600	8-lead PDIP, 8-lead SOIC, 8-lead MSOP	1.50
ADM691	4.65	35 (adjustable)	Push-pull	Push-pull	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead SOIC	2.70
ADM691A	4.65	140 (adjustable)	Push-pull	Open-drain	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead NSOIC, 16-lead WSOIC, 16-lead TSSOP	1.66
ADM692	4.4	35	Push-pull	—	Yes	No	100, 1600, adjustable	8-lead PDIP	2.39
ADM692A	4.4	140	Push-pull	—	Yes	No	1600	8-lead PDIP, 8-lead SOIC	1.66
ADM693	4.4	35 (adjustable)	Push-pull	Push-pull	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead SOIC	2.70
ADM693A	4.4	140 (adjustable)	Push-pull	Open-drain	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead NSOIC, 16-lead WSOIC	1.83
ADM694	4.65	140	Push-pull	—	Yes	No	100, 1600, adjustable	8-lead PDIP	2.50
ADM695	4.65	140 (adjustable)	Push-pull	Push-pull	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead SOIC	2.70
ADM696	1.3 (adjustable)	35	Push-pull	Open-drain	Yes	No	100, 1600, adjustable	16-lead PDIP, 16-lead WSOIC	2.60
ADM697	1.3 (adjustable)	35	Push-pull	Push-pull	No	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead WSOIC	2.60
ADM800	4.3, 4.55	140 (adjustable)	Push-pull	Open-drain	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead NSOIC, 16-lead WSOIC	2.30
ADM802	4.4, 4.65	140	Push-pull	—	Yes	No	1600	8-lead PDIP, 8-lead SOIC	2.20
ADM805	4.4, 4.65	140	—	Push-pull	Yes	No	1600	8-lead PDIP, 8-lead SOIC	2.20
ADM8690	4.65	35	Push-pull	—	Yes	No	1600	8-lead PDIP, 8-lead SOIC	2.49
ADM8691	4.65	35 (adjustable)	Push-pull	Push-pull	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead NSOIC, 16-lead WSOIC, 16-lead TSSOP	2.98
ADM8692	4.4	35	Push-pull	—	Yes	No	100, 1600	8-lead PDIP, 8-lead SOIC	2.69
ADM8693	4.4	35 (adjustable)	Push-pull	Push-pull	Yes	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead NSOIC, 16-lead WSOIC, 16-lead TSSOP	2.69
ADM8694	4.65	140	Push-pull	—	Yes	No	100, 1600	8-lead PDIP, 8-lead SOIC	2.69
ADM8695	4.65	140 (adjustable)	Push-pull	Push-pull	Yes	Yes	100, 1600, adjustable	16-lead WSOIC	2.16
ADM8696	1.3 (adjustable)	35 (adjustable)	Push-pull	Push-pull	Yes	No	100, 1600, adjustable	16-lead PDIP, 16-lead WSOIC, 16-lead TSSOP	2.69
ADM8697	1.3 (adjustable)	35 (adjustable)	Push-pull	Push-pull	No	Yes	100, 1600, adjustable	16-lead PDIP, 16-lead WSOIC, 16-lead TSSOP	2.69

¹1000 to 4999

Microprocessor Supervisory Cross References

Simple Resets/Power-On Resets

Maxim	ADI
MAX6319	ADM6319
MAX6322	ADM6322
MAX6384	ADM6384
MAX6825	ADM6825
MAX825	ADM825
MXD1810	ADM1810
MXD1811	ADM1811
MXD1812	ADM1812
MXD1813	ADM1813
MXD1815	ADM1815
MXD1816	ADM1816
MXD1817	ADM1817
MXD1818	ADM1818
MAX6315	ADM6315
MAX6326	ADM6326 <i>New</i>
MAX6328	ADM6328 <i>New</i>
MAX6346	ADM6346 <i>New</i>
MAX6348	ADM6348 <i>New</i>
MAX6711	ADM6711
MAX6713	ADM6713
MAX698	ADM698
MAX707	ADM707
MAX708	ADM708
MAX709	ADM709
MAX803	ADM803
MAX809	ADM809
MAX810	ADM810
MAX811	ADM811
MAX812	ADM812

Watchdog Timers

Maxim	ADI
MAX6316	ADM6316
MAX6318	ADM6318
MAX6320	ADM6320
MAX6321	ADM6321
MAX6821	ADM6821
MAX6822	ADM6822
MAX6823	ADM6823
MAX6824	ADM6824
MAX823	ADM823
MAX824	ADM824
DS1232	ADM1232
DS1232A	ADM1232A <i>New</i>
MAX699	ADM699
MAX705	ADM705
MAX706	ADM706

Multivoltage Supervisors

Competitor	ADI
MAX6339	ADM6339 <i>New</i>
MAX6710	ADM6710 <i>New</i>
TPS3305	ADM13305 <i>New</i>
TPS3307	ADM13307 <i>New</i>
LTC2914	ADM2914 <i>New</i>

Battery Backups

Maxim	ADI
MAX690	ADM690
MAX690A	ADM690A
MAX691	ADM691
MAX691A	ADM691A
MAX692	ADM692
MAX692A	ADM692A
MAX693	ADM693
MAX693A	ADM693A
MAX694	ADM694
MAX695	ADM695
MAX696	ADM696
MAX697	ADM697
MAX800	ADM800
MAX802	ADM802
MAX805	ADM805

Supervisory Parametric Search Tool

analog.com/supervisory-tool

The supervisory parametric search tool is an online tool that performs parametric searches on all ADI supervisory models, both those currently available and those that can be ordered.

Searches can be performed on trip points, reset timeouts, reset types, and other features.

Parametric Search - Supervisory

Settings for Single Supervisors Search in: ☒ Available Models ☐ All Models (includes unreleased)

Reset Trip Point (TP) typical (V)	Minimum Reset Timeout (RTO) minimum (ms)	Watchdog	Manual Reset	Reset Output Active-Low	Reset Output Active-High
Don't Care	Don't Care	Don't Care	Don't Care	Don't Care	Don't Care

Package Type	Watchdog Timeout (WTO) typical (ms)	Power Fail Comparator	Range of Operating Temperature (°C)
Don't Care 3 Lead Count MSOP Package	Don't Care	Don't Care	Minimum <= Don't Care Maximum >= Don't Care

[Contact ADI Experts about Supervisors](#)

See All Results for: [Dual \(2\) Supervisors](#) | [Triple \(3\) Supervisors](#) | [Quad \(4\) Supervisors](#) | [Battery Backup](#)

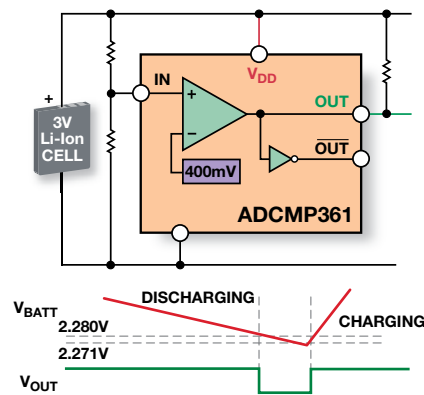
For more information on ADI cross references, visit our website at analog.com/cross-reference.

