

**Subject**  
**4-Strings LED Demo Board Manual**

Board Model: LD40V0.8A3364 2048  
 Doc. No.: OB\_DOC\_DBM\_336400

**Description:**

The performance of LED backlight power supply for LCD monitor backlight application is presented. It is designed with OB3364 which integrates a boost converter and 4 channels of current source optimized to drive LED arrays. The detailed block diagram, schematic, BOM, PCB layout and test data are also described.

The test data in this report uses 13Series 4Parallel White LED array.

## Revision History

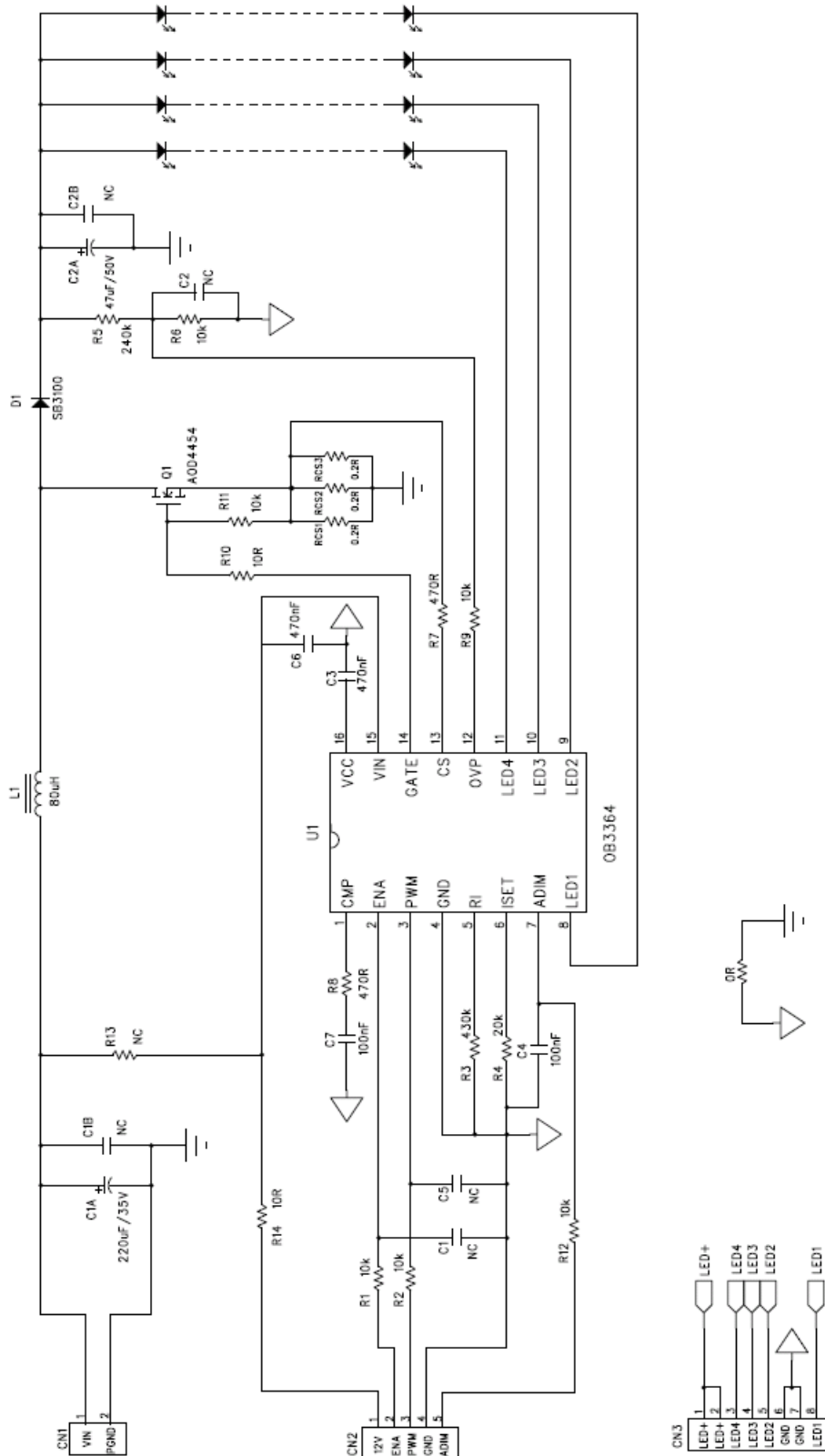
Revise Date	Version	Reason/Issue
2020-12-02	00	First Issue

## 1. Board Information

### 1.1. Features

- $\pm 3\%$  matching accuracy between 4 LED strings current (100% brightness)
- Up to 200mA current capability per string
- 10V gate drive, better MOS compatibility
- Programmable operating frequency
- PWM and analog combination dimming
- Comprehensive protections coverage covers output open, LED short /open, OVP, Diode/Inductor short, LEDX short to GND, OTP etc.

## 1.3. Electrical Schematic



# 1. Test Data & Waveform

## 3.1 Test Data Summary

### 3.1.1 Key Item Overview

Item	Symbol	Test result				Spec	Unit	Remark
		LED1	LED2	LED3	LED4			
LED Current	$I_{OUT}$	204.8	198.0	202.2	205.8	190-210	mA	Pass
LED Array voltage	$V_P$	38.47	38.26	38.12	38.38	40	V	--
LED Current Matching		1.92%				<3%		Pass
	$V_{IN}$ (V)	$I_{IN}$ (A)	$P_{IN}$ (W)	$P_{OUT}$ (W)	Efficiency	Spec		Remark
Efficiency	24.02	1.37	32.91	31.06	94.38%	>85%		Pass
	<b>L1 (Wire)</b>	<b>L1 (Core)</b>	<b>Q1</b>	<b>U2 (OB3364)</b>	<b>D1</b>			
Thermal	53.0°C	46.1°C	61.4°C	82.4°C <sup>①</sup>	70.7°C			

Note:  $V_{IN}=24V$ , under 25 °C ambient with 13S4P white LED array.

① This temperature is under IC power loss is 0.68W

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