

LM3500 Evaluation Board

National Semiconductor
Application Note 1309
Clinton Jensen
December 2003



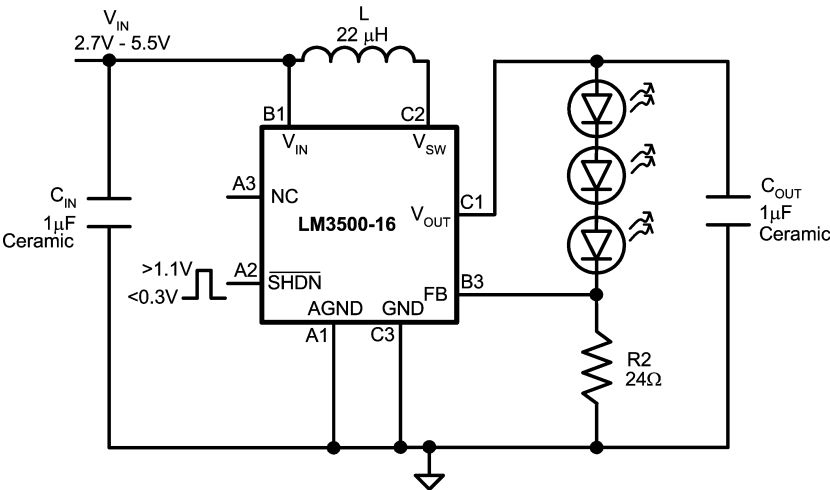
LM3500 Evaluation Board

Introduction

The LM3500 is a synchronous step-up DC/DC converter designed for white LED applications. The evaluation board is set up to drive 3 standard V_F white LEDs from a single Li-Ion battery. A fourth LED pad (D4) is included for testing of up to 4 low V_F white LEDs.

The LED current is set using the resistor R2 and the equation $I_{LED} = 0.5V/R2$. The evaluation board comes set up for approximately 20 mA LED current. Please note that for correct operation the SHDN pin must have a voltage greater than 1.1V applied to it.

Schematic



20092801

Bill of Materials

Designator	Component	Manufacturer
U1	LM3500TL-ADJ, μ SMD 8-lead	National Semiconductor
L	22 μ H, DT1608C-223	Coilcraft
C _{IN}	1 μ F, 25V Ceramic C3216X7R1E105K	TDK
C _{OUT}	1 μ F, 25V Ceramic C3216X7R1E105K	TDK
D1–D3	White LED, LWT67C	Osram
D4	0 Ω Resistor, 1206 Case, CRCW1206–000J	Vishay
R1	24 Ω , 1206 Case, CRCW1206–240J	Vishay

AN-1309

Notes

LIFE SUPPORT POLICY

NATIONAL'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT AND GENERAL COUNSEL OF NATIONAL SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

BANNED SUBSTANCE COMPLIANCE

National Semiconductor certifies that the products and packing materials meet the provisions of the Customer Products Stewardship Specification (CSP-9-111C2) and the Banned Substances and Materials of Interest Specification (CSP-9-111S2) and contain no "Banned Substances" as defined in CSP-9-111S2.



National Semiconductor
Americas Customer
Support Center
Email: new.feedback@nsc.com
Tel: 1-800-272-9959

www.national.com

National Semiconductor
Europe Customer Support Center
Fax: +49 (0) 180-530 85 86
Email: europa.support@nsc.com
Deutsch Tel: +49 (0) 69 9508 6208
English Tel: +44 (0) 870 24 0 2171
Français Tel: +33 (0) 1 41 91 8790

National Semiconductor
Asia Pacific Customer
Support Center
Email: ap.support@nsc.com

National Semiconductor
Japan Customer Support Center
Fax: 81-3-5639-7507
Email: jpn.feedback@nsc.com
Tel: 81-3-5639-7560