Low Power Comparators

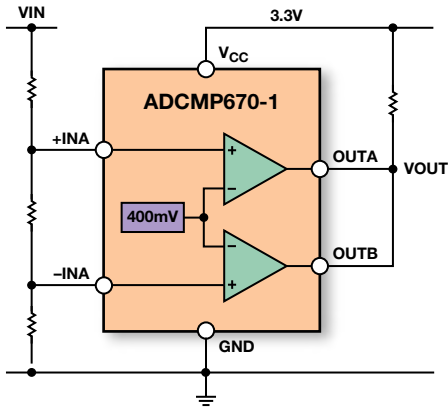
Part Number	Number Per Package	Internal Reference	Reference Accuracy ($\pm\%$)	Supply Voltage (V)	Supply Current (μA) Typ	Input Range (V)	Propagation Delay (μs) Typ	Hysteresis	Logic I/O	Package	Price¹ (\$U.S.)
ADCM341	2	Yes	0.275	1.7 to 5.5	6.5	0 to V_{CC}	10.0	Adjustable	Open-drain	8-lead SOT-23	0.90
ADCM343	2	Yes	0.275	1.7 to 5.5	6.5	0 to V_{CC}	10.0	Adjustable	Open-drain	8-lead SOT-23	0.90
ADCM350	1	Yes	3.5	2.25 to 5.5	10.0	0 to 22	5.0	Internal	Open-drain/active low	4-lead SC70	0.31
ADCM354	1	Yes	3.5	2.25 to 5.5	10.0	0 to 22	5.0	Internal	Open-drain/active high	4-lead SC70	0.31
ADCM356	1	Yes	3.5	2.25 to 5.5	10.0	0 to 22	5.0	Internal	Push-pull/active high	4-lead SC70	0.31
ADCM361	1	Yes	0.275	1.7 to 5.5	6.5	0 to V_{CC}	10.0	Internal	Open-drain	5-lead SOT-23	0.60
ADCM370	1	No	—	2.25 to 5.5	4.0	0 to 22	5.0	Internal	Open-drain	5-lead SC70	0.28
ADCM371	1	No	—	2.25 to 5.5	4.0	0 to 22	5.0	Internal	Push-pull	5-lead SC70	0.28
ADCM670	2	Yes	1.50	1.7 to 5.5	5.7	0 to V_{CC}	10.0	Internal	Open-drain	6-lead TSOT	1.40
CMP04	4	No	—	5	800.0	0 to $V_{CC} - 1.5$	1.3	—	Open-collector	14-lead SOIC	4.75
ADM1184	4	Yes	0.8	2.7 to 5.5	80	0 to V_{CC}	30.0	Fixed	Open-drain	10-lead MSOP	2.39
ADM2914	8	Yes	1.5	2.3 to shunt	62	0 to V_{CC}	125	Internal	Open-drain	16-lead QSOP	3.99
ADM12914	8	Yes	0.8	2.3 to shunt	62	0 to V_{CC}	125	Internal	Open-drain	16-lead QSOP	4.99

¹1000 to 4999

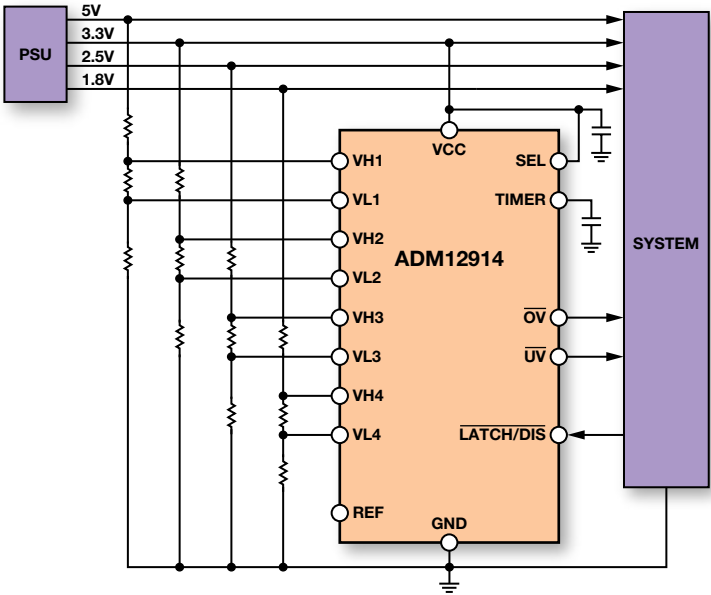
Li-Ion Battery Monitoring



Window Comparator



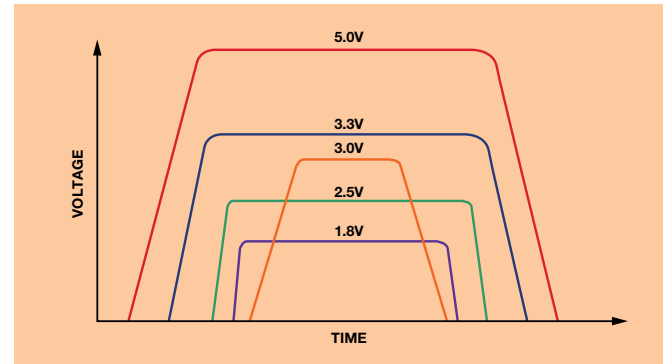
Quad UV/OV Positive/Negative Monitor



Sequencing

ADI Sequencing and Monitoring Solutions for 2 to 12 Supplies with Industry-Leading Threshold Accuracy

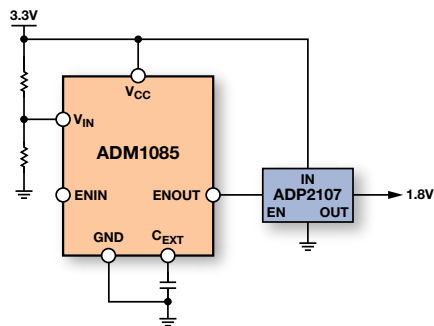
Analog Devices provides a broad portfolio of sequencing and monitoring solutions to meet your design requirements, offering both analog and digitally programmable power supply sequencers to solve your power supply requirements. Analog sequencers offer a low cost solution to simple power system requirements while digitally programmable sequencers provide a large number of power supply inputs for monitoring and sequencing with in-circuit programmability for more complex power systems.



Typical power-up and power-down sequence.

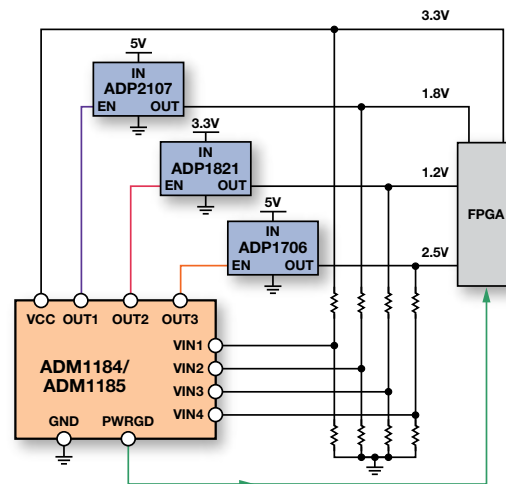
Simple Sequencer®

- Low cost solution
- Capacitor adjustable timeout
- Cascadable devices
- FET drive output (ADM6819 and ADM6820)
- 22 V tolerant outputs
- Tiny SC70 package



