

Parameters Subject to Change Without Notice

FEATURES

- Controller for adaptive 100/120Hz current ripple remover
- Built-in zener diode for input voltage clamping
- VG output voltage high to 10V
- Programmable amplitude of LED current ripple
- Programmable maximum cathode voltage of LED
- Programmable maximum LED current
- Short protection
- Over temperature protection
- SOT23-6L Package

APPLICATIONS

- LED lighting

DESCRIPTION

EV1221 use for removing the 100/120Hz LED current ripple on AC/DC power.

The adaptive technology of JW1221 ensures minimum power dissipation on NMOSFET while removing LED current ripple.

JW1221 clamps the input voltage on VIN pin by 30V. Only one resistor is needed when the output

voltage of AC/DC power is higher than 30V.

JW1221 allows user to setup maximum LED current by the sensing resistor between the source of NMOSFET and ground, which keeps NMOSFET damaged when LED short connected or hot-plug.

By sensing the drain voltage of NMOSFET via a resistor between the drain and VLMT pin, JW1221 allows user to setup the maximum cathode voltage of LED string, which could help limit the power dissipation on chip.

It's considered that LED is shorted when the cathode voltage of LED is higher than short connecting threshold and remains over 0.5 second. JW1221 shuts down NMOSFET when LED is shorted.

JW1221 provides over thermal protection. When OTP is trigged, the current removing function is blocked, and then the temperature decreases.

ELECTRICAL SPECIFICATIONS

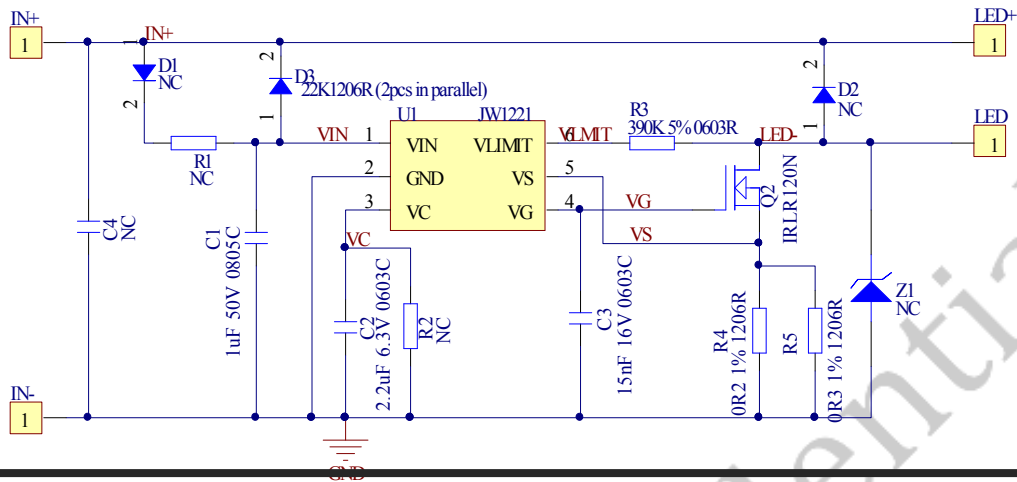
Parameter	Symbol	Value	Unit
LED Voltage	VOUT	48	V
LED Current	IOUT	1	A

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EVALUATION BOARD

SCHEMATIC



BILL OF MATERIALS

Quantity	Designator	Comment	Description	Footprint	Manufacturer	Manufacturer P/N
1	C1	1uF 50V 0805C	Ceramic Cap,X7R	0805C		
1	C2	2.2uF 6.3V 0603C	Ceramic Cap,X7R	0603C		
1	C3	15nF 16V 0603C	Ceramic Cap,X7R	0603C		
0	C4	NC	Cap	1206C		
0	D1	NC	Diode	D1206		
0	D2	NC	Diode	D1206		
2	D3	22K 5% 1206R Two pieces in parallel	Resistor	1206R		
1	Q1	200V 18A	N-MOSFET	TO-252		FQD18N20V2
0	R1	NC	Resistor	0805R		
0	R2	NC	Resistor	0603R		
1	R3	390k 5% 0603R	Resistor	0603R		
1	R4,	0R2 1% 1206R	Resistor	1206R		
1	R5	0R3 1% 1206R	Resistor	1206R		
1	Z1	JW1221	IC	SOT-23-6	Joulwatt	JW1221
0	U1	NC	Zener	DO-41		

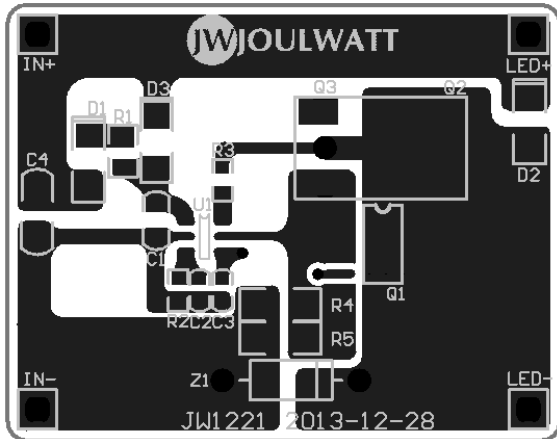
PRINTED CIRCUIT BOARD LAYOUT

Figure1—Top Layer

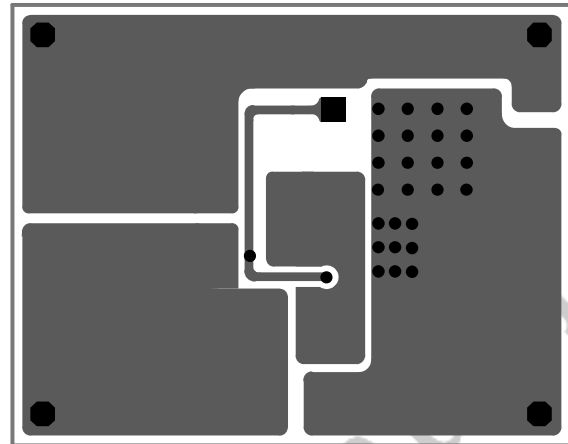


Figure2—Bottom Layer

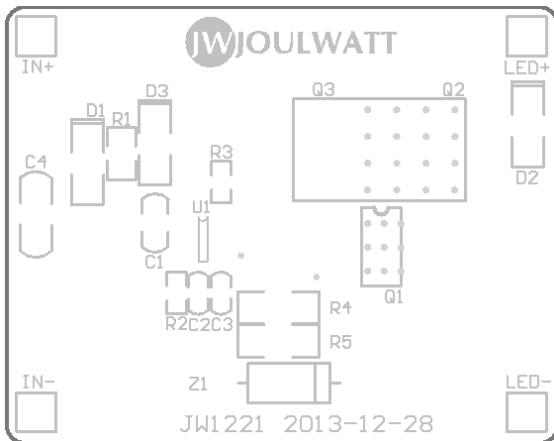


Figure3—Silk Layer

QUICK START GUIDE

1. Connect the IN+&IN- of the EVB to the output of the pre-driver and connect the positive terminal and negative terminal of the load to LED+&LED-, respectively.
2. The load must be LEDs when you test the characteristics of the EVB.
3. Turn on the power supply of the pre-driver, the evaluation board starts operating in normal condition.
4. The output current ripple is adjustable by varying the C2 on the evaluation board.
5. Any other parameters change, please refer to the datasheet of JW1221.
6. For more information, please refer to the datasheet of JW1221.

TYPICAL PERFORMANCE CHARACTERISTICS

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