



16W LED Driver Using L3012

Subject

L3012 16W / 0.68A DC/DC LED Driver Demo Board Manual

Key features:

- DC Input Full Range 4.5Vdc~40Vdc
 - DC-DC buck converter
 - Efficiency 96.24%(maximum)
 - DC Voltage Dimming and Pulsed Dimming
 - Short Circuit Protection and Open Loop Protection
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Revision History

Revise Date	Version	Reason/Issue
2014/9/15	A	First Issue



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1. LED Driver Demo Board Specification

1.1. Input Characteristics

- DC input voltage rating 6Vdc ~ 36Vdc
- DC input voltage range 4.5Vdc ~ 40Vdc

1.2. Output Characteristics

- Output voltage 3V~24V
- Typical output current 0.68A

1.3. Performance Specifications

- Maximum output power 16W
- Efficiency(maximum) 96.24%
- Current load regulation $< \pm 1\%$
- Current line regulation $< \pm 1\%$

1.4. Protection Function

- Short circuit protection Auto Recovery
- Open loop protection Auto Recovery

1.5. Environment

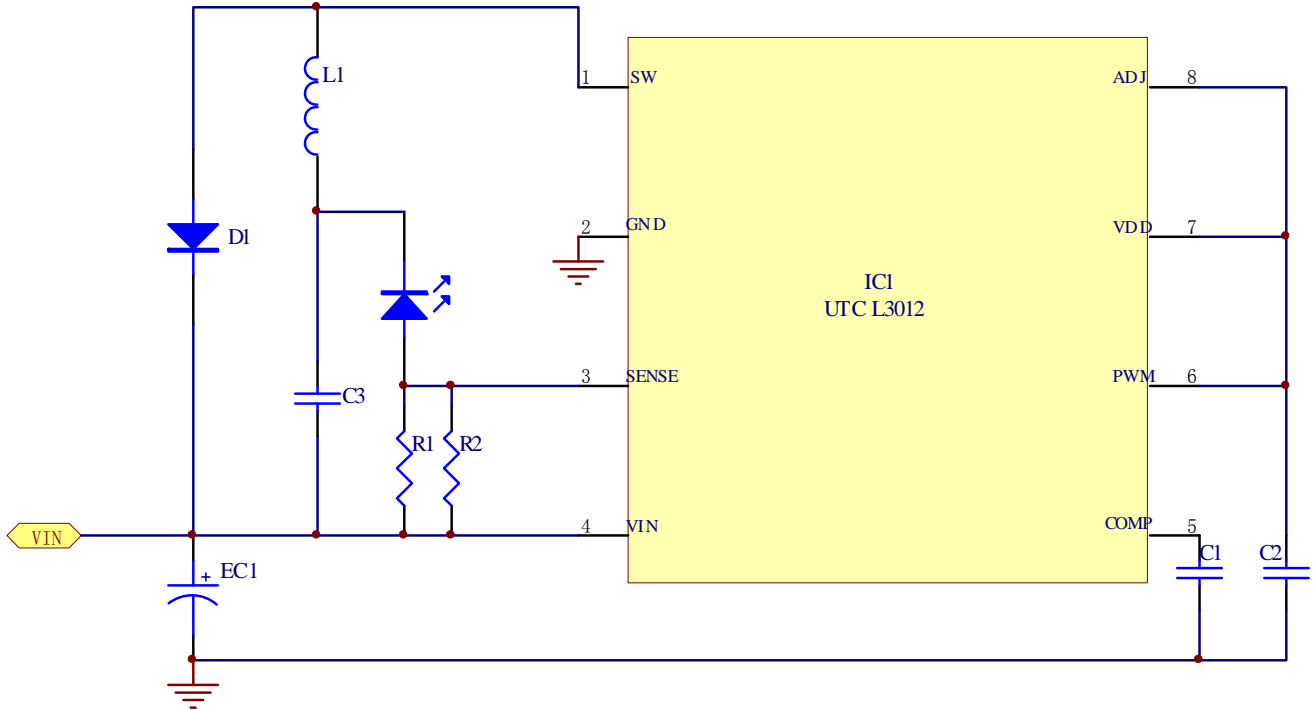
- Operation Temperature 0°C to 40 °C
- Operation Humidity 20% to 90% R.H
- Storage Temperature -40°C to 60 °C
- Storage Humidity 0% to 90% R.H



