

44V, 2A Peak High Efficiency LED Driver Evaluation Board For MR16

Parameters Subject to Change Without Notice

FEATURES

- 4.6V to 40V operating input range
2A peak switch current
- Analog dimming and PWM dimming
- Constant off-time operation
- SW over voltage lockout
- Thermal protection
- Available in SOT23-6 and ESOP8 package

APPLICATIONS

- LED Driver

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Unit
Input Voltage	VIN	12	VAC
Output Voltage	VOUT	18	V
Output Current	IOUT	150	mA

DESCRIPTION

The JW1130H is a current mode monolithic LED driver. The LED current can be controlled with an analog input voltage.

With high-side LED current sensing, the JW1130H can be configured as buck, boost or buck-boost topology to serve different LED driver need.

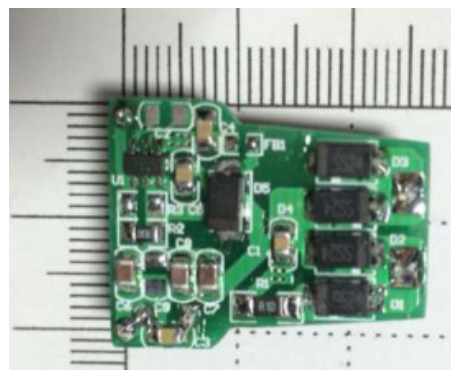
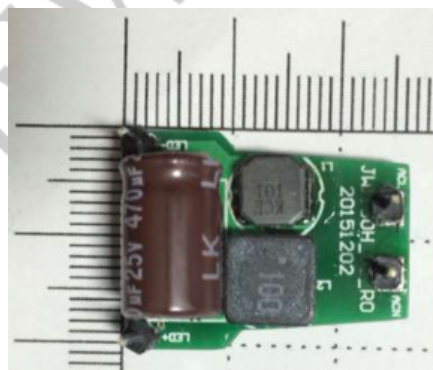
The integrated 40V/2A N-Channel MOSFETs ensures high efficiency operation.

At light loads, JW1130H operates in low frequency to maintain high efficiency and low output ripple.

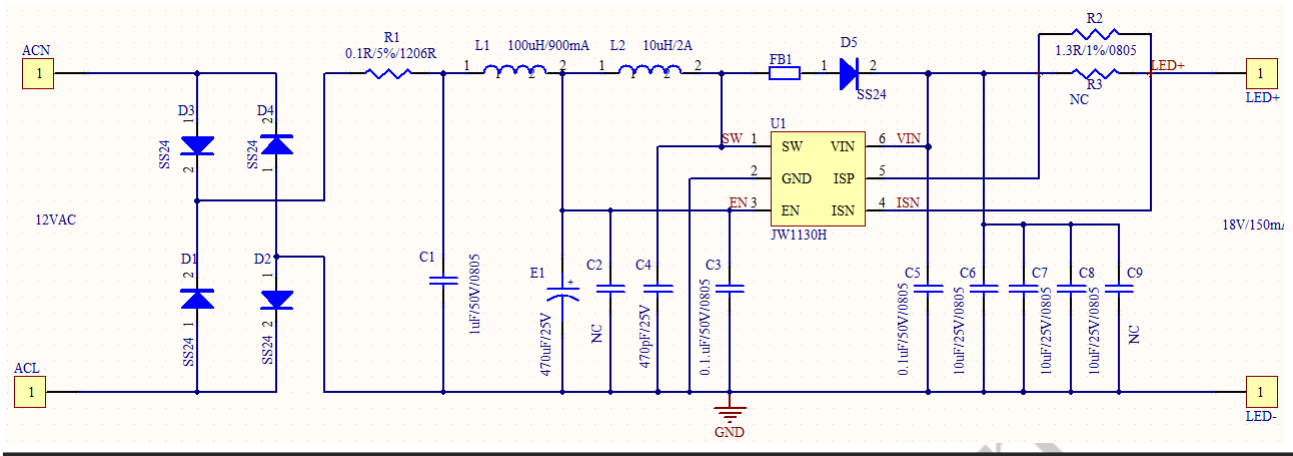
The overvoltage lockout protection on SW pin protects JW1130H from open LED fault.

The JW1130H also has thermal protection at 140 °C. The JW1130H is available in a 6-pin SOT23-6 and a 8-pin ESOP8 package, which provides a compact solution with minimal external components.

EVALUATION BOARD AND TYPICAL PERFORMANCE



SCHEMATIC



BILL OF MATERIALS

Qty	Designator	Value	Description	Package	Manufacturer	Manufacturer P/N
5	D1, D2 D3, D4, D5	SS24	40V2A	SMA		
1	L1	100uH/900mA			KCE	KNR6028MT101
1	L2	10uH/2A		7345	Würth Elektronik	74477710
1	E1	470uF/25V	Electrolytic Cap	8*10	YONGMING	
1	C1	1uF/50V	Ceramic Cap X7R	0805C	Murata	GRM21BR71H105KA12L
0	C2	NC				
1	C3, C5	0.1uF/50V	Ceramic Cap X7R	0603C	Murata	GRM188R71H104KA93D
1	C4	470pF/25V	Ceramic Cap X7R	0603C	Murata	GRM1885C2A471JA01
1	C6, C7, C8	10uF/25V	Ceramic Cap X7R	0805C	SAMSUNG	CL21B106KAYN NNE
0	C9	NC				
1	R1	0.1R/5%	Resistor	1206R	Uniohm	1206F100LT5E
1	R2	1.3R/1%	Resistor	0805R	Uniohm	0805F130KT5E
0	R3	NC	Resistor	0805R		
1	FB1	120R 100MHz/2A	EMIFIL	0603	Murata	BLM18PG121SN1
1	U1	JW1130H		SOT23-6	JoulWatt	JW1130H

PRINTED CIRCUIT BOARD LAYOUT

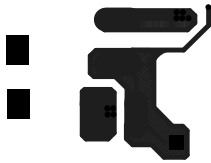


Figure1—Top Layer

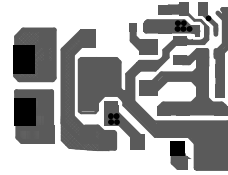


Figure2—Bottom Layer

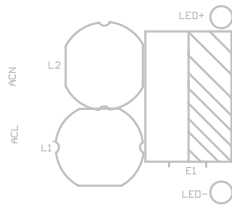


Figure3—Silk Layer1

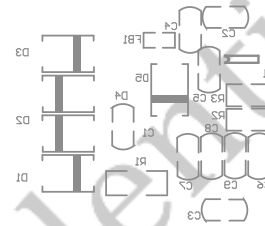


Figure4—Silk Layer2

QUICK START GUIDE

1. Connect the positive terminal and negative terminal of the LEDs to LED+ and LED- of the EVB, respectively.
2. Connect the output of the electronic transformer to the input of the EVB, with the input of the electronic transformer in “OFF” state.
3. Power on the electronic transformer and the evaluation board starts operating in normal condition.
4. For more information, please refer to the datasheet of JW1130H.

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