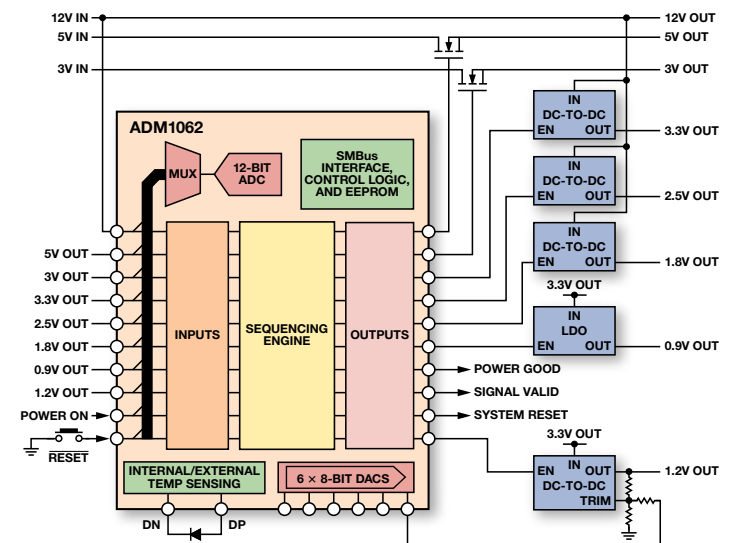
Multivoltage Sequencers

- $\pm 0.8\%$ threshold accuracy
- Up and down sequencing
- Cascadable devices (sequence 3 to 12 rails)
- Capacitor adjustable timeout
- Output valid at 1 V min
- MSOP and QSOP package



Super Sequencer®

- Programmable sequencing engine
- $\pm 1\%$ threshold accuracy
- Closed-loop margining
- Up and down sequencing
- Enable and FET drive output
- LFCSP and TQFP package



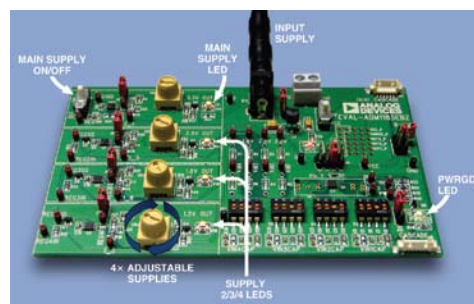
Analog Sequencers

Part Number	Number of Supplies Monitored	Voltage Monitoring Accuracy ($\pm\%$)	Number of Output Drivers	FET Drive/Enable Output	Sequencing	Package	Price (\$U.S.)
ADM1085	1: cascable	7	1	Enable	Up	6-lead SC70	0.34
ADM1086	1: cascable	8	1	Enable	Up	6-lead SC70	0.34
ADM1087	1: cascable	8	1	Enable	Up	6-lead SC70	0.34
ADM1184	4: cascable	0.8	4	Enable	Up	10-lead MSOP	2.42
ADM1185	4: cascable	0.8	4	Enable	Up	10-lead MSOP	1.21
ADM1186-1	4: cascable	0.8	4	Enable	Up and down	20-lead QSOP	3.85
ADM1186-2	4	0.8	4	Enable	Up and down	16-lead QSOP	3.02
ADM6819	2: cascable	2.6	1	FET drive	Up	6-lead SOT-23	1.21
ADM6820	2: cascable	2.6	1	FET drive	Up	6-lead SOT-23	1.21

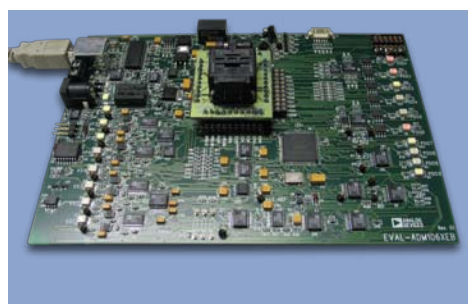
Digital Sequencers

Part Number	Number of Supplies Monitored	Voltage Monitoring Accuracy ($\pm\%$)	Number of Output Drivers	Programming Method	FET Drive/Enable Output	Voltage Readback	Supply Adj/ Margining	Package	Price (\$U.S.)
ADM1060	7: cascable	2.5	9	SMBus	Both	—	—	6-lead SC70	6.58
ADM1062	10: cascable	1	10	SMBus	Both	12-bit ADC	12-bit ADC, 6 DACs	40-lead LFSCP, 48-lead TQFP	7.59
ADM1063	10: cascable	1	10	SMBus	Both	12-bit ADC	—	40-lead LFSCP, 48-lead TQFP	8.35
ADM1064	10: cascable	1	10	SMBus	Both	12-bit ADC	—	40-lead LFSCP, 48-lead TQFP	7.84
ADM1065	10: cascable	1	10	SMBus	Both	—	—	40-lead LFSCP, 48-lead TQFP	5.82
ADM1066	12: cascable	1	10	SMBus	Both	12-bit ADC	12-bit ADC, 6 DACs	40-lead LFSCP, 48-lead TQFP	8.60
ADM1067	10: cascable	1	10	SMBus	Both	—	6 DACs	40-lead LFSCP, 48-lead TQFP	6.58
ADM1068	8: cascable	1	8	SMBus	Both	—	—	32-lead LQFP	4.05
ADM1069	8: cascable	1	8	SMBus	Both	12-bit ADC	12-bit ADC, 4 DACs	32-lead LQFP, 40-lead LFSCP	4.40

Analog Devices Sequencer Evaluation Systems

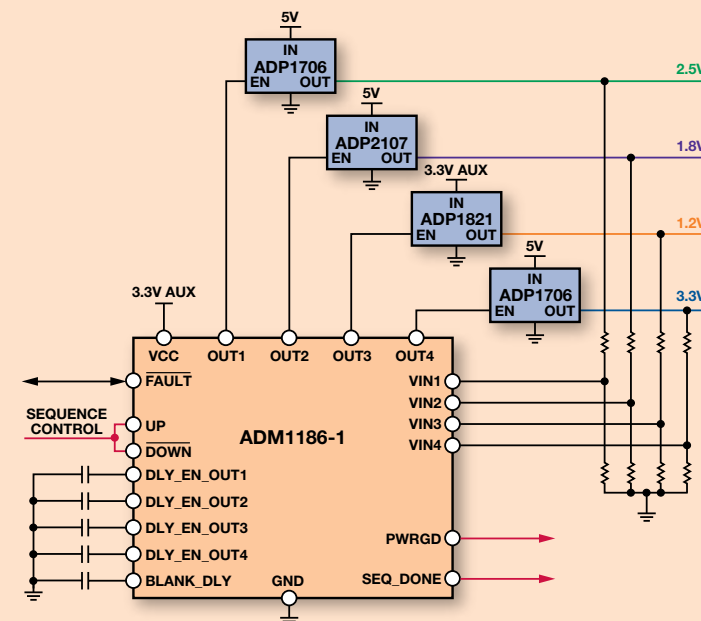


ADM1185 evaluation board.

