

AN-1697 LM4510 Evaluation Board

1 Introduction

The LM4510 is a current mode synchronous step-up DC/DC converter designed for organic LED applications. The evaluation board is designed to provide adjustable output voltage from a single Li-Ion battery. By default, output voltage is set to 16 V. Output voltage can be configured by choosing R_{F1} and R_{F2} . Loop compensation is achieved by R_C , C_{C1} and C_{C2} . R_D provides the option of enabling LM4510 from V_{IN} or external signal. For more details on the application information, see the device-specific data sheet.

2 Operating Conditions

- V_{IN} range: $2.7\text{ V} \leq V_{IN} \leq 5.5\text{ V}$
- 10 Pin WSON package
- Ambient temperature (T_A) range: -40°C to $+85^\circ\text{C}$
- Junction temperature (T_J) range: -40°C to $+125^\circ\text{C}$

3 Schematic

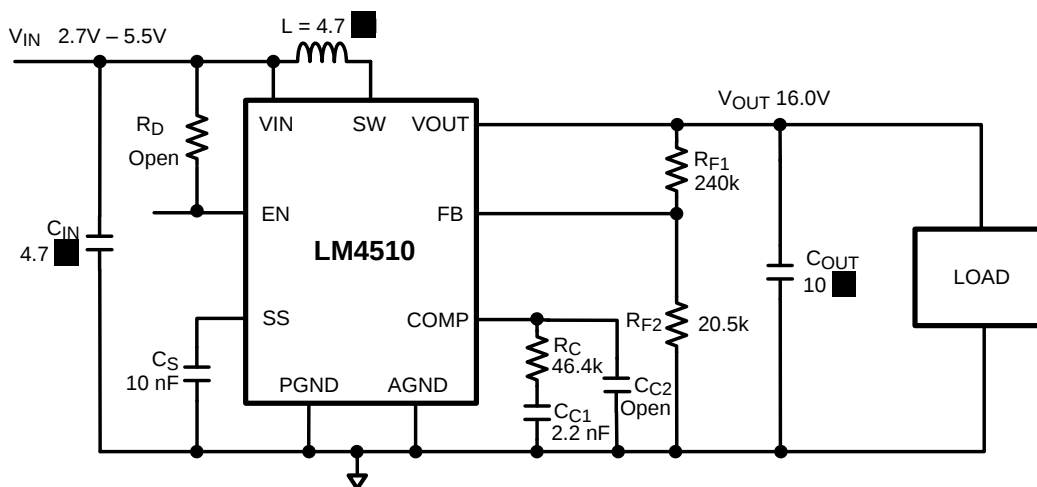


Figure 1. LM4510 Circuit Schematic

4 Bill of Materials (BOM)

Designator	Component	Manufacturer
U1	LM4510, WSON 10-lead	Texas Instruments
L	4.7 μ H, DO3314-472ML	Coilcraft
C _{IN}	4.7 μ F, 6.3 V Ceramic C2012X5R0J475K	TDK
C _{OUT}	10 μ F, 25 V Ceramic TMK316BJ106KL	Taiyo Yuden
C _S	10 nF, 25 V Ceramic C1608C0G1E103J	TDK
C _{C1}	2.2 nF, 25 V Ceramic TMK107SD222JA-T	Taiyo Yuden
R _{F1}	240 K Ω , 0603 Case, 9T06031A2403FBHFT	Yageo Corporation
R _{F2}	20.5 K Ω , 0603 Case, 9T06031A2052FBHFT	Yageo Corporation
R _C	46.4 K Ω , 0603 Case, 9T06031A4642FBHFT	Yageo Corporation
C _{C2}	Open	
R _D	Open	

5 PCB Layout

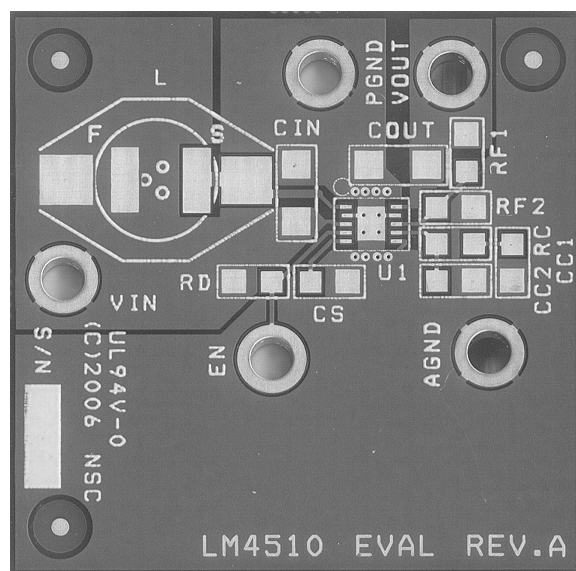


Figure 2. Top Layer

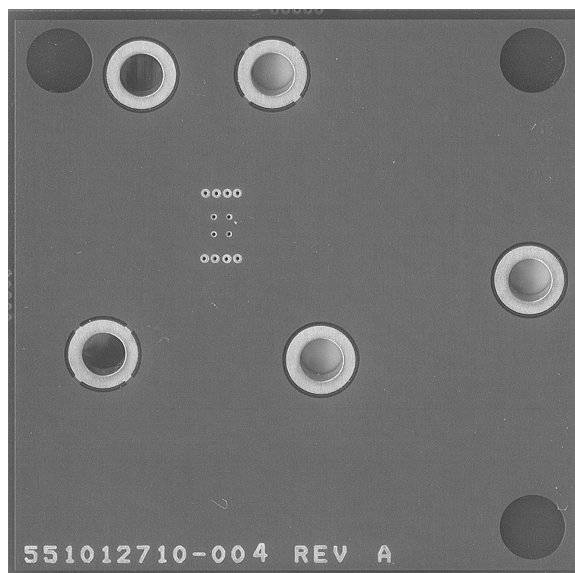


Figure 3. Bottom Layer

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