



Integrated Device Technology

ZLED7001KIT-E1

Kit Description v. 0.92

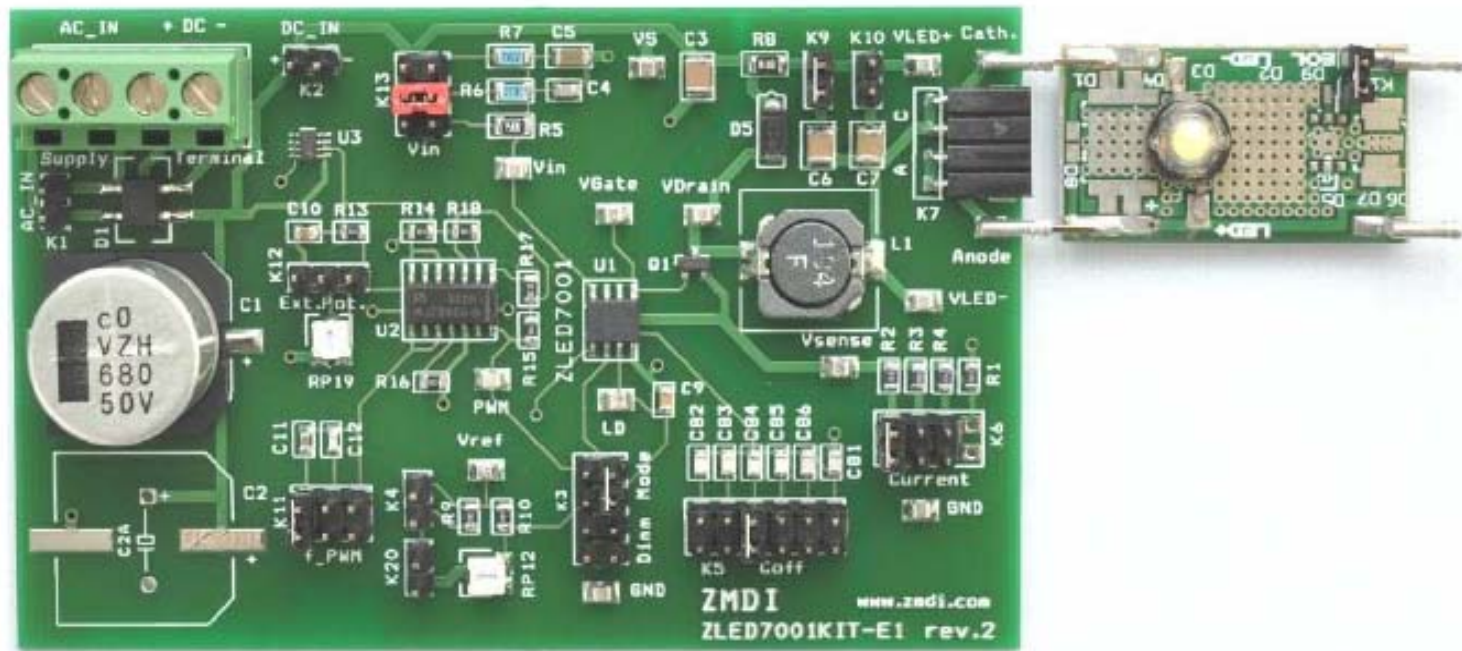
Content

1. Features
2. Quick Start
3. **WARNING**
4. Schematics Overview & Details
5. Assembly Map
6. PCB Layout
7. BOM
8. Ordering Information



Features (PCB rev. 2)

- Kit demonstrates ZLED7001 functionality in evaluation board application
- AC or DC operation over whole operating range of 6 to 40VDC
- Hardware programmable features



Quick Start

Connect 6 to 40VDC or corresponding AC supply.

Select supply voltage range, consider WARNING

select filter caps

Connect LED string, jumper last position.

PWM dimm trimmer.

Select PWM frequency.

Increase bulk capacitance to run high LED string power.