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2. LED Demo Board Information

2.1. Schematic



2.2. BOM

No.	Position	Description	Quantity
1	R1, R2	0.30R, 1206, 1%	2
2	C1	0.1uF, 50V, 20%, 0805, X7R	1
3	C2	1uF, 50V, 20%, 0805, X7R	1
4	C3	2.2uF, 50V, 20%, 1206, X7R	1
5	D1	UTC SK34 (3A, 40V), SMC	1
6	IC1	UTC L3012, SOP8	1
7	L1	47uH, 9*10*4mm	1
8	EC1	10uF, 50V, 5*11	1

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3. Performance Evaluation

This document presented here is to describe the power module performance.
The measuring data are tested at the board end, unless otherwise specified.

The Summarized Result :

Item	Test result
1. Input Characteristics	
Efficiency (maximum)	96.24%
2. Output characteristics	
Maximum Output Power	16W
Output Typical Voltage	3V~24V
Output Typical Current	0.68A
Load Regulation	<± 1%
Current Line Regulation	<± 1%
3. Protection	
Short Circuit Protection	Auto Recovery
Open Loop Protection	Auto Recovery

Test Equipment:

Item	Vendor	Model No:
1.DC Source	MATRIX	MPS-3003L-3
2.Multimeter	KEITHLEY	2000
3.Electronic load	PRODIGIT	3310