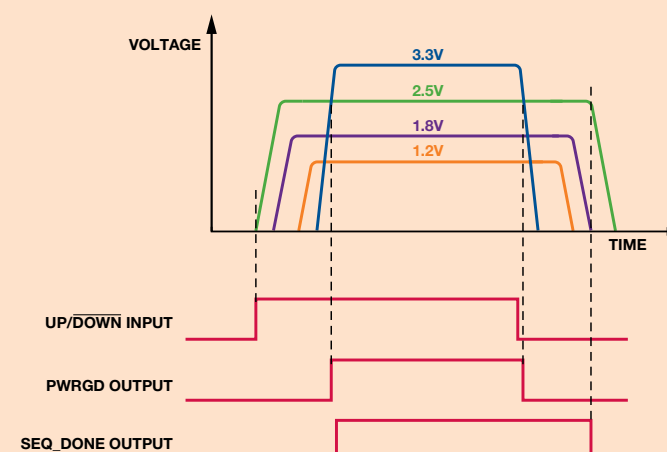


ADM1062-ADM1069 main evaluation board.

Power-Up and Power-Down Sequencing with the ADM1186



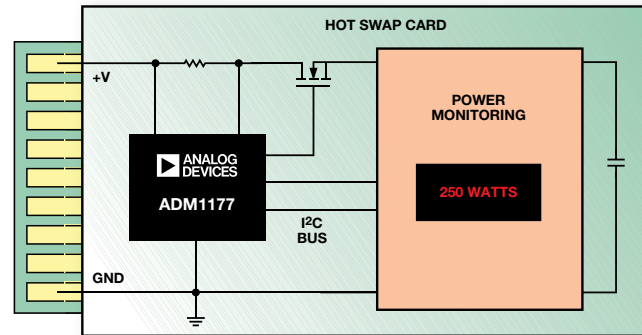
ADM1186 Power-Up and Power-Down Timing Diagram



Hot Swap

Hot Swap ICs with Precision ADC Deliver Greater Accuracy for Improved Energy Savings

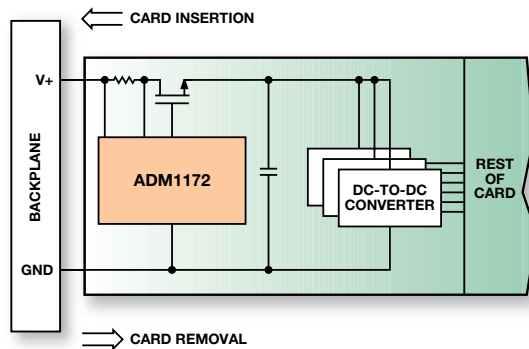
Let us show you how we're applying more than four decades of analog expertise to power management and delivering industry-best solutions that differentiate your designs and add value for your customers. Case in point: we've integrated industry-leading converter and amplifier cores with hot swap controllers to provide unmatched $\pm 3\%$ power monitoring accuracy, allowing you to offer your customers increased energy savings opportunities for data center applications.



Industry's most accurate hot swap and power monitor ICs provide accurate data on power consumption, enabling better control and conservation of energy.

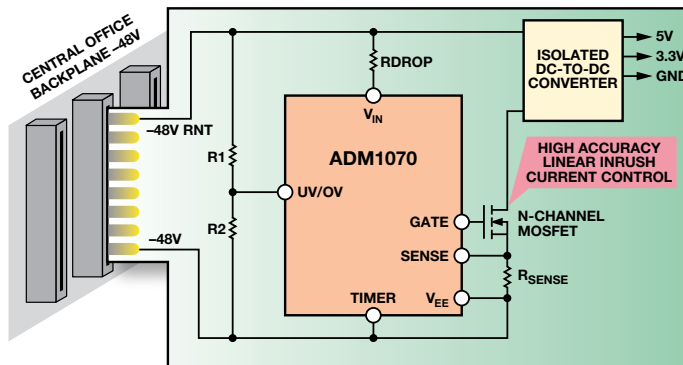
Low Voltage Positive Hot Swap Controllers

- Integrated power monitors
- Power-fail comparator
- Small TSOT packages



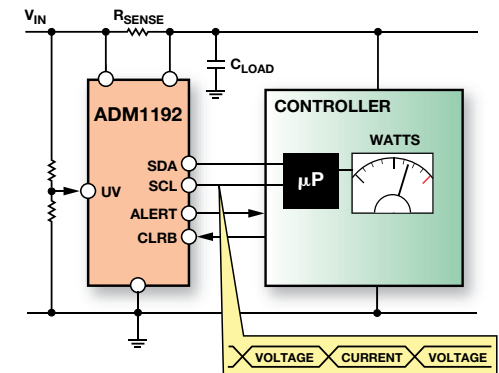
-48 V Hot Swap Controllers

- Robust shunt regulator
- Precision inrush linear current limit
- Separate UV and OV pins



Power Monitors

- Highest accuracy power monitor
- I²C Interface
- Processor interrupt pin



Low Voltage Positive Hot Swap

Part Number	Operating Range (V)	UV and OV Detection	Digital V and I Readback	Other Inputs	Other Outputs	Package	Price¹ (\$U.S.)
ADM1170	1.6 to 16.5	UV	—	—	—	8-lead TSOT	2.13
ADM1171	2.7 to 16.5	UV	—	—	CS_OUT	8-lead TSOT	2.23
ADM1172	2.7 to 16.5	UV	—	PFI	PFO	8-lead TSOT	2.02
ADM1175	3.15 to 16.5	UV or OV	I²C interface with 4 addresses	CONV	—	10-lead MSOP	2.53
ADM1176	3.15 to 16.5	UV	I²C interface with 16 addresses	—	—	10-lead MSOP	2.53
ADM1177	3.15 to 16.5	UV	I²C interface with 4 addresses	—	—	10-lead MSOP	2.53
ADM1178	3.15 to 16.5	UV	I²C interface with 4 addresses	—	ALERT	10-lead MSOP	2.73
ADM4210	2.7 to 16.5	UV	—	—	—	6-lead TSOT	3.02

¹1000 to 4999

–48 V Hot Swap Controller

Part Number	Operating Range (V)	UV and OV Detection	Current Control Accuracy (±%)	Other Inputs	Other Outputs	Package	Price¹ (\$U.S.)
ADM1070	–18 to –80	UV/OV pin	10	—	—	6-lead SOT-23	1.55
ADM1073	–18 to –80	UV pin, OV pin	3	RESTART, SHDN	LATCHED, PWRGD, SPLYGD	14-lead TSSOP	2.10

¹1000 to 4999

Digital Power Monitors

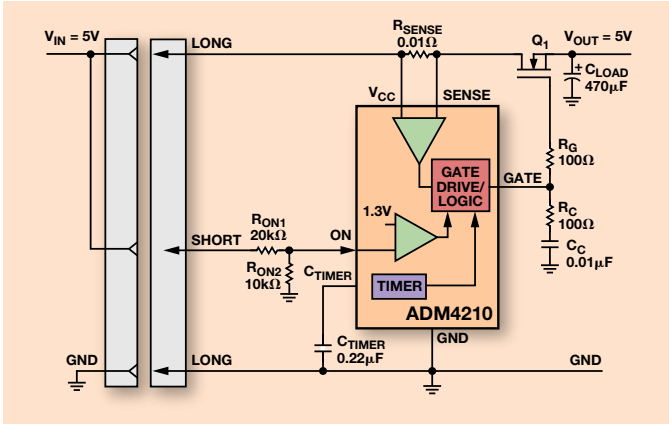
Part Number	Operating Range (V)	Current Control Accuracy (±%)	Glitch Filter	CONV Pin	CLR Pin	ALERT/ALERT	Digital V and I Readback	Package	Price¹ (\$U.S.)
ADM1191	3.15 to 26	10	—	Yes	—	ALERT	I²C interface with 4 addresses	10-lead MSOP	1.90
ADM1192	3.15 to 26	3	Prog Timer	—	Yes	ALERT	I²C interface with 16 addresses	10-lead MSOP	1.90