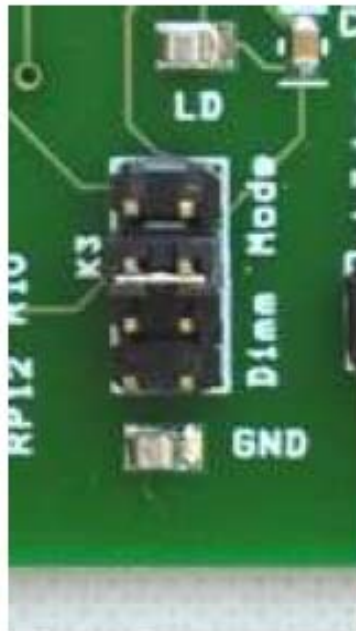
Linear dimm trimmer.

For dimm mode see next page.

Adjust Toff by selecting caps or add own cap at last jumper position.

select different LED currents

Quick Start / Jumper Options K3



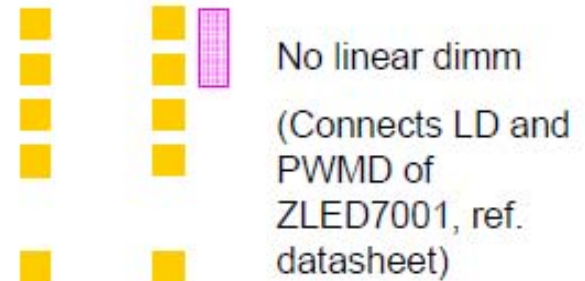
PWM



Linear Dimm by RP12



External NTC at K20



No linear dimm

(Connects LD and
PWMD of
ZLED7001, ref.
datasheet)

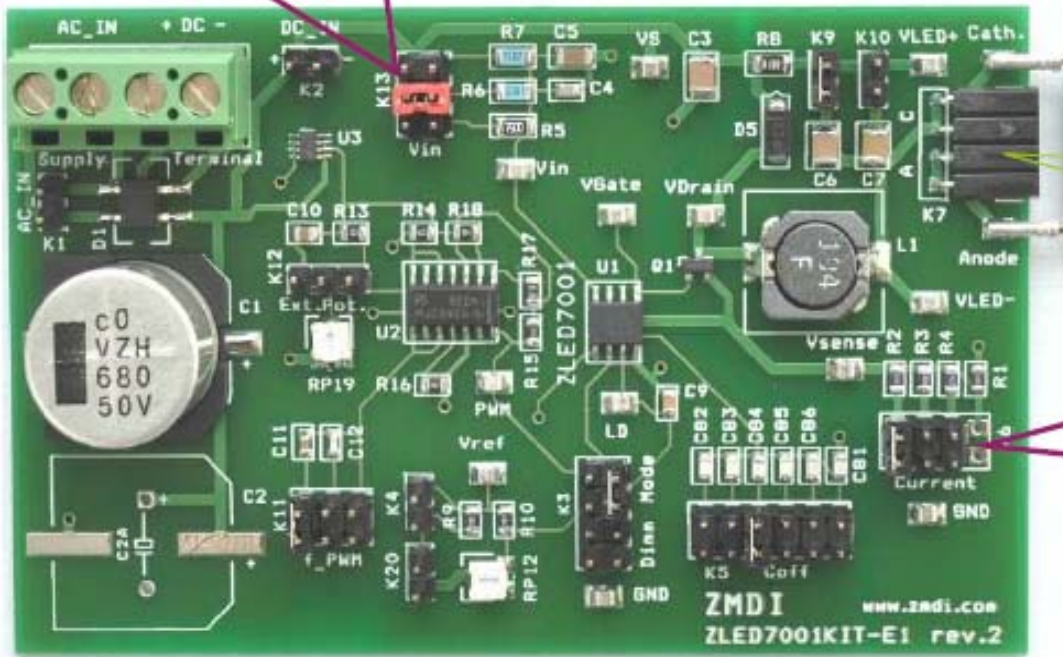


Blank LED

Quick Start / WARNING

K13 / red jumper must be set according the supply voltage range. An open jumper may result in an damaged power circuit.

