

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

Board Model: LDB40V0.4A1L\_3350E.01  
 Doc. No.: OB\_DOC\_DBM\_3350E01

**Description:**

The performance of LED backlight power supply for LCD monitor backlight application is presented. It is designed with OB3350E, 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 12Series 1Parallel White LED array.

## Revision History

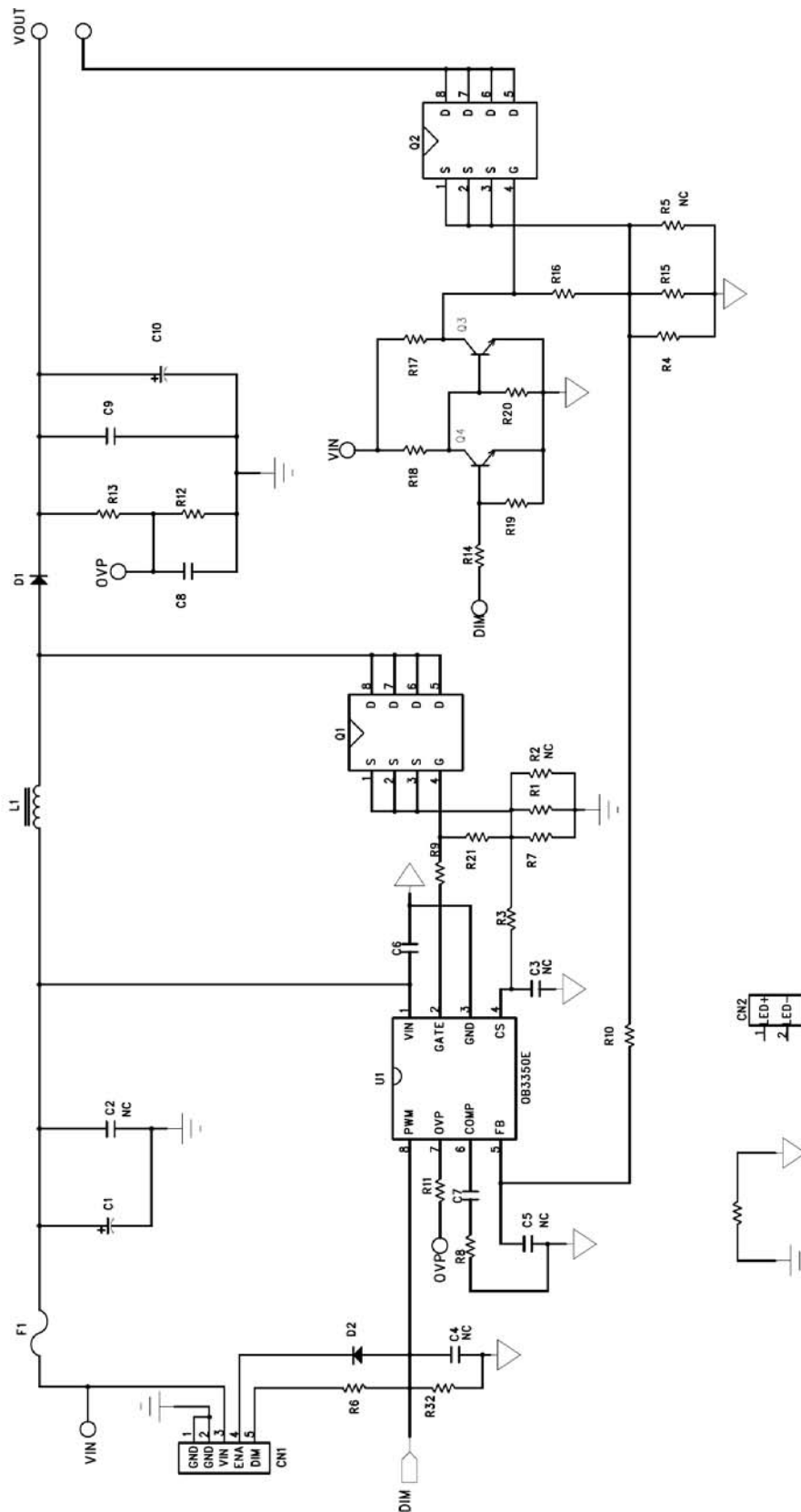
Revise Date	Version	Reason/Issue
2012-04-11	00	First Issue
2013-09-29	01	Added Dimming Circuit

## **1. Board Information**

### **1.1. Features**

- 9V to 30V input Voltage Range
- Current mode PWM Controller 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 & LED short Protection
- Support External burst dimming mode
- Dimming range from 1% to 100%

## 1.2. Electrical Schematic



VIN: 10.8-13.2V Output LED Current: 400mA;  
 PWM: 1%, Min. Brightness; 100%, Max. Brightness  
 ENA: Disable, 0-0.8V; Enable, 2-5V

## 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	$I_{OUT}$	401.3				380~420	mA	Pass
LED Array voltage	$V_P$	38.89				40	V	--
		L1 (Core)	Q1	Q2	D1	Spec	Remark	
Thermal		71.5	61.0	36.5	58.5	<75°C	Pass	
	$V_{IN}$ (V)	$I_{IN}$ (A)	$P_{IN}$ (W)	$P_{OUT}$ (W)	Efficiency	Spec	Remark	
Efficiency	11.93	1.43	17.06	15.61	91.48%	>85%	Pass	

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

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