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3.1. Input Characteristics

3.1.1. Efficiency vs. Supply Voltage

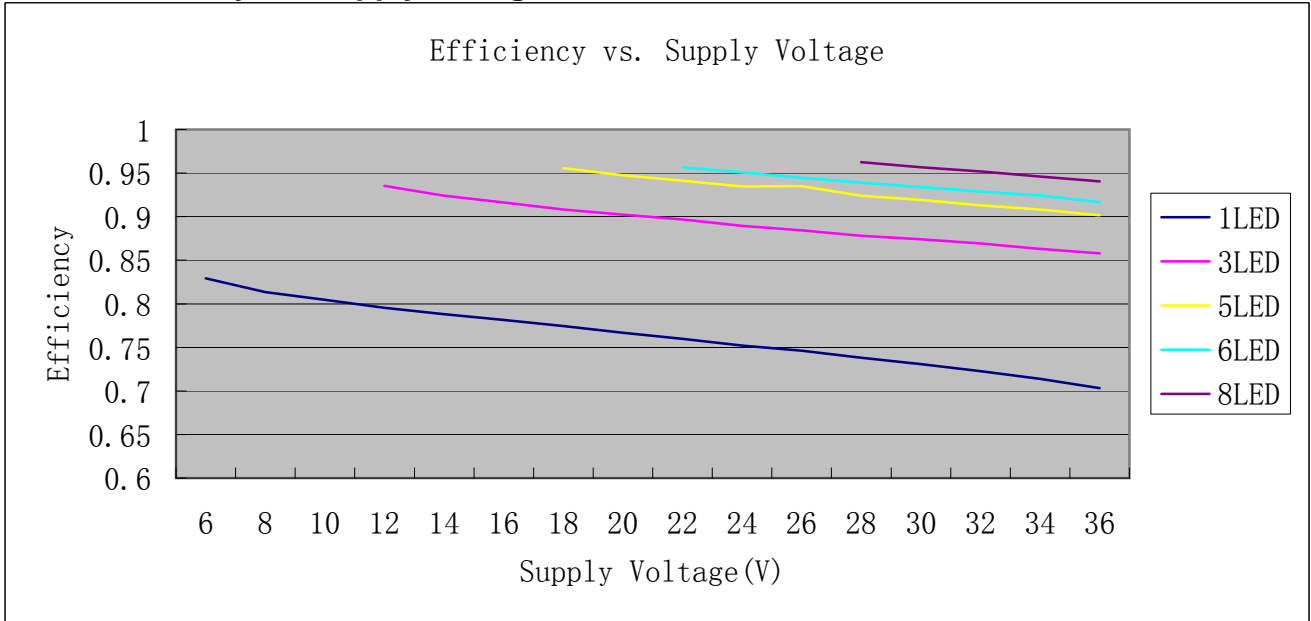


Fig.1 Efficiency V.S. Input Voltage

3.2. Output Characteristics

3.2.1. Output Current vs. Input Voltage

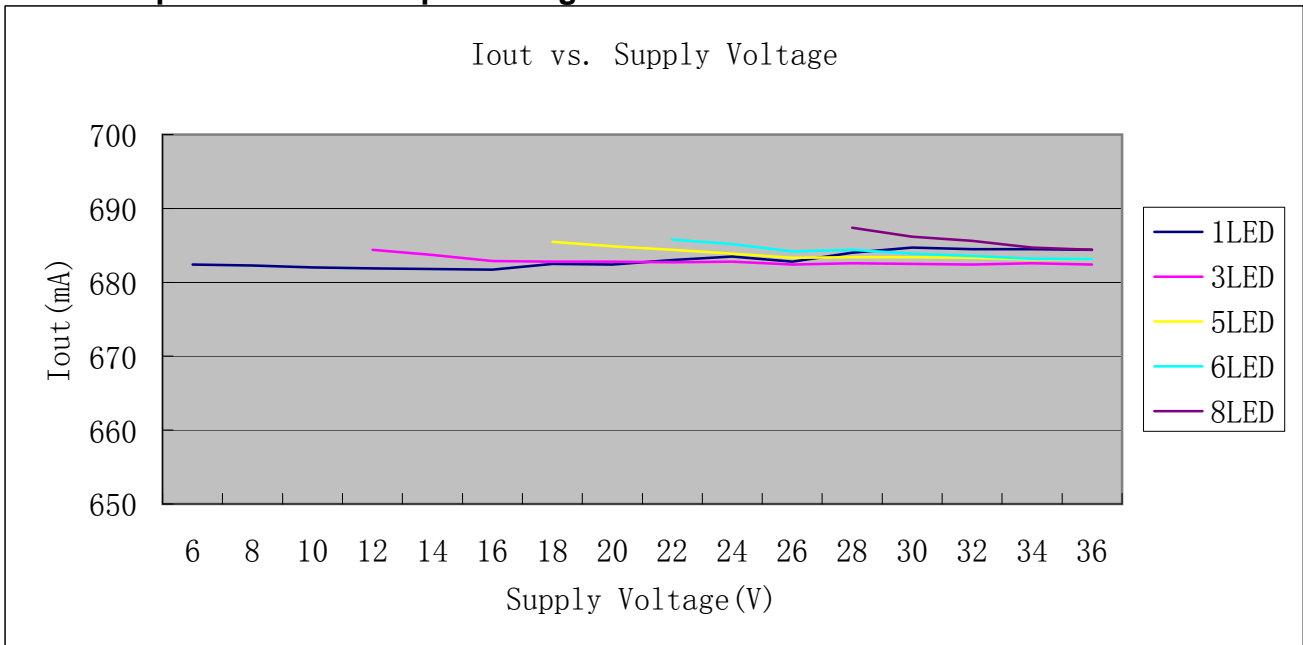


Fig.2 Output Current V.S. Input Voltage



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3.3 DC Voltage Dimming and Pulsed Dimming

Wide dimming range from 7% up to 100% with DC voltage (0V~1.5V) dimming or a wide range of pulsed dimming.

3.4. Protection

3.4.1. Open Loop Protection

When LED connection is opened , the Output will be limited to Input. Once the condition is removed, and the power will be back to normal output Voltage .

3.4.2. Short Circuit Protection

When Short Circuit Protection condition is removed and the power automatically recover



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