¹1000 to 4999

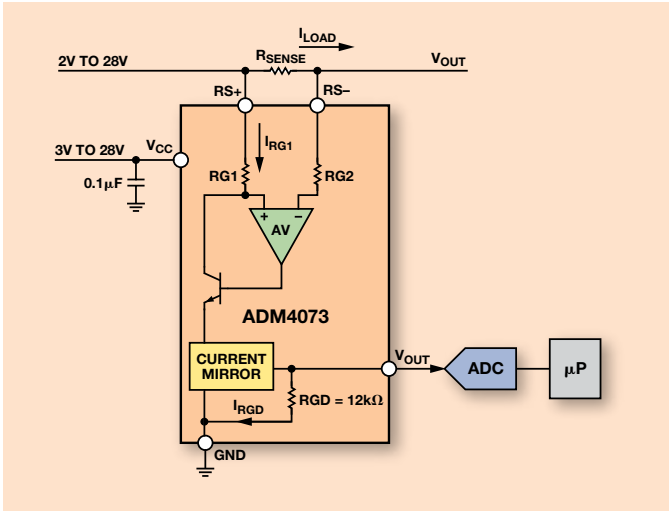
Current Sense Amplifiers—High Side

Part Number	CM Range (V)	Gain	Max Sense Voltage (mV)	Operating Range (V)	Accuracy Typ (±%)	Package	Price¹ (\$U.S.)
ADM4073T	2 to 28	20	150	3 to 28	1	6-lead SOT-23	0.6
ADM4073F	2 to 28	50	150	3 to 28	1	6-lead SOT-23	0.6
ADM4073H	2 to 28	100	150	3 to 28	1	6-lead SOT-23	0.6

¹1000 to 4999



Low voltage positive hot swap controller.

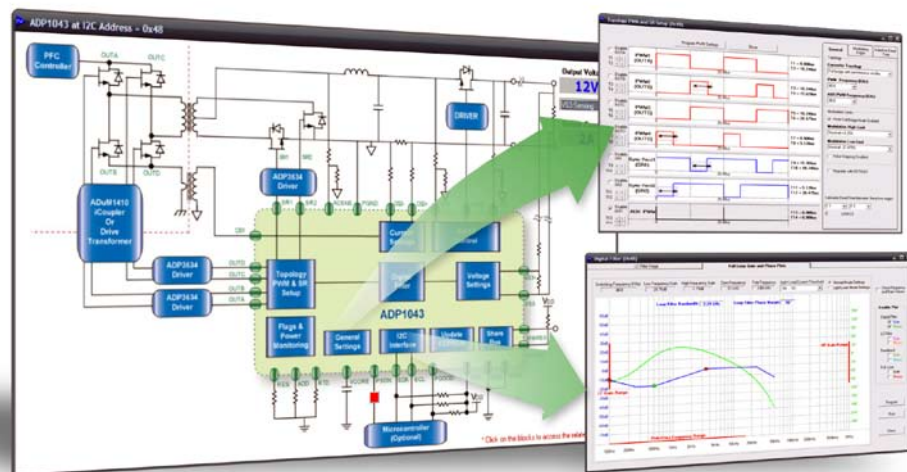


Current sense amplifier.

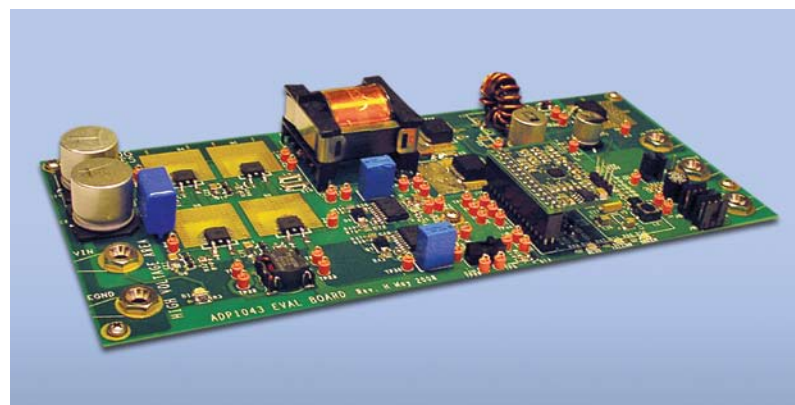
Digital Power and High Speed Drivers

ADI Is Pioneering Innovative Solutions for Digital Power Applications

The ADP1043A is a new digital controller for power design engineers designing ac-to-dc and isolated dc-to-dc power supplies used in high reliability server, storage, and communications infrastructure equipment. ADI's ADP1043A digital PWM (pulse-width modulation) power control and management device provides designers with a highly integrated circuit architecture and the flexibility to configure system power supply parameters in a matter of minutes using an intuitive GUI (graphical user interface). Power design engineers with no prior programming experience can use the GUI to monitor and quickly adjust power functions such as frequency, timing, voltage settings, and protection limits. In end-system implementations, the ADP1043A helps system integrators optimize power supply energy efficiency, while reducing design cycle time and enabling intelligent power management systems.



ADP1043A easy to use graphical user interface.



ADP1043A—100 W evaluation board based on full bridge architecture with synchronous rectification.

The ADP3634/ADP3624/ADP3630 family of high current, dual, high speed drivers complements the ADP1043A digital controller. This family uses the industry-standard driver footprint but adds high switching speed performance and enhanced reliability. This driver family has two levels of thermal protection (overtemperature warning and shutdown), provides a precision enable that can be used to provide system protection and safety, and includes UVLO to protect the power FET from supply rail droop. The ADP3650 is introduced as a dual MOSFET driver suited to driving nonisolated point-of-load synchronous buck converters.



300 W interleaved 2-FET, forward evaluation design. Converts from 380 V dc to 12 V output.

Digital Power

Part Number	V _{in} (V)	I ² C Interface	EEPROM	PWM Outputs	Current Share Control	OrFET Control	Housekeeping	Protection	Package	Widest Temperature Range (°C)	Price @ 1k (\$U.S.)
ADM1041A	5	Yes	Yes	—	Analog	Yes	5 monitors, ACOK, ACSNS1/2, ALERT, POK, PSN	Internal and external, OTP, OVP, UVP, OCP	24-lead QSOP	−40 to +85	3.21
ADP1043A	3.3	Yes	Yes	7	Analog and digital	Yes	ACSNS, FLAGIN, PGOOD1, PGOOD2, PSN	Internal and external, OTP, OVP, programmable, UVP, OCP	5 mm × 5 mm, 32-lead LFCSP	−40 to +85	4.50

