

new product
information

LX1992 HIGH EFFICIENCY BOOST LED DRIVER

New Product Information and Sales Kit

Manufactured by:

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www.Microsemi.com

More than solutions – enabling possibilities

INTRODUCTION

CONFIDENTIAL INFORMATION

This new product introduction guide is intended for use only by Microsemi's sales people and authorized representatives and distributors. This material can be adapted for customer presentations, but the sales strategy and summary [pricing, availability, etc.] is confidential and should not be shown to customers.

DESCRIPTION

The LX1992 is a compact **high efficiency step-up boost controller** for driving white or color LEDs in backlight or front light systems and offers designers maximum flexibility with respect to efficiency and cost. The LX1992 features a **pseudo-hysteretic pulse frequency modulation topology** and uses an **external N-Channel MOSFET**. Further, the LX1992 features control circuitry that is optimized for portable systems (e.g., quiescent supply current of 80 μ A (typ) and a shutdown current of less than 1 μ A). These design enhancements provide for improved performance in **battery operated systems applications**. The **device input voltage range is from 1.6V to 6.0**, allowing for a wide selection of system battery voltages and **start-up operation is guaranteed at 1.6V input**.

Programming the output current is readily achieved by using **one external current sense resistor** in series with the LEDs. In this configuration, LED current provides a feedback signal to the FB pin, maintaining constant current regardless of varying LED forward voltage (VF). Moreover, the LX1992 is capable of achieving **output currents in excess of 150mA, depending on the MOSFET selected**.

The LX1992 has an additional feature for **simple dynamic adjustment of the output current** (i.e., up to 100% of the maximum programmed current). Designers can make this adjustment via an analog reference signal or a direct PWM generated signal applied to the ADJ pin and any PWM amplitude is easily accommodated with a single external resistor.

The LX1992 is available in both **the 8-Pin MSOP**, and the miniature **8-Pin MLP** requiring minimal PCB area.

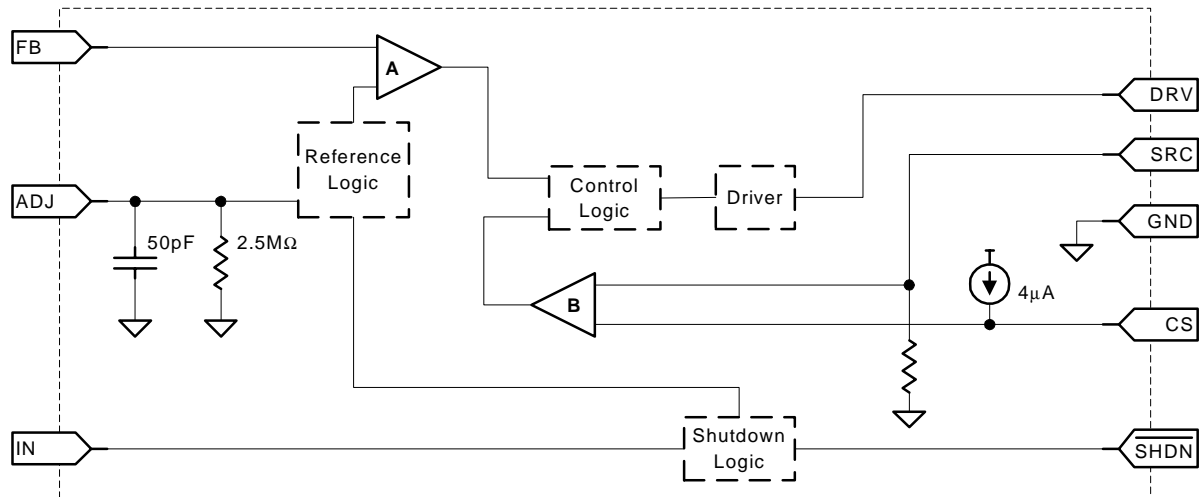
SUMMARY

The LX1992 is a compact high efficiency step-up boost controller for driving white or color LEDs for improved performance in battery operated systems applications.



