

## AN-1697 LM4510 Evaluation Board

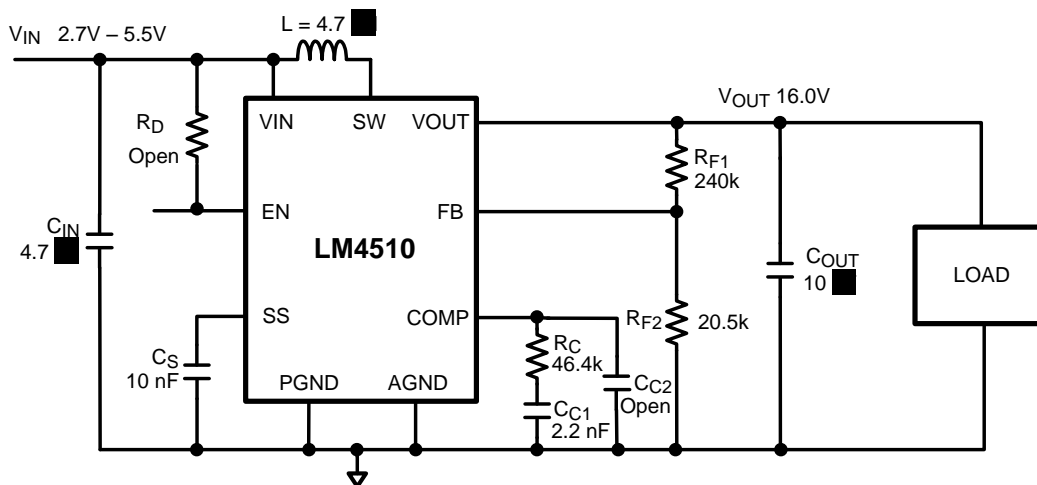
### 1 Introduction

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:  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$
- Junction temperature ( $T_J$ ) range:  $-40^\circ\text{C}$  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 $\mu$ H, DO3314-472ML	Coilcraft
C <sub>IN</sub>	4.7 $\mu$ F, 6.3 V Ceramic C2012X5R0J475K	TDK
C <sub>OUT</sub>	10 $\mu$ F, 25 V Ceramic TMK316BJ106KL	Taiyo Yuden
C <sub>S</sub>	10 nF, 25 V Ceramic C1608C0G1E103J	TDK
C <sub>C1</sub>	2.2 nF, 25 V Ceramic TMK107SD222JA-T	Taiyo Yuden
R <sub>F1</sub>	240 K $\Omega$ , 0603 Case, 9T06031A2403FBHFT	Yageo Corporation
R <sub>F2</sub>	20.5 K $\Omega$ , 0603 Case, 9T06031A2052FBHFT	Yageo Corporation
R <sub>C</sub>	46.4 K $\Omega$ , 0603 Case, 9T06031A4642FBHFT	Yageo Corporation
C <sub>C2</sub>	Open	
R <sub>D</sub>	Open	

#### 5 PCB Layout

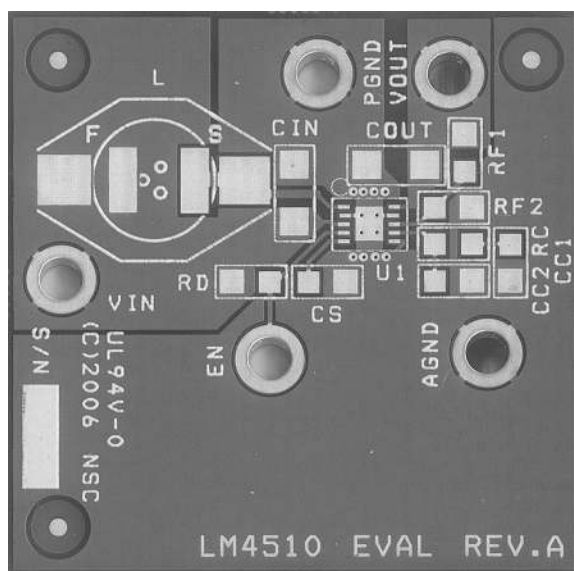
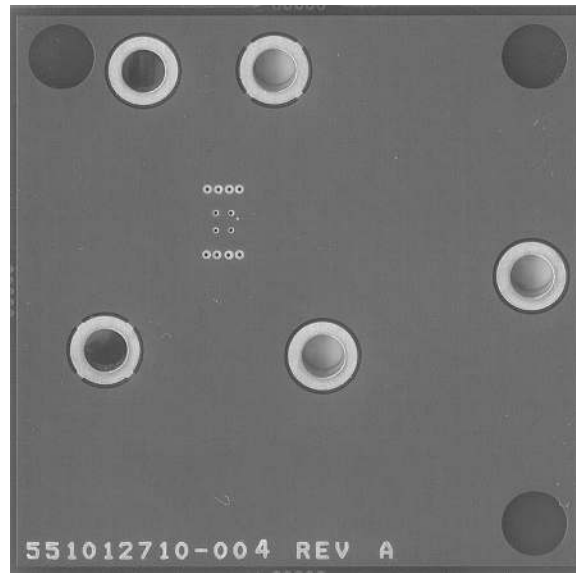


Figure 2. Top Layer



**Figure 3. Bottom Layer**

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