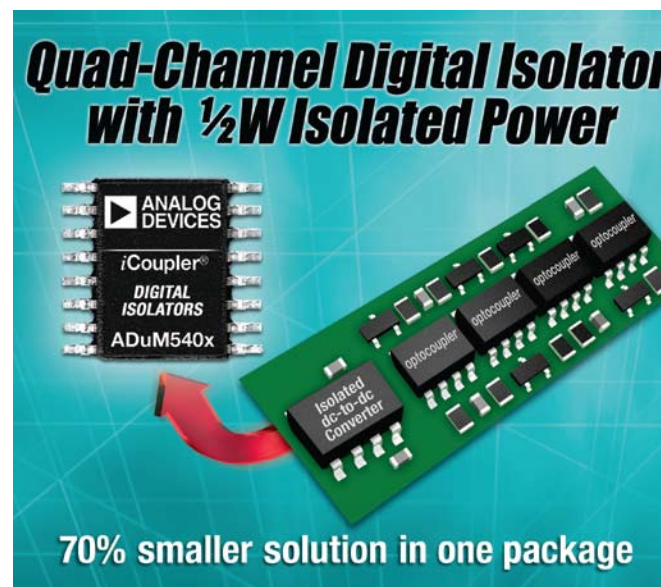
High Speed Drivers

Part Number	Description	V _{in} (V)	Peak Drive Current (A)	Prop Delay Rising Typ (ns)	UVLO_ON/OFF Threshold Typ (V)	Precision Enable/Shutdown	OT Protection	OT Warning Signal	Package	Ambient Temperature Range (°C)	Price @ 1k (\$U.S.)
ADP3633	Dual, inverting	9.5 to 18	4	10	8.7, 7.7	Yes	Yes	Yes	8-lead MSOP_EP, 8-lead SOIC_N_EP	−40 to +85	0.94/0.88
ADP3634	Dual, noninverting	9.5 to 18	4	10	8.7, 7.7	Yes	Yes	Yes	8-lead MSOP_EP, 8-lead SOIC_N_EP	−40 to +85	0.94/0.88
ADP3635	Inverting and noninverting	9.5 to 18	4	10	8.7, 7.7	Yes	Yes	Yes	8-lead MSOP_EP, 8-lead SOIC_N_EP	−40 to +85	0.94/0.88
ADP3623	Dual, inverting	4.2 to 18	4	10	4.2, 3.9	Yes	Yes	Yes	8-lead MSOP_EP, 8-lead SOIC_N_EP	−40 to +85	0.94/0.88
ADP3624	Dual, noninverting	4.2 to 18	4	10	4.2, 3.9	Yes	Yes	Yes	8-lead MSOP_EP, 8-lead SOIC_N_EP	−40 to +85	0.94/0.88
ADP3625	Inverting and noninverting	4.2 to 18	4	10	4.2, 3.9	Yes	Yes	Yes	8-lead MSOP_EP, 8-lead SOIC_N_EP	−40 to +85	0.94/0.88
ADP3629	Dual, inverting	4.2 to 18	2	10	4.2, 3.9	Yes	Yes	Yes	8-lead MSOP, 8-lead SOIC_N	−40 to +85	0.84/0.78
ADP3630	Dual, noninverting	4.2 to 18	2	10	4.2, 3.9	Yes	Yes	Yes	8-lead MSOP, 8-lead SOIC_N	−40 to +85	0.84/0.78
ADP3631	Inverting and noninverting	4.2 to 18	2	10	4.2, 3.9	Yes	Yes	Yes	8-lead MSOP, 8-lead SOIC_N	−40 to +85	0.84/0.78
ADP3650	Buck synch rectifier	4.15 to 13.2	—	30	4.15, 3.0	Yes	No	No	8-lead LFCSP, 8-lead SOIC	0 to +85	0.70/0.62

iCoupler Technology with *iso*Power Integrated, Isolated Power

Integrating power supply isolation with data signal isolation, until recently, has been a challenge because of the difficulty of transmitting power from the nonisolated system side to the isolated field side. In the past transferring power across an isolation barrier required a lot of area, with an expensive module or a complex discrete solution.

Analog Devices has addressed this issue by introducing *iso*Power—an extension of the award winning *i*Coupler technology. *iso*Power is a complete and fully integrated isolation solution for power transfer across an isolation barrier using microtransformers. The *i*Coupler technology enables both signal and power to be integrated into a single tiny surface-mount package with isolation up to 5 kV.



Digital Isolators with *iso*Power® Integrated, Isolated Power

Part Number	Number of Data Channels						Max Data Rate (Mbps)	Max Propagation Delay (ns)	Isolated Supply Output		Enhanced ESD	Input Supply Range (V)	Max Temperature (°C)	Package	Price @ 1k (\$U.S.)
	Total	Reverse Direction Options							Current (mA)	Range (V)					
		0	1	2	3	4									
2.5 kV rms Isolation															
ADuM5000	0								100	3.3 to 5.5		3.0 to 5.5	105	16-lead SOIC_W	3.16
ADuM520xA	2	•	•				1	100	100	3.3 to 5.5	•	3.0 to 5.5	105	16-lead SOIC_W	4.09
ADuM520xC		•	•				25	60	100	3.3 to 5.5	•	3.0 to 5.5	105	16-lead SOIC_W	4.66
ADuM524xA		•	•				1	70	10	4.5 to 5.5	•	2.7 to 5.5	105	8-lead SOIC_N	2.99
ADuM540xA	4	•	•	•	•	•	1	100	100	3.3 to 5.5	•	3.0 to 5.5	105	16-lead SOIC_W	5.06
ADuM540xC		•	•	•	•	•	25	60	100	3.3 to 5.5	•	3.0 to 5.5	105	16-lead SOIC_W	6.16
5 kV rms Isolation															
ADuM640xA	4	•	•	•	•	•	1	100	100	3.3 to 5.5	•	3.0 to 5.5	105	16-lead SOIC_W	6.33
ADuM640xC		•	•	•	•	•	25	60	100	3.3 to 5.5	•	3.0 to 5.5	105	16-lead SOIC_W	7.71

Companion Power Selection Guide: Blackfin and SHARC Processors

ADI power management products provide optimized power for Blackfin® and SHARC® products—whether it's a single processor or multiple processors, in handheld or high power applications, ADI has a solution to meet your needs.

How to Use This Guide

Determine the peak current requirement for each rail of your processor by referring to the relevant data sheets and engineer-to-engineer notes. Then, use this companion guide to select a power solution that offers the required V_{OUT} for that rail.

The ADIsimPower™ design tool offers a complete set of features to create a complete BOM for all of these solutions. Visit analog.com/ADIsimPower.

Part Number	V _{in} (V)	V _{out} (V)	I _{out} Max (A)	Linear Regulators										Switching Regulators										SC ¹
				ADP121	ADP170	ADP220	ADP1706	ADP1707	ADP1715	ADP1720	ADP1740 ADP1741	ADP1752 ADP1753	ADP1754 ADP1755	ADP2102	ADP2105	ADP2106	ADP2107	ADP2108	ADP2114	ADP2504	ADP5020	ADP1829	ADP1864	
	2.5–5.5	1.2–3.3	150 mA																					
	1.6–3.6	0.8–3.0	300 mA																					
	2.5–5.5	0.8–2.8	2 outputs: 200 mA, 200 mA																					
	2.5–5.5	0.75–3.3, soft start	1																					
	2.5–5.5	0.75–3.3, with tracking	1																					
	2.5–5.5	0.8–5.0	500 mA																					
	4.0–28	1.225–5.0	50 mA																					
	1.6–3.6	0.75–3.0	2																					
	1.6–3.6	0.75–2.5	800 mA																					
	1.6–3.6	0.75–2.5	1.2																					
	2.7–5.5	0.8–1.875	600 mA																					
	2.7–5.5	1.2–3.3	1																					
	2.7–5.5	1.2–3.3	1.5																					
	2.7–5.5	1.2–3.3	2																					
	2.3–5.5	1–3.3	600 mA																					
	2.7–5.5	0.8–3.3	2/2, 1/3, or 4 single																					
	2.3–5.5	2.8–5.0	1																					
	2.4–5.5	N/A	3 outputs: 250 mA, 600 mA, 150 mA																					
	3.0–18	N/A	20																					
	3.15–14	N/A	5																					