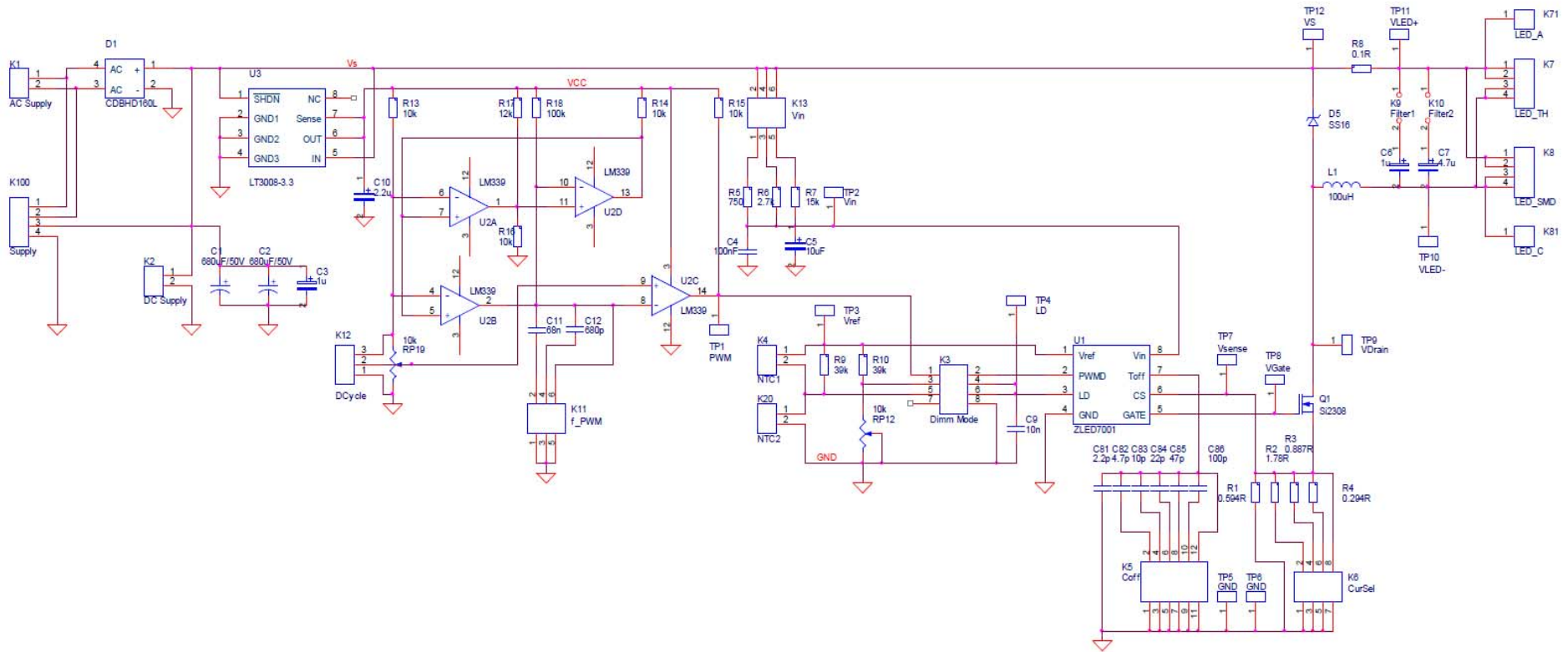
top position – 33 to 40 VDC
middle position – 12 to 33 VDC
bottom position – 8 to 12 VDC



