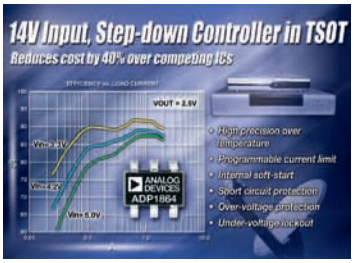
ANALOG DEVICES

Buck and Boost LED Driver DC-to-DC Switching Regulators



Analog Devices, Inc., has introduced several new families of highly efficient and reliable switching regulators with optimized levels of functional integration that maximize the power conversion and consumption in performance-driven applications. These new products range from three-phase controllers to fully-integrated controller, driver, and FET devices. Features such as margining and tracking have been integrated into several product variants to enhance the monitoring and control capabilities of the overall system.

Features

- Wide input voltage range (1V-24V)
- Step-up and step-down through variety of topologies
- Online design tools provide fast and robust solutions
- Synchronous converters for high efficiency

Benefits

- Higher efficiency over LDOs
- Fully-integrated regulators for quick design
- Reduced part count
- Reduced BOM cost
- Integrated advanced features

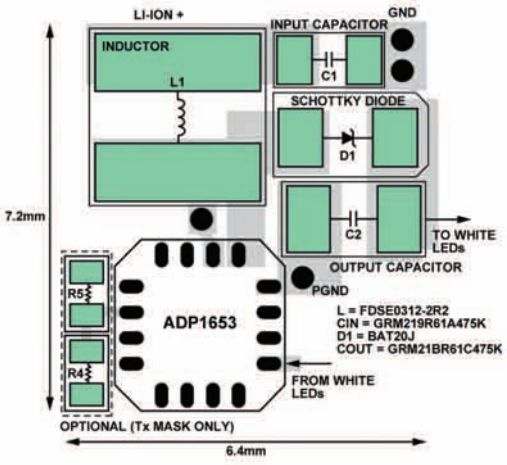
Applications

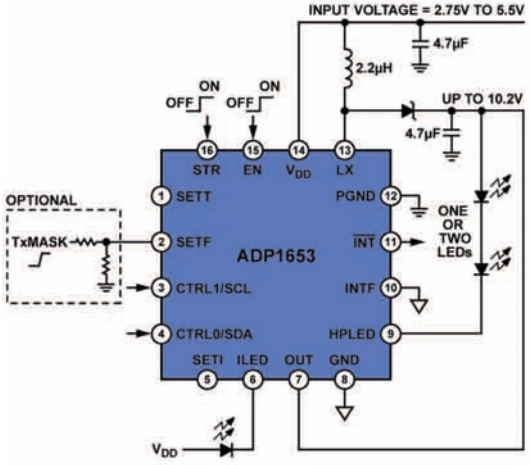
- Mobile handsets
- Set-top boxes
- Telecommunications and networking systems
- DDR terminations
- Hard disk drives

Product Specifications

Part Number	Type	Dimming Type	Number of LEDs/ String	Number of Strings	Configuration	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Peak Efficiency (%)	Diagnostic Capabilities	Interface	Markets
ADP1610/ADP1611	Step-up, SEPIC	NA	5	NA	Series	2.5-5.5	Adj. 1.23-12/20	1,000	NA	None	NA	CL FL BL
ADP1621	Step-up, flyback, SEPIC	NA	20	NA	Series	3-5.5	Adj. 1.215-80	10,000	NA	None	NA	FL BL
ADP1821	Step-down w/margining and tracking, flyback	NA	15	NA	Series	1-24	Adj. 0.6-60	25,000	NA	None	NA	CL FL TR BL
ADP1822	Step-down, flyback	NA	15	NA	Series	1-24	Adj. 0.6-60	25,000	NA	None	NA	CL FL TR BL
ADP1829	Dual step-down, flyback	NA	15/15	NA	Series	1-24	Adj. 0.6-60	25,000	NA	None	NA	FL TR BL
ADP1864	Step-down, invert, flyback	NA	15	NA	Series	3.15-14	Adj. 0.6-60	10,000	NA	None	NA	FL TR BL
ADP2102	Step-down	NA	1	NA	Series	2.7-5.5	Adj. 0.8-3.3	600	NA	None	NA	FL BL
ADP2105/ADP2106/ ADP2107		NA	1	NA	Series	2.7-5.5	Adj. 0.8-V_{IN}	2,000	NA	None	NA	CL FL BL
ADP1828	Step-down, flyback	NA	15	NA	Series	1-24	Adj. 0.6-60	25,000	NA	None	NA	FL BL
ADP1653	Step-up	Digital	2	NA	Series	2.7-5.5	10.5	500	92	None	I²C or 2-bit logic	FL

MARKETS LEGEND: CL COMMERCIAL LIGHTING · FL FLASHLIGHTS · TR TRANSPORTATION · BL BACKLIGHTING · SI SIGNAGE





Flash LED Driver, LED, and Backlighting LED Drivers

The ADP1653 is an ultra-compact, high efficiency, 12V boost converter from Analog Devices, specifically designed and optimized for use in cellular camera phones and digital still cameras. The ADP1653 solution consumes a mere 7.2 mm x 6.4 mm of board space while still offering high-efficiency Flash circuitry that can drive one string of high-brightness LEDs up to 500 mA, as well as a separate indicator LED at lower currents up to 17 mA.

Analog Devices offers LED drivers for automotive and LCD backlighting applications. Products like the AD8240, designed for automotive applications, both drive and monitor the LED assembly. End users are demanding bigger, brighter, and thinner displays. The ADM8845 and ADM8843 charge-pump-based backlight drivers are designed for driving up to six and four white LEDs in parallel, respectively, while ensuring uniform brightness of a backlit LCD display. By individually monitoring each LED current, excellent matching performance is achieved. The ADM8845 is also designed to maximize power efficiency by switching automatically between three charge pump modes based on the input voltage. For applications with severe height restrictions, the ADM8843 offers an ultra-thin package height of 0.5 mm.

Features ▸

- Small 45 mm² total solution size
- 92 percent efficiency
- 90 lumens of brightness
- Tx masking with 50 µs
- 2.2 µH power inductor
- 500 mA Flash current

Benefits ▸

- Reduces bill of materials
- Extends battery life
- Improves picture quality
- Enables smaller form factors

Applications ▸

- Digital still cameras
- Camera phones
- Portable video recorders

Product Specifications ▸

Part Number	Type	Dimming Type	Number of LEDs/ String	Number of Strings	Configuration	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Peak Efficiency (%)	Diagnostic Capabilities*	Interface	Markets
AD8240	NA	PMW	Variable	NA	Serial/parallel	9-27	12	Adjustable	NA	Yes	Analog	CL TR BL
ADM8843	NA	PMW	4 WLED	NA	Parallel	2.6-5.5	2X mode	30	88	TSD/SCP	Pin controlled	FL BL
ADM8845	NA	PMW	6 WLED	NA	Parallel	2.6-5.5	X mode	30	88	TSD/SCP	Pin controlled	FL BL

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*Diagnostic capabilities: TSD: Thermal shutdown, SCP: Short circuit protection