Blackfin Processors		Speed (MHz)	Min Voltage (V)	Max Voltage (V)	Max IDD _{INT} (mA)																	
VDD _{INT} Domain	ADSP-BF51x	All	1.083	1.47	225	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF522/ADSP-BF524/ADSP-BF526	All	1.083	1.47	250	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF523/ADSP-BF525/ADSP-BF527	All	0.95	1.26	500	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF531/ADSP-BF532/ADSP-BF533	400	0.8	1.32	350	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF533	500, 533, 600	0.8	1.45	900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF534/ADSP-BF536	300, 400	0.8	1.32	400	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF534/ADSP-BF536/ADSP-BF537	500, 533, 600	0.8	1.43	900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF538/ADSP-BF539	400, 533	0.8	1.375	850	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF54x	400	0.9	1.43	750	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	ADSP-BF54x	533, 600	0.9	1.43	1350	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Other Domains²	ADSP-BF561	All	0.8	1.42	1600	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	VDD _{EXT}	1.7	1.8, 2.5, 3.3	3.6	N/A	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	VDD _{MEM}	1.7	1.8, 2.5, 3.3	3.6	N/A	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	VDD _{DOR}	2.5	2.6	2.7	N/A	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	VDD _{JSB}	3	3.3	3.6	30	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	VDD _{OTF}	2.25	2.5	2.75	25	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

SHARC Processors		Speed (MHz)	Min Voltage (V)	Max Voltage (V)	Typical IDD _{INT} (mA)	Max IDD _{INT} (mA)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
VDD _{INT} Domain	ADSP-21261/ADSP-21262/ADSP-21266	150	1.14	1.26	<500	1260										•																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

¹SC = switching controllers

²Refer to the relevant data sheet and engineer-to-engineer note to determine the exact "other domain" requirements of each individual processor.

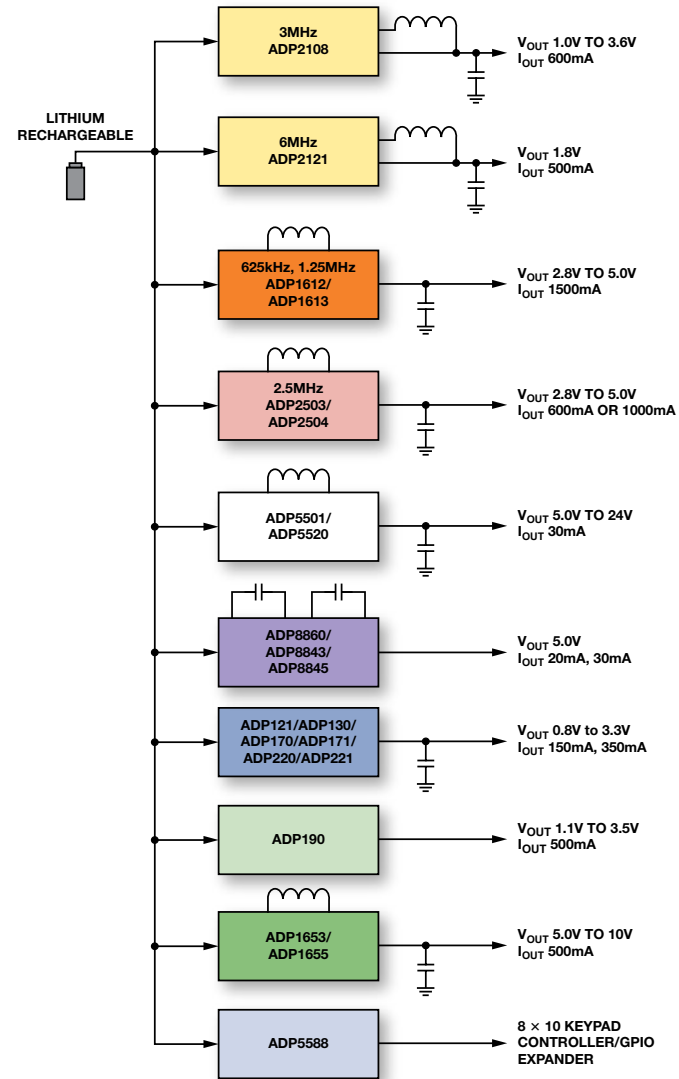
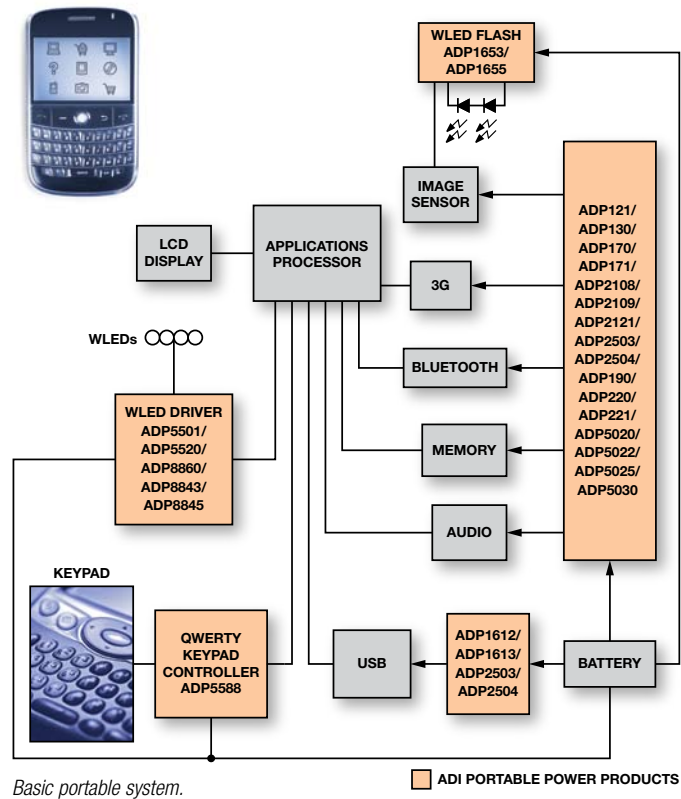
Many applications power more than one device or domain using a single regulator. Compute and add the maximum current draw for each device and domain in a particular application before choosing a regulator.

The regulators marked in this guide support the current draw at the maximum specified frequency, voltage, and industrial temperature.

Regulators not marked as compatible with a particular processor may still be appropriate depending on the frequency, voltage, temperature, and application code used.

Power Management Solutions for Portable and Low Power Applications

Analog Devices power management solutions for today's low power applications are highly integrated, energy efficient, and reduce the required PCB area to help system architects design energy efficient power systems. Today's systems must be capable of maximum processing power when tethered to external power supplies without generating excess heat, achieve maximum battery autonomy when portable, and allow extreme design flexibility for product differentiation. Low power applications, in particular, require high efficiency power systems to achieve maximum operating time before having to recharge the battery or overheat the system and waste power. Analog Devices products meets the challenges of powering today's low power systems.