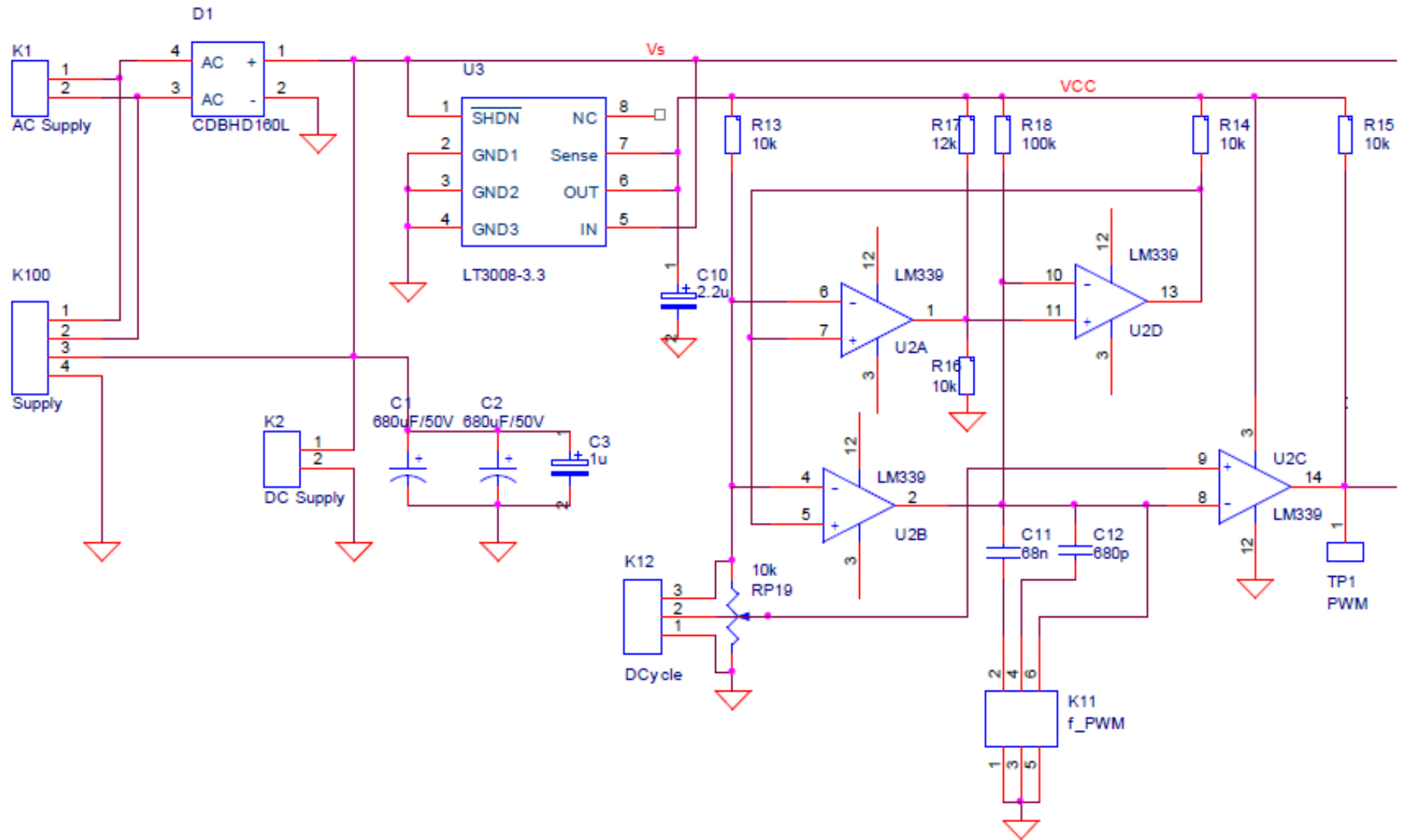
The driver circuit is intrinsically safe against open LED circuit.

At the right pad position of K6 an external sense resistor may be connected. Do not short K6. This will damage the power circuit.

