

**Subject**  
**1-String LED Demo Board Manual**

Board Model: LDB40V0.4A1L\_33510.00  
 Doc. No.: OB\_DOC\_DBM\_3351000

**Description:**

The performance of LED backlight power supply for LCD monitor backlight application is presented. It is designed with OB33510, a boost LED driver. The detailed block diagram, schematic, BOM, PCB layout and test data are also described.

The test data in this report is by 13Series 1 Parallel White LED array.

## Revision History

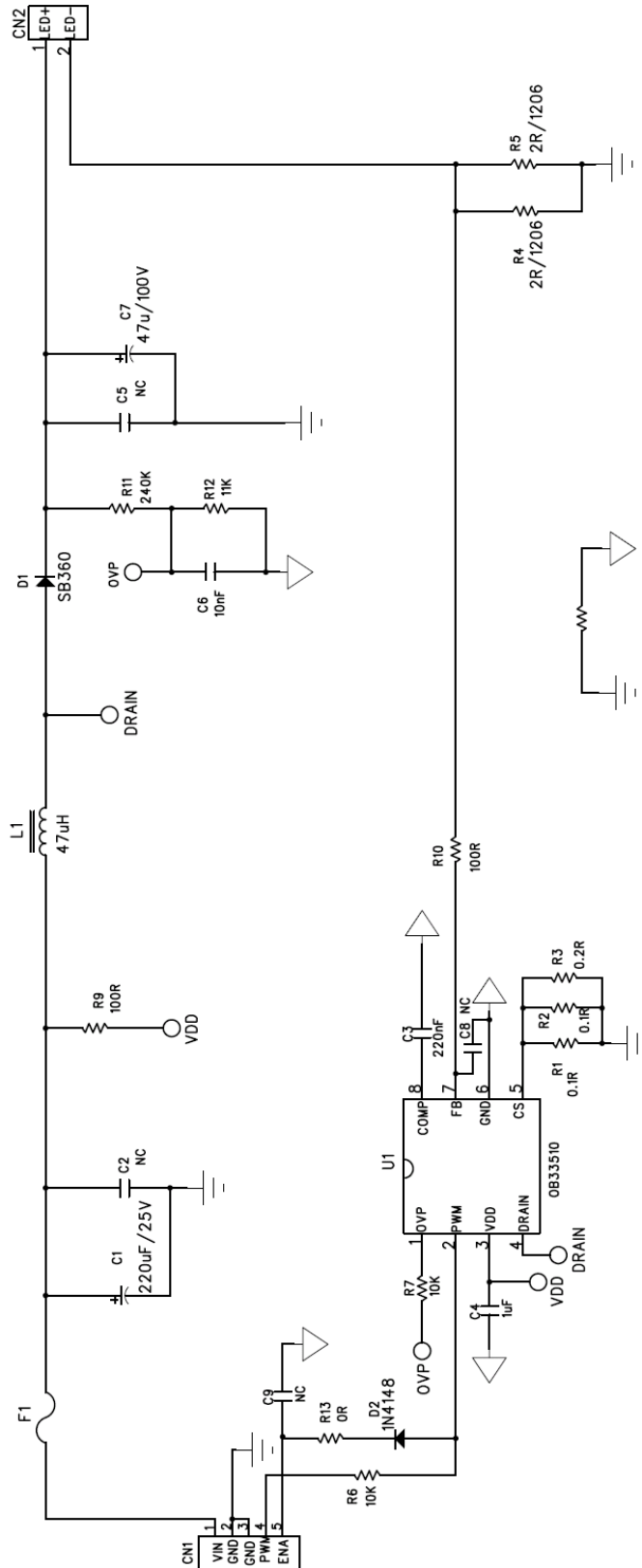
Revise Date	Version	Reason/Issue
2016-10-14	00	First Issue

## **1. Board Information**

### **1.1. Features**

- Current mode power switch with good dynamic response
- Cost effective LED solution
- Output over voltage protection, cycle by cycle Over Current Protection, VDD under voltage lockout
- Diode short Protection, inductor short Protection, LED Cathode short GND Protection
- Support PWM to analog dimming mode
- Wide dimming range from 1% to 100%

## 1.2. Electrical Schematic



## 2. Test Data & Waveform

### 2.1. Test Data Summary

#### 2.1.1. Key Item Overview

Item	Symbol	Test result			Spec	Unit	Remark
		LED					
LED Current	$I_{OUT}$	397.4			380~420	mA	Pass
LED Array voltage	$V_P$	38.50			-	V	--
	<b>L1 (Core)</b>		<b>U1</b>		<b>D1</b>	<b>Spec</b>	<b>Remark</b>
Thermal	65.8		59		51.2	<75°C	Pass
	<b><math>V_{IN}</math> (V)</b>	<b><math>I_{IN}</math>(A)</b>	<b><math>P_{IN}</math>(W)</b>	<b><math>P_{OUT}</math>(W)</b>	<b>Efficiency</b>	<b>Spec</b>	<b>Remark</b>
Efficiency	12.03	1.422	16.76	15.34	91.5%	>85%	Pass

Note:  $V_{IN}=12V$ , under 25°C ambient with 13S1P white LED array.

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