KEY PRODUCT INFORMATION

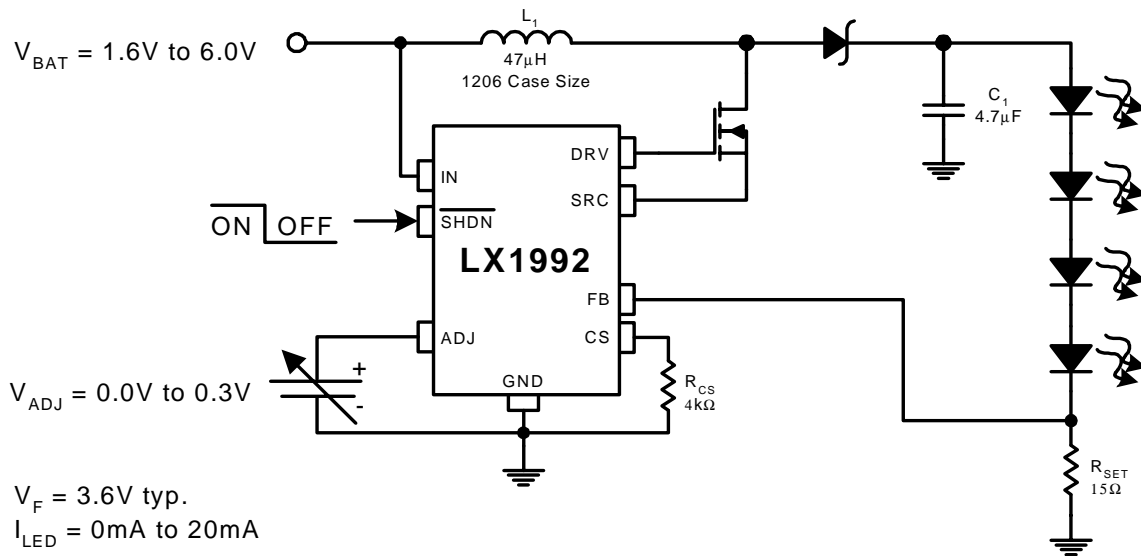
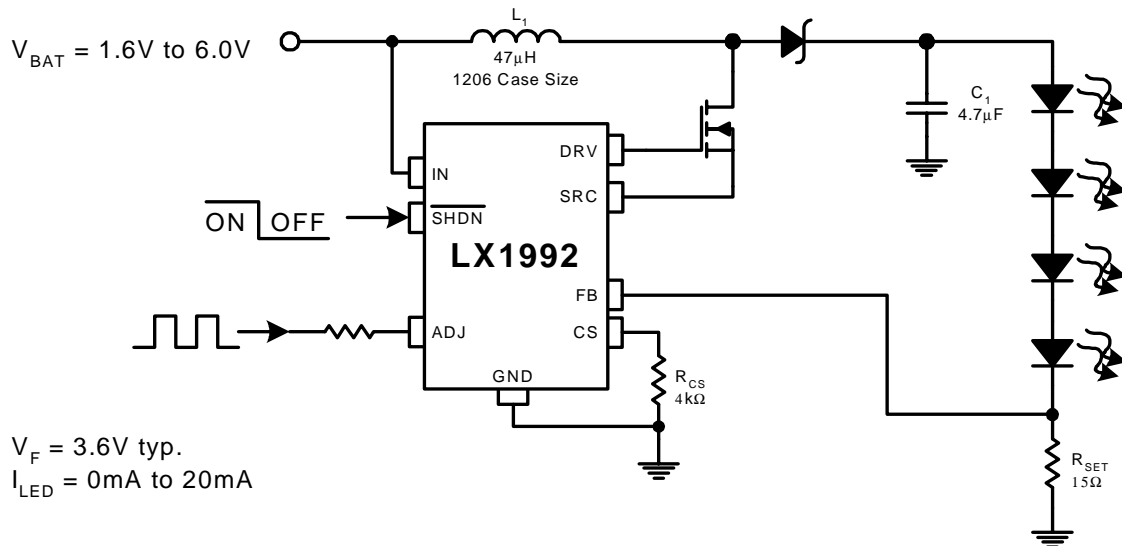
BLOCK DIAGRAM



KEY FEATURES

- >90% Maximum Efficiency
- 80μA Typical Quiescent Supply Current
- Externally Programmable Peak Inductor Current Limit For Maximum Efficiency
- Logic Controlled Shutdown
- < 1μA Shutdown Current
- Dynamic Output Current Adjustment Via Analog Reference Or Direct PWM Input
- 8-Pin MSOP Package or 8-Pin MLP

TYPICAL APPLICATION



APPLICATIONS

- Pagers
- Wireless Phones
- PDAs
- Handheld Computers
- General LCD Bias Applications
- LED Driver
- Digital Camera Displays



COMPETITIVE ANALYSIS

LX1992

Competitor	Device	Package	Topology	Min V_{IN}	Max V_{IN}	Temp. Range	Notes
Microsemi	LX1992	8 MLP 8 MSOP	PFM	1.6	6	0 to 70°C	
Maxim	MAX1689	10 MSOP	PWM / PFM	2.7	5.5	-40 to 85°C	Not Pin To Pin Compatible
Linear Tech	LTC1872	SOT23-6	PFM	2.5	9.8	-40 to 85°C	Not Pin To Pin Compatible
Zetex	ZXSC100	8 MSOP SO-8	PFM	1	3.3	0 to 70°C	Not Pin To Pin Compatible

Alternative Microsemi Solutions

Device	Description	Notes
LX1990	Dual LED Driver	<ul style="list-style-type: none"> • Direct Drive Not Designed For Boost Operation • Low Cost • Available 1/2002



SALES STRATEGY

FIND SOCKETS

- Portable products
- Chains of colored or white LED displays
- Dimmable LED's with good color match
- Step-up conversion for multiple LED drive
- Two Cell Alkaline, NiCd or NiMH Battery Source

POSITIONING

- Choice of small low profile packages
- Guaranteed startup voltage of 1.6V
- High efficiency PFM topology
- Single low value resistor sets output current
- Low frequency direct PWM dimmable
- PWM Dimming Capable

IMPORTANT FACTS TO REMEMBER

The LX1992 is a proprietary pin-out

SUMMARY

Pricing

Device	Package	Industrial (-40 to 125°C)	
		DC	1000+
LX1992CDU	8 Pin MSOP	\$0.71	\$0.82
LX1992CLM	8 Pin MLP	\$0.71	\$0.82

Availability

Samples: Now
Production: LX1992CDU NOW
 LX1992CLM 12/01

Options

Packages: DU MSOP 8 Tape and Reel [MOQ 2500pcs]
 LM MLP 8 Tape and Reel [MOQ 2500pcs]
Temperature: C Commercial 0 to 70°C

Technical Support

Datasheet: See Microsemi's Website
Application Note: See Datasheet
Evaluation Board: LXE1992

Factory Contacts

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