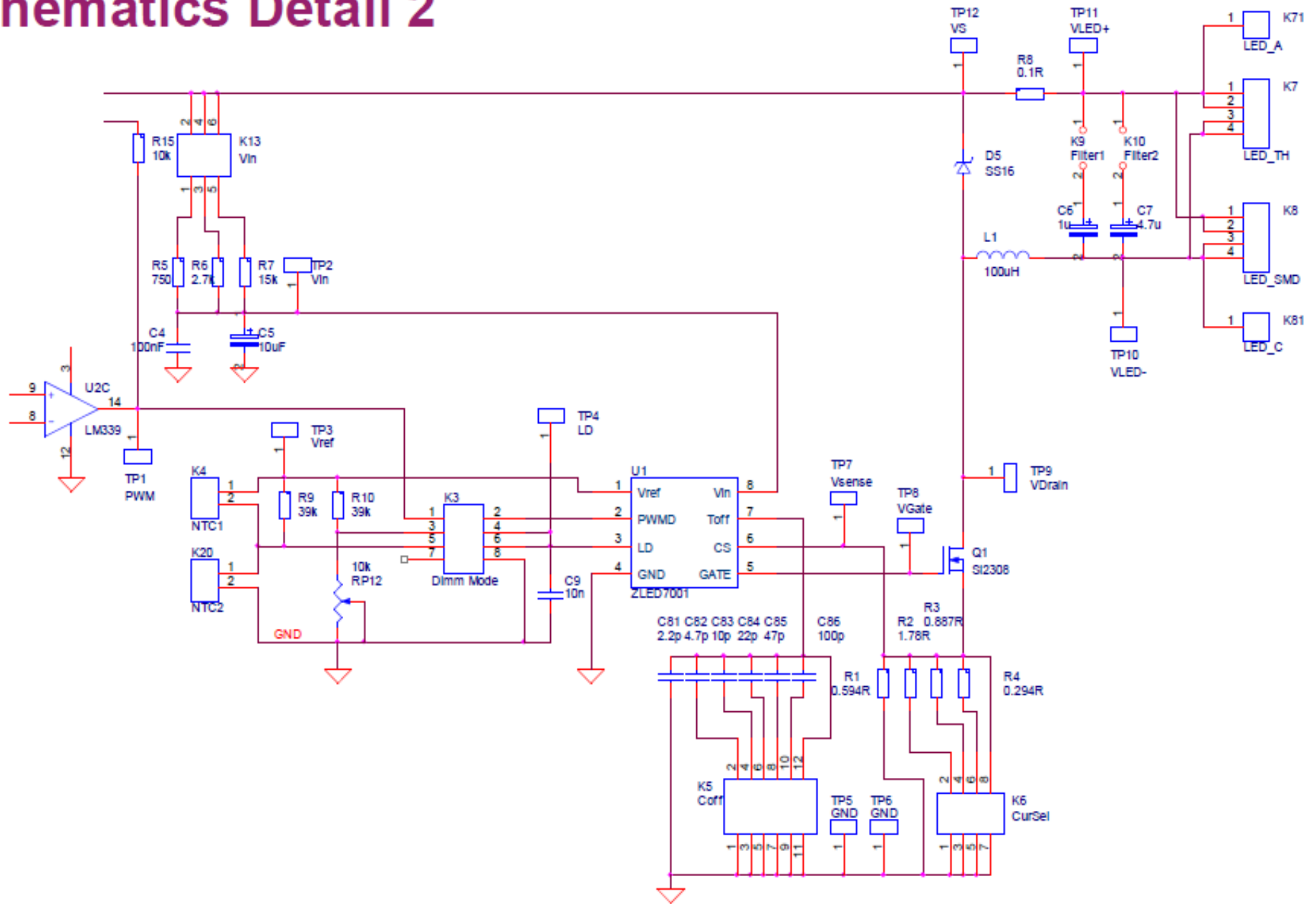
Schematics Overview



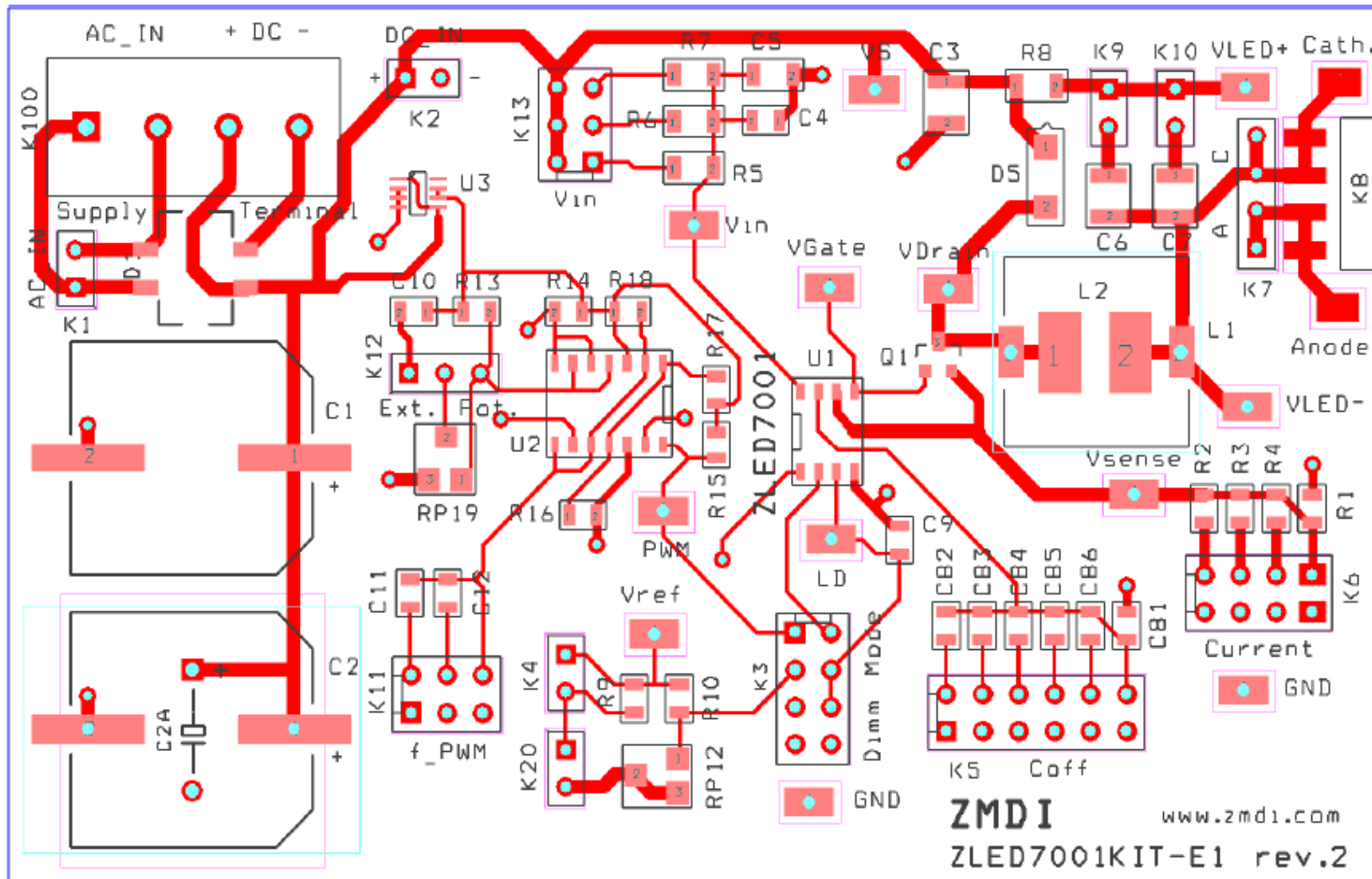
Schematics Detail 1



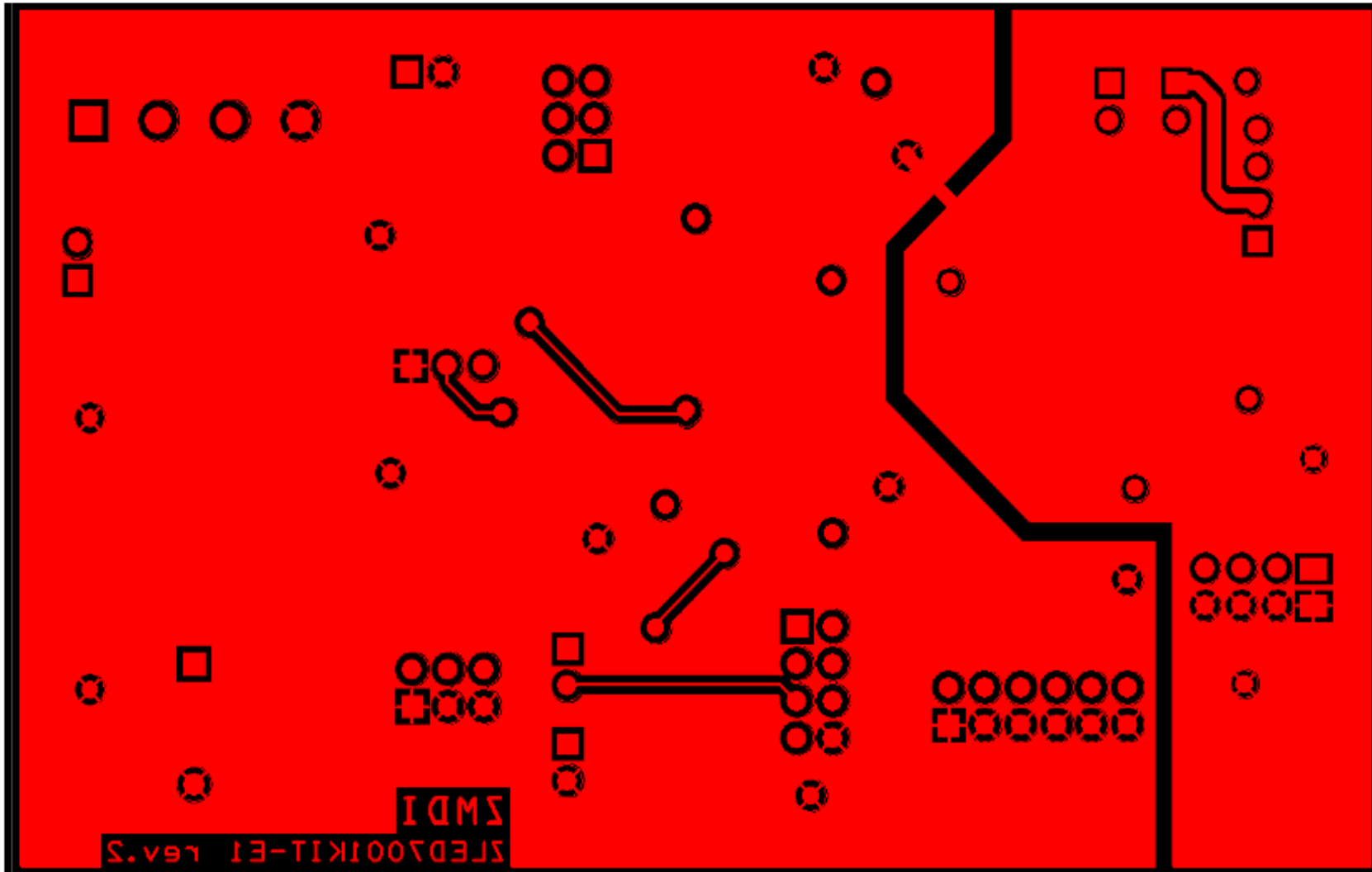
Schematics Detail 2



PCB Layout TOP



PCB Layout BOT



BOM

No.	Quantity	Symbol	Description	Parameters	Part No.	Manufacturer	Package
1	1	U1	LED driver		ZLED7001	ZMDI	SOP8
2	1	U2 A to D	Comparator 4fold		LM339	various	TSSOP14
3	1	U3	Linear Regulator		LT3008ETS8-3.3	Linear Tech.	TSOT23
4	1	Q1	NMOS Transistor		SI2308	Vishay	SOT-23
5	1	D1	Schottky Rectifier Bridge	60V / 1A	CDBHD160L	Comchip	TO-269
6	1	D5	Schottky Diode	60V / 1A	SS16	various	SMA
7	1	R1	Resistor	0.594Ω / 1%		various	0805