COLOR KEY

- | | | |
|--|---|--|
|  DC-TO-DC BUCK CONVERTERS |  ASYNCHRONOUS BOOST WLED DRIVERS |  LOAD SWITCH |
| DC-TO-DC BUCK-BOOST CONVERTERS | SWITCHED CAPACITOR BOOST WLED DRIVERS | WLED FLASH DRIVER |
|  DC-TO-DC BOOST CONVERTER |  LINEAR REGULATORS |  8 x 10 KEYPAD CONTROLLER/GPIO EXPANDER |

Linear Power Products

LD0s

Part Number	V _{IN} (V)	V _{OUT} (V)	Current Limit (mA)	Typical I _Q (μA)	Other Functions	PSRR (dB @ 1 kHz)	Package
ADP121	2.3 to 5.5	2.8 to 5.0	150	11	EN	70	5-lead TSOT, 4-ball WLCSP
ADP130	1.2 to 3.6	0.8 to 3.0	350	25	EN, bias	70	5-lead TSOT
ADP170	1.6 to 3.6	1.2 to 2.8	300	23	EN	70	5-lead TSOT
ADP171	1.6 to 3.6	Adjustable	300	23	EN	70	5-lead TSOT
ADP220	2.5 to 5.5	V _{OUT1} = 2.8 V _{OUT2} = 1.2	200	32	Dual outputs, EN	70	6-ball WLCSP
ADP221	2.5 to 5.5	V _{OUT1} = 2.8 V _{OUT2} = 1.2	200	32	Dual outputs, discharge SW, EN	70	6-ball WLCSP

Load Switch

Part Number	V _{IN} (V)	V _{OUT} (V)	Switch Current Limit (A)	Typical I _Q (μA)	Package
ADP190	1.2 to 3.6	1.2 to 3.5	0.500	2	4-ball WLCSP

DC-to-DC Power Products¹

Bucks

Part Number	V _{IN} (V)	V _{OUT} (V)	Load Current Limit (A)	Typical I _Q (μA)	Switching Frequency (MHz)	Package
ADP2108	2.3 to 5.5	1.0 to 3.3	0.6	19	3.0	5-ball WLCSP
ADP2108	2.3 to 5.5	1.0 to 3.3	0.6	19	3.0	5-lead TSOT
ADP2109 (with load discharge switch)	2.3 to 5.5	1.0 to 3.3	0.6	19	3.0	6-ball WLCSP
ADP2121	2.3 to 5.5	1.80, 1.82, 1.85, 1.875	0.5	38	6.0	6-ball WLCSP

Boosts

Part Number	V _{IN} (V)	V _{OUT} (V)	Switch Current Limit (A)	Typical I _Q (μA)	Switching Frequency	Package
ADP1612	1.8 to 5.5	V _{IN} to 20	1.5	600	650 kHz or 1.3 MHz	8-lead MSOP
ADP1613	2.5 to 5.5	V _{IN} to 20	1.8	600	650 kHz or 1.3 MHz	8-lead MSOP

Buck/Boosts

Part Number	V _{IN} (V)	V _{OUT} (V)	Load Current Limit (A)	Typical I _Q (μA)	Switching Frequency (MHz)	Package
ADP2503	2.3 to 5.5	2.8 to 5.0	0.6	38	2.5	10-lead LFCSP
ADP2504	2.3 to 5.5	2.8 to 5.0	1	38	2.5	10-lead LFCSP

¹All dc-to-dc converters on this page use internal FETs and a single external inductor.

²ALS (ambient light sensing), HBWLED (high brightness white LED).

WLED Drivers Power Products²

WLED Drivers

Part Number	V _{IN} (V)	V _{OUT} (V)	WLED Configuration	WLED Current (mA)	ALS	Boost Type	WLED Brightness Control	Switching Frequency (MHz)	Package
ADP5501	2.7 to 5.5	24 to 27	6 series	30	Yes	Inductive	I ² C programmable	Auto PFM/ PWM @ 1.0	24-lead LFCSP
ADP5520	2.7 to 5.5	24 to 27	6 series	30	Yes	Inductive	I ² C programmable	Auto PFM/ PWM @ 1.0	24-lead LFCSP
ADP8860	2.5 to 5.5	4.3 to 5.5	7 parallel	6 @ 30 1 @ 60	Yes	Switched capacitor	I ² C programmable	1.0	20-ball WLCSP, 20-lead LFCSP
ADP8843	2.6 to 5.5	V _{IN} to 5.5	4 parallel	20	No	Switched capacitor	PWM	1.5	16-lead LFCSP
ADP8845	2.6 to 5.5	V _{IN} to 5.5	6 parallel	30	No	Switched capacitor	PWM	1.5	16-lead LFCSP

HPWLED Flash Drivers

Part Number	V _{IN} (V)	V _{OUT} (V)	WLED Configuration	WLED Current (mA)	Torch Mode	Boost Type	WLED Brightness Control	Switching Frequency (MHz)	Package
ADP1653	2.75 to 5.5	12	2 series	500	Yes	Inductive	I ² C programmable	1.2	16-lead LFCSP
ADP1655	2.5 to 5.5	10	2 series	400	Yes	Inductive	I ² C programmable	2.0	12-ball WLCSP

Mobile I/O Expander and QWERTY Keypad Controller

Part Number	V _{IN} (V)	Number of I/Os	QWERTY Keypad	Other Functions	Package
ADP5588	1.8 to 3.0	16	Yes	I ² C interface and register programmability GPIOs, ALS, reset, and interrupt	24-lead LFCSP

Power Management Integrated Circuits

Part Number	Number of LDO Channels	Number of DC-to-DC Channels	I ² C Programmable (V _{OUT})	Charger	Other Functions	Package
ADP5020	1	2	Yes	No	I ² C interface and register programmability PGOOD, ext-sync	4 mm × 4 mm LFCSP
ADP5022	1	2	No	No	In phase or out of phase switch operation individual enables, power save mode (PSM)	0.5 mm pitch, 4 × 4 ball array, 2 mm × 2 mm WLCSP
ADP5025	2	3 boosts, 1 buck-boost, 1 inverter, 2 bucks	Yes	Backup battery only	RTC, programmable outputs and power sequencing, serial LEDs driver, reset	0.5 mm pitch, 8 × 8 ball array, 4 mm × 4 mm WLCSP
ADP5030	2	0	No	No	Level shifters and load switch for RF module power	0.4 mm pitch, 4 × 4 ball array, 1.6 mm × 1.6 mm WLCSP



Online Tools/Resources

In addition to providing world-class products and technical support, ADI takes great pride in offering design engineers the very best in online design tools. These tools have been specifically designed to provide power designers and nonpower designers alike the tools needed to design, optimize, and implement the very best power circuits available.

Tools like the recently released ADIsimPower tool provide users with an easy four-step process using an intuitive graphical user interface via your Web browser. This particular tool allows the designer to preselect their key goals, whether they be cost, size, or performance, and optimizes the solution to meet those goals. Additional tools are available online (as Excel-based downloadable versions) that make product selection and design a snap. ADI puts the power back in your hands.

Other Available Online Tools

- ADIsimPower: dc-to-dc power management tool
- Supervisory parametric search tool

Downloadable Excel-Based Tools

- ADI linear regulator parametric search and design
- ADP161x boost design tool
- ADP1864 buck design tool
- ADP2503/ADP2504 buck-boost switching regulator design tool
- ADP210x switching regulator design tool
- ADP2108 dc-to-dc buck design tool
- ADI supervisor parametric search and cross reference



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