8	1	R2	Resistor	1.78Ω / 1%		various	0805
9	1	R3	Resistor	0.887Ω / 1%		various	0805
10	1	R4	Resistor	0.294Ω / 1%		various	0805
11	1	R5	Resistor	750Ω / 0.25W		various	1206
12	1	R6	Resistor	2.7kΩ / 0.25W		various	1206
13	1	R7	Resistor	15kΩ / 0.25W		various	1206
14	1	R8	Resistor	0.1Ω / 0.25W		various	1206
15	2	R9/R10	Resistor	39kΩ		various	0805
16	2	RP12/RP19	Trimmer	10kΩ	TS3	Vishay	
17	4	R13/R14/ R15/R16	Resistor	10kΩ		various	0805
18	1	R17	Resistor	12kΩ		various	0805
19	1	R18	Resistor	100kΩ		various	0805
20	1	L1	Power Inductor	100μH	MSS1838-104 or 74477120	Coilcraft Würth	
21	1	C1/C2 (*)	AlEi cap	680μF/50V		various	d16x16.5
22	2	C3/C6	X7R Cap	1μF/50V		various	1210
23	1	C4	X7R Cap	100nF/50V		various	0805
24	1	C5	X7R Cap	10 μF/10V		various	1206
25	1	C7	X7R Cap	4.7μF/50V		various	1210
26	1	C81	C0G Cap	2.2pF		various	0805
27	1	C82	C0G Cap	4.7pF		various	0805
28	1	C83	C0G Cap	10pF		various	0805
29	1	C84	C0G Cap	22pF		various	0805
30	1	C85	C0G Cap	47pF		various	0805
31	1	C86	C0G Cap	100pF		various	0805
32	1	C9	X7R Cap	10nF		various	0805
33	1	C10	X7R Cap	2μF/6.3V		various	0805
34	1	C11	X7R Cap	68nF		various	0603
35	1	C12	C0G Cap	680pF		various	0603
36	12	TP1 to TP12	Test Terminal		C12000B	Nicomatic	SOT08-05
37	12	K1 to K12	TH Terminal 0.63mm			various	2.54mm grid
38		NTC (at K20)		10kΩ	not populated		

(*) C2 not populated

Ordering Information

ZLED7000KIT-D1

ZLED7000 MR16 Halogen replacement Demo Kit 12VAC/VDC, incl. 1 ZLED-PCB1

ZLED7001KIT-E1

ZLED7001 Evaluation Board up to 24VAC / 40VDC, incl. 1 ZLED-PCB1

ZLED7010KIT-D1

ZLED7010 Demo Board with LED on cool body 12VAC/VDC

ZLED-PCB1

Test PCB with one 3W white HB-LED, cascadable to one multiple LED string

ZLED-PCB2

10 unpopulated test PCBs for modular LED string with footprints of 9 common HB-LED types



Corporate Headquarters

6024 Silver Creek Valley Road
San Jose, CA 95138
www.IDT.com

Sales

1-800-345-7015 or 408-284-8200
Fax: 408-284-2775
www.IDT.com/go/sales

Tech Support

www.IDT.com/go/support

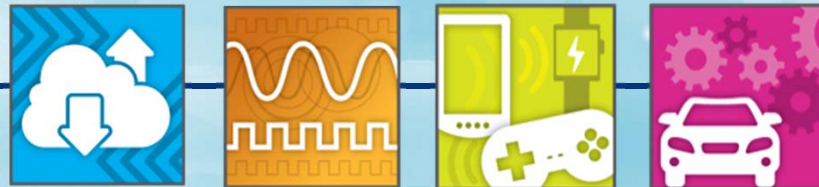
DISCLAIMER Integrated Device Technology, Inc. (IDT) reserves the right to modify the products and/or specifications described herein at any time, without notice, at IDT's sole discretion. Performance specifications and operating parameters of the described products are determined in an independent state and are not guaranteed to perform the same way when installed in customer products. The information contained herein is provided without representation or warranty of any kind, whether express or implied, including, but not limited to, the suitability of IDT's products for any particular purpose, an implied warranty of merchantability, or non-infringement of the intellectual property rights of others. This document is presented only as a guide and does not convey any license under intellectual property rights of IDT or any third parties.

IDT's products are not intended for use in applications involving extreme environmental conditions or in life support systems or similar devices where the failure or malfunction of an IDT product can be reasonably expected to significantly affect the health or safety of users. Anyone using an IDT product in such a manner does so at their own risk, absent an express, written agreement by IDT.

Integrated Device Technology, IDT and the IDT logo are trademarks or registered trademarks of IDT and its subsidiaries in the United States and other countries. Other trademarks used herein are the property of IDT or their respective third party owners. For datasheet type definitions and a glossary of common terms, visit www.idt.com/go/glossary. All contents of this document are copyright of Integrated Device Technology, Inc. All rights reserved.



Thank You



Analog Mixed Signal Product Leadership in Growth Markets